

## SCHEDULE 1

### Definitions

Unless otherwise provided or the context otherwise requires the following expressions shall have the meanings set out below. The definitions shall apply to the Agreement, including any Schedules contained within it.

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| <b>“Accounting Reference Date”</b> | means the dates to which the Supplier prepares its audited financial statements;                                                                                                                                                                                                                                                                                     |
| <b>“Achieve”</b>                   | <p>(a) in respect of a Test, to successfully pass a Test without any Test Issues; and</p> <p>(b) in respect of a Milestone, the issue of a Milestone Achievement Certificate in respect of that Milestone in accordance with the provisions of Schedule 6.2 (<i>Testing Procedures</i>),</p> <p>and “Achieved” and “Achievement” shall be construed accordingly;</p> |
| <b>“Acquired Rights Directive”</b> | the European Council Directive 77/187/EEC on the approximation of laws of European member states relating to the safeguarding of employees’ rights in the event of transfers of undertakings, businesses or parts of undertakings or businesses, as amended or re-enacted from time to time;                                                                         |
| <b>“Affected Party”</b>            | the Party seeking to claim relief in respect of a Force Majeure Event;                                                                                                                                                                                                                                                                                               |
| <b>“Affiliate”</b>                 | in relation to a body corporate, any other entity which directly or indirectly Controls, is Controlled by, or is under direct or indirect common Control with, that body corporate from time to time;                                                                                                                                                                |
| <b>“Allowable Assumptions”</b>     | the assumptions set out in Annex 5 of Schedule 7.1 ( <i>Charges and Invoicing</i> );                                                                                                                                                                                                                                                                                 |
| <b>“Allowable Price”</b>           | <p>in relation to the Retained Deliverables relating to a CPP Milestone, if any, an amount determined in accordance with the formula:</p> $A - B$ <p>where:</p>                                                                                                                                                                                                      |

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|                                                  | <p>(a) A is an amount equal to the Costs incurred by the Supplier in providing or developing the relevant Retained Deliverables as reflected in the Financial Model together with an amount equal to the Anticipated Contract Life Profit Margin thereon; and</p> <p>(b) B is an amount equal to the Allowable Price Adjustment relating to the relevant Retained Deliverables, if any, or if there is no such Allowable Price Adjustment, zero,</p> <p>provided that the Allowable Price for any Retained Deliverables shall in no circumstances exceed the aggregate amount of the Milestone Payments paid to the Supplier in respect of the Milestones (or in the case of Partial Termination, the Milestones for the parts of the Services terminated) relating to that CPP Milestone;</p> |
| <b>“Allowable Price Adjustment”</b>              | has the meaning given in Clause 34.8(c) ( <i>Payments by the Supplier</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>“Annual Contract Report”</b>                  | has the meaning given in Schedule 7.5 ( <i>Financial Reports and Audit Rights</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>“Annual Revenue”</b>                          | <p>means, for the purposes of determining whether an entity is a Public Sector Dependent Supplier, the audited consolidated aggregate revenue (including share of revenue of joint ventures and Associates) reported by the Supplier or, as appropriate, the Supplier Group in its most recent published accounts, subject to the following methodology:</p> <p>(a) figures for accounting periods of other than 12 months should be scaled pro rata to produce a proforma figure for a 12 month period; and</p> <p>(b) where the Supplier, the Supplier Group and/or their joint ventures and Associates report in a foreign currency, revenue should be converted to British Pound Sterling at the closing exchange rate on the Accounting Reference Date;</p>                               |
| <b>“Anticipated Contract Life Profit Margin”</b> | has the meaning given in Schedule 7.1 ( <i>Charges and Invoicing</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>“Approved Sub-Licensee”</b>                   | <p>any of the following:</p> <p>(a) a Central Government Body;</p> <p>(b) any third party providing services to a Central Government Body; and/or</p> <p>(c) any body (including any private sector body) which performs or carries on any of the</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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|                            | functions and/or activities that previously had been performed and/or carried on by the Authority;                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>“Assets”</b>            | all assets and rights used by the Supplier to provide the Services in accordance with this Agreement but excluding the Authority Assets;                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>“Associated Person”</b> | has the meaning given to it in Section 44(4) of the Criminal Finances Act 2017;                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>“Associates”</b>        | means, in relation to an entity, an undertaking in which the entity owns, directly or indirectly, between 20% and 50% of the voting rights and exercises a degree of control sufficient for the undertaking to be treated as an associate under generally accepted accounting principles;                                                                                                                                                                                                                                    |
| <b>“Assurance”</b>         | means written confirmation from a Relevant Authority to the Supplier that the CRP Information is approved by the Relevant Authority;                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>“ATP Milestone”</b>     | the Milestone linked to Authority to Proceed for the relevant Operational Services set out in the Implementation Plan;                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>“Audit”</b>             | any exercise by the Authority of its Audit Rights pursuant to Clause 12 ( <i>Records, Reports, Audit and Open Book Data</i> ) and Schedule 7.5 ( <i>Financial Reports and Audit Rights</i> );                                                                                                                                                                                                                                                                                                                                |
| <b>“Audit Agents”</b>      | <ul style="list-style-type: none"> <li>(a) the Authority’s internal and external auditors;</li> <li>(b) the Authority’s statutory or regulatory auditors;</li> <li>(c) the Comptroller and Auditor General, their staff and/or any appointed representatives of the National Audit Office;</li> <li>(d) HM Treasury or the Cabinet Office;</li> <li>(e) any party formally appointed by the Authority to carry out audit or similar review functions; and</li> <li>(f) successors or assigns of any of the above;</li> </ul> |
| <b>“Audit Rights”</b>      | the audit and access rights referred to in Schedule 7.5 ( <i>Financial Reports and Audit Rights</i> );                                                                                                                                                                                                                                                                                                                                                                                                                       |

**“Authority Assets”**

the Authority Materials, the Authority infrastructure and any other data, software, assets, equipment or other property owned by and/or licensed or leased to the Authority and which is or may be used in connection with the provision or receipt of the Services;

**“Authority Background IPRs”**

- (a) IPRs owned by the Authority before the Effective Date, including IPRs contained in any of the Authority's Know-How, documentation, processes and procedures;
- (b) IPRs created by the Authority independently of this Agreement; and/or
- (c) Crown Copyright which is not available to the Supplier otherwise than under this Agreement;

but excluding IPRs owned by the Authority subsisting in the Authority Software;

**“Authority Cause”**

any material breach by the Authority of any of the Authority Responsibilities, except to the extent that such breach is:

- (a) the result of any act or omission by the Authority to which the Supplier has given its prior consent; or
- (b) caused by the Supplier, any Sub-contractor or any Supplier Personnel;

**“Authority Data”**

- (a) the data, text, drawings, diagrams, images or sounds (together with any database made up of any of these) which are embodied in any electronic, magnetic, optical or tangible media, and which are:
  - (i) supplied to the Supplier by or on behalf of the Authority; and/or
  - (ii) which the Supplier is required to generate, process, store or transmit pursuant to this Agreement; or
- (b) any Personal Data for which the Authority is the Data Controller;

**“Authority IT Strategy”**

the Authority's IT policy in force as at the Effective Date (a copy of which has been supplied to the Supplier), as updated from time to time in accordance with the Change Control Procedure;

**“Authority Materials”**

the Authority Data together with any materials, documentation, information, programs and codes supplied by the Authority to the Supplier, the IPRs in which:

- (a) are owned or used by or on behalf of the Authority; and
- (b) are or may be used in connection with the provision or receipt of the Services,

but excluding any Project Specific IPRs, Specially Written Software, Supplier Software, Third Party Software and Documentation relating to Supplier Software or Third Party Software;

**“Authority Premises”**

premises owned, controlled or occupied by the Authority and/or any Central Government Body which are made available for use by the Supplier or its Sub-contractors for provision of the Services (or any of them);

**“Authority Representative”**

the representative appointed by the Authority pursuant to Clause 11.4 (*Representatives*);

**“Authority Requirements”**

the requirements of the Authority set out in Schedules 2.1 (*Services Description*), 2.2 (*Performance Indicators*), 2.3 (*Standards*), 2.4 (*Security Management*), 2.5 (*Insurance Requirements*), 6.1 (*Implementation Plan*), 8.4 (*Reports and Records Provisions*), 8.5 (*Exit Management*) and 8.6 (*Service Continuity Plan and Corporate Resolution Planning*);

**“Authority Responsibilities”**

the responsibilities of the Authority specified in Schedule 3 (*Authority Responsibilities*);

**“Authority Software”**

software which is owned by or licensed to the Authority (other than under or pursuant to this Agreement) and which is or will be used by the Supplier for the purposes of providing the Services;

**“Authority System”**

the Authority's computing environment (consisting of hardware, software and/or telecommunications networks or equipment) used by the Authority or the Supplier in connection with this Agreement which is owned by the Authority or licensed to it by a third

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|                                                    | party and which interfaces with the Supplier System or which is necessary for the Authority to receive the Services;                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>“Authority to Proceed” or “ATP”</b>             | the authorisation to the Supplier to commence the provision of the relevant Operational Services to the Authority, provided by the Authority in the form of a Milestone Achievement Certificate in respect of the ATP Milestone;                                                                                                                                                                                                                                                                          |
| <b>“Balanced Scorecard Report”</b>                 | has the meaning given in Paragraph 1.1(b) of Part B of Schedule 2.2 ( <i>Performance Levels</i> );                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>“Baseline Security Requirements”</b>            | the Authority's baseline security requirements, the current copy of which is contained in Annex 1 of Schedule 2.4 ( <i>Security Management</i> ), as updated from time to time by the Authority and notified to the Supplier;                                                                                                                                                                                                                                                                             |
| <b>“Board”</b>                                     | means the Supplier’s board of directors;                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>“Board Confirmation”</b>                        | means the written confirmation from the Board in accordance with paragraph 8 of Schedule 7.4 (Financial Distress);                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>“Breakage Costs Payment”</b>                    | has the meaning given in Schedule 7.2 ( <i>Payments on Termination</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>“Cabinet Office Markets and Suppliers Team”</b> | means the UK government’s team responsible for managing the relationship between government and its Strategic Suppliers, or any replacement or successor body carrying out the same function;                                                                                                                                                                                                                                                                                                             |
| <b>“Central Government Body”</b>                   | <p>a body listed in one of the following sub-categories of the Central Government classification of the Public Sector Classification Guide, as published and amended from time to time by the Office for National Statistics:</p> <ul style="list-style-type: none"> <li>(a) Government Department;</li> <li>(b) Non-Departmental Public Body or Assembly Sponsored Public Body (advisory, executive, or tribunal);</li> <li>(c) Non-Ministerial Department; or</li> <li>(d) Executive Agency;</li> </ul> |
| <b>“Certificate of Costs”</b>                      | Not used                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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| <b>“Change”</b>                                    | any change to this Agreement;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>“Change Authorisation Note”</b>                 | a form setting out an agreed Contract Change which shall be substantially in the form of Annex 2 of Schedule 8.2 ( <i>Change Control Procedure</i> );                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>“Change Control Procedure”</b>                  | the procedure for changing this Agreement set out in Schedule 8.2 ( <i>Change Control Procedure</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>“Change in Law”</b>                             | any change in Law which impacts on the performance of the Services which comes into force after the Effective Date;                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>“Change Request”</b>                            | a written request for a Contract Change substantially in the form of Annex 1 of Schedule 8.2 ( <i>Change Control Procedure</i> );                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>“Charges”</b>                                   | the charges for the provision of the Services set out in or otherwise calculated in accordance with Schedule 7.1 ( <i>Charges and Invoicing</i> ), including any Milestone Payment or Service Charge;                                                                                                                                                                                                                                                                                                                                                       |
| <b>“Class 1 Transaction”</b>                       | has the meaning set out in the listing rules issued by the UK Listing Authority;                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>“CNI”</b>                                       | means Critical National Infrastructure;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>“Commercially Sensitive Information”</b>        | <p>the information listed in Schedule 4.2 (<i>Commercially Sensitive Information</i>) comprising the information of a commercially sensitive nature relating to -</p> <ul style="list-style-type: none"> <li>(a) the pricing of the Services;</li> <li>(b) details of the Supplier’s IPRs; and</li> <li>(c) the Supplier’s business and investment plans;</li> </ul> <p>which the Supplier has indicated to the Authority that, if disclosed by the Authority, would cause the Supplier significant commercial disadvantage or material financial loss;</p> |
| <b>“Comparable Supply”</b>                         | the supply of services to another customer of the Supplier that are the same or similar to any of the Services;                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>“Compensation for Unacceptable KPI Failure”</b> | has the meaning given in Clause 7.4(a) ( <i>Unacceptable KPI Failure</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>“Compensation Payment”</b>                      | has the meaning given in Schedule 7.2 ( <i>Payments on Termination</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**“Condition Precedent”**

**“Confidential Information”**

has the meaning given in Clause 4.2 (*Condition Precedent*);

- (a) Information, including all Personal Data, which (however it is conveyed) is provided by the Disclosing Party pursuant to or in anticipation of this Agreement that relates to:
  - (i) the Disclosing Party Group; or
  - (ii) the operations, business, affairs, developments, intellectual property rights, trade secrets, know-how and/or personnel of the Disclosing Party Group;
- (b) other Information provided by the Disclosing Party pursuant to or in anticipation of this Agreement that is clearly designated as being confidential or equivalent or that ought reasonably to be considered to be confidential (whether or not it is so marked) which comes (or has come) to the Recipient’s attention or into the Recipient’s possession in connection with this Agreement;
- (c) discussions, negotiations, and correspondence between the Disclosing Party or any of its directors, officers, employees, consultants or professional advisers and the Recipient or any of its directors, officers, employees, consultants and professional advisers in connection with this Agreement and all matters arising therefrom; and
- (d) Information derived from any of the above, but not including any Information which:
  - (i) was in the possession of the Recipient without obligation of confidentiality prior to its disclosure by the Disclosing Party;
  - (ii) the Recipient obtained on a non-confidential basis from a third party who is not, to the Recipient’s knowledge or belief, bound by a confidentiality agreement with the Disclosing Party or otherwise prohibited from disclosing the information to the Recipient;



- (iii) was already generally available and in the public domain at the time of disclosure otherwise than by a breach of this Agreement or breach of a duty of confidentiality;
- (iv) was independently developed without access to the Confidential Information; or
- (v) relates to the Supplier's:
  1. performance under this Agreement; or
  2. failure to pay any Sub-contractor as required pursuant to Clause 15.15(a) (*Supply Chain Protection*);

**“Contract Change”**

any change to this Agreement other than an Operational Change;

**“Contract Inception Report”**

the initial Financial Model in a form agreed by the Supplier and the Authority in writing on or before the Effective Date;

**“Contract Finder”**

the online government portal which allows suppliers to search for information about contracts worth over £10,000 (excluding VAT) as prescribed by Part 4 of the Public Contract Regulations 2015;

**“Contract Year”**

- (a) a period of 12 months commencing on the Effective Date; or
- (b) thereafter a period of 12 months commencing on each anniversary of the Effective Date;

provided that the final Contract Year shall end on the expiry or termination of the Term;

**“Control”**

the possession by person, directly or indirectly, of the power to direct or cause the direction of the management and policies of the other person (whether through the ownership of voting shares, by contract or otherwise) and “Controls” and “Controlled” shall be interpreted accordingly;

**“Controller”**

has the meaning given in the GDPR;

**“Corporate Change Event”**

means:

- (a) any change of Control of the Supplier or a Parent Undertaking of the Supplier;
- (b) any change of Control of any member of the Supplier Group which, in the reasonable opinion of the Authority, could have a material adverse effect on the Services;
- (c) any change to the business of the Supplier or any member of the Supplier Group which, in the reasonable opinion of the Authority, could have a material adverse effect on the Services;
- (d) a Class 1 Transaction taking place in relation to the shares of the Supplier or any Parent Undertaking of the Supplier whose shares are listed on the main market of the London Stock Exchange plc;
- (e) an event that could reasonably be regarded as being equivalent to a Class 1 Transaction taking place in respect of the Supplier or any Parent Undertaking of the Supplier;
- (f) payment of dividends by the Supplier or the ultimate Parent Undertaking of the Supplier Group exceeding 25% of the Net Asset Value of the Supplier or the ultimate Parent Undertaking of the Supplier Group respectively in any 12 month period;
- (g) an order is made or an effective resolution is passed for the winding up of any member of the Supplier Group;
- (h) any member of the Supplier Group stopping payment of its debts generally or becoming unable to pay its debts within the meaning of section 123(1) of the Insolvency Act 1986 or any member of the Supplier Group ceasing to carry on all or substantially all its business, or any compromise, composition, arrangement or agreement being made with creditors of any member of the Supplier Group;
- (i) the appointment of a receiver, administrative receiver or administrator in respect of or over all or a material part of the undertaking or assets of any member of the Supplier Group; and/or
- (j) any process or events with an effect analogous to those in paragraphs (e) to (g) inclusive above occurring to a member of the Supplier Group in a jurisdiction outside England and Wales;

**“Corporate Resolution Planning Information”**

means, together, the:

a) Group Structure Information and Resolution Commentary; and

b) UK Public Sector and CNI Contract Information;

**“CPP Milestone”**

a contract performance point as set out in the Implementation Plan, being the Milestone at which the Supplier has demonstrated that the Supplier Solution or relevant Service is working satisfactorily in its operating environment in accordance with Schedule 6.2 (*Testing Procedures*);

**“Critical National Infrastructure”**

means those critical elements of UK national infrastructure (namely assets, facilities, systems, networks or processes and the essential workers that operate and facilitate them), the loss or compromise of which could result in:

a) major detrimental impact on the availability, integrity or delivery of essential services - including those services whose integrity, if compromised, could result in significant loss of life or casualties - taking into account significant economic or social impacts; and/or

b) significant impact on national security, national defence, or the functioning of the UK;

**“Critical Performance Failure”**

the Supplier accruing in aggregate thirty (30) **number** or more Service Points (in terms of the number of points allocated) in any period of 3 consecutive months.

**“Critical Service Contract”**

means the overall status of this Agreement as determined by the Authority and specified in paragraph 10.1 of Part 2 to Schedule 8.6 (*Service Continuity Plan and Corporate Resolution Planning*)

**“CRP Information”**

means the Corporate Resolution Planning Information;

**“CRTPA”**

the Contracts (Rights of Third Parties) Act 1999;

**“Data Loss Event”**

any event that results, or may result, in unauthorised access to Personal Data held by the Supplier under this Agreement, and/or actual or

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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|                                            | potential loss and/or destruction of Personal Data in breach of this Agreement, including any Personal Data Breach;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>“Data Protection Impact Assessment”</b> | an assessment by the Controller of the impact of the envisaged processing on the protection of Personal Data;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>“Data Protection Legislation”</b>       | <ul style="list-style-type: none"> <li>a) the GDPR, the LED and any applicable national implementing Laws as amended from time to time</li> <li>b) the DPA 2018 to the extent that it relates to processing of personal data and privacy;</li> <li>c) all applicable Law about the processing of personal data and privacy;</li> </ul>                                                                                                                                                                                                                                                                         |
| <b>“Data Subject”</b>                      | has the meaning given in the DPA;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>“Data Subject Request”</b>              | a request made by, or on behalf of, a Data Subject in accordance with rights granted pursuant to the Data Protection Legislation to their Personal Data;                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>“Deductions”</b>                        | all Service Credits, Compensation for Unacceptable KPI Failure, Delay Payments or any other deduction which is paid or payable to the Authority under this Agreement;                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>“Default”</b>                           | <p>any breach of the obligations of the relevant Party (including abandonment of this Agreement in breach of its terms, repudiatory breach or breach of a fundamental term) or any other default, act, omission, negligence or statement:</p> <ul style="list-style-type: none"> <li>(a) in the case of the Authority, of its employees, servants, agents; or</li> <li>(b) in the case of the Supplier, of its Subcontractors or any Supplier Personnel,</li> </ul> <p>in connection with or in relation to the subjectmatter of this Agreement and in respect of which such Party is liable to the other;</p> |
| <b>“Defect”</b>                            | <ul style="list-style-type: none"> <li>(a) any error, damage or defect in the manufacturing of a Deliverable; or</li> <li>(b) any error or failure of code within the Software which causes a Deliverable to malfunction or to produce unintelligible or incorrect results; or</li> </ul>                                                                                                                                                                                                                                                                                                                      |

- (c) any failure of any Deliverable to provide the performance, features and functionality specified in the Authority Requirements or the Documentation (including any adverse effect on response times) regardless of whether or not it prevents the relevant Deliverable from meeting its associated Test Success Criteria; or
- (d) any failure of any Deliverable to operate in conjunction with or interface with any other Deliverable in order to provide the performance, features and functionality specified in the Authority Requirements or the Documentation (including any adverse effect on response times) regardless of whether or not it prevents the relevant Deliverable from meeting its associated Test Success Criteria;

**“Delay”**

- (a) a delay in the Achievement of a Milestone by its Milestone Date; or
- (b) a delay in the design, development, testing or implementation of a Deliverable by the relevant date set out in the Implementation Plan;

**“Delay Deduction Period”**

the period of 100 days commencing on the relevant Milestone Date;

**“Delay Payments”**

the amounts payable by the Supplier to the Authority in respect of a Delay in Achieving a Key Milestone as specified in Schedule 7.1 (*Charges and Invoicing*);

**“Deliverable”**

an item or feature delivered or to be delivered by the Supplier at or before a Milestone Date or at any other stage during the performance of this Agreement;

**“Detailed Implementation Plan”**

the plan developed and revised from time to time in accordance with Paragraphs 3 and 4 of Schedule 6.1 (*Implementation Plan*);

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| <b>“Dependent Parent Undertaking”</b> | means any Parent Undertaking which provides any of its Subsidiary Undertakings and/or Associates, whether directly or indirectly, with any financial, trading, managerial or other assistance of whatever nature, without which the Supplier would be unable to continue the day to day conduct and operation of its business in the same manner as carried on at the time of entering into this Agreement, including for the avoidance of doubt the provision of the Services in accordance with the terms of this Agreement; |
| <b>“Disclosing Party”</b>             | has the meaning given in Clause 21.1 ( <i>Confidentiality</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>“Disclosing Party Group”</b>       | <p>(a) where the Disclosing Party is the Supplier, the Supplier and any Affiliates of the Supplier; and</p> <p>(b) where the Disclosing Party is the Authority, the Authority and any Central Government Body with which the Authority or the Supplier interacts in connection with this Agreement;</p>                                                                                                                                                                                                                        |
| <b>“Dispute”</b>                      | any dispute, difference or question of interpretation arising out of or in connection with this Agreement, including any dispute, difference or question of interpretation relating to the Services, failure to agree in accordance with the Change Control Procedure or any matter where this Agreement directs the Parties to resolve an issue by reference to the Dispute Resolution Procedure;                                                                                                                             |
| <b>“Dispute Notice”</b>               | a written notice served by one Party on the other stating that the Party serving the notice believes that there is a Dispute;                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>“Dispute Resolution Procedure”</b> | the dispute resolution procedure set out in Schedule 8.3 ( <i>Dispute Resolution Procedure</i> );                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>“Documentation”</b>                | descriptions of the Services and Performance Indicators, details of the Supplier System (including (i) vendors and versions for off-the-shelf components and (ii) source code and build information for proprietary components), relevant design and development information, technical specifications of all functionality including those not included in standard manuals (such as those that modify system performance and access levels),                                                                                 |

configuration details, test scripts, user manuals, operating manuals, process definitions and procedures, and all such other documentation as:

- (a) is required to be supplied by the Supplier to the Authority under this Agreement;
- (b) would reasonably be required by a competent third party capable of Good Industry Practice contracted by the Authority to develop, configure, build, deploy, run, maintain, upgrade and test the individual systems that provide Services;
- (c) is required by the Supplier in order to provide the Services; and/or
- (d) has been or shall be generated for the purpose of providing the Services;

**“DOTAS”**

the Disclosure of Tax Avoidance Schemes rules which require a promoter of tax schemes to tell HMRC of any specified notifiable arrangements or proposals and to provide prescribed information on those arrangements or proposals within set time limits as contained in Part 7 of the Finance Act 2004 and in secondary legislation made under vires contained in Part 7 of the Finance Act 2004 and as extended to national insurance contributions by the National Insurance Contributions (Application of Part 7 of the Finance Act 2004) Regulations 2012, SI 2012/1868) made under section 132A of the Social Security Administration Act 1992;

**“DPA”**

the Data Protection Act 2018 ;

**“Due Diligence Information”**

any information supplied to the Supplier by or on behalf of the Authority prior to the Effective Date;

**“Effective Date”**

the later of:

- (a) the date on which this Agreement is signed by both Parties; and
- (b) the 15 April 2020;

**“EIRs”**

the Environmental Information Regulations 2004, together with any guidance and/or codes of practice issued by the Information Commissioner or any Central Government Body in relation to such Regulations;

### **“Emergency Maintenance”**

ad hoc and unplanned maintenance provided by the Supplier where:

- (a) the Authority reasonably suspects that the IT Environment or the Services, or any part of the IT Environment or the Services, has or may have developed a fault, and notifies the Supplier of the same; or
- (b) the Supplier reasonably suspects that the IT Environment or the Services, or any part the IT Environment or the Services, has or may have developed a fault;

### **“Employee Liabilities”**

all claims, actions, proceedings, orders, demands, complaints, investigations (save for any claims for personal injury which are covered by insurance) and any award, compensation, damages, tribunal awards, fine, loss, order, penalty, disbursement, payment made by way of settlement and costs, expenses and legal costs reasonably incurred in connection with a claim or investigation related to employment including in relation to the following:

- (a) redundancy payments including contractual or enhanced redundancy costs, termination costs and notice payments;
- (b) unfair, wrongful or constructive dismissal compensation;
- (c) compensation for discrimination on grounds of sex, race, disability, age, religion or belief, gender reassignment, marriage or civil partnership, pregnancy and maternity or sexual orientation or claims for equal pay;
- (d) compensation for less favourable treatment of part-time workers or fixed term employees;
- (e) outstanding employment debts and unlawful deduction of wages including any PAYE and national insurance contributions;
- (f) employment claims whether in tort, contract or statute or otherwise;
- (g) any investigation relating to employment matters by the Equality and Human Rights Commission or other enforcement, regulatory or supervisory body and of implementing any requirements which may arise from such investigation;



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| <b>“Employment Regulations”</b>            | the Transfer of Undertakings (Protection of Employment) Regulations 2006 (SI 2006/246) as amended or replaced or any other Regulations implementing the Acquired Rights Directive;                                                                                                                                                                                                                                                                                                         |
| <b>“Estimated Year 1 Charges”</b>          | the estimated Charges payable by the Authority during the first Contract Year, as set out in the Financial Model;                                                                                                                                                                                                                                                                                                                                                                          |
| <b>“Estimated Initial Service Charges”</b> | the estimated Service Charges payable by the Authority during the period of 12 months from the first Operational Service Commencement Date, as set out in the Financial Model;                                                                                                                                                                                                                                                                                                             |
| <b>“Exit Day”</b>                          | shall have the meaning in the European Union (Withdrawal) Act 2018;                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>“Exit Management”</b>                   | services, activities, processes and procedures to ensure a smooth and orderly transition of all or part of the Services from the Supplier to the Authority and/or a Replacement Supplier, as set out or referred to in Schedule 8.5 ( <i>Exit Management</i> );                                                                                                                                                                                                                            |
| <b>“Exit Plan”</b>                         | the plan produced and updated by the Supplier during the Term in accordance with Paragraph 4 of Schedule 8.5 ( <i>Exit Management</i> );                                                                                                                                                                                                                                                                                                                                                   |
| <b>“Expedited Dispute Timetable”</b>       | the reduced timetable for the resolution of Disputes set out in Paragraph 3 of Schedule 8.3 ( <i>Dispute Resolution Procedure</i> );                                                                                                                                                                                                                                                                                                                                                       |
| <b>“Expert”</b>                            | has the meaning given in Schedule 8.3 ( <i>Dispute Resolution Procedure</i> );                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>“Expert Determination”</b>              | the process described in Paragraph 6 of Schedule 8.3 ( <i>Dispute Resolution Procedure</i> );                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>“Extension Period”</b>                  | shall be taken to mean either; (a) a period of one (1) year from the end of the Initial Term if so extended by the Parties; (b) a further one (1) year at the end of the initial extension set out in (a); and/or (c) the final year of extension at end of the second extension set out in (b), in each as the context so requires and the term “Extension Periods” shall be taken to mean any combination of the foregoing and/or all of the foregoing extensions set out in (a) to (c); |
| <b>“Financial Distress Event”</b>          | the occurrence of one or more of the events listed in Paragraph 3.1 of Schedule 7.4 ( <i>Financial Distress</i> );                                                                                                                                                                                                                                                                                                                                                                         |

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| <b>“Financial Distress Remediation Plan”</b> | a plan setting out how the Supplier will ensure the continued performance and delivery of the Services in accordance with this Agreement in the event that a Financial Distress Event occurs;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>“Financial Model”</b>                     | has the meaning given in Schedule 7.5 ( <i>Financial Reports and Audit Rights</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>“Financial Reports”</b>                   | has the meaning given in Schedule 7.5 ( <i>Financial Reports and Audit Rights</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>“Financial Transparency Objectives”</b>   | has the meaning given in Schedule 7.5 ( <i>Financial Reports and Audit Rights</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>“FOIA”</b>                                | the Freedom of Information Act 2000 and any subordinate legislation made under that Act from time to time, together with any guidance and/or codes of practice issued by the Information Commissioner or any relevant Central Government Body in relation to such Act;                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>“Force Majeure Event”</b>                 | any event outside the reasonable control of either Party affecting its performance of its obligations under this Agreement arising from acts, events, omissions, happenings or non-happenings beyond its reasonable control and which are not attributable to any wilful act, neglect or failure to take reasonable preventative action by that Party, including acts of God, riots, war or armed conflict, acts of terrorism, acts of government, local government or regulatory bodies, fire, flood, storm or earthquake, or disaster but excluding any industrial dispute relating to the Supplier or the Supplier Personnel or any other failure in the Supplier’s or a Sub-contractor’s supply chain; |
| <b>“Force Majeure Notice”</b>                | a written notice served by the Affected Party on the other Party stating that the Affected Party believes that there is a Force Majeure Event;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>“GDPR”</b>                                | The General Data Protection Regulation (EU) 2016/679                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>“General Anti-Abuse Rule”</b>             | <p>(a) the legislation in Part 5 of the Finance Act 2013; and</p> <p>(b) any future legislation introduced into parliament to counteract tax advantages arising from abusive arrangements to avoid national insurance contributions;</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>“General Change in Law”</b>               | a Change in Law where the change is of a general legislative nature (including taxation or duties of any sort affecting the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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|                                                                | Supplier) or which affects or relates to a Comparable Supply;                                                                                                                                                                                                                                                                                                                                     |
| <b>“Good Industry Practice”</b>                                | at any time the exercise of all reasonable skill, care and diligence, which would be reasonably expected at such time from a reasonable supplier of services similar to the Services;                                                                                                                                                                                                             |
| <b>“Group Structure Information and Resolution Commentary”</b> | means the information relating to the Supplier Group to be provided by the Supplier in accordance with Paragraphs 11 to 13 and Appendix 1 of Part 2 of Schedule 8.6 (Service Continuity Plan and Corporate Resolution Planning);                                                                                                                                                                  |
| <b>“Halifax Abuse Principle”</b>                               | the principle explained in the CJEU Case C-255/02 Halifax and others;                                                                                                                                                                                                                                                                                                                             |
| <b>“Health and Safety Policy”</b>                              | the health and safety policy of the Authority and/or other relevant Central Government Body as provided to the Supplier on or before the Effective Date and as subsequently provided to the Supplier from time to time except any provision of any such subsequently provided policy that cannot be reasonably reconciled to ensuring compliance with applicable Law regarding health and safety; |
| <b>“HMRC”</b>                                                  | HM Revenue & Customs;                                                                                                                                                                                                                                                                                                                                                                             |
| <b>“Impact Assessment”</b>                                     | has the meaning given in Schedule 8.2 ( <i>Change Control Procedure</i> );                                                                                                                                                                                                                                                                                                                        |
| <b>“Implementation Plan”</b>                                   | the Outline Implementation Plan or (if and when approved by the Authority pursuant to Paragraph 3 of Schedule 6.1 ( <i>Implementation Plan</i> )) the Detailed Implementation Plan as updated in accordance with Paragraph 4 of Schedule 6.1 ( <i>Implementation Plan</i> ) from time to time;                                                                                                    |
| <b>“Implementation Services”</b>                               | all the services to be performed from the Implementation Services Commencement Date up to the Authority to Proceed, being the blueprinting, proof of concept, new national modelling, NaFRA2 core system build, data take-on and testing, together with the relevant project management, all as described in more detail in the relevant parts of Schedule 2.1;                                   |

**“Implementation Services Commencement Date”**

the date on which the Supplier is to commence provision of the first of the Implementation Services, being effective date plus ten (10) working days

**“Independent Control”**

where a Controller has provided Personal Data to another Party which is neither a Processor or Joint Controller because the recipient itself determines the purposes and means of processing but does so separately from the Controller providing it with Personal Data;

**“Information”**

all information of whatever nature, however conveyed and in whatever form, including in writing, orally, by demonstration, electronically and in a tangible, visual or machine-readable medium (including CD-ROM, magnetic and digital form);

**“Initial Term”**

the period of four (4) years and six (6) months from and including the Effective Date;

**“Initial Upload Date”**

means the occurrence of an event detailed in Schedule 8.4 (*Reports and Records Provisions*) Annex 3 (*Virtual Library*) which requires the Supplier to provide its initial upload of the relevant information to the Virtual Library;

**“Insolvency Event”**

with respect to any person, means:

- (a) that person suspends, or threatens to suspend, payment of its debts, or is unable to pay its debts as they fall due or admits inability to pay its debts, or:
  - (i) (being a company or a LLP) is deemed unable to pay its debts within the meaning of section 123 of the Insolvency Act 1986, or
  - (ii) (being a partnership) is deemed unable to pay its debts within the meaning of section 222 of the Insolvency Act 1986;

- (b) that person commences negotiations with one or more of its creditors (using a voluntary arrangement, scheme of arrangement or otherwise) with a view to rescheduling any of its debts, or makes a proposal for or enters into any compromise or arrangement with one or more of its creditors or takes any step to obtain a moratorium pursuant to Section 1A and Schedule A1 of the Insolvency Act 1986 other than (in the case of a company, a LLP or a partnership) for the sole purpose of a scheme for a solvent amalgamation of that that person with one or more other companies or the solvent reconstruction of that person;
- (c) another person becomes entitled to appoint a receiver over the assets of that person or a receiver is appointed over the assets of that person;
- (d) a creditor or encumbrancer of that person attaches or takes possession of, or a distress, execution or other such process is levied or enforced on or sued against, the whole or any part of that person's assets and such

**“Intellectual Property Rights”  
or “IPRs”**

attachment or process is not discharged within 14 days;

- (e) that person suspends or ceases, or threatens to suspend or cease, carrying on all or a substantial part of its business;
- (f) where that person is a company, a LLP or a partnership:
  - (i) a petition is presented (which is not dismissed within 14 days of its service), a notice is given, a resolution is passed, or an order is made, for or in connection with the winding up of that

person other than for the sole purpose of a scheme for a solvent amalgamation of that person with one or more other companies or the solvent reconstruction of that person;

- (ii) an application is made to court, or an order is made, for the appointment of an administrator, or if a notice of intention to appoint an administrator is filed at Court or given or if an administrator is appointed, over that person;
- (iii) (being a company or a LLP) the holder of a qualifying floating charge over the assets of that person has become entitled to appoint or has appointed an administrative receiver; or
- (iv) (being a partnership) the holder of an agricultural floating charge over the assets of that person has become entitled to appoint or has appointed an agricultural receiver; or

(g) any event occurs, or proceeding is taken, with respect to that person in any jurisdiction to which it is subject that has an effect equivalent or similar to any of the events mentioned above;

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protection similar to copyright, rights in databases, patents and rights in inventions, semiconductor topography rights, trade marks, rights in Internet domain names and website addresses and other rights in trade names,

designs, Know-How, trade secrets and other rights in Confidential Information;

(b) applications for registration, and the right to apply for registration, for any of the rights listed

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                                     | at (a) that are capable of being registered in any country or jurisdiction; and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                     | (c) all other rights having equivalent or similar effect in any country or jurisdiction;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>“Intervention Cause”</b>         | has the meaning given in Clause 29.1 (Remedial Adviser);                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>“Intervention Notice”</b>        | has the meaning given in Clause 29.1 ( <i>Remedial Adviser</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>“Intervention Period”</b>        | has the meaning given in Clause 29.2(c) ( <i>Remedial Adviser</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>“Intervention Trigger Event”</b> | <ul style="list-style-type: none"> <li>(a) any event falling within limb (a), (b), (c), (e), (f) or (g) of the definition of a Supplier Termination Event;</li> <li>(b) a Default by the Supplier that is materially preventing or materially delaying the performance of the Services or any material part of the Services;</li> <li>(c) the Supplier accruing in aggregate 22.5 or more Service Points (in terms of the number of points allocated) in any period of three (3) consecutive months;</li> <li>(d) the Supplier accruing Service Credits which meet or exceed 75% of the Service Credit Cap; and/or</li> <li>(e) the Supplier not Achieving a Key Milestone within 75 days of its relevant Milestone Date;</li> </ul> |
| <b>“IPRs Claim”</b>                 | any claim for an infringement (including the defence of such infringement) of any Relevant IPRs save for any such claim to the extent that it is caused by any use by or on behalf of any party other than the Supplier of any Relevant IPRs, or the use of the Authority Software by or on behalf of the Supplier, in either case in combination with any item not supplied or recommended by the Supplier pursuant to this Agreement or for a purpose not reasonably to be inferred from the Services Description or the provisions of this Agreement;                                                                                                                                                                             |
| <b>“IT”</b>                         | information and communications technology;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>“IT Environment”</b>             | the Authority System and the Supplier System;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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| <b>“Joint Controllers”</b>         | where two or more Controllers jointly determine the purposes and means of processing;                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>“Key Milestone”</b>             | the Milestones identified in the Implementation Plan as key milestones and in respect of which Delay Payments may be payable in accordance with Paragraph 1 of Part C of Schedule 7.1 ( <i>Charges and Invoicing</i> ) if the Supplier fails to Achieve the Milestone Date in respect of such Milestone;                                                                                                                                                                            |
| <b>“Key Performance Indicator”</b> | the key performance indicators set out in Table 1 of Part I of Annex 1 of Schedule 2.2 ( <i>Performance Levels</i> );                                                                                                                                                                                                                                                                                                                                                               |
| <b>“Key Personnel”</b>             | those persons appointed by the Supplier to fulfil the Key Roles, being the persons listed in Schedule 9.2 ( <i>Key Personnel</i> ) against each Key Role as at the Effective Date or as amended from time to time in accordance with Clauses 14.5 and 14.6 ( <i>Key Personnel</i> );                                                                                                                                                                                                |
| <b>“Key Roles”</b>                 | a role described as a Key Role in Schedule 9.2 ( <i>Key Personnel</i> ) and any additional roles added from time to time in accordance with Clause 14.4 ( <i>Key Personnel</i> );                                                                                                                                                                                                                                                                                                   |
| <b>“Key Sub-contract”</b>          | each Sub-contract with a Key Sub-contractor;                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>“Key Sub-contractor”</b>        | any Sub-contractor: <ul style="list-style-type: none"> <li>(a) which, in the opinion of the Authority, performs (or would perform if appointed) a critical role in the provision of all or any part of the Services; and/or</li> <li>(b) with a Sub-contract with a contract value which at the time of appointment exceeds (or would exceed if appointed) 10% of the aggregate Charges forecast to be payable under this Agreement (as set out in the Financial Model);</li> </ul> |
| <b>“Know-How”</b>                  | all ideas, concepts, schemes, information, procedures and/or processes, derivative works, knowledge, techniques, methodology, and anything else in the nature of know how relating to the Services but excluding know how already in the other Party’s possession before this Agreement;                                                                                                                                                                                            |
| <b>“KPI Failure”</b>               | a failure to meet the Target Performance Level in respect of a Key Performance Indicator;                                                                                                                                                                                                                                                                                                                                                                                           |



**“KPI Service Threshold”**

shall be as set out against the relevant Key Performance Indicator in Table 1 of Part I of Annex 1 of Schedule 2.2 (*Performance Levels*);

**“Law”**

any law, statute, subordinate legislation within the meaning of section 21(1) of the Interpretation Act 1978, bye-law, enforceable right within the meaning of section 2 of the European Communities Act 1972, regulation, order, mandatory guidance or code of practice, judgment of a relevant court of law, or directives or requirements of any regulatory body with which the Supplier is bound to comply;

**“Licensed Software”**

all and any Software licensed by or through the Supplier, its Sub-contractors to the Authority for the purposes of or pursuant to this Agreement;

**“Losses”**

losses, liabilities, damages, costs and expenses (including legal fees on a solicitor/client basis) and disbursements and costs of investigation, litigation, settlement, judgment interest and penalties whether arising in contract, tort (including negligence), breach of statutory duty or otherwise;

**“Maintenance Schedule”**

shall have the meaning set out in Clause 9.4 (*Maintenance*);

**“Malicious Software”**

any software program or code intended to destroy, interfere with, corrupt, or cause undesired effects on program files, data or other information, executable code or application software macros, whether or not its operation is immediate or delayed, and whether the malicious software is introduced wilfully, negligently or without knowledge of its existence;

**“Management Information”**

the management information specified in Schedule 2.2 (*Performance Levels*), Schedule 7.1 (*Charges and Invoicing*) and Schedule 8.1 (*Governance*) to be provided by the Supplier to the Authority;

**“Material KPI Failure”**

- (a) a Serious KPI Failure;
- (b) a Severe KPI Failure; or
- (c) a failure by the Supplier to meet a KPI Service Threshold;

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| <b>“Material PI Failure”</b>                                                                                                                            | (a) a failure by the Supplier to meet the PI Service Threshold in respect of 25% or more of the Subsidiary Performance Indicators that are measured in that Service Period; and/or                                                                                                                                                                                                                                             |
| <b>“Measurement Period”</b>                                                                                                                             | (b) a failure by the Supplier to meet the Target Performance Level in respect of 50% or more of the Subsidiary Performance Indicators that are measured in that Service Period;<br>in relation to a Key Performance Indicator or Subsidiary Performance Indicator, the period over which the Supplier’s performance is measured (for example, a Service Period if measured monthly or a 12 month period if measured annually); |
| <b>“Milestone”</b>                                                                                                                                      | an event or task described in the Implementation Plan which, if applicable, shall be completed by the relevant Milestone Date;                                                                                                                                                                                                                                                                                                 |
| <b>“Milestone Achievement Certificate”</b>                                                                                                              | the certificate to be granted by the Authority when the Supplier has Achieved a Milestone, which shall be in substantially the same form as that set out in Annex 3 of Schedule 6.2 ( <i>Testing Procedures</i> );                                                                                                                                                                                                             |
| <b>“Milestone Adjustment Payment in respect of each CPP Milestone the subject of a Amount”</b><br><b>Milestone Adjustment Payment Notice, an amount</b> | determined in accordance with the formula:                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                         | $A - B$                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                                                         | where:                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                         | (a) A is an amount equal to the aggregate sum of all Milestone Payments paid to the Supplier in respect of the Milestones (or in the case of Partial Termination, the Milestones for the parts of the Services terminated) relating to that CPP Milestone; and                                                                                                                                                                 |
|                                                                                                                                                         | (b) B is an amount equal to the aggregate Allowable Price for the Retained Deliverables relating to that CPP Milestone or, if there are no such Retained Deliverables, zero;                                                                                                                                                                                                                                                   |
| <b>“Milestone Adjustment Payment Notice”</b>                                                                                                            | has the meaning given in Clause 34.7 ( <i>Payments by the Supplier</i> );                                                                                                                                                                                                                                                                                                                                                      |
| <b>“Milestone Date”</b>                                                                                                                                 | the target date set out against the relevant Milestone in the Implementation Plan by which the Milestone must be Achieved;                                                                                                                                                                                                                                                                                                     |

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| <b>“Milestone Payment”</b>                        | a payment identified in Schedule 7.1 ( <i>Charges and Invoicing</i> ) to be made following the issue of a Milestone Achievement Certificate;                                                                                                                                                                   |
| <b>“Milestone Retention”</b>                      | has the meaning given in Schedule 7.1 ( <i>Charges and Invoicing</i> );                                                                                                                                                                                                                                        |
| <b>“Minor KPI Failure”</b>                        | shall be as set out against the relevant Key Performance Indicator in Table 1 of Part I of Annex 1 of Schedule 2.2 ( <i>Performance Levels</i> );                                                                                                                                                              |
| <b>“month”</b>                                    | a calendar month and “monthly” shall be interpreted accordingly;                                                                                                                                                                                                                                               |
| <b>“Multi-Party Dispute Resolution Procedure”</b> | has the meaning given in Paragraph 9.1 of Schedule 8.3 ( <i>Dispute Resolution Procedure</i> );                                                                                                                                                                                                                |
| <b>“Multi-Party Procedure Initiation Notice”</b>  | has the meaning given in Paragraph 9.2 of Schedule 8.3 ( <i>Dispute Resolution Procedure</i> );                                                                                                                                                                                                                |
| <b>“New Releases”</b>                             | an item produced primarily to extend, alter or improve the Software and/or any Deliverable by providing additional functionality or performance enhancement (whether or not defects in the Software and/or Deliverable are also corrected) while still retaining the original designated purpose of that item; |
| <b>“Non-trivial Customer Base”</b>                | a significant customer base with respect to the date of first release and the relevant market but excluding Affiliates and other entities related to the licensor;                                                                                                                                             |
| <b>“Non-retained Deliverables”</b>                | in relation to a CPP Milestone Payment Notice and each CPP Milestone the subject of that CPP Milestone Payment Notice, Deliverables provided to the Authority which relate to the relevant CPP Milestone(s) and which are not Retained Deliverables;                                                           |
| <b>“Notifiable Default”</b>                       | shall have the meaning given in Clause 27.1( <i>Rectification Plan Process</i> ); software and/or data in machine-readable,                                                                                                                                                                                    |
| <b>“Object Code”</b>                              | compiled object code form;                                                                                                                                                                                                                                                                                     |
| <b>“Occasion of Tax Non-Compliance”</b>           | (a) any tax return of the Supplier submitted to a Relevant Tax Authority on or after 1 October                                                                                                                                                                                                                 |

2012 is found on or after 1 April 2013 to be incorrect as a result of:

- (i) a Relevant Tax Authority successfully challenging the Supplier under the General Anti-Abuse Rule or the Halifax Abuse Principle or under any tax rules or legislation that have an effect equivalent or similar to the General Anti-Abuse Rule or the Halifax Abuse Principle;
  - (ii) the failure of an avoidance scheme which the Supplier was involved in, and which was, or should have been, notified to a Relevant Tax Authority under the DOTAS or any equivalent or similar regime; and/or
- (b) any tax return of the Supplier submitted to a Relevant Tax Authority on or after 1 October 2012 gives rise on or after 1 April 2013 to a criminal conviction in any jurisdiction for tax related offences which is not spent at the Effective Date or to a civil penalty for fraud or evasion;
- (c) has the meaning given in Schedule 7.5  
*(Financial*

**“Open Book Data”**

*Reports and Audit Rights*) computer Software that is released on the internet

**“Open Source”** for use by any person, such release usually being made under a recognised open source licence and stating that it is released as open source;

**“Operating Environment”**

the Authority System and the Sites;

**“Operational Change”**

any change in the Supplier's Operational Services procedures which in all respects, when implemented:

- (a) will not affect the Charges and will not result in any other costs to the Authority;
- (b) may change the way in which the Services are delivered but will not adversely affect the output of the Services or increase the risks in performing or receiving the Services;
- (c) will not adversely affect the interfaces or interoperability of the Services with any of the Authority's IT infrastructure; and
- (d) will not require a change to this Agreement;

**“Operational Service Commencement Date”**

in relation to an Operational Service, the later of:

- (a) the date identified in the Operational Services Implementation Plan upon which the Operational Service is to commence; and
- (b) where the Implementation Plan states that the Supplier must have Achieved the relevant ATP Milestone before it can commence the provision of that Operational Service, the date upon which the Supplier Achieves the relevant ATP Milestone;

**“Operational Services”**

shall be all services to be performed from the Operational Services Commencement Date and the issue of an Authority to Proceed until the end of the Initial Term being the support and maintenance of the NaFRA2 core system all as described in more detail in the relevant parts of Schedule 2.1;

**“Optional Services”**

the services described as such in Schedule 2.1 (*Services Description*) which are to be provided by the Supplier if required by the Authority in accordance with Clause 5.10 (*Optional Services*);

**“Optional Services Implementation Plan”**

the implementation plan to effect the Optional Services agreed between the Parties prior to the Effective Date and, if not agreed prior to the Effective Date, to be developed by the Supplier and approved by the Authority;

**“Other Supplier”**

any supplier to the Authority (other than the Supplier) which is notified to the Supplier from time to time and/or of which the Supplier should have been aware;

**“Outline Implementation Plan”**

the outline plan set out at Annex 1 of

Schedule 6.1 (*Implementation Plan*);

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| <b>“Parent Undertaking”</b>            | has the meaning set out in section 1162 of the Companies Act 2006;                                                                                                                                                                                                                                        |
| <b>“Partial Termination”</b>           | the partial termination of this Agreement to the extent that it relates to the provision of any part of the Services as further provided for in Clause 33.2(b) ( <i>Termination by the Authority</i> ) or 33.3(b) ( <i>Termination by the Supplier</i> ) or otherwise by mutual agreement by the Parties; |
| <b>“Parties” and “Party”</b>           | have the meanings respectively given on page 1 of this Agreement;                                                                                                                                                                                                                                         |
| <b>“Performance Failure”</b>           | a KPI Failure or a PI Failure;                                                                                                                                                                                                                                                                            |
| <b>“Performance Indicators”</b>        | the Key Performance Indicators and the Subsidiary Performance Indicators;                                                                                                                                                                                                                                 |
| <b>“Permitted Maintenance”</b>         | has the meaning given in Clause 9.4 ( <i>Maintenance</i> );                                                                                                                                                                                                                                               |
| <b>“Performance Monitoring Report”</b> | has the meaning given in Schedule 2.2 ( <i>Performance Levels</i> );                                                                                                                                                                                                                                      |
| <b>“Personal Data”</b>                 | has the meaning given in the GDPR                                                                                                                                                                                                                                                                         |
| <b>“Personal Data Breach”</b>          | has the meaning given in the GDPR                                                                                                                                                                                                                                                                         |
| <b>“PI Failure”</b>                    | a failure to meet the Target Performance Level in respect of a Subsidiary Performance Indicator;                                                                                                                                                                                                          |
| <b>“PI Service Threshold”</b>          | shall be as set out against the relevant Subsidiary Performance Indicator in Table 2 in Part I of Annex 1 of Schedule 2.2 ( <i>Performance Levels</i> );                                                                                                                                                  |
| <b>“Preceding Services”</b>            | has the meaning given in Clause 5.2(b) ( <i>Standard of Services</i> );                                                                                                                                                                                                                                   |
| <b>“Processor”</b>                     | has the meaning given to it under the GDPR;                                                                                                                                                                                                                                                               |
| <b>“Processor Personnel”</b>           | means all directors, officers, employees, agents, consultants and suppliers of the Processor and/or of any Sub-Processor engaged in the performance of its obligations under this Agreement;                                                                                                              |

**“Executive Board”** the body described in Paragraph 5 of Schedule 8.1 (*Governance*);

**“Prohibited Act”**

- (a) to directly or indirectly offer, promise or give any person working for or engaged by the Authority a financial or other advantage to:
  - (i) induce that person to perform improperly a relevant function or activity; or
  - (ii) reward that person for improper performance of a relevant function or activity;
- (b) to directly or indirectly request, agree to receive or accept any financial or other advantage as an inducement or a reward for improper performance of a relevant function or activity in connection with this Agreement;
- (c) an offence:
  - (i) under the Bribery Act 2010 (or any legislation repealed or revoked by such Act);
  - (ii) under legislation or common law concerning fraudulent acts (including offences by the Supplier under Part 3 of the Criminal Finances Act 2017) ; or
  - (iii) defrauding, attempting to defraud or conspiring to defraud the Authority; or
- (d) any activity, practice or conduct which would constitute one of the offences listed under (c) above if such activity, practice or conduct had been carried out in the UK;

**“Protective Measures:**

appropriate technical and organisational measures which may include: pseudonymising and encrypting Personal Data, ensuring confidentiality, integrity, availability and resilience of systems and services, ensuring that availability of and access to Personal Data can be restored in a timely manner after an incident, and regularly assessing and evaluating the effectiveness of the such measures adopted by it;

**“Project Specific IPRs”**

- (a) Intellectual Property Rights in items created by the Supplier (or by a third party on behalf of the Supplier) specifically for the purposes of this Agreement and updates and

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                                                     | amendments of these items including (but not limited to) database schema; and/or                                                                                                                                                                                                                                                                                                                                                                             |
|                                                     | (b) Intellectual Property Rights arising as a result of the performance of the Supplier's obligations under this Agreement;                                                                                                                                                                                                                                                                                                                                  |
|                                                     | but shall not include the Supplier Background IPRs, Supplier Software, Third Party Software, Third Party IPRs or the Specially Written Software;                                                                                                                                                                                                                                                                                                             |
| <b>“Public Sector Dependent Supplier”</b>           | means a supplier where that Supplier, or that Supplier's Group has Annual Revenue of £50 million or more of which over 50% is generated from UK Public Sector Business;                                                                                                                                                                                                                                                                                      |
| <b>“Public Sector and CNI Contract Information”</b> | means the information requirements set out in accordance with Paragraphs 11 to 13 and Appendix II of Part 2 of Schedule 8.6 (Service Continuity Plan and Corporate Resolution Planning);                                                                                                                                                                                                                                                                     |
| <b>“Quality Plans”</b>                              | has the meaning given in Clause 6.1 ( <i>Quality Plans</i> );                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>“Quarter”</b>                                    | the first Service Period and each subsequent Service Period (save that the final Quarter shall end on the date of termination or expiry of this Agreement);                                                                                                                                                                                                                                                                                                  |
| <b>“Recipient”</b>                                  | has the meaning given in Clause 21.1 ( <i>Confidentiality</i> );                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>“Records”</b>                                    | has the meaning given in Schedule 8.4 ( <i>Reports and Records Provisions</i> );                                                                                                                                                                                                                                                                                                                                                                             |
| <b>“Rectification Plan”</b>                         | a plan to address the impact of, and prevent the reoccurrence of, a Notifiable Default;                                                                                                                                                                                                                                                                                                                                                                      |
| <b>“Rectification Plan Failure”</b>                 | <p>(a) the Supplier failing to submit or resubmit a draft Rectification Plan to the Authority within the timescales specified in Clauses 27.4 (<i>Submission of the draft Rectification Plan</i>) or 27.8 (<i>Agreement of the Rectification Plan</i>);</p> <p>(b) the Authority, acting reasonably, rejecting a revised draft of the Rectification Plan submitted by the Supplier pursuant to Clause 27.7 (<i>Agreement of the Rectification Plan</i>);</p> |



- (c) the Supplier failing to rectify a material Default within the later of:
  - (i) 30 Working Days of a notification made pursuant to Clause 27.2 (*Notification*); and
  - (ii) where the Parties have agreed a Rectification Plan in respect of that material Default and the Supplier can demonstrate that it is implementing the Rectification Plan in good faith, the date specified in the Rectification Plan by which the Supplier must rectify the material Default;
- (d) a Material KPI Failure re-occurring in respect of the same Key Performance Indicator for the same (or substantially the same) root cause in any of the 3 Measurement Periods subsequent to the Measurement Period in which the initial Material KPI Failure occurred;
- (e) the Supplier not Achieving a Key Milestone by the expiry of the Delay Deduction Period; and/or
- (f) following the successful implementation of a Rectification Plan, the same Notifiable Default recurring within a period of 6 months for the same (or substantially the same) root cause as that of the original Notifiable Default;

**“Rectification Plan Process”**

the process set out in Clauses 27.4 (*Submission of the draft Rectification Plan*) to 27.9 (*Agreement of the Rectification Plan*);

**“Registers”**

has the meaning given in Schedule 8.5 (*Exit Management*);

**“Relevant Authority”**

means the Authority or, where the Supplier is a Strategic Supplier, the Cabinet Office Markets and Suppliers Team;

**“Relevant IPRs”**

IPRs used to provide the Services or as otherwise provided and/or licensed by the Supplier (or to which the Supplier has provided access) to the Authority or a third party in the fulfilment of the Supplier’s obligations under this Agreement including IPRs in the Specially Written Software, the Supplier Non-COTS Software, the Supplier

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|                                      | Non-COTS Background IPRs, the Third Party Non-COTS Software and the Third Party Non-COTS IPRs but excluding any IPRs in the Authority Software, the Authority Background IPRs, the Supplier COTS Software, the Supplier COTS Background IPRs, the Third Party COTS Software and/or the Third Party COTS IPRs;                        |
| <b>“Relevant Preceding Services”</b> | has the meaning given in Clause 5.2(b) ( <i>Standard of Services</i> );                                                                                                                                                                                                                                                              |
| <b>“Relevant Requirements”</b>       | all applicable Law relating to bribery, corruption and fraud, including the Bribery Act 2010 and any guidance issued by the Secretary of State for Justice pursuant to section 9 of the Bribery Act 2010;                                                                                                                            |
| <b>“Relevant Tax Authority”</b>      | HMRC, or, if applicable, a tax authority in the jurisdiction in which the Supplier is established;                                                                                                                                                                                                                                   |
| <b>“Relief Notice”</b>               | has the meaning given in Clause 31.2 ( <i>Authority Cause</i> );                                                                                                                                                                                                                                                                     |
| <b>“Remedial Adviser”</b>            | the person appointed pursuant to Clause 29.2 ( <i>Remedial Adviser</i> );                                                                                                                                                                                                                                                            |
| <b>“Remedial Adviser Failure”</b>    | has the meaning given in Clause 29.6 ( <i>Remedial Adviser</i> );                                                                                                                                                                                                                                                                    |
| <b>“Replacement Services”</b>        | any services which are the same as or substantially similar to any of the Services and which the Authority receives in substitution for any of the Services following the expiry or termination or Partial Termination of this Agreement, whether those services are provided by the Authority internally and/or by any third party; |
| <b>“Replacement Supplier”</b>        | any third party service provider of Replacement Services appointed by the Authority from time to time (or where the Authority is providing replacement Services for its own account, the Authority);                                                                                                                                 |
| <b>“Request For Information”</b>     | a Request for Information under the FOIA or the EIRs;                                                                                                                                                                                                                                                                                |
| <b>“Required Action”</b>             | has the meaning given in Clause 30.1(a) ( <i>Step-In Rights</i> );                                                                                                                                                                                                                                                                   |
| <b>“Retained Deliverables”</b>       | has the meaning given in Clause 34.8(b) ( <i>Payments by the Supplier</i> );                                                                                                                                                                                                                                                         |

**“Risk Register”**

the register of risks and contingencies that have been factored into any Costs due under this Agreement, a copy of which is set out in Annex 4 of Schedule 7.1 (*Charges and Invoicing*);

**“Security Management Plan”**

the Supplier's security plan as attached as Annex 2 of Schedule 2.4 (*Security Management*) and as subsequently developed and revised pursuant to Paragraphs 3 and 4 of Schedule 2.4 (*Security Management*);

**“Serious KPI Failure”**

shall be as set out against the relevant Key Performance Indicator in Table 1 of Part I of Annex 1 of (Schedule 2.2 (*Performance Levels*);

**“Service Charges”**

the periodic payments made in accordance with Schedule 7.1 (*Charges and Invoicing*) in respect of the supply of the Operational Services;

**“Service Continuity Plan”**

any plan prepared pursuant to Paragraph 2 of Schedule 8.6 (*Service Continuity Plan and Corporate Resolution Planning*) as may be amended from time to time;

**“Service Continuity Services”**

the business continuity, disaster recovery and insolvency continuity services set out in Schedule 8.6 (*Service Continuity Plan and Corporate Resolution Planning*);

**“Service Credit Cap”**

- (a) in the period of 12 months from the first Operational Service Commencement Date to occur after the Effective Date, eight per cent (8%) of the Estimated Initial Service Charges; and
- (b) during the remainder of the Term, eight per cent (8%) of the Service Charges paid and/or due to be paid to the Supplier under this Agreement in the period of 12 months immediately preceding the Service Period in respect of which Service Credits are accrued;

**“Service Credits”**

credits payable by the Supplier due to the occurrence of 1 or more KPI Failures, calculated in accordance with Paragraph 3 of Part C of Schedule 7.1 (*Charges and Invoicing*);

**“Service Period”**

three (3) calendar months, save that:

- (a) the first month shall begin on the first Operational Service Commencement Date and shall expire at the end of the calendar month in which the first Operational Service Commencement Date falls; and
- (b) the final month shall commence on the first day of the calendar month in which the Term expires or terminates and shall end on the expiry or termination of the Term;

**“Service Points”**

in relation to a KPI Failure, the points that are set out against the relevant Key Performance Indicator in the fifth column of the table in Annex 1 of Schedule 2.2 (*Performance Levels*);

**“Services”**

any and all of the services to be provided by the Supplier under this Agreement, including those set out in Schedule 2.1 (*Services Description*);

**“Services Description”**

the services description set out in Schedule 2.1 (*Services Description*);

**“Severe KPI Failure”**

shall be as set out against the relevant Key Performance Indicator in Table 1 of Part I of Annex 1 of Schedule 2.2 (*Performance Levels*);

**“Sites”**

any premises (including the Authority Premises, the Supplier’s premises or third party premises):

(a) from, to or at which:

- (i) the Services are (or are to be) provided; or
- (ii) the Supplier manages, organises or otherwise directs the provision or the use of the Services; or

(b) where:

- (i) any part of the Supplier System is situated; or
- (ii) any physical interface with the Authority System takes place;

**“SME”**

an enterprise falling within the category of micro, small and medium-sized enterprises defined by the

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                                        | Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises;                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>“Software”</b>                      | Specially Written Software, Supplier Software and Third Party Software;                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>“Software Supporting Materials”</b> | has the meaning given in Clause 17.1(b) ( <i>Specially Written Software and Project Specific IPRs</i> );                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>“Source Code”</b>                   | computer programs and/or data in eye-readable form and in such form that it can be compiled or interpreted into equivalent binary code together with all related design comments, flow charts, technical information and documentation necessary for the use, reproduction, maintenance, modification and enhancement of such software;                                                                                                                                                         |
| <b>“Specially Written Software”</b>    | any software (including database software, linking instructions, test scripts, compilation instructions and test instructions) created by the Supplier (or by a Sub-contractor or other third party on behalf of the Supplier) specifically for the purposes of delivering the NaFRA2 core system and Operational Services as specified in Schedule 2.1 of this Agreement, but shall not include any Supplier Software, Third Party Software, Third Party IPRs and/or Supplier Background IPRs. |
| <b>“Specific Change in Law”</b>        | a Change in Law that relates specifically to the business of the Authority and which would not affect a Comparable Supply;                                                                                                                                                                                                                                                                                                                                                                      |
| <b>“Standards”</b>                     | the standards, polices and/or procedures identified in Schedule 2.3 ( <i>Standards</i> );                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>“Step-In Notice”</b>                | has the meaning given in Clause 30.1 ( <i>Step-In Rights</i> );                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>“Step-In Trigger Event”</b>         | <ul style="list-style-type: none"> <li>(a) any event falling within the definition of a Supplier Termination Event;</li> <li>(b) a Default by the Supplier that is materially preventing or materially delaying the performance of the Services or any material part of the Services;</li> <li>(c) the Authority considers that the circumstances constitute an emergency despite the Supplier not being in breach of its obligations under this Agreement;</li> </ul>                          |

- (d) the Authority being advised by a regulatory body that the exercise by the Authority of its rights under Clause 30 (Step-In Rights) is necessary;
- (e) the existence of a serious risk to the health or safety of persons, property or the environment in connection with the Services; and/or
- (f) a need by the Authority to take action to discharge a statutory duty;

**“Step-Out Date”**

has the meaning given in Clause 30.5(b) (*Step-In Rights*);

**“Step-Out Notice”**

has the meaning given in Clause 30.5 (*Step-In Rights*);

**“Step-Out Plan”**

has the meaning given in Clause 30.6 (*Step-In Rights*);

**“Strategic Supplier”**

means those suppliers to government listed at <https://www.gov.uk/government/publications/strategic-suppliers>;

**“Sub-contract”**

any contract or agreement (or proposed contract or agreement) between the Supplier (or a Subcontractor) and any third party whereby that third party agrees to provide to the Supplier (or the Subcontractor) all or any part of the Services or facilities or services which are material for the provision of the Services or any part thereof or necessary for the management, direction or control of the Services or any part thereof;

**“Sub-contractor”**

any third party with whom:

- (a) the Supplier enters into a Sub-contract; or
- (b) a third party under (a) above enters into a Subcontract, or the servants or agents of that third party;

**“Sub-processor”**

any third party appointed to process Personal Data on behalf of the Supplier related to this Agreement;

**“Subsidiary Undertaking”**

has the meaning set out in section 1162 of the Companies Act 2006;

**“Subsidiary Performance Indicator”**

the performance indicators set out in Table 2 of Part I of Annex 1 of Schedule 2.2 (*Performance Levels*);

**“Successor Body”**

has the meaning given in Clause 36.4 (*Assignment and Novation*);

**“Supplier Background IPRs”**

- (a) Intellectual Property Rights owned by the Supplier and/or any Sub-contractor before the Effective Date, for example those subsisting in the Supplier's and/or the Sub-contractor's standard development tools, program components or standard code used in computer programming or in physical or electronic media containing the Supplier's and/or any Subcontractor's Know-How or generic business methodologies; and/or

- (b) Intellectual Property Rights created by the Supplier and/or any Sub-contractor independently of this Agreement,

which in each case is or will be used before or during the Term for designing, testing implementing or providing the Services but excluding Intellectual Property Rights owned by the Supplier and/or any Sub-contractor subsisting in the Supplier Software;

**“Supplier COTS Background IPRs”**

Any embodiments of Supplier Background IPRs that:

- (a) the Supplier and/or any Sub-contractor makes generally available commercially prior to the date of this Agreement (whether by way of sale, lease or licence) on standard terms which are not typically negotiated by the Supplier save as to price; and

- (b) has a Non-trivial Customer Base;

**“Supplier COTS Software”**

Supplier Software (including open source software) that:

- (a) the Supplier makes generally available commercially prior to the date of this Agreement (whether by way of sale, lease or licence) on standard terms which are not typically negotiated by the Supplier save as to price; and

- (b) has a Non-trivial Customer Base;

|                                            |                                                                                                                                                                                                                                                                                                                                                     |
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| <b>“Supplier Equipment”</b>                | the hardware, computer and telecoms devices and equipment used by the Supplier or its Sub-contractors (but not hired, leased or loaned from the Authority) for the provision of the Services;                                                                                                                                                       |
| <b>“Supplier Group”</b>                    | means the Supplier, its Dependent Parent Undertakings and all Subsidiary Undertakings and Associates of such Dependent Parent Undertakings;                                                                                                                                                                                                         |
| <b>“Supplier Non-COTS Background IPRs”</b> | Any embodiments of Supplier Background IPRs that have been delivered by the Supplier to the Authority and that are not Supplier COTS Background IPRs;                                                                                                                                                                                               |
| <b>“Supplier Non-COTS Software”</b>        | Supplier Software that is not Supplier COTS Software;                                                                                                                                                                                                                                                                                               |
| <b>“Supplier Non-Performance”</b>          | has the meaning given in Clause 31.1 ( <i>Authority Cause</i> );                                                                                                                                                                                                                                                                                    |
| <b>“Supplier Personnel”</b>                | all directors, officers, employees, agents, consultants and contractors of the Supplier and/or of any Sub-contractor engaged in the performance of the Supplier’s obligations under this Agreement;                                                                                                                                                 |
| <b>“Supplier Profit”</b>                   | has the meaning given in Schedule 7.1 ( <i>Charges and Invoicing</i> );                                                                                                                                                                                                                                                                             |
| <b>“Supplier Profit Margin”</b>            | has the meaning given in Schedule 7.1 ( <i>Charges and Invoicing</i> );                                                                                                                                                                                                                                                                             |
| <b>“Supplier Representative”</b>           | the representative appointed by the Supplier pursuant to Clause 11.3 ( <i>Representatives</i> );                                                                                                                                                                                                                                                    |
| <b>“Supplier Software”</b>                 | software which is proprietary to the Supplier (or an Affiliate of the Supplier) and/or any Sub-contractor which shall include any revisions, extensions and evolutions thereof and which is or will be used by the Supplier for the purposes of providing the Services, including the software specified as such in Schedule 5 ( <i>Software</i> ); |
| <b>“Supplier Solution”</b>                 | the Supplier's solution for the Services set out in Schedule 4.1 ( <i>Supplier Solution</i> ) including any Annexes of that Schedule;                                                                                                                                                                                                               |



**“Supplier System”**

the information and communications technology system used by the Supplier in implementing and performing the Services including the Software, the Supplier Equipment, configuration and management utilities, calibration and testing tools and related cabling (but excluding the Authority System);

**“Supplier Termination Event”**

- (a) the Supplier’s level of performance constituting a Critical Performance Failure;
- (b) the Supplier committing a material Default which is irremediable;
- (c) as a result of the Supplier’s Default, the Authority incurring Losses in any Contract Year which exceed 80% of the value of the aggregate annual liability cap for that Contract Year as set out in Clause 25.6(a) (*Financial Limits*);
- (d) a Remedial Adviser Failure;
- (e) a Rectification Plan Failure;
- (f) where a right of termination is expressly reserved in this Agreement, including pursuant to:
  - (i) Clause 19 (*IPRs Indemnity*);
  - (ii) Clause 39.6(b) (*Prevention of Fraud and Bribery*); and/or
  - (iii) Paragraph 6 of Schedule 7.4 (*Financial Distress*);
  - (iv) Paragraph 12 of Part 2 to Schedule 8.6 (*Service Continuity Plan and Corporate Resolution Planning*);
- (g) the representation and warranty given by the Supplier pursuant to Clause 3.2(i) (*Warranties*) being materially untrue or misleading;
- (h) the Supplier committing a material Default under Clause 10.10 and 10.11 (*Promoting Tax Compliance*) or failing to provide details of steps being taken and mitigating factors pursuant to Clause 10.10 (*Promoting Tax Compliance*) which in the reasonable opinion of the Authority are acceptable;

- (i) the Supplier committing a material Default under any of the following Clauses:

- (i) Clause 5.5(j) (*Services*);
- (ii) Clause 23 (*Protection of Personal Data*);
- (iii) Clause 22 (*Transparency and Freedom of Information*);
- (iv) Clause 21 (*Confidentiality*); and (v) Clause 35 (*Compliance*); and/or

in respect of any security requirements set out in Schedule 2.1 (*Services Description*), Schedule 2.4 (*Security Management*) or the Baseline Security Requirements; and/or

in respect of any requirements set out in Schedule 9.1 (*Staff Transfer*);

- (j) any failure by the Supplier to implement the changes set out in a Benchmark Report as referred to in Paragraph 5.9 of Schedule 7.3 (*Benchmarking*);
- (k) an Insolvency Event occurring in respect of the Supplier;
- (l) Not used;
- (m) a change of Control of the Supplier unless:
  - (i) the Authority has given its prior written consent to the particular Change of Control, which subsequently takes place as proposed; or
  - (ii) the Authority has not served its notice of objection within 6 months of the later of the date on which the Change of Control took place or the date on which the Authority was given notice of the Change of Control;
- (n) a change of Control of a Key Sub-contractor unless, within 6 months of being notified by the Authority that it objects to such change of Control, the Supplier terminates the relevant Key Sub-contract and replaces it with a comparable Key Sub-contract which is approved

by the Authority pursuant to Clause 15.0 (*Appointment of Key Subcontractors*);

- (o) Not used;
- (p) the Authority has become aware that the Supplier should have been excluded under Regulation 57(1) or (2) of the Public Contracts Regulations 2015 from the procurement procedure leading to the award of this Agreement; or
- (q) a failure by the Supplier to comply in the performance of the Services with legal obligations in the fields of environmental, social or labour law.

**“Supply Chain Transparency Report”**

means the report provided by the Supplier to the Authority in the form set out in Annex 4 of Schedule 8.4 (Reports and Records Provisions)

**“Target Performance Level”**

the minimum level of performance for a Performance Indicator which is required by the Authority, as set out against the relevant Performance Indicator in the tables in Annex 1 of Schedule 2.2 (*Performance Levels*);

**“Term”**

the period commencing on the Effective Date and ending on the expiry of the Initial Term or any Extension Period or on earlier termination of this Agreement;

**“Termination Assistance Notice”**

has the meaning given in Paragraph 5.1 of Schedule 8.5 (*Exit Management*);

**“Termination Assistance Period”**

in relation to a Termination Assistance Notice, the period specified in the Termination Assistance Notice for which the Supplier is required to provide the Termination Services as such period may be extended pursuant to Paragraph 5.2 of Schedule 8.5 (*Exit Management*);

**“Termination Date”**

the date set out in a Termination Notice on which this Agreement (or a part of it as the case may be) is to terminate;

**“Termination Notice”**

a written notice of termination given by one Party to the other, notifying the Party receiving the notice of the intention of the Party giving the notice to terminate this Agreement (or any part

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|                                    | thereof) on a specified date and setting out the grounds for termination;                                                                                                                                                                                                                                                                                |
| <b>“Termination Payment”</b>       | the payment determined in accordance with Schedule 7.2 ( <i>Payments on Termination</i> );                                                                                                                                                                                                                                                               |
| <b>“Termination Services”</b>      | the services and activities to be performed by the Supplier pursuant to the Exit Plan, including those activities listed in Annex 1 of Schedule 8.5 ( <i>Exit Management</i> ), and any other services required pursuant to the Termination Assistance Notice;                                                                                           |
| <b>“Test Issues”</b>               | has the meaning given in Schedule 6.2 ( <i>Testing Procedures</i> );                                                                                                                                                                                                                                                                                     |
| <b>“Test(s)” and “Testing”</b>     | any tests required to be carried out under this Agreement, as further described in Schedule 6.2 ( <i>Testing Procedure</i> ) and “Tested” shall be construed accordingly;                                                                                                                                                                                |
| <b>“Test Success Criteria”</b>     | has the meaning given in Schedule 6.2 ( <i>Testing Procedures</i> );                                                                                                                                                                                                                                                                                     |
| <b>“Third Party Auditor”</b>       | an independent third party auditor as appointed by the Authority from time to time to confirm the completeness and accuracy of information uploaded to the Virtual Library in accordance with the requirements outlined in Schedule 8.4 (Reports and Records Provisions);                                                                                |
| <b>“Third Party Beneficiary”</b>   | has the meaning given in Clause 43.1 ( <i>Third Party Rights</i> );                                                                                                                                                                                                                                                                                      |
| <b>“Third Party COTS IPRs”</b>     | Third Party IPRs that: <ul style="list-style-type: none"> <li>(a) the supplier makes generally available commercially prior to the date of this Agreement (whether by way of sale, lease or licence) on standard terms which are not typically negotiated by the supplier save as to price; and</li> <li>(b) has a Non-trivial Customer Base;</li> </ul> |
| <b>“Third Party COTS Software”</b> | Third Party Software (including open source software) that: <ul style="list-style-type: none"> <li>(a) the supplier makes generally available commercially prior to the date of this Agreement (whether by way of sale, lease or licence) on standard terms which are not</li> </ul>                                                                     |

|                                                 |                                                                                                                                                                                                                                                                                                                                                                                             |
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|                                                 | typically negotiated by the supplier save as to price; and                                                                                                                                                                                                                                                                                                                                  |
|                                                 | (b) has a Non-trivial Customer base;                                                                                                                                                                                                                                                                                                                                                        |
| <b>“Third Party IPRs”</b>                       | Intellectual Property Rights owned by a third party but excluding Intellectual Property Rights owned by the third party subsisting in any Third Party Software;                                                                                                                                                                                                                             |
| <b>“Third Party Non-COTS IPRs”</b>              | Third Party IPRs that are not Third Party COTS IPRs;                                                                                                                                                                                                                                                                                                                                        |
| <b>“Third Party Non-COTS Software”</b>          | Third Party Software that is not Third Party COTS Software;                                                                                                                                                                                                                                                                                                                                 |
| <b>“Third Party Provisions”</b>                 | has the meaning given in Clause 43.1 ( <i>Third Party Rights</i> );                                                                                                                                                                                                                                                                                                                         |
| <b>“Third Party Software”</b>                   | software which is proprietary to any third party which shall include any revisions, extensions and evolutions thereof (other than an Affiliate of the Supplier) or any Open Source Software which in any case is, will be or is proposed to be used by the Supplier for the purposes of providing the Services, including the software specified as such in Schedule 5 ( <i>Software</i> ); |
| <b>“Transferring Assets”</b>                    | has the meaning given in Paragraph 6.2(a) of Schedule 8.5 ( <i>Exit Management</i> );                                                                                                                                                                                                                                                                                                       |
| <b>“Transferring Authority Employees”</b>       | has the meaning given in Schedule 9.1 ( <i>Staff Transfer</i> );                                                                                                                                                                                                                                                                                                                            |
| <b>“Transferring Former Supplier Employees”</b> | has the meaning given in Schedule 9.1 ( <i>Staff Transfer</i> );                                                                                                                                                                                                                                                                                                                            |
| <b>“Transferring Supplier Employees”</b>        | has the meaning given in Schedule 9.1 ( <i>Staff Transfer</i> );                                                                                                                                                                                                                                                                                                                            |
| <b>“Transparency Information”</b>               | has the meaning given in Clause 22.1 ( <i>Transparency and Freedom of Information</i> );                                                                                                                                                                                                                                                                                                    |
| <b>“Transparency Reports”</b>                   | has the meaning given in Schedule 8.4 ( <i>Reports and Records Provisions</i> );                                                                                                                                                                                                                                                                                                            |
| <b>“UK”</b>                                     | the United Kingdom;                                                                                                                                                                                                                                                                                                                                                                         |

|                                                      |                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“UK Public Sector Business”</b>                   | means any goods, service or works provision to UK public sector bodies, including Central Government Departments and their arm's length bodies and agencies, non-departmental public bodies, NHS bodies, local authorities, health bodies, police, fire and rescue, education bodies and devolved administrations; |
| <b>“UK Public Sector / CNI Contract Information”</b> | means the information relating to the Supplier Group to be provided by the Supplier in accordance with Paragraphs 11 to 13 and Appendix II of Part 2 of Schedule 8.6 (Service Continuity Plan and Corporate Resolution Planning);                                                                                  |
| <b>“Unacceptable KPI Failure”</b>                    | the Supplier failing to achieve the KPI Service Threshold in respect of more than 50% of the Key Performance Indicators that are measured in that Service Period;                                                                                                                                                  |
| <b>“Unrecovered Payment”</b>                         | has the meaning given in Schedule 7.2 ( <i>Payments on Termination</i> );                                                                                                                                                                                                                                          |
| <b>“Updates”</b>                                     | in relation to any Software and/or any Deliverable means a version of such item which has been produced primarily to overcome Defects in, or to improve the operation of, that item;                                                                                                                               |
| <b>“Update Requirement”</b>                          | means the occurrence of an event detailed in Schedule 8.4 (Reports and Records Provisions) Annex 3 (Virtual Library) which requires the Supplier to update the relevant information hosted on the Virtual Library;                                                                                                 |
| <b>“Valid”</b>                                       | in respect of an Assurance, has the meaning given to it in Paragraph 11.7 of Part 2 to Schedule 8.6 (Service Continuity Plan and Corporate Resolution Planning);                                                                                                                                                   |
| <b>“Upgrades”</b>                                    | any patch, New Release or upgrade of Software and/or a Deliverable, including standard upgrades, product enhancements, and any modifications, but excluding any Update which the Supplier or a third party software supplier (or any Affiliate of the Supplier or any third party) releases during the Term;       |
| <b>“VAT”</b>                                         | value added tax as provided for in the Value Added Tax Act 1994;                                                                                                                                                                                                                                                   |

|                          |                                                                                                                                                                                                          |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“VCSE”</b>            | means a non-governmental organisation that is value-driven and which principally reinvests its surpluses to further social, environmental or cultural objectives;                                        |
| <b>“Virtual Library”</b> | means the data repository hosted by the Supplier containing the information about this Agreement and the Services provided under it in accordance with<br>Schedule 8.4 (Reports and Records Provisions); |
| <b>“Working Day”</b>     | any day other than a Saturday, Sunday or public holiday in England and Wales.                                                                                                                            |





## **MODEL AGREEMENT FOR SERVICES SCHEDULES**

### **SCHEDULE 2.1**

#### **SERVICES DESCRIPTION**

## Services Description

### 1 DEFINITIONS

In this Schedule, the following definitions shall apply:

None provided

### 2 INTRODUCTION

2.1 Not used.

2.2 This Schedule sets out the intended scope of the Services to be provided by the Supplier and to provide a description of what each Service entails.

2.3 The Services consist of:

“Implementation Services” which shall be all the services to be performed from the Implementation Services Commencement Date up to the Authority to Proceed, being the blueprinting, proof of concept, new national modelling, NaFRA2 core system build, data take-on and testing, together with the relevant project management, all as described in more detail in this Schedule 2.1, and,

“Operational Services” which shall be all services to be performed after the Authority to Proceed and from the Operational Services Commencement Date, being the support and maintenance of the NaFRA2 core system all as described in more detail in this Schedule 2.1.

### 3 SERVICES DESCRIPTION

3.1 All the formal Requirements in Sections 3 are set out in tables. Each row in the table represents a clause (requirement).

An outline of the key features of a Table and Response area is as follows. Further explanation of the use and format of the tables is then stated below in 3.1.1.

| Table ID | Short name                                                                                                                                                                                                                                           | Table description |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| CLAUSE   | Clause description                                                                                                                                                                                                                                   |                   |
| 1.0      | <b>A leading Requirements clause-</b> if this is the main, overarching clause, it will be in bold type.                                                                                                                                              |                   |
| 1.1      | Another Requirement clause- The following clauses provide more detail to the main, 1.0, clause.                                                                                                                                                      |                   |
| 1.2      | <b>Aspirational:</b> An “aspirational” requirement clause - any aspirational clause will be labelled “Aspirational” and will be high-lit grey to distinguish it easily from other (Basic) requirements. Every clause requires a Supplier Declaration |                   |

#### 3.1.1 Basic and Aspirational

The clauses in some Tables are classified into two types:

Basic - Those which we expect can be delivered as part of the supplier's proposed solution, in the first working,

delivered build of NaFRA2 at the end of 3 years. (These Requirements are not specifically labelled "Basic" in the Tables)

Aspirational - These are specifically labelled in the Tables. We expect the supplier MAY deliver some of these (in Full or in Part), within their tender - i.e. as part of the first working, delivered build of NaFRA2 at the end of 3 years;

Alternatively the supplier may NOT be able to deliver some of these (in part or fully) within three years - but MAY potentially be able to deliver some aspects of these (in full or part) beyond 3 years (i.e. outside of any initial contract).

### 3.2 General Note on Modelling

Throughout the Specification, and in the Functional Requirements in particular, reference is made to "modelling". We anticipate that the complexity of this modelling will change throughout the lifetime of NaFRA2. The word "modelling" could therefore cover anything from:

- *"a set of processes from which an assessment of flood risk is derived"* to;
- building and running hydraulic, hydrodynamic, and hydrological models.

Initially we would expect NaFRA2 to be able to "model" (assess) flood risk by making use of existing outputs from detailed hydraulic, hydrodynamic and hydrological models. These could be local or national. As further outputs from local models (existing and new) are developed, we would add these to the Simulation Library. We also expect periodically to rerun and update national models. All of these will contribute to NaFRA2's assessment of flood risk. It may be appropriate for NaFRA2 to have some simulation capability; it may also be advantageous for NaFRA2 to be able to request the re-running of a national or local scale model that supports NaFRA2 already. In the long term, we see NaFRA2 developing into one part of a wider integrated modelling system from meteorology to impacts, as well as providing an assessment of flood risk.

When read in conjunction with the functional requirements, the general shift in modelling and computational assessment of flood risk over time would be as follows:

Initial: Extraction and simple manipulation

- Where there is a requirement for NaFRA2 to produce / model / calculate / etc. an output then this normally initially means, as a minimum, that the required output will be provided by direct extractions from Local or National Model datasets, that have previously been input and stored in the NaFRA2 solution - with only minimal simple additional calculations or manipulations being performed by the NaFRA2 toolkit on this data to produce required outputs, e.g. interpolation between, or extrapolation from, existing design scenarios (via the Simulation Library).

Intermediate: Progressive sophistication of both Data and Tools to enable richer products

- Where the National Model infills data not produced by local modelling, the output will become richer and of higher quality in its content, and;
- Where the toolkit framework will allow that the NaFRA2 toolkit can become more functionally sophisticated in producing outputs required, particularly bespoke outputs that require non-standard combinations or parameters, e.g. see SFC2, SFE1 and SFE5.

We expect all of the initial and intermediate objectives to be delivered within the first three years.

Longer term: Moving toward fully integrated modelling

- The NaFRA2 solution framework must be open to the possibility, longer term, that users can request new runs of Local or National models (or, indeed, request processing by other external tools) from within the NaFRA2 solution; and the resulting data can then seamlessly be made available for NaFRA2 to use in its assessment of flood risk.
- Over the longer term, the NaFRA2 solution will develop into one part of a wider integrated modelling system from meteorology to impacts, as well as providing an assessment of flood risk.

Regardless of the level of “modelling” used, the following Success Factors need to be met.

### 3.3 Business Functional Requirements (Success Factors)

#### Success Factor A:

We will have a national assessment of flood risk, with complete coverage for England of multiple sources of flooding, to underpin Environment Agency business; so that we maintain a national overview of flooding and continue to meet the needs of the Flood Risk Regulations.

#### SFA 1 - Complete coverage

NaFRA2 needs to provide an assessment of flood risk, for all of England (including the Scilly Isles). Initially we will achieve this by making use of all local modelling we currently have available to us. We also want to produce a new national model of flood risk to support NaFRA2’s assessment of flood risk where local modelling does not exist. We envisage the Simulation Library will be able to supply any missing data (e.g. absent design scenarios, missing return periods, etc.)

|             |                          |                                                                                                                                                                                                                                                          |
|-------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFA1</b> | <b>Complete coverage</b> | <b>There can be complete spatial coverage in flood risk outputs: The EA can undertake strategic overview of its flooding role; Flood warnings can be extended to all risk sources (including rapid response catchments that are on non-main rivers).</b> |
| <b>ID</b>   | <b>Description</b>       |                                                                                                                                                                                                                                                          |

|               |                                                                                                                                                                                                                                                                                                                                                        |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFA1.0</b> | <b>The supplier's solution will serve flood risk information for the items set out in rows below for all locations in England (including Scilly Isles).</b><br><br><i>N.B. These items below can apply both to all Local Model outputs held by the solution at higher resolutions and to any lower resolution National Model held by the solution.</i> |
| SFA1.1        | Main rivers – covers (potential flooding from) all main rivers (tidal and fluvial).                                                                                                                                                                                                                                                                    |
| SFA1.2        | Non-main rivers – Minimum: covers (potential flooding from) non-main rivers (at least for those with contributing catchments greater than 3km <sup>2</sup> , consistent with existing Flood Zones policy) with additional information from smaller watercourses where available.                                                                       |
| SFA1.3        | <b>Aspirational:</b> All non-main rivers – covers potential flooding from all non-main rivers.                                                                                                                                                                                                                                                         |
| SFA1.4        | Coastal flooding – covers all areas potentially subject to coastal flooding.                                                                                                                                                                                                                                                                           |
| SFA1.5        | Surface Water – covers all of England.                                                                                                                                                                                                                                                                                                                 |
| SFA1.6        | Catchments that cross the border with Wales and Scotland will need to be included.                                                                                                                                                                                                                                                                     |
| SFA1.7        | Reservoirs - those covered under the Reservoirs Act 1975.                                                                                                                                                                                                                                                                                              |

## SFA 2 - All sources

The standard to which multiple sources of flooding are represented is expected to increase between the initial operational solution (in use by 3 years after award of contract) and the longer term aspirational solution. Initially, modelled outputs from single source of flooding models would at least need to be combined to assess the contribution of each source of flooding to the overall flood risk.

Aspirationally, we would expect the solution to be able to represent multiple sources of flooding by using each source as an input to a Joint Probability Assessment, and certainly to be able to use existing outputs from available Joint Probability Models. Ultimately, we would expect to see a change over time to allow fully integrated modelling to be used, where real time forecasting models, hydraulic models and impact assessment would all be linked to give the assessment of flood risk at any given location in any forecast scenario.

“Compatible results”, in the table below, refers to the need to compare “like with like” when combining, merging or assessing modelled output of flood risk (e.g. for a MAST-type analysis). Initially, inputs to this holistic picture will have been generated outside NaFRA2 (e.g. local detailed model outputs). If, for example, a certain design scenario is missing, it should be possible to generate this via the simulation library, or from modelling - in which case this new output must also be compatible/comparable.

|             |                                                                                                                                                                                                                                    |                                                                                                                                                         |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFA2</b> | <b>All sources</b>                                                                                                                                                                                                                 | <b>We will be able to have a common understanding of flood risk from all sources. We can have the holistic picture of risk and mitigation measures.</b> |
| <b>ID</b>   | <b>Description</b>                                                                                                                                                                                                                 |                                                                                                                                                         |
| SFA2.0      | The supplier's solution will serve modelling outputs which represent the key sources of flooding (at a minimum: rivers, sea, surface water) through the combination of <u>compatible</u> results (see definition in SFA2.1 below). |                                                                                                                                                         |

|         |                                                                                                                                                                                                                                                                                                                                                         |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFA2.1  | The results from the flooding sources will be compatible if: <ul style="list-style-type: none"> <li>• they cover the same variables for the same probabilities, and</li> <li>• are defined in the same way, and</li> <li>• are generated using the same driving scenarios, and</li> <li>• are presented at the same spatial scale / location</li> </ul> |
| SFA2.2  | The solution will combine compatible results using a method that is at least as good as our existing method (a MAST-type approach) to produce RoFMS.                                                                                                                                                                                                    |
| SFA2.3  | The solution can use outputs from existing/new models of individual flood sources (at any scale).                                                                                                                                                                                                                                                       |
| SFA2.4  | The solution can use outputs from existing / new models of integrated flood sources (at any scale).                                                                                                                                                                                                                                                     |
| SFA2.5  | The solution will allow us to choose which model outputs should be used as inputs for each calculation.                                                                                                                                                                                                                                                 |
| SFA2.6  | The solution will initially consider rivers, sea (tidal / coastal) and surface water.                                                                                                                                                                                                                                                                   |
| SFA2.7  | The solution will combine the outputs to produce and store results stated in SFA3.                                                                                                                                                                                                                                                                      |
| SFA2.8  | <b>Aspirational:</b> The solution will include “All sources” (i.e. it will also include groundwater, impounded water, and piped water).                                                                                                                                                                                                                 |
| SFA2.9  | <b>Aspirational:</b> There will be improved quality of the solution results by increasing the quality of the way interactions between flood sources are represented (i.e. joint probability analysis), and possibly links to the creation of fully integrated national models (see New National Modelling (NNM) and SFA2.4).                            |
| SFA2.10 | <b>Aspirational:</b> Interactions/dependencies between sources are represented where they have a potentially significant effect on results.                                                                                                                                                                                                             |

### SFA 3 - Multiple sources (contribution)

The requirement for SFA3 has arisen due to the limitations of how we currently assess flood risk from various sources of flooding. Whilst there is a desire to move toward better representing multiple sources of flooding, we also need to ensure we don't lose any functionality that our current ways of working give us. Because we currently model each source of flooding separately, it is easy to assess how at risk any given location may be from any source of flooding - though simply combining these flood outlines does not give us an accurate picture of the joint probability of flooding (i.e. combining a 100yr fluvial outline, with a 100yr coastal outline, with 100yr surface water outline does not give a 100yr probability from all sources).

|        |                                                                                                                                                                                                              |                                                                                                                                                                                                                        |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFA3   | Multiple sources                                                                                                                                                                                             | The EA and our partners will be able to assess the contribution of multiple sources to overall flood likelihood. We can understand the holistic picture of risk, appropriate funding streams, and mitigation measures. |
| ID     | Description                                                                                                                                                                                                  |                                                                                                                                                                                                                        |
| SFA3.0 | The solution can identify (or provide a means of identifying) the relative proportion or % contribution of <u>some</u> sources of flooding (This, as a minimum, must include rivers, surface water and sea). |                                                                                                                                                                                                                        |
| SFA3.1 | The solution calculates the overall risk of flooding from multiple sources, producing outputs: likelihood of inundation, chance of flooding to any depth, depth of flooding for any probability.             |                                                                                                                                                                                                                        |
| SFA3.2 | The solution calculates the level of confidence in the results.                                                                                                                                              |                                                                                                                                                                                                                        |

|        |                                                                                                                                                                                                                                                                                                                                                                                   |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFA3.3 | The solution calculates the relative proportion of overall risk that each source considered contributes.                                                                                                                                                                                                                                                                          |
| SFA3.4 | <b>Aspirational:</b> In calculating the relative proportion of overall risk that each source contributes, interdependencies between these sources must be taken into account.                                                                                                                                                                                                     |
| SFA3.5 | <p>The solution calculates the risk of flooding from each individual source.</p> <p>If a multiple sources model was used the input data for each relevant source should be used.</p> <p><i>(N.B. this is so that, even if we eventually use only integrated models, we can still get results for all the sources individually - to allow analysis and action separately).</i></p> |
| SFA3.6 | The solution stores all outputs and makes them easily accessible.                                                                                                                                                                                                                                                                                                                 |
| SFA3.7 | The solution maps all outputs at the same resolution.                                                                                                                                                                                                                                                                                                                             |
| SFA3.8 | <b>Aspirational:</b> The solution must include all sources (to include groundwater, impounded water and piped water).                                                                                                                                                                                                                                                             |

#### SFA 4 - Flood management Assets

| SFA4     | Flood management assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | All flood management assets (EA and 3rd party owned) that affect flows or water levels are considered. |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| ID       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                        |
| SFA4.0   | The solution will produce modelled output variables (such as depths, pathways, extents) that include the operation and effect/impact of "flood management assets" (subject to data availability).                                                                                                                                                                                                                                                                                                                                 |                                                                                                        |
| SFA4.1   | "Flood management assets" (in SFA4.0) will include both EA-owned and 3rd-partyowned assets.                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                        |
| SFA4.2   | "Flood management assets" (in SFA4.0) will NOT include drainage assets (but see also SFA4.7).                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                        |
| SFA4.3   | "Flood management assets" (in SFA4.0) will include both inland and coastal assets.                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                        |
| SFA4.4   | <p>"Flood management assets" (in SFA4.0) will include those assets that affect flows or water levels, especially (but not restricted to) the subtypes: • 'structures' whose purpose is to manage flood water through influencing flows or water levels, such as weirs, flood walls, pumps)</p> <ul style="list-style-type: none"> <li>• 'defences' such as embankments, flood walls, gates and demountable defences</li> </ul> <p><i>NB. See '96_17' for full definitions of flood asset types and subtypes (Appendix 6).</i></p> |                                                                                                        |
| SFA4.5   | "Flood management assets" (in SFA4.0) will include both active and passive assets.                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                        |
| SFA4.5.1 | "Active assets" (in SFA4.5) will include any types which are more complex assets with operational rules (such as barriers, sluices/gates)                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                        |
| SFA4.5.2 | "Passive assets" (in SFA4.5) will include any types of in-situ assets (such as flood embankments).                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                        |
| SFA4.6   | <p>Asset information should be included in the best way possible, not necessarily using existing methods or systems.</p> <p><i>N.B. more information on the current approach to asset information and associated challenges can be found in Appendix 6 'CDL and AIMS existing limitations'.</i></p>                                                                                                                                                                                                                               |                                                                                                        |

|        |                                                                                                            |
|--------|------------------------------------------------------------------------------------------------------------|
| SFA4.7 | <b>Aspirational:</b> "Flood management assets" (in SFA4.0) will also include all types of drainage assets. |
|--------|------------------------------------------------------------------------------------------------------------|

#### SFA 5 - Other Floodplain Features

| SFA5   | Other floodplain features                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Other floodplain features that may affect flood flows can be included (such as road and railway infrastructure). |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| ID     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                  |
| SFA5.0 | The supplier's solution will have the ability to include detailed representations (where already available) of some other floodplain and coastal features/infrastructure can impact on flood flows (whether or not their primary purpose is flood alleviation) - i.e. to allow us to better represent the effect of diversion channels, road or rail routes or coastal protection assets which are known about and significantly increase or decrease the risk of flooding in an area. |                                                                                                                  |
| SFA5.1 | <b>Aspirational:</b> The solution will have implemented detailed representations of ALL floodplain and coastal features/infrastructure that can impact on flood flows (whether or not their primary purpose is flood alleviation).<br><br><i>N.B. Inclusion via surface DTM data is not considered as a detailed representation.</i>                                                                                                                                                   |                                                                                                                  |

#### Success Factor B:

We maximise the value of local modelling, and use it as part of a seamless assessment where our data can be interrogated at any spatial scale (from national, catchment, property, to individual assets) to provide consistent results throughout ('one number' to describe flood risk for a location).

#### SFB 1 - Local Models

We intend to make use of our local modelling as much as possible. In our current NaFRA, the output of risk often differs from that shown by local models, which can be ambiguous, and often leads to mistrust in the NaFRA outputs. We want "one answer" for any given location, and want this answer to be "the same as" that derived from local modelling.

However, NaFRA2 will need to use the most appropriate model for its assessment. Most of the time the local, detailed modelling will be the highest quality and most appropriate model. Careful thought will need to be given as to how the solution will handle scenarios where there is more than one local model, where the national model may be better than the local (e.g. if local model uses old data), or any other occurrence where a decision on which modelled output is used is required.

| SFB1   | Local models                                                                                                                                                                                                                                                                                                                                                                                                | Locally trusted results are the normal basis of the national results. |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| ID     | Description                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                       |
| SFB1.0 | The supplier's solution will produce outputs that are <u>the same as</u> ((see SFB1.1) those from our <u>best quality</u> (see SFB1.2) local models (delivered through local modelling programmes) <u>where such models exist for the given scenarios</u> (see SFB1.2) - so that there is <u>no difference in the information used</u> locally to assess risk and nationally to assess risk (see SFB1.3.2). |                                                                       |



|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFB1.1   | (Re “the same as” in SFB1.0): Wherever possible, the solution will represent the local fluvial, tidal, coastal, surface water model outputs without change to them: (except, minor change as a result of reformatting say from Triangular Irregular Network (TIN) to grid will be acceptable).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|          | <i>(N.B. re “best quality” and “where such models exist” in SFB1.0): By default, it may initially be assumed that, where both Local and National models exist for the same geography and scenario, then Local models are the best quality; However there may be exceptions to this, e.g. where a local model’s input data is out of date, or has fallen behind the national modelled outputs for other reasons.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| SFB1.2   | (In cases such as SFB1.1) The supplier will work with the Agency to develop initial (and later) Business Rules, regarding the selection/weighting of input data/model(s) that will produce the highest confidence and most accurate outputs; The solution will implement these Business Rules.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| SFB1.2.1 | The solution will enable any subsequent changes in these Business Rules (1.3) over time to be easily implemented, resulting in progressive improvement in the consistency of data selection between National and Local models and in the resulting outputs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| SFB1.2.2 | (Re “no difference” in SFB1.0): The Business Rules and their implementation will NOT permit alternative concurrent selections/weighting of the input(s) to be used, and so will NOT allow any concurrent variation in output(s) produced – i.e. There must be “a single version of the truth”, at any given time, represented by NaFRA2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SFB1.3   | <p>The solution will also enable system processing options in the way the Business Rules are invoked:</p> <p><i>For example, when a selection of the input(s) to be used is needed</i></p> <ul style="list-style-type: none"> <li><i>a) The solution may make a mandatory processing stop and prompt for a user selection (e.g. by a Local team member) regarding which data to use</i></li> <li><i>b) The solution may make a default automatic choice, but then make a notification of the choice made; and offer a user the choice to over-ride this</i></li> <li><i>c) The solution may make a default automatic choice, and make notification of the choice made (but offer no option to override)</i></li> </ul> <p>This solution will be flexible over time in its processing for such cases (e.g. a - c above, as examples):<br/> <i>for example, this might be by enabling the System Admin role to choose which type of processing should be used</i></p> |
| SFB1.4   | (In SFB1.3 and 1.4) The solution will create or update metadata for the output produced, recording what choice of input(s) was made and why.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| SFB1.5   | (In SFB1.3 and 1.4) Where relevant, the solution will update metadata for the inputs used - to enable better choices to be made on a future occasion; or/and to flag the potential need for some further data and metadata improvement in a Local model or the relevant part of the National model.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| SFB1.6   | The solution will visibly mark on output mapping – or indicate in output data or reports - any areas of interpolations and/or smoothed transitions between Local and National models.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## SFB 2 - Consistent at all scales

We intend to make use of our local modelling as much as possible. In our current NaFRA, the output of risk often differs from that shown by local models, which can be ambiguous, and often leads to mistrust in the NaFRA outputs. We want “one answer” for any given location, and want this answer to be “the same as” that derived from local modelling. This answer must not alter if the solution’s outputs are viewed or analysed at different scales.

However this is achieved, care must be taken not to introduce obvious aberrations or artefacts where models join/meet. Should any smoothing or other manipulation take place, this should be visually indicated (i.e. by means of a shape file or similar) to allow the users to identify such areas. Thought must also be given to how best to allow for changes in modelled output over time. For example, we may initially have to work with both 1D and 2D model outputs and, as 2D model outputs become more commonplace, consideration needs to be given to how we combine and make use of differing resolutions from different-scale modelling studies.

Aspirationally, thought needs to be given to whether local, detailed modelled input data could be used, rather than just their outputs.

|               |                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                          |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFB2</b>   | <b>Consistent at all scales</b>                                                                                                                                                                                                                                                                 | <b>We will have maximised the value of local modelling by fully using it as part of a seamless assessment: Our data can be interrogated at any spatial scale (from national, catchment, property, to individual assets) and it will provide consistent results throughout (e.g. 'one result' to describe flood risk for a location).</b> |
| <b>ID</b>     | <b>Description</b>                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                          |
| <b>SFB2.0</b> | <b>The supplier's solution will produce "seamless" (see SFB2.2-3) and "consistent" (see SFB2.6-8) outputs at all scales.</b>                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                          |
| SFB2.1        | The solution will provide 'one result' to describe flood risk for a location.                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                          |
| SFB2.2        | The solution will produce "seamless" outputs, meaning that if outputs are generated from different models, the outputs from each scenario can be combined together into one national data layer with minimal processing (i.e. in a process taking less than one day).                           |                                                                                                                                                                                                                                                                                                                                          |
| SFB2.3        | The solution will produce "seamless" outputs, meaning that outputs from any scenario that are analysed at any spatial scale add up to give the same national total as when the national data was queried separately (i.e. for the number of properties at risk, Expected Annual Damages (EAD)). |                                                                                                                                                                                                                                                                                                                                          |
| SFB2.4        | Outputs and scenarios are complementary for fluvial, tidal, coastal and surface water flood sources (Refer to SFA2.1).                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                          |
| SFB2.5        | <b>Aspirational:</b> Outputs and scenarios are complementary for all flood sources (Refer to SFA2.1).                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                          |
| SFB2.6        | The solution will produce "consistent" (See SFB2.6.1-3) outputs for priority locations. Priority locations will be determined by the client.                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                          |
| SFB2.6.1      | "Consistent" means that they will have same quality at all spatial scales (national, catchment, local, property).                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                          |
| SFB2.6.2      | "Consistent" means that they will be consistently of the same quality geographically (i.e. we provide the same quality of data in rural areas as urban areas, if a priority location).                                                                                                          |                                                                                                                                                                                                                                                                                                                                          |
| SFB2.6.3      | "Consistent" means that they are consistently of the same resolution both geographically and at all spatial scales (i.e. we provide the same resolution of data in rural areas as urban areas, if a priority location).                                                                         |                                                                                                                                                                                                                                                                                                                                          |
| SFB2.7        | <b>Aspirational:</b> The solution will produce "consistent" (see SFB2.6.1-3) outputs for all locations                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                          |
| SFB2.8        | <b>Aspirational:</b> The solution will produce "consistent" (see SFB2.6.1-3) outputs for all sources                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                          |

### SFB 3 - Asset Level Risk

|               |                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                          |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFB3</b>   | <b>Asset level risk</b>                                                                                                                                                                                                                                                                                                                                                                                 | <b>Risk data can be created that enables risk (probability and damages) to be calculated, apportioned to individual assets and aggregated to other management units (such as flood risk systems or groups of assets)</b> |
| <b>ID</b>     | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                          |
| <b>SFB3.0</b> | <b>The solution will be able to calculate Risk information (annual probability and damage as EAD) for flood management assets (scenarios defined in SFE4.2.1 - SFE4.2.5).</b>                                                                                                                                                                                                                           |                                                                                                                                                                                                                          |
| SFB3.1        | The solution will calculate Risk information, as above, at a system level or for any hydraulically independent area.                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                          |
| SFB3.2        | The solution will be able to apportion floodplain risk (EAD) information back to each individual corresponding asset, and this can be aggregated to give totals for any group of assets (e.g. FRMS), or spatial boundary.                                                                                                                                                                               |                                                                                                                                                                                                                          |
| SFB3.2.1      | The solution will aggregate the totals of any group of assets or operational boundary.                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                          |
| SFB3.3        | The solution will use this information to calculate data stated in SFB3.3.1 – 3.3.4 for each asset, and provide this for the Risk Attribution Field Tool (RAFT), as a direct output:                                                                                                                                                                                                                    |                                                                                                                                                                                                                          |
| SFB3.3.1      | - Annual probability of asset failure due to breaching at current and target condition.                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                          |
| SFB3.3.2      | - Consequences associated with failure for each expression of damages (as defined in SFD5, SFD6, and SFD7).                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                          |
| SFB3.3.3      | - The additional risk associated with each asset being in a condition below target when compared to target condition (expressed as an additional damages figure, e.g. Additional Households at Risk flooded by 1% AEP breach scenario).                                                                                                                                                                 |                                                                                                                                                                                                                          |
| SFB3.3.4      | - Area (hectares) of land protected by each flood management asset and its designation (e.g. agricultural land flooded by 1% AEP breach scenario).                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                          |
| SFB3.4        | The solution will be able to provide results at Asset level in XML format (a further spec is available for this output). This output data will be produced regularly (to a schedule to be agreed) or on request of a NaFRA2 user with appropriate privileges (e.g. System Admin / Output) and delivered to a location where they can be ingested by our AIMS Planning (Atrium) asset management system. |                                                                                                                                                                                                                          |

#### SFB 4 - Third party information

As well as using our own modelled data or asset data, NaFRA2 will also make use of available 3rd Party data.

The aspiration is to be able to use 3rd Party data (where it exists and is in the right format) “as is” to support our flood risk assessment just as our own modelling or asset data would (SFB4.4). Where this is not possible, 3rd Party information should still be able to be made use of to some extent (i.e. SFB 4.1, 4.2 & 4.3). It may be that we are only able to use this information as visual supporting evidence in the initial version of the product. The inability to include 3rd Party data is one of the major limitations of our current NaFRA.

|             |                                |                                                                                                                                                                                                                                                                                                      |
|-------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFB4</b> | <b>Third party information</b> | <b>Flood risk information from third parties (such as Lead Local Flood Authorities, developers and the public) can be incorporated – so that we use the best available data (irrespective of owner); customers have most up to date &amp; best information; and our picture of risk is holistic.</b> |
|-------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| ID     | Description                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFB4.0 | <b><i>N.B. The solution will enable flood risk information (see SFB4.5 for specific types) from third parties to be incorporated in adherence with SFB 4.1 – SFB 4.3</i></b><br><b><i>SFB 4.1 – SFB 4.3 are ordered from least to most aspirational with SFB 4.4 being fully aspirational specified requirements.</i></b>                                                                                                          |
| SFB4.1 | The solution will enable third party data to be included as comparative data to refer to only – i.e. as additional information separate from the Agency's national flood risk products.                                                                                                                                                                                                                                            |
| SFB4.2 | The solution will enable third party flood risk information that meets our data standards and in the right format, and that is made available to us (restriction free) to be used to calibrate models or verify model outputs.                                                                                                                                                                                                     |
| SFB4.3 | The solution will enable third party flood risk information that meets our data standards and in the right format, and that is made available to us (restriction free) to be incorporated - with some processing (including format changes) sufficient to make it consistent with our data.                                                                                                                                        |
| SFB4.4 | <b>Aspirational:</b> The solution will enable all third party flood risk information, that meets our data standards and is in compatible formats, and that is made available to us (restriction free) to be incorporated into NaFRA as is without any change                                                                                                                                                                       |
| SFB4.5 | Flood risk information (in SFB4.0 – 4.4) includes: recorded flood outlines/levels, flood management asset data (location, type, crest levels etc.), community flood protection measures, flood model outputs (includes information supplied as part of Flood Risk assessments from developers and the public, and surface water flood mapping from Lead Local Flood Authorities) and other man-made assets that influence flooding |

### Success Factor C

| SFC1   | Individual receptor level                                                                                                                                                                                        | Results will be fit for local operational (area FCRM) risk management decisions, including understanding flood impacts at the level of individual receptors. E.g. We can, with confidence, say whether individual properties are at risk of flooding, and target flood warnings. |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID     | Description                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                  |
| SFC1.0 | The solution will provide outputs that are of sufficient detail they are fit for use to describe the likelihood of flooding to receptors (including but not limited to properties).                              |                                                                                                                                                                                                                                                                                  |
| SFC1.1 | Where receptor threshold survey information is available, the solution can use this to improve the risk information – for example to identify the first property to flood in each flood warning area.            |                                                                                                                                                                                                                                                                                  |
| SFC1.2 | <b>Aspirational:</b> Where receptor threshold survey information is available, the solution will provide further improved risk information, particularly identifying if the water is likely to enter a property. |                                                                                                                                                                                                                                                                                  |
| SFC1.3 | As new threshold data becomes available, the solution can add this in to the analysis and use it to improve our assessment of risk at the receptor level.                                                        |                                                                                                                                                                                                                                                                                  |
| SFC1.4 | <b>Aspirational:</b> For urban and high risk areas, the flood risk information supported by the solution will be of the accuracy needed to distinguish the flood risk between one property and its neighbour(s). |                                                                                                                                                                                                                                                                                  |

### SFC 2 - Investment impact testing

NaFRA2 will be able to provide consistent and uniform cost benefit appraisals to allow us to understand the impacts of potential investment on a given location/receptor's flood risk. The solution will take a forward look at the picture of flood risk under different investment scenarios.

Initially, this may be achieved through post processing outputs from NaFRA2, for manually selected locations. Outputs need to enable required analysis (e.g. including values that change to reflect with/without scenarios for proposed flood risk management measures).

Over time, we would like NaFRA2 to automatically produce such reporting or analysis without the need to take data outside NaFRA2 to process it. This automation may only occur at pre-determined, user-prioritised locations to begin with.

Aspirationally, NaFRA2 needs to analyse and report the impacts of investment as a standard output for all locations.

|               |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                 |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFC2</b>   | <b>Investment impact testing</b>                                                                                                                                                                                                                                  | <b>Outputs from the solution will enable reports showing the impact of planned investment on risk, to be produced at a property level (and can be built up to communities, catchments and national levels).</b> |
| <b>ID</b>     | <b>Description</b>                                                                                                                                                                                                                                                |                                                                                                                                                                                                                 |
| <b>SFC2.0</b> | <b>The solution will be able to output data on the change in risks resulting from new (or changed) asset schemes to produce a report of the impact on risk. Initially this will be done by post processing the outputs of the solution's model/simulation.</b>    |                                                                                                                                                                                                                 |
| SFC2.1        | <b>Aspirational:</b> The solution will directly produce the reports showing the impacts on risk.                                                                                                                                                                  |                                                                                                                                                                                                                 |
| SFC2.2        | The solution will be able to produce scalable reports showing the impacts on risk (i.e. they can be produced for individual receptors), catchments, nationally, or any other user defined management boundary but locations required will need to be prioritised. |                                                                                                                                                                                                                 |
| SFC2.3        | <b>Aspirational:</b> The "locations required" (in SFC2.2) need not be prioritised.                                                                                                                                                                                |                                                                                                                                                                                                                 |

## Success Factor D

We can produce, as standard, 'richer' information including flood depth, level, duration, frequency, spatial extent, velocity, flow, direction and hazard, so that we have a complete understanding of all the dimensions of a flood to enable engagement and interventions to be tailored.

### SFD 1 - Outputs 1 (spatial / depth)

Please read the following whilst also referring to the "general note on modelling" at the start of Section 3. The flood risk information that we require in order to provide a richer assessment of flood risk will (likely) initially be provided to the NaFRA2 environment in the form of pre-existing modelled outputs (e.g. depth, velocity, hazard, flow direction, etc.). "Producing outputs" from NaFRA2 could therefore cover a spectrum of options, from directly reporting underlying model outputs (grids); to using these outputs in some form of analysis; to directly carrying out hydraulic/hydrodynamic modelling in the aspirational product - either by the solution "requesting" a supporting model to be re-run externally in the background, or

because NaFRA2 has this capability in-built. We would expect this functionality to change in complexity over time.

Likewise, the quality of outputs would be expected to differ spatially between the initial version of the solution and a later aspirational enhancement to it - as per the sub clauses below.

|               |                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                        |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFD1</b>   | <b>Outputs 1</b>                                                                                                                                                                                                                                                                                                                                                                                       | <b>Spatial extent, annual probability and depth outputs can be produced everywhere - adequate to improve our understanding of risk for preparing for, responding to, and mitigating floods. E.g. We will know the depth and level (m AOD) of flooding for any location in England.</b> |
| <b>ID</b>     | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                        |
| <b>SFD1.0</b> | <b>The supplier's solution will produce outputs (defined in SFD1.1 – 1.10 below) for spatial extent, annual probability and depth. This might be directly from input data stored in the solution or derived data from the processing toolkit.</b>                                                                                                                                                      |                                                                                                                                                                                                                                                                                        |
| SFD1.1        | Extents, depths and probability of flooding will take account of areas where water flows as well as areas where depressions are filled.                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                        |
| SFD1.2        | Detailed spatial extent information and detailed depth outputs will be produced for urban/high risk floodplain locations.<br>(Where detailed depth information includes peak depth, depth/time profile; and is reliable to use at individual receptor level (i.e. derived using threshold survey information where available)).                                                                        |                                                                                                                                                                                                                                                                                        |
| SFD1.3        | Outputs account for the dynamic interaction between the floodplain and the channel (This is especially important when considering asset loading and asset level risk)                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                        |
| SFD1.4        | General depth information will be produced for all other locations. (Where: General depth information includes peak depth that is not fit to use at an individual receptor/property level (i.e. derived from LiDAR)).                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                        |
| SFD1.5        | <b>Aspirational:</b> Detailed spatial extent information and detailed depth outputs will be produced for ALL floodplain locations (urban and rural).                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| SFD1.6        | Level information can be derived quickly from depth and the appropriate DTM (Based on current data standards, our targets are:<br><ul style="list-style-type: none"> <li>- Detailed: level is accurate to +/-150mm or better;</li> <li>- Appraisal: level has target accuracy of +/-250mm or better; Generalised / rural areas: accurate to +/- x</li> </ul> (x : Need to agree a reasonable target)). |                                                                                                                                                                                                                                                                                        |
| SFD1.7        | <b>Aspirational:</b> Peak and time varying level information can be derived quickly from depth and the appropriate DTM.                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                        |
| SFD1.8        | The solution will be capable of holding data to meet standards for minimum depth, minimum flood area, etc.                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                        |
| SFD1.9        | The annual probability of flooding can be produced for the complete spatial coverage.                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                        |
| SFD1.10       | The solution will record accuracy of depth data in bands of<br><ul style="list-style-type: none"> <li>- met target,</li> <li>- better than target,</li> <li>- worse than target to support uncertainty calculations.</li> </ul>                                                                                                                                                                        |                                                                                                                                                                                                                                                                                        |

## SFD 2 - Outputs 2 (level / flow / direction / hazard)

Please read the following whilst also referring to the “general note on modelling” in of Section 3.2. And the text at the top of Table SFD1



|               |                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                      |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFD2</b>   | <b>Outputs 2</b>                                                                                                                                                                                                                                                                                                                                                                                               | <b>Level, velocity, flow, direction, duration and hazard to life outputs can be produced - adequate to improve our understanding of risk for preparing for, responding to, and</b>                                                                                                   |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                | <b>mitigating floods - particularly in issuing risk to life warnings, and improved response times.</b><br><b>We will know for any location in England where the water is likely to flow (direction) and how fast it may flow (velocity), so that we can estimate hazard to life.</b> |
| <b>ID</b>     | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                      |
| <b>SFD2.0</b> | <b>The solution will produce level, velocity, flow, direction, duration and hazard to life outputs as defined in SFD2.1 - 2.8 below.</b><br><b>This might be directly from input data stored in the solution or derived data from the processing toolkit.</b>                                                                                                                                                  |                                                                                                                                                                                                                                                                                      |
| SFD2.1        | Level and velocity data will be available everywhere, on floodplain and in channel, for all 'design' flood probabilities and all scenarios. Maximum velocity is captured and recorded.                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                      |
| SFD2.2        | Extents, depths and probability of flooding will take account of areas where water flows as well as areas where depressions are filled.                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                      |
| SFD2.3        | <b>Aspirational:</b> Level and velocity data will be available everywhere, on floodplain and in channel, for all 'design' flood probabilities and all scenarios. Velocity variation over time is captured and recorded.                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                      |
| SFD2.4        | Modelled flows (peak flow and hydrographs) can be captured and recorded across the full floodplain at all gauging stations where local modelling exists.                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |
| SFD2.5        | <b>Aspirational:</b> Modelled flows (peak flow and hydrographs) can be captured and recorded across the full floodplain at all gauging stations and at user defined intervals.                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                      |
| SFD2.6        | <b>Aspirational:</b> Direction of flow can be captured and recorded at maximum hazard.                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                      |
| SFD2.7        | Duration of flooding above a given threshold in general categories (Over 4 weeks, 2-4 weeks, 1-2 weeks, less than 1 week, less than 24 hours – if final category is possible, see SFD2.8) will be provided that can be used for depth-duration impacts assessment for all of England. Where more detailed data exists, the solution can capture and record the hydrographs so they can be viewed and analysed. |                                                                                                                                                                                                                                                                                      |
| SFD2.8        | <b>Aspirational:</b> Duration of flooding above a given threshold known to a sub-daily value where required (urban areas mainly). Aspiration is to the 30 minute accuracy.                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                      |
| SFD2.9        | Maximum hazard to life can be captured and recorded based on coincident velocity and depth.                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                      |
| SFD2.10       | Aspirational: Maximum hazard to life can be captured and recorded for asset failure scenarios based on coincident velocity and depth.                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                      |

### SFD 3 - Outputs 3 (duration / speed)

Please read the following whilst also referring to the “general note on modelling” at in Section 3.2. And the text at the top of Table SFD1.

|               |                                                                                                                                                                                                                                          |                                                                                                                                                                                 |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFD3</b>   | <b>Outputs 3</b>                                                                                                                                                                                                                         | <b>We improve our understanding of risk for preparing for, responding to, and mitigating floods. Particularly in issuing risk to life warnings, and improve response times.</b> |
| <b>ID</b>     | <b>Description</b>                                                                                                                                                                                                                       |                                                                                                                                                                                 |
| <b>SFD3.0</b> | <b>The solution will produce frequency, speed of onset and volume outputs as defined in SFD3.1 &amp; 3.2 below.</b><br><b>This might be directly from input data stored in the solution or derived data from the processing toolkit.</b> |                                                                                                                                                                                 |

|        |                                                                                                                                                      |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFD3.1 | Speed of onset information can be captured at the flood warning area scale where needed:<br>- onset of flooding<br>- time to first property flooding |
|        | - time to maximum inundation<br>- time to recede                                                                                                     |
| SFD3.2 | The solution can capture volume of water in the floodplain.                                                                                          |

#### SFD 4 - Propagation

Please read the following whilst referring to the “general note on modelling” in Section 3.2. The flood risk information we require to provide a richer assessment of flood risk will (likely) initially be provided to the NaFRA2 environment in the form of pre-existing modelled outputs showing flood propagation (e.g. animations or time step information).

We anticipate that some form of manipulation outside the NaFRA2 environment would be required to produce this information in the initial version of the solution, with the ability to produce such outputs directly in a more aspirational solution.

|        |                                                                                                                                                                                      |                                                                                                                                                                                                                             |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFD4   | Propagation                                                                                                                                                                          | <b>Flood propagation information can be produced as an accessible direct output from our assessment of flood risk that is accurate to flood warning areas to show where the flow routes are and how a flood propagates.</b> |
| ID     | Description                                                                                                                                                                          |                                                                                                                                                                                                                             |
| SFD4.0 | <b>The solution will produce flood propagation data (where needed) that is accurate to flood warning areas and which shows where the flow routes are and how a flood propagates.</b> |                                                                                                                                                                                                                             |
| SFD4.1 | Flood propagation information is produced, via the post-processing of outputs from the assessment data.                                                                              |                                                                                                                                                                                                                             |
| SFD4.2 | <b>Aspirational:</b> Flood propagation information is produced without post-processing as an accessible direct output.                                                               |                                                                                                                                                                                                                             |

#### SFD 5 - Direct impacts

Direct impacts are damages done to assets and property as a result of being flooded.

|        |                                                                                                                                                                                         |                                                                                                                                |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| SFD5   | Direct impacts                                                                                                                                                                          | <b>The direct impacts of flooding can be quantified and therefore contribute to a comprehensive, holistic picture of risk.</b> |
| ID     | Description                                                                                                                                                                             |                                                                                                                                |
| SFD5.0 | <b>The solution will calculate an average annual economic damage for each property and business in England. When calculating this, it will use information specified in SFD5.1-5.7.</b> |                                                                                                                                |
| SFD5.1 | Information (which will be provided) will be used on the estimated annual average economic damages for national and catchment / LLFA levels;                                            |                                                                                                                                |
| SFD5.2 | <b>Aspirational:</b> The solution can calculate an estimated annual average economic damages for ANY defined boundary (national <-> sub catchment).                                     |                                                                                                                                |
| SFD5.3 | Calculations will use depth damage curves and flood duration (where depth damage curves are considered up to date and/or reflective of known flooding).                                 |                                                                                                                                |
| SFD5.4 | Calculations will include: damage to basements; saline contamination; intrusion of sewage.                                                                                              |                                                                                                                                |
| SFD5.5 | All properties will be classified (to known types) to reduce uncertainty in the estimation.                                                                                             |                                                                                                                                |



|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <i>The NRD is due to be updated annually from 2018. Improvements to the methodology are intended to reduce the number of unclassified properties, however there will still be unclassified properties within the dataset that will need addressing by the supplier. There may also be adjustments to the future schema.</i>                                                                                                                                                                                                                            |
| SFD5.6 | <p>Receptor threshold levels will be included in the calculation if available.</p> <p>Receptors will include, at a minimum:</p> <ul style="list-style-type: none"> <li>Residential properties (inc failure and contents)</li> <li>Business properties (inc failure and contents; inc utility assets)</li> <li>Temporary accommodation (inc failure and contents)</li> <li>Vehicles, boats and caravans</li> <li>Emergency services</li> <li>Agriculture</li> <li>Risk to life and injury</li> <li>Education</li> </ul>                                 |
| SFD5.7 | <p><b>Aspirational:</b> The scope of Receptors may also include (additional to SFD5.6):</p> <ul style="list-style-type: none"> <li>Publicly owned property damage including schools, hospitals (excluding roads) and roads</li> <li>Utilities – energy (inc gas, electricity sub stations)</li> <li>Utilities – water (inc water supply and waste water)</li> <li>Transport – road</li> <li>Transport – rail</li> <li>Other (wildlife, heritage and tourism)</li> <li>Telecommunications</li> <li>Ecosystems</li> <li>Local Authority costs</li> </ul> |

#### SFD 6 - Indirect impacts

Indirect impacts are costs due to the disruption of services as a result of flooding.

| SFD6     | Indirect impacts                                                                                                                                                                                                                                                                                                                                                                                                                                      | Indirect impacts of flooding can be quantified and therefore contribute to a comprehensive, holistic picture of risk. |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| ID       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                       |
| SFD6.1   | <b>(Using existing available data), the solution will calculate the cost of indirect impacts of flooding individually; and these can also be combined to give a total cost in £ for the following:</b>                                                                                                                                                                                                                                                |                                                                                                                       |
| SFD6.1.1 | <ul style="list-style-type: none"> <li>Agriculture</li> <li>Environmental designated land (e.g. SSSIs)</li> <li>Utilities – energy (inc electricity infrastructure)</li> <li>Transport – road e.g. routes impacted loss of services</li> <li>Transport – rail e.g. services disrupted, number of travellers</li> </ul>                                                                                                                                |                                                                                                                       |
| SFD6.2.1 | <p><b>Aspirational:</b> (N.B. the aspiration here may evolve as the research in this area evolves)</p> <p>The solution will calculate the cost of indirect impacts of flooding individually; and these can be combined to give a total cost in £ for the following:</p>                                                                                                                                                                               |                                                                                                                       |
| SFD6.2.2 | <p><b>Aspirational:</b> SFD6.1.1 plus:</p> <ul style="list-style-type: none"> <li>Risk to life and injury</li> <li>Education</li> <li>Publicly owned property damage including schools, hospitals (excluding roads) and roads</li> <li>Utilities – water (including water supply and waste water - receptor network affected)</li> <li>Utilities - i.e. which properties are impacted from network disruption?</li> <li>Emergency services</li> </ul> |                                                                                                                       |

|  |                                                                                                                   |
|--|-------------------------------------------------------------------------------------------------------------------|
|  | Other (wildlife, heritage and tourism)<br>Telecommunications - receptor network affected Local<br>Authority costs |
|--|-------------------------------------------------------------------------------------------------------------------|

#### SFD 7 - Health / Social impacts

We wish to better understand the impact of flooding on public health, as current methods for evaluating this were developed over 20 years ago. Where possible, it would be desirable to make use of existing work.

Public Health England have conducted research with those affected by flooding during the winter 2013/14 floods. This unique study has provided, for the first time, data on the proportion of those affected by anxiety, depression or post-traumatic stress disorder in the aftermath of a flood. This new data is the key to calculating the economic impacts of a flood on human health and can now enable new capability in this area.

Current data and methods are held within the Multi-Coloured Manual (MCM). A project is underway with the aim of improving and updating this with the best available evidence and data.

Social/Health impacts are the impacts on people as a result of flooding.

|               |                                                                                                                                      |                                                                                                                                              |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFD7</b>   | <b>Health/social impacts</b>                                                                                                         | <b>The impact of flooding on health and society can be quantified and therefore contribute to a comprehensive, holistic picture of risk.</b> |
| <b>ID</b>     | <b>Description</b>                                                                                                                   |                                                                                                                                              |
| <b>SFD7.0</b> | <b>The solution will assess the cost of impacts on health and society. At a minimum:</b>                                             |                                                                                                                                              |
| SFD7.0.1      | Loss of education                                                                                                                    |                                                                                                                                              |
| SDF7.0.1      | Mental health impacts (inc. number of people affected)                                                                               |                                                                                                                                              |
| SFD7.1        | Calculations regarding the impact of flooding on health and society are produced indirectly following a post processing task.        |                                                                                                                                              |
| SFD7.2        | <b>Aspirational:</b> The solution will enable an assessment on the full range of impacts on health, risk to life and society.        |                                                                                                                                              |
| SFD7.3        | <b>Aspirational:</b> The solution will directly calculate the impact of flooding on health and society and produce these as outputs. |                                                                                                                                              |

#### Success Factor E

We can quickly test national and catchment scenarios (including event based, and natural flood management ones) when needed, so that we can respond to ad-hoc questions during incidents, and also support our long term strategic response to flooding whilst supporting other environmental outcomes.

#### SFE 1 - Quick testing

|             |                      |                                                                                                                                                                                                                                                     |
|-------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFE1</b> | <b>Quick testing</b> | <b>Foreseeable national or catchment scenarios can be quickly tested (including “what if” questions during incidents). We have some ability to answer ad-hoc questions quickly. We can better respond to Government questions during incidents.</b> |
| <b>ID</b>   | <b>Description</b>   |                                                                                                                                                                                                                                                     |

|          |                                                                                                                                                                                                                                                                                      |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFE1.0   | <b>(for the given scenarios in SFD2 to SFD5) At a minimum, the solution will enable us to extract flood outputs and impacts for any location in less than one day.</b>                                                                                                               |
| SFE1.1   | <b>Aspiration:</b> (for the given scenarios in SFD2 to SFD5) The solution will enable simulations to be created and extracted for any location.                                                                                                                                      |
| SFE1.2   | <b>Aspiration:</b> (for the given scenarios in SFD2 to SFD5) Additionally the solution will enable ad hoc amendments to be made to simulations, run and extracted within two days, (to meet "ad-hoc" enquiries) that involve changes to the following factors (SFE1.2.1 – 1.2.4):    |
| SFE1.2.1 | - <b>Aspiration:</b> 1) the hazard scenario generation (e.g. changes to rainfall, river volumes, coastal levels).                                                                                                                                                                    |
| SFE1.2.2 | - <b>Aspiration:</b> 2) the flood defence system (e.g. changes to flood management asset locations, heights, standards of protection).                                                                                                                                               |
| SFE1.2.3 | - <b>Aspiration:</b> 3) Floodplain hydraulics (e.g. changes to land use, pathways, flood storage).                                                                                                                                                                                   |
| SFE1.2.4 | - <b>Aspiration:</b> 4) Impact analysis (changes to receptor thresholds, properties at risk, type of property).<br>This requires hazard data to be analysed against any point, line and area receptor data, including buildings, outbuildings, land, infrastructure, roads and life. |

#### SFE 2 - Scenarios 1 (with / without assets)

|          |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                     |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| SFE2     | <b>Scenarios 1 (with/ without assets)</b>                                                                                                                                                                                                                                                                                                                | <b>We can produce results for fluvial, tidal, coastal estuarine and surface water scenarios, for a range of annual probabilities and/or events.</b> |
| ID       | Description                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                     |
| SFE2.0   | <b>The solution will be able to generate results for scenarios (as described in SFE2.1.1, SFE2.1.2, SFE2.2.1 below) for fluvial, tidal, coastal and surface water flood risks.</b><br>N.B. if an integrated modelling approach is used, the contribution of the individual source of flooding must be identified – refer to SFA3, including sub-clauses. |                                                                                                                                                     |
| SFE2.1   | <b><u>(With flood management assets)</u></b><br>Fluvial, tidal, coastal and surface water hazard scenarios can be modelled with the flood defence system scenario "defended" (assets operating as planned, e.g. no failure by breaching).                                                                                                                |                                                                                                                                                     |
| SFE2.1.1 | Fluvial, tidal and coastal (50%, 20%, 10%, 5%, 4%, 3.3%, 2%, 3%, 1%, 0.5%, 0.1%) annual exceedance probabilities.                                                                                                                                                                                                                                        |                                                                                                                                                     |
| SFE2.1.2 | Surface water: 1 in 30 (3.3%), 1 in 100 (1%) and 1 in 1000 (0.1%).<br>Plus additional annual exceedance probabilities to be decided during development phase.                                                                                                                                                                                            |                                                                                                                                                     |
| SFE2.1.3 | <b>Aspirational:</b> The solution will be flexible to changes in what is classified as a flood management asset;<br>The solution can create any outputs by selecting which assets to remove/include in the analysis.                                                                                                                                     |                                                                                                                                                     |
| SFE2.1.4 | <b>Aspirational:</b> Any defined probability up to 0.1%.                                                                                                                                                                                                                                                                                                 |                                                                                                                                                     |
| SFE2.1.5 | <b>Aspirational:</b> The solution can model scenarios with different asset configurations (i.e. newly constructed or amended schemes), updated data, changes to model methods and results compared with previous runs - to help inform community engagement, scheme design, and model method improvements.                                               |                                                                                                                                                     |
| SFE2.2   | <b><u>(Without flood management assets)</u></b><br>Fluvial, tidal and coastal hazard scenarios can be modelled with the flood defences system scenario of "undefended" so we can understand the flood risk of the natural floodplain in order to support the Planning Policy Framework.                                                                  |                                                                                                                                                     |
| SFE2.2.1 | Fluvial, tidal and coastal (50%, 20%, 10%, 5%, 4%, 3.3%, 2%, 1.3%, 1%, 0.5%, 0.1%) annual exceedance probabilities, as a minimum.                                                                                                                                                                                                                        |                                                                                                                                                     |
| SFE2.2.2 | <b>Aspirational:</b> Any defined probability up to 0.1%.                                                                                                                                                                                                                                                                                                 |                                                                                                                                                     |

SFE 3 - Scenarios 2 (blockage / breach / land management / climate change)

|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                     |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| SFE3   | Scenarios 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>We can produce results for fluvial, tidal, coastal estuarine and surface water scenarios, for a range of annual probabilities and/or events.</b> |
| ID     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                     |
| SFE3.0 | <b>The solution will be able to generate results for scenarios (as described in the subsections below) for fluvial, tidal, coastal and surface water flood risks.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                     |
| SFE3.1 | (Fluvial, Coastal and Estuarine scenarios)<br>The supplier's solution will produce defined standard fluvial, coastal and estuarine scenarios. These scenarios can be carried out at catchment level / coastal cell, for set parameters (SFE3.3 – 3.13 below) with no bespoke user input parameters expected.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                     |
| SFE3.2 | <b>Aspirational:</b> The supplier's solution will produce bespoke fluvial, coastal and estuarine scenarios. These scenarios can be produced for whole catchments or specific locations. The parameters for these scenarios (examples SFE3.3-3.13 below) can be altered to the required user input and run as individual simulations.                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                     |
| SFE3.3 | (Breaching)<br>The solution will simulate breach scenarios for 1% and 0.5% AEPs (minimum) for single assets and groups of assets where required. System will model breaches to occur at a range of water levels, above and below bank top, with crest level reduced to natural ground level. Breach length and duration is to follow the Modelling and Forecasting Technical Guidance Note –'Breach of Defence guidance 2017' in Appendix 6, or any update or replacement of this guidance.                                                                                                                                                                                                                                                                              |                                                                                                                                                     |
| SFE3.4 | <b>Aspirational:</b> The solution will simulate breach scenarios for any defined AEP and any asset / groups of assets. System will model breaches to occur at a range of water levels, above and below bank top, with crest level reduced to natural ground level. Breach length and duration is to follow the guidance current at the time.                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                     |
| SFE3.5 | (non-breach asset failure)<br>The solution will simulate non-breach asset failure scenarios for 1% and 0.5% AEPs for single assets and groups of assets where required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                     |
| SFE3.6 | (Blockage assessment)<br>The solution will simulate blockage scenarios for culverts where required (to be defined in the delivery phase scope). Use the latest guidance from the DEFRA / Environment Agency (currently the Trash and Security Screen Guide (2009) and upcoming Blockage Management Guide, SC110005) and the latest CIRIA Culvert Design and Operation Guide (C689). The following method shall apply depending on the latest guidance:<br><ul style="list-style-type: none"> <li>- If a culvert has trash screen, simulate runs for 30%, 67% and 100% blockages (TSSG pg. 56)</li> <li>- If a culvert does not have a screen, simulate runs for 5%, 25% and 80% blockages (CDOG pg.123).</li> </ul> Use three flood probabilities: 5%, 20%, and 1% AEP's |                                                                                                                                                     |
| SFE3.6 | <b>Aspirational:</b> The solution will simulate blockage scenarios for any determined % blockage (minimum 5%, 25%, 30%, 67%, 80%, 100% blockage of structures) for any flood probability (minimum 5%, 20% and 1% AEP's), and any location.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                     |
| SFE3.7 | (Channel maintenance analysis)<br>The solution will simulate representations of channel maintenance by altering channel roughness values and/or water levels at a system level across England.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                     |
| SFE3.8 | <b>Aspirational:</b> The solution will simulate representations of channel maintenance by altering channel roughness values and/or channel capacity and/or increase in water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                     |
|        | levels. These factors can be changed at the reach level and are applied across England.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                     |

|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFE3.9  | (Land management and other land use changes.)<br>The solution will incorporate data from other models that have simulated changes in land use into its processing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| SFE3.10 | <b>Aspirational:</b> The solution will model: land use and management interventions, e.g. agricultural and land drainage modifications; overland flow interception; catchment woodland planting; land and soil management changes; installing ponds and bunds; creating and restoring non-floodplain wetlands;                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| SFE3.11 | <b>Aspirational:</b> The solution will model: In-channel and floodplain interventions, e.g. floodplain, wet woodland planting; river and floodplain reconnection; retaining or placing woody debris in-channel; retaining or constricting woody debris dams; river restoration; creating and restoring floodplain wetlands.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SFE3.12 | (Climate change)<br>The solution will model the impacts of climate change using the latest version of the Adapting to Climate Change - Risk Allowance guidance (updated based on UKCP18) (for changes to peak river flow, peak rainfall intensity, sea level rise, offshore wind speed and extreme wave height), in line with National Planning Policy Framework and the following scenarios:<br><ul style="list-style-type: none"> <li>- all with flood management assets</li> <li>- without flood management assets</li> <li>- Use three flood probabilities (5% fluvial, 1% fluvial and 0.5% coastal, 0.1% fluvial and coastal)</li> <li>- Central estimates modelled for all epochs</li> <li>- Other allowances interpolated (upper end, higher central)</li> </ul> |
| SFE3.13 | <b>Aspirational:</b> The solution will model the impacts of climate change for full range of scenarios and 3.33%, 1%, 0.5% and 0.1% flood probabilities using the latest guidance for any modelled scenario (as in tables SFE2, 3, 4).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|         | <i>NB. With regards to SFE3.12 and SFE3.13, Reference should be made to the Environment Agency research project SC150009 on revised climate change estimates for fluvial flooding and sea level rise.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

#### SFE 4 - Asset performance

|          |                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| SFE4     | Asset performance                                                                                                                                                                                                                                                                                                                                                                                          | <b>We can understand the chance of flood management assets overtopping or failing - to inform investment needs and maintenance programmes.</b> |
| ID       | Description                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                |
| SFE4.0   | <b>The solution will calculate an annualised probability of flooding by modelling asset performance using:</b> <ul style="list-style-type: none"> <li>• existing fragility curves for generalised modelling,</li> <li>• specific asset parameters where they exist in local modelling</li> <li>• asset specific fragility curves generated for key assets (<i>in progress, due before 2020</i>)</li> </ul> |                                                                                                                                                |
| SFE4.0.1 | Performance will be calculated for all assets included in the "with flood management assets scenario" SFE2.1                                                                                                                                                                                                                                                                                               |                                                                                                                                                |
| SFE4.1   | <b>Aspirational:</b> The solution will provide an annualised probability by modelling asset performance using asset-specific parameters.<br>Assets (Please refer to '96_17' in Appendix 6) include in-line defences (walls, embankments) and in channel assets (Thames Barrier) and pumps (see SFE4.2.1-3 for scenarios required).                                                                         |                                                                                                                                                |
| SFE4.2.1 | Present day, with flood management assets (current condition) ("baseline").                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                |
| SFE4.2.2 | Breach.                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                |
| SFE4.2.3 | Overtopping (including multivariate probabilistic modelling of the coast).                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                |
| SFE4.2.4 | All condition grades (to show changing risk due to asset improvement / deterioration - i.e. to support maintenance justification).                                                                                                                                                                                                                                                                         |                                                                                                                                                |

|          |                                                                                                       |
|----------|-------------------------------------------------------------------------------------------------------|
| SFE4.2.5 | Target condition.                                                                                     |
| SFE4.4   | <b>Aspirational:</b> In providing SFE4.0 or 4.1, dependencies between asset failures can be captured. |

#### SFE 5 - Multiple scenarios (combinations of above)

|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                   |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFE5   | <b>Multiple scenarios (combinations of above)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>We can produce fluvial, coastal and estuarine scenarios that combine multiple scenarios - so we can use all our information on flood risk to give a most likely annual chance of flooding.</b> |
| ID     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                   |
| SFE5.0 | <p>The solution enables some of the scenarios in tables SFE2, SFE3, SFE4 to be combined.</p> <p><i>Please specify which combinations in your response below.</i></p>                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                   |
| SFE5.1 | <p><b>Aspirational:</b> The solution enables any and all combination of scenarios from tables SFE2, SFE3, SFE4 to be modelled in a combined multi parameter scenario, where they are required (e.g. in South London where blockage has a higher probability due to number of culverts we'd want to include this in the Annual Probability calculation).</p> <p><i>Please describe in your response the degree to which ALL combinations of scenarios will be possible a) in your initial solution b) subsequently in the foreseeable future</i></p> |                                                                                                                                                                                                   |

#### Success Factor F

We produce the information needed to provide standard services to analyse, quantify and monitor changes in flood risk for a range of spatial scales, so we can support FCRM investment decisions and demonstrate the benefit of our investment.

#### SFF 1 - Changes in flood risk

|        |                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                        |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFF1   | <b>Changes in flood risk</b>                                                                                                                                                                                                                                                                                                               | <b>The information needed to analyse, quantify and monitor changes in flood risk for a range of spatial scales is produced - such that we can say how much risk there is, where it is, what it is, and how it is changing / has changed over time.</b> |
| ID     | Description                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                        |
| SFF1.0 | <p>We can monitor a change in risk over time, through post processing if necessary, for every scenario for each asset/ group of assets / property / community / area / national (any spatial scale), by recording the probability at each model run / update (populated to each property / parcel of land) and reasons for the update.</p> |                                                                                                                                                                                                                                                        |
| SFF1.1 | <p><b>Aspirational:</b> The solution directly calculates change in risk (change in likelihood and change in damages) for everything listed in SFF1.0</p>                                                                                                                                                                                   |                                                                                                                                                                                                                                                        |
| SFF1.2 | <p>Specifically, we can show which properties have reduced in risk, and what the reduction is (from X probability to Y probability) in each model update, due to which flood management assets, and over defined time periods (e.g. with the last 6 year capital programme of investment), or a specific scheme.</p>                       |                                                                                                                                                                                                                                                        |
| SFF1.3 | <p>We must be able to distinguish and separate changes to probability due to -</p> <ul style="list-style-type: none"> <li>- data improvements (i.e. data other than flood asset data),</li> <li>- method changes</li> <li>- and schemes built.</li> </ul>                                                                                  |                                                                                                                                                                                                                                                        |

#### SFF 2 - Model inventory reporting



|        |                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                 |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFF2   | Model Inventory Reporting                                                                                                                                                                                                                                                                                                                                                                    | We understand our model data and limitations- because consistent reports are available describing the flood modelling asset inventory base - including the number of models, geographic distribution, model types, model condition and target condition, model quality, model value, the rivers/coast/coverage modelled and the uses of models. |
| ID     | Description                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                 |
| SFF2.0 | <b>Reports can be generated for at least the following information:</b> <ul style="list-style-type: none"> <li>- Modelling Asset Base</li> <li>- Number of Models</li> <li>- Geographic distribution</li> <li>- Model Types</li> <li>- Model Condition and target condition</li> <li>- Model Quality</li> <li>- Model Value</li> <li>- Coverage of model</li> <li>- Uses of model</li> </ul> |                                                                                                                                                                                                                                                                                                                                                 |
| SFF2.1 | <b>Aspirational:</b> Extended to more model inventory audit information, as required.                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                 |

### SFF 3 - Other boundaries

|        |                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                 |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFF3   | Other boundaries                                                                                                                                                                                                                                                                                              | Outputs can be analysed and presented in a variety of management boundaries (such as groups of assets, communities and flood warning areas). We have results that can be analysed at any spatial scale and presented in any unit relevant to each business area and which provide consistent results nationally |
| ID     | Description                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                 |
| SFF3.0 | Outputs for units quantified across a range of different spatial scales and management boundaries (EA, administrative, geographical) will NOT be directly produced by the solution, but will be able to be post processed based on the model/system outputs – and will provide nationally consistent results. |                                                                                                                                                                                                                                                                                                                 |
| SFF3.1 | <b>Aspirational:</b> “Other” unit boundaries held separately from the Nafra2 solution can be accessed and applied by the solution – and the solution will produce nationally consistent results using these boundaries                                                                                        |                                                                                                                                                                                                                                                                                                                 |
| SFF3.2 | <b>Aspirational:</b> The solution can directly calculate and produce outputs for a wide range of types of units that are quantified across a range of different spatial scales and management boundaries (EA, administrative, geographical) in order to provide nationally consistent results.                |                                                                                                                                                                                                                                                                                                                 |

### SFF 4 - Enable risk tracking

|        |                                                                                                                                                                                   |                                                                                                                                                        |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFF4   | Enable risk tracking                                                                                                                                                              | Output format(s) enable comparisons to be drawn between flood risk in different years, to demonstrate benefit and risk reduction from past investment. |
| ID     | Description                                                                                                                                                                       |                                                                                                                                                        |
| SFF4.0 | Outputs are produced in a consistent format to allow comparisons between model runs in order to determine changes in flood risk (SFF1).                                           |                                                                                                                                                        |
| SFF4.1 | <b>Aspirational:</b> Outputs are produced in a consistent format to allow instant comparisons between model runs in order to determine changes in flood risk.                     |                                                                                                                                                        |
| SFF4.2 | <b>Aspirational:</b> The solution can produce outputs that quantify the benefits of past risk changes (direct and indirect damages avoided) and directly link them to investment. |                                                                                                                                                        |

|        |                                                                                                                                  |
|--------|----------------------------------------------------------------------------------------------------------------------------------|
| SFF4.3 | The solution's ability to carry this out should not be impacted/prevented by future changes to the modelling/simulation process. |
|--------|----------------------------------------------------------------------------------------------------------------------------------|

#### SFF 5 - Natural Capital

|        |                                                                                                                                                                                                     |                                                                                                                                                                                       |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFF5   | Natural capital                                                                                                                                                                                     | Assessment of the effects of flooding and flood risk management interventions on natural capital will be made possible - so we understand how natural capital is affected by flooding |
| ID     | Description                                                                                                                                                                                         |                                                                                                                                                                                       |
| SFF5.0 | We will be able to calculate an assessment of the flood risk management interventions and the effects of flooding on natural capital through a postprocessing task using outputs from the solution. |                                                                                                                                                                                       |
| SFF5.1 | <b>Aspirational:</b> The suppliers' solution will calculate an assessment of the flood risk management interventions and the effects of flooding on natural capital.                                |                                                                                                                                                                                       |

#### Success Factor G

Our data and risk information are easily accessible, available to all, trusted and used by us, our partners and customers, so that we can maximise the value of our investment in risk information and enable better FCRM decision making for all involved.

#### SFG 1 - Standard modelling approaches

|        |                                                                                                                                                                                                                                                      |                                                                                                                                               |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| SFG1   | Standard modelling approaches                                                                                                                                                                                                                        | Our information can be easily updated and is widely trusted - because it is based on widely supported industry standard modelling approaches. |
| ID     | Description                                                                                                                                                                                                                                          |                                                                                                                                               |
| SFG1.0 | (If 1.2 below is not met) At a minimum the solution will be based on new modelling approaches that (at a minimum) meet industry standard and can be used by (at a minimum) EA staff, other RMAs and WEM consultants to create new/replicate results. |                                                                                                                                               |
| SFG1.1 | The solution will meet the standards required for Environment Agency modelling in our Coastal/Estuary and Tidal/Inland model standard documents.                                                                                                     |                                                                                                                                               |
| SFG1.2 | <b>Aspirational:</b> The suppliers solution uses established industry-standard modelling approaches that are commercially or freely available in the required format and can be used by all to create new/replicate results.                         |                                                                                                                                               |

#### SFG 2 - Validation against recorded flooding

|        |                                                                                                                                                                                     |                                                                                                                                                                                                                  |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFG2   | Validation against recorded flooding                                                                                                                                                | Recorded flooding (where available, for any flood source, for England) can be used to validate the outputs from modelled scenarios - so we can be confident our information is representative of known flooding. |
| ID     | Description                                                                                                                                                                         |                                                                                                                                                                                                                  |
| SFG2.0 | The solution's outputs can be related to known/recorded flooding information to undertake comparisons. (See also NNM1.6, and 4.2.).                                                 |                                                                                                                                                                                                                  |
| SFG2.1 | <b>Aspirational:</b> The solution can directly compare its outputs with known/recorded flooding information - and so enable users to understand the relative severity of any event. |                                                                                                                                                                                                                  |
| SFG2.2 | At a minimum recorded flooding information is limited to recorded flood outlines (extents) only.                                                                                    |                                                                                                                                                                                                                  |



|        |                                                                                                                                           |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------|
| SFG2.3 | <b>Aspirational:</b> Recorded flooding information is (as a minimum): recorded flood outlines, recorded flood levels and recorded depths. |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------|

### SFG 3 - Standard data

| SFG3   | Standard data                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Our data and information is easily accessible, widely used and trusted because it is made available in industry-recognised format (eg consistent with the principles of GDS and BIM ) |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                       |
| SFG3.0 | The customer need for the data and information (identified as part of the Government Digital Service (GDS) process) is considered as part of the creation of the data and information.                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                       |
| SFG3.1 | The solution is capable both of holding “raw” outputs (as produced by the toolkit) and of holding equivalent outputs that have been exported by core Nafra2 users, post-processed externally to Nafra2 and re-imported as “final” outputs which meet quality assurance standards: This may include, for example, filtering out data below a given depth/hazard, removing small areas etc. Relevant quality assurance standards will be reviewed and agreed during the Blueprint stage) |                                                                                                                                                                                       |
| SFG3.2 | <b>Aspirational:</b> The solution is capable of automatically processing outputs while they are being produced and stored within the solution - to meet quality assurance standards etc.                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                       |
| SFG3.3 | “Final product” outputs that are stored can be accessed by core Nafra2 users: And by appropriately privileged core users, they can be formally exported to other users and consuming services of Nafra2 data products. (See SRD2)                                                                                                                                                                                                                                                      |                                                                                                                                                                                       |
| SFG3.4 | <b>Aspirational:</b> Full range of outputs, including final and 'interim' outputs (e.g. analyses that are part way to meeting EA needs, but that might usefully meet other customer needs) can be accessed and exported                                                                                                                                                                                                                                                                |                                                                                                                                                                                       |
| SFG3.5 | All outputs can be processed using existing EA tools to make them INSPIRE and OGC compliant.                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                       |
| SFG3.6 | <b>Aspirational:</b> The solution creates its outputs as INSPIRE and OGC compliant without need to reprocess.                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                       |
| SFG3.7 | All outputs can be made available in widely used proprietary formats.                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                       |
| SFG3.8 | All outputs can be made available in open formats                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                       |
| SFG3.9 | <b>Aspirational:</b> The solution will support the generation of BIM compliant outputs, if required, without post-processing                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                       |

### SFG 4 - Open Data

| SFG4   | Open data                                                                                                                                                                                                                                                        | Outputs are made available as Open Data - so our information is easily accessible, widely used and trusted                                                                                             |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |                                                                                                                                                                                                                                                                  | Engagement by the end user is considered as part of the process in order to help maximise the reach of the information, and allow it to be freely used, modified, and shared by anyone for any purpose |
| ID     | Description                                                                                                                                                                                                                                                      |                                                                                                                                                                                                        |
| SFG4.0 | Output data is produced but requires post processing in order for it to be approved using the Environment Agency’s internal standards and processes for a) Open Data Risk Assessment (ODRA) and b) Approval for Access (AfA) .<br>(See Appendix 6 and Section 7) |                                                                                                                                                                                                        |
| SFG4.1 | <b>Aspirational:</b> Output data is produced in a format that makes it compliant for approved using the Open Data Risk Assessment (ODRA) and Approval for Access (AfA) process.                                                                                  |                                                                                                                                                                                                        |
| SFG4.2 | The solution outputs data which has an associated metadata record and is discoverable on data.gov.uk in a format that achieves a 2 star on the 5 star deployment scheme.<br>( <a href="http://5stardata.info/en/">http://5stardata.info/en/</a> )                |                                                                                                                                                                                                        |

|        |                                                                                                                                                                                                                                               |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFG4.3 | <b>Aspirational:</b> The output data has a metadata record which is discoverable on data.gov.uk in a format that achieves a 3 star on the 5 star deployment scheme.<br>( <a href="http://5stardata.info/en/">http://5stardata.info/en/</a> ). |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

(SFG5 has not been included as it has been covered by other requirements.)

#### SFG 6 - Limitations

| SFG6    | Uncertainty and data limitations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Information about the purpose, intended use, suitability and limitations of flood risk data is provided - so we understand and communicate how good our data is, where it has limitations, and where we need to improve it. |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                             |
| SFG6.0  | <b>The solution will provide quantitatively defined uncertainty for flood probability, depth and EAD.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                             |
| SFG6.1  | The solution enables uncertainty calculations which quantify uncertainty in input data and model methods, separately and in combination.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                             |
| SFG6.2  | At a minimum the solution will calculate uncertainty at the end of the model process and make it available as a data output so that we can identify where the greatest uncertainties are (spatially), and what is causing them (to target method / data improvements). Please consider the approach described in ' <a href="http://evidence.environmentagency.gov.uk/FCERM/en/Default/FCRM/Project.aspx?ProjectID=ACADE47A-D154-4F97A44C-8E6EED14F499&amp;PageId=a0fe6dfc-506a-452c-9bff-a7ec06b4e6b0">Accounting for residual uncertainty- updating the freeboard guide</a> '<br>( <a href="http://evidence.environmentagency.gov.uk/FCERM/en/Default/FCRM/Project.aspx?ProjectID=ACADE47A-D154-4F97A44C-8E6EED14F499&amp;PageId=a0fe6dfc-506a-452c-9bff-a7ec06b4e6b0">http://evidence.environmentagency.gov.uk/FCERM/en/Default/FCRM/Project.aspx?ProjectID=ACADE47A-D154-4F97A44C-8E6EED14F499&amp;PageId=a0fe6dfc-506a-452c-9bff-a7ec06b4e6b0</a> ). |                                                                                                                                                                                                                             |
| SFG6.3  | <b>Aspirational:</b> The solution will calculate uncertainty at key processing stages in the model and make them available as a data output so that uncertainty can be tracked throughout the model process, and identify where the greatest uncertainties are (within the model process and spatially), and what is causing them (to target method / data improvements).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                             |
| SFG6.4  | The solution will provide, at a minimum, uncertainty information in the form of upper, lower and best estimate for flood depth, at the same resolution they are calculated (e.g. 5m grid). Uncertainty information will be produced by reviewing the existing local model stock if they are used and likely to be:<br>a) = +150mm, lower = -150mm;<br>b) = +250mm, lower = -250mm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                             |
| SFG6.5  | The solution will provide uncertainty information in the form of upper, lower and best estimate for probability of flooding and EAD results at the same resolution they are calculated (e.g. 5m grid).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                             |
|         | The form of the Uncertainty information will be decided during blueprint stage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                             |
| SFG6.6  | The solution will be able to calculate the proportion of our EAD has been derived from depth information that is within, or outside the target uncertainty bands referenced in SFG6.4.<br><br>This means EAD uncertainty analysis can be linked to probability and depth uncertainty.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                             |
| SFG6.7  | The solution will be able to attribute results to each property point.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                             |
| SFG6.8  | The solution will update uncertainty estimates each time new input data is added or model methods are changed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                             |
| SFG6.9  | The solution will enable that uncertainty calculation is flexible - to measure improvements in model methods and input data over time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                             |
| SFG6.10 | The solution will enable that uncertainty information will be used to assign suitability information to any location - to communicate intended uses of the data and where data warnings need to be applied (e.g. "suitable for catchment scale risk assessment, not property level assessment").                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                             |

|             |                                                                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFG6.1<br>1 | The solution will enable limitations of the model methods and data to be recorded and can be made available in the publically open flood risk products.  |
| SFG6.1<br>2 | The solution will generate national summaries of quantified uncertainty (upper and lower estimate, plus a best estimate) for probability, depth and EAD. |

#### SFG 7 - Efficient local updates

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                    |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFG7</b>   | <b>Efficient local updates</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>The process of incorporating changes in input data is quick and efficient so that NaFRA2 outputs remain up to date and we use and share the best available information for decision making.</b> |
| <b>ID</b>     | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                    |
| <b>SFG7.0</b> | <p>The solution will enable new or updated input data (e.g. asset data, input water levels, modelled outputs etc.), to be uploaded/accessed, incorporated and <u>used</u> (see below) within 3 months or less from the time the necessary inputs become available at a sufficient quality for inclusion in the Nafra2 solution. (Our current benchmark is 4 months).</p> <p><u>“Used”</u> in the above means that</p> <ul style="list-style-type: none"> <li>a) user queries and bespoke outputs from NaFra2 will be able to use new/changed input data very soon after it is first declared to be available to Nafra2</li> <li>b) all “standard outputs” will reflect the best quality input data as soon as possible after that, (within the improved timescales above)</li> </ul> <p>In your response, please explain how well your solution will support this outcome: Refer to System Function Requirements (section 4.4) , in general, including, for example, SRA3-6, SRB3, SRB4, SRC3, SRC4, SRD1, SRD2; and also SFG3</p> |                                                                                                                                                                                                    |
| <b>SFG7.1</b> | <b>Aspirational:</b> The solution will enable new or updated input data to be incorporated within 1 month of the necessary inputs becoming available for inclusion.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                    |

#### SFG 8 - Efficient 3rd party updates

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                     |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SFG8</b>   | <b>Efficient 3rd party updates</b>                                                                                                                                                                                                                                                                                                                                                                                                        | <b>The process for incorporating / update of 3rd party local modelling is efficient easy and quick (time) - so we use our resources effectively to do this - and so our colleagues, customers and partners have the most up to date information</b> |
| <b>ID</b>     | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                     |
| <b>SFG8.0</b> | <p>Modelling outputs from 3rd parties can be incorporated within 3 months of the necessary inputs becoming available for inclusion (e.g. input water levels, modelled outlines).</p> <p>In your response, please explain how well your solution will support this outcome: Refer to SRB4 and System Function Requirements (section 4.4) in general, including, for example, SRA3-6, SRB3, SRB4, SRC3, SRC4, SRD1, SRD2; and also SFG3</p> |                                                                                                                                                                                                                                                     |
| <b>SFG8.1</b> | <b>Aspirational:</b> Modelling outputs from 3rd parties can be incorporated within 1 month of the necessary inputs becoming available for inclusion (e.g. input water levels, modelled outlines).                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                     |

### 3.4 New National modelling (NNM) - Outline Specification

## NNM1 - Overview/high level requirements

The supplier is to use the latest improvements in data, knowledge, modelling software, and technology to produce the best national scale flood mapping possible, with the resources available. We are looking for an option offering the best balance between model accuracy and model efficiency. The solution will provide improved robust, credible, transparent national flood modelling for the whole of England (including Isles of Scilly).

This national modelling will be used to fill those gaps which are not covered by local modelling (Around 35% of modelled floodplain - coastal and inland watercourses - in England are currently not covered by local detailed modelling). The national modelling will also be able to be used where local modelling data is unsuitable or where a scenario is not covered by local modelling (Some scenarios may not be covered by existing local modelling anywhere, e.g. only 30% of receptors are covered by local detailed defended modelling).

Although one use of this national modelling will be to provide infill in those areas not covered by local modelling we anticipate that, in some cases, the quality of the new national modelling will exceed that of some of our local, detailed modelling, e.g. where a model is old, or no longer represents the floodplain features. As such the national modelling should not be overly generalised or too coarse to provide a robust assessment of flood risk and aid decision making.

| NNM 1a | Overview / High level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | This section states overall high level requirements for the new national model |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| ID     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                |
| 1.0    | <b>Basic scope: The supplier will produce national scale flood modelling for all England (including the Isles of Scilly) for the following sources:</b><br><br><b>1. Rivers</b><br><br><b>2. Sea</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                |
|        | <b>3. Surface Water.</b><br><br><b>The solution will include:</b><br><br><b>EITHER a) the construction of a new national model for rivers and sea and b) a national model for surface water (which may be based on improvements to the existing Risk of flooding from Surface Water (RoFSW), or be some alternative method proposed by the supplier</b><br><br><b>OR an integrated (multiple sources) model covering these sources.</b><br><br><b><i>The supplier must state below which approach is proposed. The supplier must describe below the pros and cons of chosen route (or both routes) and (if both are feasible) should provide a quote for each.</i></b> |                                                                                |
| 1.1    | The supplier will ensure the national modelling can identify (or provide a means of identifying) the relative proportion or % contribution of each source of flooding (rivers, surface water, sea), and can assess the risk of flooding from each individual source (meeting the requirements of SFA3).                                                                                                                                                                                                                                                                                                                                                                |                                                                                |

|     |                                                                                                                                                                                                                                                                                                                                                 |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.2 | <p>The national model will provide in-channel and overland/floodplain results that are fit for local operational risk management decisions, including understanding flood impacts at the level of individual receptors using the NaFRA2 assessment (see SFC1).</p> <p>Appropriate tolerances will be agreed during blueprint stage (BP2.1)</p>  |
| 1.3 | The supplier will use the national model to produce outputs covering a full range of hydrological estimates for flows and open coast events from 50% to 0.01% chance of occurring in any year (see SFE2).                                                                                                                                       |
| 1.4 | The national modelling will produce peak flood depth, level, duration, frequency, spatial extent, velocity, flow (rivers only), direction (see SFD1) and volume.                                                                                                                                                                                |
| 1.5 | The national modelling will produce 'hazard ratings', giving an indication of the maximum flood risk to people for each modelled cell, based on the methods outlined in Defra/Environment Agency (2006) "Flood Risks to People Methodology", FD2320/FD2321, using coincident depth and speed values to give the maximum value of hazard rating. |

| NNM 1b | Calibration and Validation                                                                                                                                                                                                                       | This section states overall High level requirements for the calibration and validation of the new national model |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| ID     | Description                                                                                                                                                                                                                                      |                                                                                                                  |
| 1.6    | The national modelling will be validated against recorded flood information - levels, flows and flood outlines for an optimal number (agreed in the development phase) of locations specified by the client.                                     |                                                                                                                  |
| 1.7    | The national modelling will be adjusted within a plausible range of modelling parameters to meet levels, flows, and flood outlines from those local detailed models which have a quality flag of x or better (where x is selected in blueprint). |                                                                                                                  |
| 1.8    | The supplier will quantify and offer possible explanations for all anomalies where there is an unreasonable discrepancy between national modelling and detailed local models. (Tolerances to be agreed during development phase).                |                                                                                                                  |

| NNM 1c | Extended scope                                                                                                                                                                                                                                            | This section states overall High level requirements for the new national model required |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1.9    | <p><b>Aspirational:</b> The national modelling will also provide flood risk information for the following other flood sources (as detailed in CSF SFA2.7)</p> <ul style="list-style-type: none"> <li>Groundwater, impounded water, piped water</li> </ul> |                                                                                         |

## NNM 2 - Data and Methods

| NNM 2a | Data | This section states data requirements for the new national model |
|--------|------|------------------------------------------------------------------|
|--------|------|------------------------------------------------------------------|

| ID  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.0 | <p>The national model will (where deemed appropriate for the new modelling approach set out by the tenderer) draw on combined best practice and datasets from:</p> <ol style="list-style-type: none"> <li>1. current methods as detailed in Appendix 5 &amp; 6 (RoFRS, RoFSW and coastal methods developed as part of State of the Nation NaFRA, including data flow maps)</li> <li>2. the blueprint stage of this project</li> <li>3. International best practice.</li> </ol> |
| 2.1 | The supplier will use the latest versions of all applicable datasets.                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2.2 | The national model will, as far as is practicable, use inputs from local detailed modelling as inputs into the national model (for example, detailed local hydrology; coastal overtopping rates; drainage capacities).                                                                                                                                                                                                                                                         |

| NNM 2b | Methods                                                                                                                                                    | This section states the method requirements for the new national model |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| ID     | Description                                                                                                                                                |                                                                        |
| 2.3    | The national model will incorporate the most up to date hydrological data available and make use of the most up to date hydrological analysis and methods. |                                                                        |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.3.1 | The consultant shall develop a method during the blueprint stage (BP2.3.2), using best practice, to produce peak flows and suitable hydrographs at regularly-spaced nodes for all watercourses.                                                                                                                                                                                                                     |
| 2.3.2 | <p>The supplier will use the best local estimates of QMED from our extensive gauge network to inform the peak flow estimates.</p> <p>NB: We have a successful method for improved peak flow derivation developed in the EA's Modelling &amp; Forecasting, Exeter Centre that can be used as a basis for this task. The supplier should consider this approach and only take a different one if theirs is better</p> |
| 2.3.3 | Confidence and Uncertainty in peak flow estimates will be calculated at each node point location                                                                                                                                                                                                                                                                                                                    |
| 2.3.4 | <b>Aspirational:</b> The supplier will further improve peak design flow data and hydrograph quality building on the methods above and using further local data including, but not limited to, locally-derived rating curves and recorded flood information, to give a plausible and coherent hydrological assessment.                                                                                               |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.4 | <p>The national modelling will reflect spatial variation in:</p> <ul style="list-style-type: none"> <li>• channel capacity</li> <li>• roughness</li> <li>• storm durations</li> <li>• drainage rates (surface water modelling)</li> <li>• infiltration rates (surface water modelling)</li> <li>• hyetograph calculation method (surface water modelling)</li> </ul>                                                                                                               |
| 2.5 | <p>The supplier will improve currency and confidence compared with approaches currently used in representing:</p> <ol style="list-style-type: none"> <li>1. antecedent conditions</li> <li>2. joint probability</li> <li>3. flood management asset (defence) geometry</li> <li>4. wave overtopping</li> <li>5. beach profiles / state</li> <li>6. confidence rating classification</li> </ol> <p>Methods to be further developed, collaboratively, during the Blueprint stage.</p> |
| 2.6 | <p><b>The national model(s) will be run to cover the following scenarios:</b></p> <ol style="list-style-type: none"> <li>1. Without assets (undefended)</li> <li>2. With assets – overtopping</li> <li>3. With assets – breach/failure (inc current condition)</li> <li>4. With assets – breach/failure (inc target condition)</li> <li>5. residual risk – combines all the above</li> <li>6. climate change</li> </ol>                                                            |
| 2.7 | <p>The national modelling will include metadata on a cell-by-cell basis describing the input datasets used at that location. Metadata should also include any other details to allow full traceability of the results.</p>                                                                                                                                                                                                                                                         |

### NNM 3 - Design and processing

The national model will address multiple sources of flooding. The national model may be delivered either as two discrete national models for separate sources (rivers and sea, surface water), or as one integrated (multiple sources) model.

We expect the national model to be updated annually at a minimum; additional bespoke scenarios / one-off updates may be required occasionally for part or all of England.

| NNM 3 | Nat model Design | This section states design and processing requirements for the new national model required |
|-------|------------------|--------------------------------------------------------------------------------------------|
| ID    | Description      |                                                                                            |



|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.0 | <p><b>Software :</b> The national modelling will be developed using supported industry standard modelling approaches and software that will be open source or commercially available for use by the Environment Agency in line with the requirement set out in CSF SFG1.</p> <p><i>The supplier must state below their chosen modelling software(s). The supplier must also state the expected run-time for the model(s) for all England (including the Isles of Scilly) and the evidence on which this is based (i.e. previous studies)).</i></p> |
| 3.1 | The national modelling must be developed using software that fully solves shallow water equations, and is benchmarked in accordance with Environment Agency project SC120002 ('Benchmarking of 2D Hydraulic Modelling Packages' – in Appendix 6) as suitable for this type of application.                                                                                                                                                                                                                                                         |
| 3.2 | The national modelling must be developed using the latest R&D on benchmarking coastal modelling.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3.3 | The supplier will ensure the national modelling simulation period captures the peak value in each of flood extent, depth, speed, and hazard rating.                                                                                                                                                                                                                                                                                                                                                                                                |
| 3.4 | <p>The national model will assess confidence and uncertainty in a way comparable to existing RoFRS/NaFRA and RoFSW approaches (see Appendix 5), and incorporating the uncertainty in hydrology derived in NNM2.3.3, in order to allow the operation of NAFRA2 logical rules.</p> <p><i>NB. This method will be further developed in the Blueprint stage following contract award, agreed with the Environment Agency, and implemented as part of the project.</i></p>                                                                              |
| 3.5 | The supplier will process the model output data to a defined standard for it to be uploaded, and will upload the outputs to the NaFRA2 solution, to be incorporated into the simulation library and used as a part of the NaFRA2 assessments. The standards for the resulting processed national data are to be agreed with the Environment Agency as part of the blueprint stage (for the purposes of this tender the supplier should assume they are to apply the same approach as used currently for RoFSW (see Appendix 5))                    |
| 3.6 | The solution should be developed flexibly enough to allow users to upload (or update) a number of input datasets at the same time.                                                                                                                                                                                                                                                                                                                                                                                                                 |

#### NNM 4 - Deliverables

| NNM 4 | Nat model deliverables                                                                                                                                | This section states requirements for deliverables for the new national model required |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| ID    | Description                                                                                                                                           |                                                                                       |
| 4.0   | <b>Basic:</b> The supplier will provide processed model outputs at peak values and upload them into the Simulation Library                            |                                                                                       |
| 4.1   | <b>Aspirational:</b> The supplier will provide processed model outputs at intervals (ideally 15 minutes) and upload them into the Simulation Library. |                                                                                       |



|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.2 | <p>The supplier will provide the following early deliverables by <b>December 2020</b>:</p> <ul style="list-style-type: none"> <li>- National modelling outputs – surface water – in a format (to be agreed) for access (viewable for direct comparison with existing data) by LLFAs so they can review and provide feedback.</li> <li>- National modelling outputs – all modelled sources – flood extents and depths for: <ul style="list-style-type: none"> <li>o A range of at least 7 flow estimate scenarios (to be defined) Then for each flow estimate scenario, considering: <ul style="list-style-type: none"> <li>o Without assets (undefended) o With assets – overtopping o With assets – breach/failure (inc current condition) o With assets – breach/failure (inc target condition) o residual risk – combines all the above</li> </ul> </li> </ul> </li> </ul> <p>These will be used to input into LTIS. More precise requirements will be confirmed during the blueprint stage and nearer the time.</p> <ul style="list-style-type: none"> <li>- Validation report (describing work undertaken to validate the modelling and mapping)</li> </ul> |
| 4.3 | <p>In addition to 4.0 and 4.2, the supplier will provide the following deliverables to allow us to own, run, produce, and process the outputs by the project end date:</p> <ol style="list-style-type: none"> <li>1. The Model.</li> <li>2. Model input data &amp; all associated data processing tools (including spreadsheets, databases etc.</li> <li>3. Unprocessed model output data</li> <li>4. Reporting describing the work undertaken, explaining modelling decisions, and detailing methods, values, approaches and post processing steps applied to the model or its outputs.</li> <li>5. Additional training to run the model or process its outputs.</li> <li>6. Support post project to operate and run the model.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                      |

**GAP FOR NNM 5 REDACTED**

### 3.5 System Functional Requirements (SR)

This section covers requirements for overall System Functional Requirement, which are not explicitly stated in the Business Functional Requirements and New National Model Requirements sections (preceding). System “Non-Functional” Requirements are in a separate section following.

These System Functional Requirements are divided into five Subsections:

- A Inputs
- B Storage
- C Processing
- D Outputs
- E User numbers and roles

## **System Requirements A - Inputs**

Initially in the Blueprint/PoC stage(s), the supplier will manage/deliver the ingestion of a variety of representative “sample data” into a Blueprint PoC solution environment.

Subsequently, during the system development/acceptance-test/ops-commissioning stages, the supplier will manage/deliver the ingestion of a progressive full “take-on” of large volumes of our operational data (as will be current at that time) to a solution repository in a fuller scale “pre-production” environment.

The supplier will also manage/deliver updates to any relevant parts of any data, as previously taken-on, where any updates are needed during the elapsed period of the system-development/acceptance-test/ops-commissioning stages.

Once fully operational, the solution will enable Users with “Upload privileges” to maintain (to add to or replace) the existing operational data, of various types, stored in the Solution.

For most types of data, this will be achievable using the generic upload functionality/facilities to be provided by the Solution. (See SRA 3 - 6).

For some data types (e.g. model output data; asset-related data) there are some more specific upload requirements.

Alternatively, for some data types it may be possible that a supplier will develop a solution architecture which will operate by sharing access to some data “on demand” by NaFRA2 from where the data is already stored/exposed - without needing to upload and store within the NaFRA2 solution.

NB. The target and aspirational service levels for loading data (stated SFG7 and SFG8) are for an overall business process for preparing and loading data that includes some components and process not within the scope of the suppliers solution: But, within the overall process, the supplier must ensure the solution will provide effective operational components and functionality, to support the data preparation and upload steps, as required following:

### **Overall Input requirements:**

In summary the following Inputs subsection covers the following functionality overall

SRA1) Initial Blueprint/PoC environment and “sample” data take-on:

- The supplier will provide an initial environment for Blueprint/Proof of Concept work ;
- The supplier will take on representative “sample data” provided by the Agency to the Blueprint/Proof of Concept solution / environment. The scope of this data will increase as work progresses in these stages

SRA2) Subsequent operational data take-ons to a “pre-production” take-on environment:

- During the period of the solution’s development (eg: subsequent to PoC, but before the solution become operational), the supplier will provide an appropriate full scale “pre-production” data-takeon environment:
- The supplier will take-on to this environment (and periodically refresh/maintain) all the operational data that will subsequently be required to be held by the solution when it will first become fully operational
- The supplier will also derive and store in the database a set (to be agreed in Blueprint stage) of standard outputs that can be a) acceptance-tested as derived from this input data and b) handed over as part of the initially loaded operational data

SRA3) The full operational solution will, in general:

- Enable privileged users to upload a variety of required data types (so adding to or replacing existing data in the solutions repository)
  - from any location where the solution has adequate access provision;
  - where there is adequate communications capacity, sufficient to support the specific upload
  - and where the data to be uploaded has adequate prevalidated quality to be uploadable

Within this general context, but more specifically to some data types, the full operational solution will:

- Enable easy upload of model output data - either directly from the MapEdit tool, or from storage in the corporate MapEdit data repository
  - (... Or, aspirationally, the solution may operate by accessing and sharing relevant model output data that has been stored in the corporate MapEdit repository, without this needing any uploading or any data duplication)
- Enable easy upload of various data types data from the Agency’s Data Sharing Platform (DSP) or its replacement.
  - (... Or, aspirationally, the solution may also operate by accessing and sharing relevant data types that are exposed on the DSP, without upload)

- The solution will be able to upload batched updates of relevant asset-related data from the Agency's AIMS system
  - ( ... Or, aspirationally, the solution may receive automated batch updates of relevant asset-related data from the Agency's AIMS system)

SRA4) - SRA4 has been deleted- the solution WON'T

- Provide any additional specialist data edit and transform tools
- Support partial uploads (i.e. we must fully replace a previously uploaded version)
  - Except for National Model data
- Enable editing of data within the solution after it is uploaded

SRA5) The solution will:

- Provide a straightforward functionality for data-format check and upload for all data types needed
- Provide a user interface and process for users with upload-privileges to invoke this

SRA6) The solution will:

- Upload data sets (and do any restructuring of data where required by upload script)
- Upload / hold incompatible data without "incorporating" it.
- Optionally provide a "backdoor" mechanism for upload of relatively static data, e.g. by the System Admin role

**SRA 1 - Initial Blueprint/PoC environment + sample data take-on**

|             |                                 |                                                                                                                                                                                                                                                                                                                                           |
|-------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SRA1</b> | <b>BP/PoC env + sample data</b> | <b>Initial Blueprint/POC/Pilot environment and initial Data upload</b> <ul style="list-style-type: none"> <li>• The supplier will provide an initial environment for Blueprint/Proof of Concept work;</li> <li>• The supplier will take on "sample data" provided by the Agency to the for Blueprint/Proof of Concept solution</li> </ul> |
| <b>ID</b>   |                                 |                                                                                                                                                                                                                                                                                                                                           |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.0 | <p><b>The supplier will provide an initial Blueprint/POC environment.</b></p> <p><i>NB This may need to persist for the duration of the development stages of project (e.g. up to 3 years).</i></p> <p><i>It will not be the development environment for the full operational solution + full take-on data; nor the subsequent controlled production environment for the fully-accepted operational solution</i></p>                                                                                                                         |
| 1.1 | The supplier will take on “representative sample data” provided by the Agency to the developing Blueprint/Proof of Concept solution in this environment                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.2 | <p>The Blueprint/POC environment will</p> <ol style="list-style-type: none"> <li>1. Enable restricted access (tba) by EA users for collaborative design and development of the components of solution</li> <li>2. Enable periodic review of components under development by a wider group of EA users (Maximum concurrent EA review users estimated = 50)</li> <li>3. Provide a temporary external viewer to enable reviewers in external partner organisations (e.g. LLFAs) to review components being demonstrated (see POC1.9)</li> </ol> |
| 1.3 | The developing Blueprint and PoC solutions, using sample data and in the BP/PoC environment will be adequate to enable the supplier to fulfil the objectives of the Blueprint and POC stages (see section 5.2)                                                                                                                                                                                                                                                                                                                               |

#### **SRA 2 - Operational data take-ons to a “pre-production” take-on environment**

|             |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SRA2</b> | <b>Pre-prod envt + ops data takeons</b> | <p>“Pre-production” operational data take-on environment and related full operational data take-ons</p> <ul style="list-style-type: none"> <li>• During the period of the solution’s development, (eg subsequent to PoC, but before the solution become operational, and which may include an optional Prototyping stage), the supplier will provide an appropriate full scale “pre-production” data-take-on / development environment:</li> <li>• The supplier will progressively take-on data to this environment (and periodically refresh/maintain) all the operational data that will then initially be required to be held by the solution when it will first become fully operational</li> <li>• The supplier will also derive and store in the database a set (to be agreed in Blueprint stage) of standard outputs that can be a) acceptance-tested as derived from this</li> </ul> |
|             |                                         | input data and b) handed over as part of the initially loaded operational                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|             |                                         | <i>NB. The following clauses relate to the period over which the full solution is being progressively developed and tested, prior to its operational acceptance, (and in parallel to whatever Development, and Test environments the supplier uses (see NFR 7b)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2.0         |                                         | <p><b>The Supplier will provide, , a full-scale “Data take-on / Pre-production environment” to which managed and secured data take-on(s) of operational data can be progressively carried out</b></p> <p><b>This environment will be forward-compatible with the final test, acceptance and full production environments that will also be provided by the supplier.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| 2.1 | <p>The supplier will undertake the progressive take-on of operational data, (provided by the EA or from third parties acting for the EA), to the solution's repository within the Data Takeon environment</p> <p>Overall take-on data volumes are estimated in SRB1,(but see Nb.2 below).</p> <p>This operational production data will include diverse data types (see Section 6)</p>                                                                                                                   |
| 2.2 | <p>The supplier will enable any external changes to previously uploaded data, to be applied - by the supplier re-uploading changed data sets up to three times a year (*) - during the period of solution development, before operational implementation of normal uploading/updating processes (as in SRA3)</p> <p>(* The supplier should provide for this in cost estimating)</p>                                                                                                                     |
|     | <p><i><b>NB.2</b> Some types of data may be taken-on from (or have shared access via) an Agency cloud-based repository solution (the replacement Data Sharing Platform) if it has been implemented at that time and hosts relevant data.</i></p> <p><i>However, it is anticipated the majority (or all) of take-on data will require transfer via other comms connections or physical media.</i></p>                                                                                                    |
|     | <p><i><b>NB.3</b> The supplier's data take-on of operational data will include a very large volume of local model outputs data: UNLESS, the supplier were to propose a full production solution architecture, which (if agreed and adopted) could enable the solution to directly share access to local model output data held in our corporate MapEdit repository, or replacement, acting as our master repository for model output data and metadata (see, more regarding this in next table)</i></p> |
| 2.3 | <p>The supplier will also derive and store in the database a set (to be agreed in Blueprint stage) of Standard Outputs that can be a) acceptance-tested as derived from this input data (see BP4.8.1) and b) handed over as part of the initially loaded operational solution</p>                                                                                                                                                                                                                       |

### **SRA 3 - Data Upload (or data sharing) in the operational solution**

|             |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SRA3</b> | <b>Ops data maintenance</b> | <p><b>We can maintain (add to or replace) data used in the operational solution</b></p> <p><b>The full operational solution will, in general:</b></p> <ul style="list-style-type: none"> <li>• <b>Enable privileged users to upload a variety of required data types (so adding to or replacing existing data in the solutions repository)</b></li> <li>• <b>from any location where the solution has adequate access provision;</b> <ul style="list-style-type: none"> <li>○ <b>where there is adequate communications capacity, sufficient to support the specific upload</b></li> <li>○ <b>and where the data to be uploaded has adequate pre-validated quality to be uploadable</b></li> </ul> </li> <li>• <b>Within this general context, but more specifically to some data types, the full operational solution will also</b></li> </ul> |
|-------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|     | <ul style="list-style-type: none"> <li>• Enable easy upload of model output data - either directly from the MapEdit tool, or from storage in the corporate MapEdit data repository <ul style="list-style-type: none"> <li>○ (Or, aspirationally, the solution may operate by accessing and sharing relevant model output data that has been stored in the corporate MapEdit repository, without this needing any uploading or any data duplication)</li> </ul> </li> <li>• Enable easy upload of various data types data from the Agency's Data Sharing Platform (DSP) or its replacement. <ul style="list-style-type: none"> <li>○ (Or, aspirationally, the solution may also operate by accessing and sharing relevant data types that are exposed on the DSP, without upload)</li> </ul> </li> <li>• The solution will be able to upload batched updates of relevant asset-related data from the Agency's AIMS system <ul style="list-style-type: none"> <li>○ (Or, aspirationally, the solution may receive automated batch updates of relevant asset-related data from the Agency's AIMS system)</li> </ul> </li> </ul> |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 3.0 | <p><b>General upload capability</b><br/> The full operational solution, in its full production environment, will have the capability to potentially upload data from any location that the solution can access, (including locations external to the Agency) assuming there is adequate access permissions and an adequate communications connection capacity sufficient to support the specific upload transaction. :<br/> <i>(See SRA2 for more on this basic upload process)</i><br/> <b>Additionally some more specific upload capabilities may be possible –See 3.4 onwards in this table</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3.1 | The solution should be developed flexibly enough to allow a user to upload a number of input datasets at the same time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3.2 | The solution will enable partial upload/replace of aspects of the National Model output data: e.g. for partial geographic scope; for some scenarios only.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|     | <i>NB. Apart from the above, in general it is NOT currently envisaged that NaFRA2 users will change individual data items or parts of datasets <u>after</u> they have been stored in the solution, except by re-uploading a revised version of the complete data set to supersede a previous version</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3.3 | <p><b>Aspirational:</b> The full operational solution will be able to potentially read without uploading and saving specified data from any location that the solution can access, (including locations external to the Agency), provided there is adequate access permission and an adequate communications connection capacity sufficient to support the specific data read/share transaction.<br/> <i>Some more specific data share capabilities may be possible – See 3.4 onwards in this table</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|     | <p><b>Local and National Model output data – as specific inputs to the solution</b><br/> <u>NB. - current process: (These outline notes are provided as context)</u><br/> Currently our source models are held either in local storage around the Agency or externally.<br/> Flood Models are run either by internal staff (within an Area or in a central team) or by external contractors.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <p>Flood Models that are run by agency staff may be run on the Central Modelling Platform (CMP) ...</p> <p>Raw flood model outputs are processed into outlines that meet our data standards Flood Model outputs are delivered as a composite Mapedit geodatabase comprising the packaged outputs from all (in scope) runs of the model.</p> <p>A piece of work is currently being currently underway to standardise their management wrt the Mapedit environment: See next Note row in this table After delivery, EA staff Qulity Assure the model output data.</p> <p>Good Quality Vector data is then uploaded/stored into the corporate MapEdit repository (This currently hosted by CapGemini inside the EA Estate) Some format validation is performed in upload (A user may need to re-upload if upload fails).</p> <p>This corporate MapEdit environment has a standard directory structure down to a certain level (Area /Team)</p> <p>File organisation/naming below that level is not standardised.</p> <p>Folder/File naming in the MapEdit repository is informative of the source/purpose of the model run producing the data</p> <p>Related metadata may currently remain stored locally.</p> <p>Local model output data stored in Mapedit has business uses which are NOT within the scope of the proposed for NaFRA2 functionality/outputs - E.g.</p> <ul style="list-style-type: none"> <li>i) Derive the Flood Zones</li> <li>ii) Data requests to customers for use in Flood Risk Assessments</li> <li>iii) Flood Slider Tool (for incident management</li> <li>iv) Help determine Flood Risk Permits</li> </ul> |
|     | <p><u>An additional note on MapEdit and ongoing enhancements</u></p> <p>The MapEdit system is a national tool that hosts Flood and Coastal Risk Management Mapping and Modelling data and enables data validation, consistency and reporting of completeness and quality. The current system (phase 3) went fully live in March 2016, replacing the National Flood and Coastal Defence Database (NFCDD). MapEdit has been developed "in-house" and is designed and planned to be scalable to allow the hosting of further data and associated functionality. The latest enhancements (phase 4) are currently being described in a business case for change, which is substantially driven by NaFRA2.</p> <p>As a precursor to phase 4, we have commissioned a supplier to build pilot cloud based data stack capable of storing and sharing Vector and Raster data as a Digital Service. We are loading into that data stack some Vector Data (output data from flood models, usually stored in MapEdit) Raster data (Velocity, Depth, Hazard etc) and LiDAR data for all of England.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|     | <p>The following requirements rows are in the context of the two table notes rows above ...</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3.4 | <p>The full operational solution will enable easy uploading of all or partial flood model output data from MapEdit (Vector data) into the NaFRa2 solution.</p> <p>If possible this may be invoked directly by a MapEdit user who is viewing data in the MapEdit tool</p> <p>Also the solution will enable upload of all or partial flood model output data from a grid (raster) and/or multi-dimensional file format.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|     | <p>NB. There may be a number of process options in the above , to be resolved with the supplier in Blueprint/PoC stage:</p> <p>As examples the following options have been identified.</p> <p>(These may not be exhaustive)</p> <p>A user of the MapEdit tool, who is viewing and performing basic validations in the MapEdit environment may set an indicator to invoke possible option such as:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



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|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | <ul style="list-style-type: none"> <li>to upload /save data both to the corporate MapEdit repository and the NaFRA2 repository in parallel</li> <li>to upload / save to Nafra2 only</li> <li>to upload / save to the corporate MapEdit repository only (as is done now)... And additionally then, a script in the MapEdit environment may identify and invoke a further sequential upload of the data from the corporate MapEdit repository to the NaFRA2 Solution repository</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 3.5.1 | The full operational solution will be also be able to achieve easy uploading of data previously saved in the corporate MapEdit data repository                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3.5.2 | Alternatively, <b>aspirationally</b> , dependant on an overall solution architecture to be determined in the Blueprint/PoC stage, the solution may be designed to operate by accessing (subject to access permissions) and consuming “on demand” relevant model output data that has been stored in the corporate MapEdit repository - without any need to uploading and store in the NaFRA2 solution ; and thus no data duplications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|       | <p><i>NB. The supplier may propose a full production solution architecture as above - which if adopted, would enable the solution to directly share access (subject to permissions) to local model output data held in an Agency repository (e.g. the corporate MapEdit repository). If this is proposed it must be agreed to be feasible / optimal with respect to several other factors such as:</i></p> <ul style="list-style-type: none"> <li><i>business needs for adequate effective local data (and metadata) management and control ; and for overall corporate data (and metadata) management and control</i></li> <li><i>adequate solution performance with respect to comms capacity and processing times</i></li> <li><i>specific structuring requirements of the NaFRA2 repository to meet functional requirements</i></li> <li><i>data access restrictions, firewalls etc.</i></li> <li><i>total data storage volumes and storage costs</i></li> <li><i>minimising data duplication</i></li> </ul>                                                                                                                                                                                                                                                                                                 |
| 3.5.3 | <p>During the Blueprint stage the supplier will include, in their proposed Solution Architecture (see BP4.5 and BP4.6) an evaluation of the feasibility of any option that NaFRA2 solution might directly consume, subject to permissions, data held in the MapEdit environment, compared to other options - for example by manually invoked uploads or system interfacing of duplicated data from MapEdit and storing it in the NaFRA2 repository:</p> <p>Under any of these feasibility options, the supplier’s solution architecture in Blueprint will detail how the solution will consume or receive data from the MapEdit system/environment and under what arrangement with MapEdit (i.e. what is needed from MapEdit to “push” (or notify) the data and how NaFRA2 “calls” (or finds) the service/data to consume, interface or upload).</p> <p>The feasibility analysis of options should include evaluation both of technical feasibility (including e.g. operational performance aspects, as in the note above) and of relative costs, benefits and risks between options - across relevant business processes and supplier development and support.</p> <p>The supplier will be granted access to the MapEdit system and its pilot extension to support their evaluation in the Blueprint stage.</p> |
|       | <p><i>NB. <u>Option Considered but Rejected (so far):</u> An operational architecture option where the NaFRA2 Solution repository would entirely replace the corporate MapEdit repository as the corporate repository for quality model output data This is rejected (so far) because</i></p> <ul style="list-style-type: none"> <li><i>local model output data has other business uses outside of NaFRA2 functionality;</i></li> <li><i>the NaFRA2 SimLib will likely be specifically designed to hold and structure data to enable the NaFRA2 solution functionality and performance – it is not currently expected to be a generalised repository</i></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | <p><b>NB. The Data Sharing Platform (replacement) as a potential source of some data, other than model outputs, for NaFRA2:</b></p> <p><i>The Agency is currently progressing a replacement for its existing DSP solution by a cloudbased solution. Subject to its progress, some data that is required for NaFRA2 <u>may</u> be made available on the DSP</i></p> <p><i>The following options may be needed:</i></p>                                                                                                                                                                                                                                                 |
| 3.6  | The NaFRA2 solution will be able to easily upload data from the DSP replacement solution and store it, (duplicating data held on DSP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 3.7  | Alternative: The NaFRA2 solution will be able to directly access and share “on demand” some data held in the DSP . It will not need to store duplicates of that data within the NaFRA2 solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|      | <p><b>NB. The demand for, and provision of, changes to asset-related data held in the corporate AIMS (Atrium) system</b></p> <ol style="list-style-type: none"> <li><i>1. The NaFRA2 solution must receive timely updates regarding the condition of relevant Assets, principally maintained and held in the AIMS solution. These Asset conditions will be used with Fragility curves held in NaFRA2 to calculate asset performance in assessing flood risk.</i></li> <li><i>2. The NaFRA2 solution should receive timely updates of changed asset configurations or new assets as maintained in the AIMS solution</i></li> </ol>                                     |
| 3.8  | Minimum: The solution will be able to upload batched updates of relevant asset-related data from the Agency’s AIMS system (This will be manually invoked when notification is received from AIMS that relevant data has been changed. Checking for update notifications should be frequent - e.g. weekly)                                                                                                                                                                                                                                                                                                                                                             |
| 3.9  | <b>Aspirational:</b> The solution will be able to receive automated batch updates of relevant asset-related data from the Agency’s AIMS system) on a weekly or daily basis (i.e. the NaFRA2 solution will be able to accept data “pushed” to it via an automated or semi-automated data transfer mechanism - a controlled “batch interface”)                                                                                                                                                                                                                                                                                                                          |
|      | <p><b><u>NB. Considered but currently rejected :</u></b> <i>NaFRA2 will have access to the AIMS data repository and be able to access relevant asset-related data exposed there on demand without the need to upload and store</i> Reasons for rejection :</p> <ul style="list-style-type: none"> <li><i>• Complex and costly relative to the need to provide AIMS data to NaFRA2</i></li> <li><i>• This is a possible very long term aspirational option only (i.e. when the Agency has progressed overall Data Sharing to a more integrated level)</i></li> </ul>                                                                                                   |
| 3.10 | <p><b>Metadata for data uploaded/ingested :</b></p> <p>see “Data Management - Metadata” requirements, SRB4)</p> <p>The solution will help support that data in any of these controlled environments (e.g. MapEdit Repository or DSP ) should be well-managed, to support efficient pre-loadprocessing, upload and subsequent use of the data in NaFRA2:</p> <p>Minimum: For example, the solution will be able to easily access system-metadata for the data for being held prior to upload - metadata such as the relevant environments storage and directory structure, filenames, timestamps, versioning, and other related system- and user-created metadata,</p> |
| 3.11 | The solution will be able access any extended metadata (previously created) for data to be uploaded, such as the data’s source, its derivation (eg the models input data and parameters used, transformations and editing applied), its intended purpose/use-ability, its quality, etc.                                                                                                                                                                                                                                                                                                                                                                               |
| 3.12 | <b>Aspirational:</b> The solution will increasingly support and, optionally, control aspects of producing metadata and load scripts for relevant data being prepared in Agency controlled environments prior to upload                                                                                                                                                                                                                                                                                                                                                                                                                                                |

SRA4 has been deliberately removed from these specifications SRA 5 - Data upload - invoking process

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                        |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SRA5 | Data Upload Setup/Invoke                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>We will have easy, efficient upload of data into the NaFRA2 solution : The solution will</p> <ul style="list-style-type: none"> <li>• Provide a straightforward functionality for dataformat check and upload for all data types needed</li> <li>• Provide a user interface and process for “uploadusers” to invoke this</li> </ul> |
| ID   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                        |
| 5.0  | <p>The solution will be able to upload data from any location, provided</p> <ul style="list-style-type: none"> <li>- the data is readied there with appropriate format, metadata and load instructions;</li> <li>- the solution’s operational environment has access to the data source environment and access-permissions to the data to be uploaded</li> <li>- communications capacity between environments is adequate</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                        |
| 5.1  | The solution will enable a user to specify the dataset name / id , by which a data set will be identified within NaFRA2 after it is uploaded                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                        |
| 5.2  | The solution will provide straightforward input-validation functionality.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                        |
| 5.3  | <i>During the Blueprint stage, the supplier will assure that Agency will agree/specify any format and validation rules to which the Agency seeks to prefer / impose / constrain the suppliers solution when uploading data</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                        |
| 5.4  | The solution will restrict invoking an upload of data to a user with appropriate permissions – eg Upload-User role                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                        |
| 5.5  | <p>This solution will provide a user interface (which may be both on-line and via off-line submission) and processing to invoke a controlled up-load of data:<br/> <i>For example a representative high level process is as follows :</i><br/> <i>The solution will enable an upload user to notify the solution that data is deemed ready for upload;</i><br/> <i>The solution will prompt for missing metadata, check data format, load script:</i><br/> <i>The solution will notify if an upload is not possible – and why.</i><br/> <i>The solution will upload data and reformat if required in load script; update metadata and notify load is successful:</i><br/> <i>Or exceptionally if the load is not successful the system will regress to the pre-load condition and notify the requesting Upload user</i></p> |                                                                                                                                                                                                                                                                                                                                        |

#### SRA 6 - Data upload - Solution processing on upload

|      |                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                           |
|------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SRA6 | Data upload: Processing                                                                             | <p>The solution will</p> <ul style="list-style-type: none"> <li>• Upload data sets (and do any restructuring of data where required by upload script)</li> <li>• Upload / hold incompatible data without “incorporating” it.</li> <li>• Optionally provide a “backdoor” mechanism for upload of relatively static data by a System Admin role or solution technical supporters</li> </ul> |
| ID   | Description                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                           |
| 6.0  | The solution will upload and store data, including disaggregating / restructuring it as appropriate |                                                                                                                                                                                                                                                                                                                                                                                           |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6.1 | The solution will be capable of uploading and storing 2D data.                                                                                                                                                                                                                                                                                                                                                                                                                |
| 6.2 | The solution will be able to upload and hold some data that are not necessarily compatible, either in format and/or content, with respect to the main data resources held (e.g. Third party Flood Risk data – see SFB4, SFG8).                                                                                                                                                                                                                                                |
|     | <i>NB. (re above): The degree of incorporation and use of this data by the solution's toolkit processing and FRA business processes may be limited, both initially and even aspirationally (SFB4): (e.g. Various, It may be used purely as comparative reference data, or for calibration of solution outputs; or may be incorporated into solution processing and outputs (either following some changes prior to upload; or unchanged, as received from third parties).</i> |
|     | <i>NB. National Model output data can be uploaded with the same generic facilities as other model output data – But note SRA3.2 – partial upload possible</i>                                                                                                                                                                                                                                                                                                                 |
| 6.3 | Optionally the solution will provide a “backdoor” mechanism for upload of relatively static data by a System Admin role or solution technical supporters.                                                                                                                                                                                                                                                                                                                     |

### **System Requirement B - Store / Manage**

In summary the requirements stated in Data Storage and Management section cover the following functionality:

B1) The solution will:

- Provide adequate, proactive storage capacity for the range of data needing to be stored
  - Including both primary (uploaded) data and derived (solution generated) data
  - Including previous versions (with version control)
- The estimated initial data volume to be stored at the time the service first goes live is 20-80 TB: The range depends on the amount of primary 2-D data to be taken on: There will be an estimated potential growth of 10% pa thereafter

B2) The solution will:

- Provide archive options - if/when needed for performance and data management needs
- Provide a reasonable SLA for archive retrieval actions
- Provide good reporting / notifications on data + volumes held in Live and Archive
- Enable System Admin role to archive data; delete data (from live or archive); and adjust some archiving rules parameters

B3) The solution will:

- Be able to distinguish “BAU/Operational” data from

“Bespoke/Whatif” data

- Hold “history of change” for some specific data items only (not for all data generally)

B4) The solution will:

- Provide good metadata maintenance - from preload -> load -> derive -> output
- Update metadata with system metadata and prompt for user metadata every-time data is changed or derived
- Assure back-traceability (derivation audit trail) for any data
- Aspirationally provide forward impact tracing for planned data changes before they are applied
- Aspirationally: Update derived “standard” outputs automatically to be in step with changed inputs

**SRB 1 - Storage: Data Types, Volumes**

|             |                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SRB1</b> | <b>Database</b>                                                                                                                                                         | <b>The solution will</b> <ul style="list-style-type: none"><li>• Provide adequate, proactive storage capacity for the range of data needing to be stored<ul style="list-style-type: none"><li>◦ Including both primary (uploaded) data and derived (solution generated) data</li><li>◦ Including previous versions (with version control)</li></ul></li><li>• The estimated initial data volume to be stored at the time the service first goes live is 20-80 TB: The range depends on the amount of primary 2-D data to be taken on: There will be an estimated potential growth of 10% pa thereafter</li></ul> |
| <b>ID</b>   | <b>Description</b>                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>1.0</b>  | <b>The solution service operator will proactively provide and manage adequate data storage capacity so that all required NaFRA2 solution data can always be stored.</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>1.1</b>  | <i>NB. The overall total data volumes the solution will store are estimated as 20-80 TB initially with a growth rate estimated as 10% pa</i>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <p>Data will include</p> <ul style="list-style-type: none"> <li>- Initial uploaded input data.</li> <li>- Later uploaded input data, e.g.</li> <li>- further new input data (e.g. reruns of local models with different scenarios or parameters, revised local models, new local models</li> <li>- revised versions of previously uploaded input data - Derived data generated by the solution, including, e.g.,</li> <li>- both for interim and for final output products</li> <li>- and both for “standard” products and for less formal derived data, such as “what-if” bespoke products and other “WIP”;</li> <li>- Outputs produced via “post-processing” outside of the solution, which are then reuploaded to the NaFRa2 solution for better data management etc.)</li> </ul> |
|     | (Note : All this data is potentially valuable for retrospective reviews and trend analysis even where superseded by later versions: There is currently no operational retention/deletion policy for these data that requires their time-based or event-trigger-based deletion)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.2 | The solution must be designed with capability to store much of its data holdings long term (i.e. Some versions of data items may be held 10 years plus without deletion): This applies, for example, too much of the data in the following general categories 1.3 – 1.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1.3 | The solution will be able to store previous versions of any of the data it stores (whether uploaded or derived)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.4 | Wherever equivalently-defined data is updated – e.g. by a new upload or by re-run calculation within the solution - the solution will apply version-control.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1.5 | Previous versions will be retained (by default) and the highest version will be the default version normally accessed (with some user-over-ride potentially possible as a choice in some cases: (SFB1.3, SRC2.6 / 2.7 )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## SRB 2 - Archive (Option) and Data Deletion

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SRB2 | Archive, Delete                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p><b>The solution will</b></p> <ul style="list-style-type: none"> <li>• Provide archive options - if / when needed for performance and data management needs)</li> <li>• Provide a reasonable SLA for archive retrieval actions</li> <li>• Provide good reporting / notifications on data + volumes held in Live and Archive</li> <li>• Enable System Admin role to archive data; delete data (from live or archive); and adjust some archiving rules parameters</li> </ul> |
| ID   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2.0  | <b>Tendering suppliers must explain below how they will charge for data storage; and if/how this is reduced by providing an archive for preserving/managing any data that is less likely to be accessed</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2.1  | The solution may provide an archive for part of its data holdings, (particularly previous versions of data), if, for example, this helps the solution’s performance or data management or operating costs for data storage :                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2.2  | <p>If an archive is provided, the solution will provide a flexible archive management: For example, a general Archive service will be agreed (and can be varied) between the service provider and the Agency, within which the solution will provide facilities to allow, eg, the System Admin role to set defaults and make exceptions on which data is to be archived: E.g.:</p> <ul style="list-style-type: none"> <li>- General service = The System will archive a previous version of data within 2 or 3 days of it being superseded</li> <li>- System Admin role can set the ‘x’ days; and make exceptions for data that he/she specifies</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |



|     |                                                                                                                                                                                                                                                                                         |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.3 | The solution will provide clear information (to all users) about the data held and managed by the solution.                                                                                                                                                                             |
| 2.4 | The solution will enable general users to specify data (+ version) to be retrieved from archive. The solution will make this data accessible within 24 hours (Tendering Suppliers should state if agreeing a longer retrieval time will influence cost of solution).                    |
| 2.5 | <i>This applies especially if the contract may allow the supplier to charge more for extra "live" storage used (e.g. on a variable rate or thresholds):</i><br>The solution / service provider will enable the System Admin role to monitor the sizes and locations of all data stored. |
| 2.6 | The solution / service-provider will notify the Agency of any potential service impacts from the amount of data stored - for example, on the performance or cost of the service, so that we may manage the archive / deletion of stored data, if we choose to.                          |
| 2.7 | The solution will enable the authorised users to delete data held (whether in the live production database or any archive).                                                                                                                                                             |

### SRB 3 - "Standard" and "Bespoke" data; Reporting trends

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                            |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SRB3 | Standard / Bespoke History                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>The solution will</p> <ul style="list-style-type: none"> <li>• Be able to distinguish "BAU/Operational" data from "Bespoke/What if" data</li> <li>• Hold/present/report a "history of change" for some specific data items only (not for all data generally)</li> </ul> |
| ID   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                            |
| 3.0  | <p><b>The solution will recognise distinctions in the data held with respect to its intended purpose and use:</b> For example: The generation of "standard" FRA output products for realistic operational purposes will not (at least by default) include in its derivation any data that has been previously uploaded or derived only for specific "bespoke" purposes, such as for what-if modelling on scenarios that would currently be considered unrealistic for operational FRA uses</p>                                                                        |                                                                                                                                                                                                                                                                            |
| 3.1  | <p><b>Aspirational :</b> The solution will be designed to be able to hold a "full history of change" for <u>some</u> specified derived data (only) - so that it can support reporting on trends over time where (aspirationally) it will do this as an integrated process without post-processing: For example, this may be required for changes over time in Risk (SFF1, SFF4), and Uncertainty (SFG6):<br/>It will be able to do this for data with a fine granularity down property/receptor level.</p>                                                            |                                                                                                                                                                                                                                                                            |
| 3.2  | <p>Data will be held with related metadata that enables the cause to be identified for change in value (e.g. in order to identify where the cause is due real world change; and excludes any parts of changes that are artefacts of modelling method, "other data" changes, etc.). (see SFF1.3)</p>                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                            |
|      | <p><i>NB. In its initial service implementation, the solution will NOT generally hold a "full history of change" for other derived data values. In general, the initial solution will not necessarily be able to present various trend/time-series of changes in data values on request (i.e. for other trend reports, someone might have recover the stored previous versions of inputs to the solution, assuming they've not been deleted since, and re-derive previous outputs, and then make comparisons – probably by external post-processing of data).</i></p> |                                                                                                                                                                                                                                                                            |
| 3.3  | <p>Aspirational: The solution will be designed to be open to implement (if and when needed) the holding of fuller "history of change" for other data types or data sets.</p>                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                            |

#### SRB 4 - Metadata maintenance and reporting

|      |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SRB4 | (Meta)Data Management | <p><b>Good metadata maintenance, reporting and data management</b></p> <p>The solution will</p> <ul style="list-style-type: none"> <li>• Provide good metadata maintenance - from preload -&gt; load -&gt; derive -&gt; output</li> <li>• Update metadata with system metadata and prompt for user metadata every-time data is changed or derived</li> <li>• Assure back-traceability (derivation audit trail) for any data</li> <li>• Aspirationally provide forward impact tracing for planned data changes before they are applied</li> <li>• Aspirationally: Update derived “standard” outputs automatically to be in step with changed inputs</li> </ul> |
|------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| ID  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.0 | <b>The solution will support the good management of data – especially dealing with potentially many-to-many relationships between multi-step calculations/derivations, and multiple outputs.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4.1 | <p>The solution will support the creation/maintenance of relevant metadata at any process step where data (or its status) is created or changed – e.g. when:</p> <ul style="list-style-type: none"> <li>- editing/preparing data for uploading (aspirationally)</li> <li>- uploading/restructuring data;</li> <li>- creating or changing stored derived data produced using the toolkit (whether data produced is WIP/interim or final; and whether any data product produced is standard or bespoke);</li> <li>- QA of data;</li> <li>- approving data for export to core NaFRA2 users or wider formal output to other services / customers receiving NaFRA2 outputs</li> <li>- re-uploading post-processed data,</li> <li>- archiving data;</li> <li>- restoring from archive</li> <li>- deleting data</li> </ul> |
| 4.2 | The solution will automatically record system-generated meta-data (e.g. date-time, dataids, volumes, user, etc.);                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4.3 | The solution will automatically record toolkit-generated meta-data (e.g. tool/process used, parameters etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4.4 | The solution will prompt for, and verify the presence of, any aspects of metadata that require user input and are missing - (egs: aspects of the data's intended purpose, derivation (model/tool used, preceding/source data and parameters,), assessed resulting data quality).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4.5 | <i>(In order to support data integrity and traceability of NaFRA data resources)</i> The solution will not start (or will not complete), and will hold in exception and report, any processing step that requires a metadata update and where there is missing mandatory metadata (before or after the step).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |



|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.6  | <p>The requirements for Metadata to be maintained by the solution will be documented by the supplier and agreed during the Blueprint stage.</p> <p>Broadly they will include:</p> <ul style="list-style-type: none"> <li>• metadata for data uploaded to (or accessed/consumed by) the solution (including, for model outputs: the model id, run date/time, run input data description / id, run parameters, person running, run purpose, run output data quality; other metadata from the “model-grab” documentation exercise)</li> <li>• metadata for interim and final derived data (including: derivation date, time, data this is derived from, tool/process-step/queryparameters used to derive this data, person/process-step saving this data, purpose of data, quality of data)</li> <li>• metadata for formally output data (Including metadata for “final” derived data above + date / time / person approving output, purpose, recipient person(s) or target environment, description, quality, usage caveats etc.)</li> <li>- Formally output metadata will conform to INSPIRE and OGC standards</li> </ul> |
| 4.7  | <p>The solution will produce adequate overall inventory reports of data held, using relevant metadata.</p> <p>This will include the ability to report fully (or selectively, at user choice) on all data changes/additions/deletions that have occurred (between user-specified dates) to data (of user specified types) that is held or accessed by the solution.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4.8  | <p>The solution will be able to produce an audit trail of the derivation of specified data (i.e. showing the intended purpose, derivation (source/preceding data, model/tool used, parameters used) + date-/time, user, quality assessment etc.).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|      | <p>This trail will be able to trace back the derivation of specified data over all the steps in producing it, (where it is a multi-step derivation) - e.g. from uploaded source data through interim products to final product.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4.9  | <p>The solution will be able to automatically produce an audit trail (as in 4.8 above) reactively after a change to data is applied (e.g. by a revised upload, or by running a newly defined calculation; or a rerun calculation), so a user can identify the impact of an applied change on other existing products – including identifying any “out-of-step” that have now been introduced</p> <p><i>(Note: this is intended to help assure derived data holdings are consistent to a single version of the truth - holistically, not just at individual data level).</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4.10 | <p><b>Aspirational:</b> The solution will be able to report potential impacts of a data-change or a calculation change <u>before</u> the change is invoked (e.g. for a planned upload of revised data, or for rerunning a toolkit calculation), so users can identify the potential impact of planned changes on other existing data products:</p> <p>This will include the capability to report potential impacts of a data/calculation change traced through multiple forward derivation steps to other existing data products.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4.11 | <p><b>Aspirational:</b> The solution will automatically update “standard” derived data and data products held if they are affected by changes in data by an upload (or by an update to shared data held externally) or by changes in a previous derivation step.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

### System Requirement C - Processing Data

In summary this “Processing” sub-section covers the following functionality between input and output

C1) The solution will

- Provide all the processing that is explicit or implicitly needed for the Business Functional Requirements (Section 4.2) •
  - Provide an adaptive toolkit framework that can
    - integrate tools from multiple suppliers

- be able to change/add tools used over time - without impacting continuity of results
- Use industry standard tools by default
- Support parallel improvement in tools, data and processing

C2) The solution will

- Enable users to create/edit and invoke “macros” defining multistep processes using the tools
- Enable privileged users to choose (in some cases) which data should be used to derive a product ... (and then to make that choice consistent for all users until it is formally changed)

C3) The solution will

- Create data products for presentation/save by invoking individual processing tools/steps within the toolkit or by invoking “macros” that link a number of processing tools/steps together
- Create data products for presentation/save from requests created using a user-enquiry interface

C4) The solution will

- Produce “standard” data products (typically BAU / routine operational)
- Produce “bespoke” data products (typically “what-if”)
- Produce products for “other” or ad-hoc geographic boundaries

**SRC 1 – Toolkit framework**

| <b>SRC1</b> | <b>Toolkit framework</b>                                                                                                                                                                                                                                                                                                                                                              | <b>The tools will provide the processing capabilities required for – SFG) are be provided the business outcomes needed (SFA within a well-integrated and adaptable framework</b> |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ID</b>   | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                  |
| <b>1.0</b>  | <b>The solution processing tools will provide all the processing capabilities required for the business outcomes needed (SFA – SFG).</b>                                                                                                                                                                                                                                              |                                                                                                                                                                                  |
| 1.1         | The solution will enable inconsistency and step changes in data at the boundary edges where two models overlap to be addressed - e.g. by tapering or feathering data and display.                                                                                                                                                                                                     |                                                                                                                                                                                  |
| 1.2         | Where the toolkit applies techniques to manipulate data in order to produce outputs, the resulting output data will have appropriate indicators (e.g. flagged as “Interpolated” “smoothed boundary transition” etc.                                                                                                                                                                   |                                                                                                                                                                                  |
| 1.3         | The solution will include these indicators (as in 1.2) in the solution’s data presentations and outputs.                                                                                                                                                                                                                                                                              |                                                                                                                                                                                  |
| 1.4         | The toolkit framework will ensure that all input data validation, online query, processing and generation of outputs by the solution accesses and uses relevant reference data (including standard controlled lists or picklist) wherever appropriate – For example: Using only the official names for operational Areas or standard definitions for asset types. (See also NFR 1.22) |                                                                                                                                                                                  |

|     |                                                                                                                                                                                                                                                                                                                                                   |
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| 1.5 | The processing toolkit will be designed and delivered to be able to include a range of tools which may be from different suppliers. The solution will provide a coherent framework in which the tools are integrated and can interoperate. See SFG1 - It will use industry standard tools by default.                                             |
| 1.6 | The toolkit framework will be open and adaptive, so that additional tools can be added, (or tools replaced) over time with minimal impacts to user and overall processing.                                                                                                                                                                        |
| 1.7 | The overall solution will be adaptive over time, so required business outputs can be achieved by the progressive improvement (in parallel) of both the underlying data (e.g. National and Local model data held); and the toolkit capabilities, plus increasingly refined processes – so making best use of the tools and data holdings together. |

#### SRC 2 - Macros; User choices in data to be used

| SRC2 | Define processing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p><b>“Macros” and user-choice in data to be used The solution will</b></p> <ul style="list-style-type: none"> <li>• <b>Enable users to create/edit and invoke “macros” defining multi-step processes using the tools</b></li> <li>• <b>Enable privileged users to choose (in some cases) which data should be used from which to derive a product ... (and then to make that choice consistent for all users until it is formally changed</b></li> </ul> |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2.0  | <b>The solution will enable users to predefine and run “macros” (i.e. a predefined series of processing steps) for predefined processes that the toolkit is required to compute</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2.1  | Macros can define multi-step processes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2.2  | Macros can be saved, named, listed, edited, renamed etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2.3  | <p>Macro's may be used to run processes that, e.g.</p> <ul style="list-style-type: none"> <li>- restructure/store input data on upload</li> <li>- derive standard data and store it</li> <li>- produce interim or final products</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2.4  | <p>The solution will calculate derived interim data that supports “standard outputs” and store it as pre-processed data, as an interim to later output in standard (or bespoke) data products. It may do this e.g.:</p> <ul style="list-style-type: none"> <li>- automatically immediately after the upload of relevant new or updated data;</li> <li>- on receiving a user request for products that require “standard” derived data that has not yet been pre-processed/stored ;</li> <li>- from a time-scheduled trigger - e.g. a regular overnight run</li> </ul> <p>The minimum list of “standard outputs” and of the interim derived data needed to support these “standard outputs” will be agreed during the blueprint stage (BP4.8.1).</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2.5  | Aspirational: The solution will automatically recalculate its final Standard Outputs when inputs (or prior calculating steps) on which they final Standard Outputs depend are updated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2.6  | <p>The solution will support (in few specific instances only, within a few specific process only) some human selection regarding the choice of data to be used to produce further derived data or an output e.g.</p> <ul style="list-style-type: none"> <li>- Choosing local / national input data in areas with overlap (SFB2–“Produce outputs that are the same as those from our best quality local models”)</li> <li>- Choosing a previous version of data</li> <li>- Choosing how to combine sources (SFA2–“Combine sources with compatible results”</li> <li>- Choosing calculation method (e.g. see demonstrator on “attribution”)</li> </ul>                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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| 2.7 | In such cases (2.6 above), the solution will NOT allow any concurrent variants to exist in any given output produced. An appropriately authorised user must make the choice, which will then persist for all other users until appropriately changed again (i.e. There may be some limited instances of user choice – but the solution should not allow concurrent different choices to be valid: This is to assure a “Single Version of the truth”). See expansion note (box below). |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Expansion Note: re SRC2.7: Human selection in the choice of underlying data to be used to produce an output: and “single version of the truth”

- In a few processes the solution may implement cases within the relevant business rules (which are to be developed with the supplier), where a human decision will be input the choice (and/or proportion) of which available underlying models’ data should be used to produce a derived data for storage or output.
- In these cases there must be “a single version of the truth”, at any given time, presented by NaFRA2 overall: Therefore these Business Rules and their implementation must NOT permit more than one alternative choice to be *concurrently* operational regarding the selections or weighting of the input(s) to be used;

- (see for example SFB1.2 - 1.5)
- ... This must also cascade to all relate-able data and outputs – e.g.: A national total and the local components of that national total must always be consistent (... And also this consistency must hold, regardless of what local boundaries are being used. so also applies to user defined boundaries )

### **SRC 3 - Create potential outputs by invoking individual toolkit steps, macros or menu options**

|             |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SRC3</b> | <b>Invoke outputs</b>                                                                                                                                                                                                                                                        | <p><b>The solution will enable a user to</b></p> <ul style="list-style-type: none"> <li>• <b>Create data products for presentation/save by invoking individual processing tools/steps within the toolkit or by invoking “macros” that link a number of processing tools/steps together</b></li> <li>• <b>Create data products for presentation/save from requests created using a user-enquiry interface</b></li> </ul> |
| <b>ID</b>   | <b>Description</b>                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>3.0</b>  | <p><b><u>Individual tools / steps :</u></b><br/> <b>The solution will enable users to select individual toolkit tools or processing steps ad hoc;</b><br/> <b>They can then use the tool to process existing data that the user is viewing or accessing at the time.</b></p> |                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>3.1</b>  | Users will be able to save results from an individual tool's use within the overall solution, as new data / dataset identified by the user.                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>3.2</b>  | <p><b><u>Macros</u></b><br/> <b>The solution will enable a user to invoke an existing macro,</b><br/> <b>If it is needed by the macro definition, the solution will accept user-supplied parameters.as it is invoked.</b></p>                                                |                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>3.3</b>  | Users will be able to save results from using a macro within the overall solution, as new data / dataset identified by the user.                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                         |

|     |                                                                                                                                                                                                                                                                                                                                                                                                              |
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| 3.4 | The solution will support a user to easily <ul style="list-style-type: none"> <li>- Create a new macro</li> <li>- Edit an existing macro</li> <li>- Save a macro, with related metadata - Invoke a macro.</li> </ul>                                                                                                                                                                                         |
| 3.5 | <u>Enquiry Interface</u><br><b>The solution will provide an easy-to-use (eg a menu-driven) front end for users to define outputs without needing to specify tools or macros (above).</b><br>An illustration (NOT a specification) of a visualisation of a user interface is included at Appendix 2.                                                                                                          |
| 3.6 | This enquiry menu will allow users to specify a combination of factors for the output they seek: e.g. see the combination indicated by the use of drop down menus in Appendix 2.                                                                                                                                                                                                                             |
| 3.7 | Aspirational: The solution will be designed so not to constrain the data variables that may offered via this user enquiry menu (and to be able to generate the outputs thus requested by a user) .                                                                                                                                                                                                           |
| 3.8 | The user interface will enable a user to specify that the data generated in response to output request can be <ul style="list-style-type: none"> <li>a) saved within the solution in a way named by the user.</li> <li>b) saved external to the solution in a way identified and named by the user</li> </ul> Note b) above is not intended as a formal output mechanism from the Nafra2 solution (See SRD2) |

#### SRC 4 - Standard and bespoke outputs (inc. "other" geography)

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                      |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SRC4 | Standard / Bespoke + other geog.                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>The solution will</b> <ul style="list-style-type: none"> <li>• Produce "standard" data products (typically BAU / operational)</li> <li>• Produce "bespoke" data products (typically "what-if")</li> <li>• Produce products for "other" or ad-hoc geographic boundaries</li> </ul> |
| ID   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                      |
| 4.0  | <b>The solution will support two broad classes of output products: "standard" and "bespoke" (or 'what if') outputs.</b>                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                      |
|      | <i>Note1: These are informal classes. Over time more of the bespoke products will likely become classified as Standard. An initial list/specification of "minimum Standard Outputs" will be agreed during the Blueprint stage</i><br><i>Note2: There is a large range of different combinations of output factors possible (see for example the enquiry interface in Appendix 2) so not every combination will ever be available as standard products.</i> |                                                                                                                                                                                                                                                                                      |
| 4.1  | The solution will be able to provide outputs that are standard products quickly and efficiently (See Table NFR2b for response times).                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                      |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <p><i>Note : A range of possible production routes may be needed to generate standard and bespoke output products, according to what is requested : These routes may include the following (listed here from the most automatic to the most human-intervention)</i></p> <p><i>Outputs may be:</i></p> <ul style="list-style-type: none"> <li><i>a) Standard outputs that have been previously generated and stored to be available on request</i></li> <li><i>b) Standard outputs that can be generated from “standard interim derived data” already held as previously derived stored standard data</i></li> <li><i>c) On the fly (“lightly bespoke”) standard outputs, using pre-processed standard data - but needing some additional derivation steps, that can be done automatically – eg using predefined macros</i></li> <li><i>d) Bespoke outputs from pre-processed standard data - with straightforward additional derivation - semi- automated using macros, but also some human intervention may be needed</i></li> <li><i>e) Bespoke outputs from pre-processed standard data, (or unprocessed existing inputs), needing human work using toolkit (possibly including manual editing/invoking of new macros)</i></li> <li><i>f) Bespoke outputs from pre-saved standard data (or unprocessed existing inputs) needing further additional human work which includes exporting data and post processing.</i></li> <li><i>g) Bespoke outputs requiring additional new input / upload data (eg new runs of Local models with new parameters and scenarios)</i></li> </ul> |
| 4.2 | <p>The solution will be able broadly classify output requests according to the production route needed to deliver the required outputs; and to notify users of the route and expected delivery lead-time accordingly</p> <p>(For example; see Appendix 2 (non-specificatory) for a simple version and examples of the types of enquiries that fall into the categories suggested there:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4.3 | <p>The implemented solution will enable Business Requirement (see SFF3) to be able to produce outputs for non-standard geographic areas.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|     | <p><i>NB. There may be a number of different potential technical options to enable 4.3 including the following:</i></p> <ul style="list-style-type: none"> <li><i>a) Drawing/deriving a boundary shape elsewhere and importing it as a mask;</i></li> <li><i>b) or drawing it on screen within the solution And then</i></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|     | <ul style="list-style-type: none"> <li><i>c) Accessing and processing relevant data within the solution</i></li> </ul> <p>Or</p> <ul style="list-style-type: none"> <li><i>d) Exporting relevant (fine-grained) data to an external processing tool.</i></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4.4 | <p>The solution will ensure that totals etc., for data that is related to any non-standard geographical area must still be consistent with any other possible cut of the data; and must be consistent with a “single value” in any aggregated national total (regardless of whatever cut may have been applied within that).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

#### **System Requirement D - Outputs**

In summary, this section covers the functionality to control and execute the delivery of data products from the solution to a wider use base beyond the scope of the solution

D1) The solution will:

- Enable easy presentation of output – as maps , tables and graphs
  - (By an integrated presentation layer or by very closecoupled external tools)
- Be able to export working data to ArcGIS or other external tools, not integrated into the solution (eg Excel)

- Be able to re-upload data into the controlled database environment after any externalised QA or post-processing

D2) The solution will:

- Enable/record approval by privileged users to release/output data products/services (+ metadata products) -
  - to specific other users/stakeholders who are not core direct-NaFRA2 users
  - 
  - to other general-access environments and platforms (eg Easinet/Easimap, DSP, gov.uk etc )
- Release the approved data and metadata to the destination location/service specified

**SRD 1 - Presentation of potential outputs (GIS, tabular, graphic); using other “close coupled” tools**

|             |                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SRD1</b> | <b>Presentation of outputs</b>                                                                                                                                                                                                                                                                                                                                        | <b>The solution will</b> <ul style="list-style-type: none"> <li>• <b>Enable easy presentation of output – as maps , tables and graphs</b> ◦ (By an integrated presentation layer or by very close-coupled tools)</li> <li>• <b>Be able to export working data to ArcGIS or other external tools, not integrated into the solution (eg Excel)</b></li> <li>• <b>Be able to re-upload data into the controlled database environment after any externalised QA or post-processing</b></li> </ul> |
| <b>ID</b>   | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>1.0</b>  | <b>The solution will enable easy presentation of outputs in a GIS presentation layer.</b>                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>1.1</b>  | <b>The solution will allow easy presentation of summary data in tabulated data - and enable drill down to more detailed tabulated data.</b>                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>1.2</b>  | <b>The solution will allow easy presentation of summary numeric data graphically.</b>                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>1.3</b>  | As a minimum: Any interfacing between solution toolkit calculated data and presentation tools provided by the solution will be very close coupled and quick/simple to use and see results.                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>1.4</b>  | <b>Aspirationally</b> , adequate simple GIS/tabular/graphical presentation capabilities will be seamlessly integrated with User's output-request facility; and with the toolkits resulting production of output data<br><i>(See, for example the map presentation integrated with enquiry screen in Appendix 2, noting that this is a non-specificatory example).</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|             | <i>Wrt 1.4 - However note that the Agency</i><br><i>1) has other GIS tools for expert users and</i><br><i>2) will export standard NaFRA2 products to Easimap / Intranet for general users to view / filter / query,</i><br><i>We don't seek to procure at cost and implement additional “full-feature GIS” functionality within the NaFRA2 solution,</i>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|             | <u>Using other tools, close-coupled to the solution</u><br>For Nafra2 core/login users, working with the solution and its data in a close coupled or “seamless” way with other tools, not provided as part of the solution (next four items).                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.5 | The solution will be able to export “interim” or “final” output data (in an ArcGIS compatible format) in a comparatively seamless way - for further review, and post processing if needed.                                                                                                                                                                                                                                                      |
| 1.6 | <b>Aspirational:</b> The solution will guide the user through standard output quality review steps in ArcGIS or an equivalent tool<br>(for example, similarly to the way this is currently done where MDSF2 uses ArcGIS).                                                                                                                                                                                                                       |
| 1.7 | The solution will allow appropriately privileged core NaFRA2 users be able to export data to other tools outside of the solution for other post-processing, if needed. This will enable privileged NaFRA2 users to view and work on data outside of the solution.                                                                                                                                                                               |
| 1.8 | QA'd and/or post-processed data resulting from 1.7 above will then be very easily reuploaded to the solution and stored (with its revised metadata) - for example by using the solutions normal upload functionality.<br>QA'd/post-processed data/products will then be available for controlled release/output to others (see Table SRD2).                                                                                                     |
|     | <i>Note : The solution will hold the Master of Interim and final derived NaFRA products – incl. both Standard and Bespoke products + any products post-processed outside of the solution and then up-loaded.</i><br><i>These type of products should not be copied/released out of the solution to others (nonNaFRA2 core users) without the products having gained an “approved to publish/export” status (NB. Please see the Table SRD2).</i> |

## SRD 2 - Approving Data Release/export; Delivering Outputs

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SRD2 | Release/Deliver Outputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p><b>The solution will</b></p> <ul style="list-style-type: none"> <li>• <b>Enable/record approval by privileged users to release/output data products/services (+ metadata products) -</b> <ul style="list-style-type: none"> <li>○ to specific other users/stakeholders who are not core direct-NaFRA2 users -</li> <li>○ to other general-access environments and platforms (eg Easinet/Easimap, DSP, gov.uk etc )</li> </ul> </li> <li>• <b>Release the approved data and metadata to the destination location/service specified</b></li> </ul> |
| ID   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|      | <i>Note (Scope exclusion): In its initial implementation, no required automated interfaces (or sharing) of solution output data from the solution to any other application or system have been identified.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 2.1  | <b>Aspirational:</b> The solution must be designed to enable the possibility of automated interfaces (or sharing) of solution output data in the longer term future :<br>The solution must designed to be able to provide external connectivity to extract and export data with any required Agency system, using a RESTFUL protocols.                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 2.2  | <p>The solution will enable / impose formal control and approval (aka “release”) of all outputs (whether standard or bespoke, whether GIS or other data) that are provided:</p> <ol style="list-style-type: none"> <li>a) to other applications or services external to the NaFRA2 solution (eg to Central Data Store, Datasharing Platform, etc)</li> <li>b) or to other specific recipients who are not direct users of the NaFRA2 solution</li> </ol> <p>Note this requirement covers formal “release” of data from NaFRA2. It does not include the export of data - by core Nafra2 users only - to nearby non-integrated tools such as ArcGIS or Excel (see SRD1) which is not a “release” process formally controlled by the solution.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 2.3  | The solution will retain a copy of all such “released/output-ed” data products, with related release/output metadata.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



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|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.4 | The solution will provide an easy way for users with appropriate privilege to select/specify and approve the release/output of a data product.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2.5 | In SRD2.4, the solution will <ul style="list-style-type: none"> <li>present existing metadata for the product, including its derivation, QA-metadata, etc. for review</li> <li>enable final update of this metadata by the user (and system) with reference to requesting and transacting the release.</li> <li>ensure mandatory metadata is present</li> </ul>                                                                                                                                                                                                                                      |
| 2.6 | The solution will release selected metadata (tbc) from the total metadata held with the data product, according to the needs of the intended destination.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2.7 | Subject to access permissions, the solution will be able to copy any release-approved products + metadata to the release destination specified (NB. This may be a release “staging area”):                                                                                                                                                                                                                                                                                                                                                                                                           |
|     | <p><i>NB. This is the “downstream” scope boundary for the procured solution. Beyond this, data products will be delivered / presented used in the following ways:</i></p> <ul style="list-style-type: none"> <li><i>c) In the Agency’s CDS and on Easimap</i></li> <li><i>d) Defra-wide publication and Data Sharing Platform for partner organisations</i></li> <li><i>e) Ad hoc direct distribution of standard and bespoke products to specific data recipients</i></li> <li><i>f) Publication of standard products via gov.uk to wider stakeholders, including the general public</i></li> </ul> |

### System Requirement E - Users

#### SRE 1 - System-User Numbers and Roles / Privileges

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SRE1</b> | <b>User Numbers and Roles</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>The solution will support an estimated total of maximum 70 concurrent direct Environment Agency users in initial service delivery, (with potential extensibility to several hundred direct users later, including users in other organisations) There will be standard, maintainable, system-access privileges grouped into maintainable system-user-roles which are assignable to login users</b> |
| <b>ID</b>   | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>1.0</b>  | <p>The solution will directly serve a number of Users stated below as direct system users during the few years of implementation</p> <p>The typical maximum total people with direct system access (in first few years of implementation will be approx. 60, comprising</p> <p>3 per Area = approx. 50</p> <p>+ National = approx. 5</p> <p>+ Other specialist and project = approx. 5</p> <p><b>An expanded breakdown of these numbers is SRE1-Table-1, below this green table.</b></p> |                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.1         | <p><b>Aspirational:</b> The solution will be designed to be expandable to potentially supporting, in the longer term, a larger user base of up to 500 login users within and outside the Agency (with, say, 200 concurrent logins) Users may be accessing via the agency network and via external web services.</p>                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.2         | The solution will support a number of distinct system-user roles each grouping different user access privileges.                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.3         | The solution will enable that any given person that is a direct system-user, may, if it is required and approved, have more than one user login id.                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.4         | The solution will enable that any given user-login may have more than one assigned user role (i.e. set of user-privileges).                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                       |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.5 | Initially, some representative (illustrative) user-role/privileges that the solution may support are identified in the SRE1-Table2 below: <i>The totals stated are illustrative estimates only</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1.6 | The solution will be designed/delivered to be open to easily introducing new or variant User-role/privileges over time, if needed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|     | <p><i>NB. Our business processes MAY identify/require/enforce differences between Area and National roles, but the requirements above, currently assume the following:</i></p> <p><i>The solution will NOT implemented any differentiation/ segregation/partition of Area roles + Area data from other Areas or from National roles and data. E.g. the system will not constrain the following :</i></p> <ul style="list-style-type: none"> <li>- Any "Upload-user" could upload any data irrespective of its geographic cover</li> <li>- Any Modelling or General user can run bespoke enquiries and save the data, irrespective of its geographic cover</li> <li>- Any Output-privileged user can release/output, irrespective of its geographic cover</li> </ul> |
|     | <i>NB. The solution will NOT formally distinguish or partition "BAU/operational" users and their data from "Bespoke/What-if" users and their data.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

SRE1 sub-Table 1: Breakdown of user numbers

| Role/Team                                                                 | Description                                                                                                                                                                                                                                                                        | No. users |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Project Manager                                                           | Is responsible for running the project on a day-to-day basis on behalf of the project executive and project board.                                                                                                                                                                 | 0         |
| Technical leads                                                           | Responsible for specifying the needs of those who will use the final product(s), for user liaison with the project team and for monitoring that the solution will meet those needs within the constraints of the Business Case in terms of quality, functionality and ease of use. | 1         |
| Communications                                                            | Provide and maintain communications plan and provide communications briefings and materials for all aspects of project                                                                                                                                                             | 0         |
| ADIC MDIC                                                                 | Area Data Improvement Coordinator – 14 areas 1 in each area<br>MDIC Modelling Data Improvement Coordinator, 14 Areas, 1 in each Area                                                                                                                                               | 28        |
| CIS                                                                       | BA, Architect, Systems Analyst                                                                                                                                                                                                                                                     | 3         |
| M and F Business Partners                                                 | Only 4. In trial at the moment. Act as focal point and conduit for liaison with M&F teams                                                                                                                                                                                          | 4         |
| National Modelling Experts                                                | Leading development and testing of the Simulation Library, the new national modelling and the process toolkit (the emulator).                                                                                                                                                      | 2         |
| Local Modelling Expert                                                    | Ensures project team understand all issues that arise with our existing local models in development of the simulation library.                                                                                                                                                     | 14        |
| Asset management Data expert                                              | lead with the Areas on the AIMS and Map Edit work required                                                                                                                                                                                                                         | 1         |
| Data and Systems lead                                                     | Leading development of EA data and data systems to ensure they meet the needs of NaFRA2                                                                                                                                                                                            | 1         |
| Internal Technical Review Group                                           | Provide technical expertise, feedback and advice to project team x 12                                                                                                                                                                                                              | 12        |
| Business Implementation and Transition (sit in Areas or Directorate. TBC) | Bridge gap between Directorate and Operations. Hands on resource.                                                                                                                                                                                                                  | TBC       |

|               |                                                                                                                           |           |
|---------------|---------------------------------------------------------------------------------------------------------------------------|-----------|
| Agile advisor | Guides the team to use effective methods to ensure the project delivers only those things that are required by user needs | TBC       |
| <b>TOTAL</b>  |                                                                                                                           | <b>66</b> |

SRE1 sub-Table 2 : Example System-User-roles (system access-privileges)

| Role                     | Privileges                                                                                                                                                                                                                                                                                                   | Est Apx total assigned |        |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------|
|                          |                                                                                                                                                                                                                                                                                                              | Nat/system             | Area   |
| System Admin             | Can create/remove user accounts<br>Can assign/remove user role- privileges<br>Can change reference data (including standard controlled lists and picklists)<br>Can invoke data archiving<br>Can invoke data deletion<br>Etc<br>(Plus: All other user privileges below)                                       | 2                      |        |
| Superuser?               | Delegated selected System Admin privileges, tbi                                                                                                                                                                                                                                                              |                        | 14     |
| Upload user              | Can Invoke data uploads (inc. primary uploads and postprocessed uploads)                                                                                                                                                                                                                                     | 2                      | 14?    |
| Modelling user           | Can invoke archive retrieval (re-instatement to live)<br>Can invoke single step actions of a tool on data<br>Can edit/create macros for multistep tool actions<br>Can save interim/WIP data<br>Plus other "General User" privileges below                                                                    | 2                      | 14     |
| General user             | Can run macros,<br>Can use the solution's enquiry menu<br>Can save standard or bespoke data products generated by the use of macros or solution enquiry menu<br>Can export data for further post-processing outside of the solution toolkit (not the same as "outputting" below )                            | 4                      | 28 -42 |
| Guest/enquiry-only user? | Can run macros,<br>Can use solution enquiry menu                                                                                                                                                                                                                                                             |                        | ?      |
| Output User              | Can approve the release of data products for which Nafra2 SimLib holds the master* to a wider audience than the direct Nafra2 solution users<br>* (e.g.: Uploaded Local Model outputs held, Nat model outputs, derived standard and bespoke data products, good-quality interim and post-processed products) | 2                      | 14     |

### 3.6 Non-Functional Requirements (NFR)

This section provides further "Non-Functional Requirements" for the procurement. In this section will refer to the Environment Agency as 'the Authority'.

Where system metrics are given, these are indicative of current solution sizings; our expectation is that there will be a need to flex - our best estimation is +/- 20%. This is indicative and subject to change by agreement. Suppliers need to support both current solution sizings and indicative estimates (where given).

#### NFR 1a Product / Service Standards

| NFR1 | Product / Service Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|      | <p><i>The Solution will be delivered in accordance with standards stated contract Schedule 2.3 Standards - currently issued in draft at this stage of ITT .</i></p> <p><i>The final Schedule 2.3 will include the various Business and Data standards identified in various other Requirement in this document – (elsewhere to this table NFR1a): These are currently summarised in Section 7;</i></p> <p><i>The final schedule 2.3 will also include the standards requirements below in table NFR1a. These are not included in Section 7</i></p> |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | <p><i>Note : Section 7 does include a number of standards that relate to IS/IT and Data:</i></p> <ul style="list-style-type: none"> <li>• 5 star deployment scheme for Open Data</li> <li>• Approval for Access (AfA) - internal guidance</li> <li>• Open Data Risk Assessment (ODRA) - internal guidance</li> <li>• Data standards. Environment Agency controlled lists</li> <li>• Government Building Information Modelling</li> <li>• Government Digital Services (GDS)</li> <li>• INSPIRE</li> <li>• Open Geospatial Consortium (OGC)</li> </ul> <p><i>Additionally the following IS/IT-related standards will apply, as in the NFR1a table rows below</i></p>              |
| 1.1  | <p>The solution must comply with</p> <ul style="list-style-type: none"> <li>• the government's <a href="#">Digital by Default Service Standard</a></li> <li>• Applicable elements that assure alignment to Government Digital Services within the UK Government's Technology Code of Practice as documented at <a href="https://www.gov.uk/service-manual/technology/code-of-practice.html">https://www.gov.uk/service-manual/technology/code-of-practice.html</a>.</li> </ul>                                                                                                                                                                                                  |
| 1.2  | <p>Open standards and Open source should be used in NaFRA2 components. Where this may not be the case, the supplier must provide a full explanation.</p> <p>Open Standards Principles re software interoperability, data and document formats in the ICT environment, are documented at <a href="https://www.gov.uk/government/publications/openstandards-principles/open-standards-principles">https://www.gov.uk/government/publications/openstandards-principles/open-standards-principles</a>:</p> <p>This includes that all documentation published electronically will be in a non-proprietary format (such as PDF or Open Document Format (ISO 26300 or equivalent))</p> |
| 1.3  | Any code developed as part of the solution must be open, re-usable and published under appropriate licenses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1.4  | The solution's technical architecture electronic documentation will be in accordance with Good Industry Practice, and preferably complying with "The Open Group Architecture Framework" 9.1 or its equivalent.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1.5  | The supplier's project development will be managed in waterfall mode consistent with PRINCE2 or agreed equivalent; and/or in agile mode within Agile/SCRUM/RUP frameworks or agreed equivalents.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1.6  | The Supplier will develop and host the solution in a cloud environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1.7  | The solution must be able to support RESTful APIs (Application Programming Interface).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1.8  | APIs must use HTTPS (HyperText Transfer Protocol Secure) as the only transport protocol.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1.9  | <p>The solution and its operational service must conform to the following legislation:</p> <ul style="list-style-type: none"> <li>• The Data Protection Act;</li> <li>• Special Education Needs and Disability Act;</li> <li>• Disability Discrimination Act;</li> <li>• Environmental Information Act;</li> <li>• Re-Use of Public Sector Information Act;</li> <li>• Computer Misuse Act; and</li> <li>• Freedom of Information Act.</li> </ul>                                                                                                                                                                                                                               |
| 1.10 | <p>The supplier will be responsible for providing a specified "end-to-end" service within defined boundaries to the Authority and arranging any sub-contracts (including OLAs and/or SLAs) to ensure that this happens.</p> <p>(In your response to this table overall (below), please include explanation of how any Service Level Agreements or Operational Level Agreements being proposed as part of your solution (within boundaries you state here) will work, including any 3<sup>rd</sup> parties also involved in such SLAs or OLAs )</p>                                                                                                                              |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.11 | <p>The NaFra2 solution operational service provided by the supplier must demonstrably conform to</p> <ul style="list-style-type: none"> <li>• ITIL v3 2011;</li> <li>• ISO/IEC 20000-1 2011 "ITSM Specification for Service Management";</li> <li>• ISO/IEC 20000-2 2012 "ITSM Code of Practice for Service Management";</li> <li>• ISO 10007 "Quality management systems – Guidelines for configuration management";</li> <li>• ISO 9001 "Quality Management"</li> <li>• BS25999-1:2006 "Code of Practice for Business Continuity Management" and ISO/IEC 27031:2011, ISO 22301 and ISO/IEC 24762:2008 in the provision of "IT Service Continuity Strategy" or "Disaster Recovery" plans.</li> </ul> <p>The supplier will include evidence below of their existing capabilities to operate processes in conformance to ITIL and other elements above, across service strategy, design, transition, operations and continual improvement domains.</p> |
| 1.12 | <p>After implementation, there must be regular service reviews with the Authority: A monthly review for the first 6 months and then quarterly review thereafter.</p> <p>In your response to this table overall (below), please provide details of your proposed Service Review process and documentation that will be offered.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|      | <i>Testing will be done to standards stated in table NFR7b and draft contract schedule 6.2</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|      | <i>Security management will be to standards stated in table NFR8 and draft contract schedule 2.5</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|      | <i>Environmental and Hardware Safety will be to standards as in draft contract schedule 2.3 Standards</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|      | <i>Usability and assistive technology will be to standards as in table NFR6</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|      | <i>Business Continuity and Disaster recovery will be done to standards stated in Table NFR5 and draft contract schedule 8.6 "Business Continuity and Disaster Recovery Provisions"</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

#### **NFR 1b Extensibility, Change Management, Portability**

| <b>NFR1</b> | <b>Extensibility, Change Management, Portability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ID</b>   | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1.20        | <p>As well as providing a solution that meets the non-aspirational and "aspirational" requirements that are agreed to be delivered by the contract with the supplier: The solution must also be designed and developed such that it can easily accommodate future enhancements and extensions, for example that are either:</p> <p>a) "Aspirational" requirements within tables in this Specification document but which are not agreed with the supplier to be for delivery within the agreed contract or</p> <p>b) implied by the descriptive text for the Longer term vision for the NaFRA2 solution stated in other text areas in this document - but which are not specified as table rows in this specification document.</p> |
| 1.21        | <p>The solution must be developed and fully documented to be easily maintainable both by the developing supplier and by any other supplier to whom support may be transferred at some future date</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.22 | <p>The solution should be designed to be flexible. Wherever possible, simple changes should be able to be applied by a privileged role in the Authority (eg a System Admin role) without needing the supporting supplier to action</p> <p>Such changes include, for example, the values of reference data items (including standard controlled lists and picklists) and labels in the user interface.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1.23 | <p>During the initiation of the project the supplier will propose and agree with the Environment Agency, and subsequently operate, an adequate “technical-level” project Change Control process (This will co-operate with the “contract-level” Change Control process in draft schedule 8.2, and ITIL Change Management processes for the transition to and operation of the subsequent NaFRA2 operational services)</p> <p>The scope of applicability for this technical-level Change Control process will be defined and agreed - within the range of all interim and final NaFRA2 project and service documents and products which the Agency receives; (and especially where a candidate change may not require also invoking the contract-level change control process - schedule 8.2)</p> <p>See also NFR2.6 for operational Change management</p> |
| 1.24 | <p>During the initiation of the project the supplier will propose and agree with the Environment Agency, and subsequently operate, an adequate project Configuration Management solution (This will co-operate with the requirement for “Registers” etc draft schedule 8.5 Exit management, and ITIL Change Management processes for the transition to and operation of the subsequent NaFRA2 operational services)</p> <p>The range of applicability for this Configuration Management solution will be defined and agreed within the range of all interim and final NaFRA2 project and service documents and products which the Agency receives, (as for 1.23) See also NFR2.6 for operational Change management</p>                                                                                                                                    |
| 1.25 | Portability, The solution must designed, built and documented, to be easily transferable from one operating environment to another.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.26 | The solution’s intellectual property rights (IPR) must be owned by the Authority                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1.27 | On exit from contract the supplier must provide full up to date source code and technical documentation, such that onward development and maintenance of the solution and its operational service support can easily be transferred other supplier(s) This will be consistent with the draft contract Schedule 8.5 Exit Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1.28 | <p>On exit from contract the supplier must provide an extract of the data held by the solution (in a format to be agreed) for migration to a subsequent service operator.</p> <p>This data must include but not be limited to:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|      | <ul style="list-style-type: none"> <li>• Transactional data; •</li> <li>Reference data; and</li> <li>• Integrity data.</li> </ul> <p>(See also draft contract Schedule 8.5 Exit Management)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

#### NFR 2a Support and Availability

| NFR2A | Support & Availability                                                                                                                                                                                                                                                                                                                                                                            |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID    | Description                                                                                                                                                                                                                                                                                                                                                                                       |
| 2.1   | <p><b><u>Support</u></b></p> <p>The supplier will provide support to the Authority during core hours of 8:00am – 6:00pm, Monday to Friday, 52 weeks per year excluding national holidays.</p> <p>Please also advise in your response (below) to this table overall, how out of hours (outside of 9.00 - 17.00) access to technical staff / helpdesk support may also be provided and managed.</p> |



|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.2 | <p>All users must use the Authority's CIS Helpdesk for first line support. The supplier must provide all second and third line support, in conjunction with the Authority's Helpdesk.</p> <p>Capgemini (or later replacement) is the prime supplier of IT support services to the Environment Agency, and will therefore form part of the support model. The supplier will work with the Environment Agency and Capgemini to provide an end to end user support process that will include the setup/liaison/handover and the preparation of the supporting documents to the helpdesk support services.</p> <p>In your response (below) to this overall table, please confirm details of the support that you will provide as part of your solution/service, including details of the following:</p> <ul style="list-style-type: none"> <li>How support queries will be raised and managed</li> <li>Escalation route for support queries</li> <li>Prioritization of calls</li> <li>Hours of support</li> <li>Any variations to support process during incidents (either environmental or system)</li> <li>Review points</li> <li>Alignment to the ITIL framework (v3/2011)</li> </ul> |
| 2.3 | Each NaFRA2 service/software component must be 99.95% available, measured 24x7 over 4 weeks. Excluding agreed maintenance windows.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.4 | The supplier will provide full application availability monitoring and report the results to the Authority when requested to do so (including to a pre-stated regular schedule).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

#### NFR 2b Resilience and Performance

| NFR2B | Resilience and Performance                                                                                                                                                                                                                                                                                                                   |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID    | Description                                                                                                                                                                                                                                                                                                                                  |
| 2.5   | Planned maintenance must occur during non-core hours and must be agreed between the Supplier and the Authority at least 10 working days in advance.                                                                                                                                                                                          |
| 2.6   | <p>NaFRA2 operational changes must be in accordance with an operational change management process and schedule agreed between the supplier and the Authority.</p> <p>Please provide details (in your response below) of your proposed operational change management process, including release/configuration management and maintenance:</p> |
| 2.7   | No single component of the NaFRA2 solution will impact the performance or availability of any other component. In particular, component upgrades must be able to be undertaken without impacting the performance or availability of any other component.                                                                                     |
| 2.8   | NaFRA2 components must be deployed in an instantly automatic elastic environment, with the supplier ensuring that adequate resources are available to match solution loading.                                                                                                                                                                |
| 2.9   | An adequate level of service performance will be provided – for example where the average system response time must not exceed 4 seconds.                                                                                                                                                                                                    |
| 2.10  | The solution will perform to this adequate performance with typical total login sessions on an unexceptional working day = approx. 20-30 user-sessions.                                                                                                                                                                                      |
| 2.11  | The solution will perform to this adequate performance where the typical maximum concurrent logged-in usage on an unexceptional working day may be 10-15 concurrent user-sessions.                                                                                                                                                           |
| 2.12  | The solution will perform to this adequate performance where the maximum concurrent attempted log-in usage during in an incident or other exceptional demand period may be all 60 users above + approx. 20% contingency (i.e. approx. 70 users).                                                                                             |

|      |                                                                                                                                                                                                                                                                                                                                                                               |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.13 | The solution will be designed/implemented to enable access by up to 70 concurrent users, without significant degradation to this adequate performance: This will be so when these users are concurrently running a representative spread of processes (which includes typical upload, standard enquiries and bespoke enquiries needing interpolation of data by the toolkit). |
| 2.14 | The Supplier will provide full application performance monitoring.                                                                                                                                                                                                                                                                                                            |
| 2.15 | Performance of the live transactional solution must not be affected by any system monitoring / reporting tasks.                                                                                                                                                                                                                                                               |

### **NFR 3 Scalability and Sustainability**

| <b>NFR3</b> | <b>Scalability and Sustainability</b>                                                                                                                                                                                                                                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ID</b>   | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                   |
| 3.1         | The solution must be able to support overall scalability - which may be implemented with a range of options for horizontal and vertical scalability. It should be easy to add more storage and processing power to cope with increases in data volumes of up to 20% per annum. (See SRB1)                                                                            |
| 3.2         | The suppliers must comply with appropriate environmental legislation. This includes updates and changes to existing legislation and compliance with new legislation introduced during the contract term(s).                                                                                                                                                          |
| 3.3         | The Suppliers must provide detailed proposals to help the Authority reduce its impact on the environment. These must include power reduction measures, recycling arrangements etc.                                                                                                                                                                                   |
| 3.4         | Suppliers must measure and report (or help us to measure and report) the sustainability, economic and environmental benefits of introducing and running this service, as well as the carbon and waste from introducing this product/service and provide information on how they are going to increase the sustainability benefits over the duration of the contract. |
| 3.5         | Suppliers and the Authority must enter into a sustainability scorecard to be agreed at contract sign off and take part in a sustainable IT group to promote sustainability within the IT industry.                                                                                                                                                                   |
| 3.6         | Suppliers will meet the finalised contractual agreements made with respect to Sustainability – See draft Contract Schedule 11 and ITT Instructions Section 1.14                                                                                                                                                                                                      |

### **NFR 4 Access and Authentication**

| <b>NFR4</b> | <b>Access and Authentication</b>                                                                                                                                                                                                                                                     |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ID</b>   | <b>Description</b>                                                                                                                                                                                                                                                                   |
| 4.1         | Where Supplier staff access the system for maintenance purposes, appropriate access controls must be in place.                                                                                                                                                                       |
| 4.2         | Single Sign-on: The system's use of the sign- in mechanism must be able to provide access to role-based functionality (see SRE1) whilst allowing users to authenticate once, and only once, to use all the services and applications to which the user has predetermined privileges. |
| 4.3         | The Authority must be able to reset user passwords.                                                                                                                                                                                                                                  |
| 4.4         | Users' password must conform to the Authority password policies.                                                                                                                                                                                                                     |
| 4.5         | A countdown prompting password change should be provided from 7 days before password expiry.                                                                                                                                                                                         |
| 4.6         | The Authority's approved helpdesk must have the ability to reset passwords.                                                                                                                                                                                                          |
| 4.7         | Passwords must be a minimum 8 characters.                                                                                                                                                                                                                                            |



|      |                                                                                                            |
|------|------------------------------------------------------------------------------------------------------------|
| 4.8  | Passwords must have a minimum of one upper case, one lower case and one numeric character.                 |
| 4.9  | Dictionary checks must be used in order to prohibit guessable words.                                       |
| 4.10 | Simple substitutions are prohibited, for example the letter o for zero, the letter l for one etc.          |
| 4.11 | Sequences – must prohibit obvious sequences or repeated characters are prohibited, for example 111 or abc. |

#### **NFR 5 Backup and Disaster Recovery**

| <b>NFR5</b> | <b>Backup and Disaster Recovery</b>                                                                                                                                                                                                                                                                                  |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ID</b>   | <b>Description</b>                                                                                                                                                                                                                                                                                                   |
|             | <i>Note: See also draft Contract Schedule 8.6 Business Continuity and Disaster recovery Provisions'</i>                                                                                                                                                                                                              |
| 5.1         | All system components must be backed up such that the Authority's Recovery Time and Recovery Position Objectives (RTO, RPO) can be achieved (To be agree when establishing the full SLA).                                                                                                                            |
| 5.2         | Running the back-up must have no impact on service.                                                                                                                                                                                                                                                                  |
| 5.3         | Backup data will be held for 8 weeks, at the end of the 8 weeks period, old backup data must be disposed of in a secure method to be agreed with the Authority.                                                                                                                                                      |
| 5.4         | Following a system failure, the maximum time to recovery must be 24 hour in all cases, with no data loss.                                                                                                                                                                                                            |
| 5.5         | Following a DR event, the Authority needs to be consulted so that the system can be brought back up in a controlled manner.                                                                                                                                                                                          |
| 5.6         | All components of the system must undergo annual disaster recovery testing at a time to be agreed with the Authority. The Supplier must provide a full report of the results and correct any shortfalls. The content and format of this report must be agreed with the Authority.                                    |
| 5.7         | Business continuity plans must be tested annually to include provision of a full report complete with corrective actions. The content and format of this report must be agreed with the Authority.                                                                                                                   |
| 5.8         | The Supplier must be responsible for its disaster recovery plans but must submit plans for the Authority for its review and comment and, at choice, its rejection and amendment This should be done a) at high level in suppliers ITT response below b) The supplier will detail it further in the Blueprint stage   |
|             | It will be acceptance verified as part of transition to a live service.                                                                                                                                                                                                                                              |
| 5.9         | Overall, the suppliers Business Continuity and Disaster Recovery provisions will be consistent with BS25999-1:2006 "Code of Practice for Business Continuity Management" and ISO/IEC 27031:2011, ISO 22301 and ISO/IEC 24762:2008 in the provision of "IT Service Continuity Strategy" or "Disaster Recovery" plans. |

#### **NFR 6 Usability and Assistive Technology**

| <b>NFR6</b> | <b>Usability and Assistive Technology</b> |
|-------------|-------------------------------------------|
| <b>ID</b>   | <b>Description</b>                        |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6.1 | <p>Each component must meet</p> <ul style="list-style-type: none"> <li>the World Wide Web (W3C) Web Accessibility Initiative (WAI) Web Content Accessibility Guidelines (WCAG) conformance level AA. The latest guidelines are known as WCAG 2.0 (<a href="#">Web Content Accessibility Guidelines</a>).</li> <li>ISO/IEC 13066-1: 2011 Information Technology – Interoperability with assistive technology (AT) – Part 1</li> <li>UK Government Accessibility standards for End User facing services (<a href="https://www.gov.uk/service-manual/helping-people-to-use-your-service/makingyour-service-accessible-an-introduction">https://www.gov.uk/service-manual/helping-people-to-use-your-service/makingyour-service-accessible-an-introduction</a>)</li> </ul> |
| 6.2 | In general, the solution and its service will be designed to be easily usable by any employee of the Environment Agency (assuming physical access and access privileges);<br>(Note, wrt “Usability”: Aspirationally, the solution may also, in the longer term, become a direct end-user service to others external to the Environment-Agency)                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 6.3 | The solution shall be fully web-enabled and accessible via a browser with no need to download additional software for support.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 6.4 | The system must be compatible with various browsers and their versions as defined by the Authority. (i.e. Google Chrome (latest versions) and Internet Explorer 11 )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

#### NFR 7a Training

| NFR7A | Training                                                                                                                                                                                                                                                                                                                                                                              |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID    | Description                                                                                                                                                                                                                                                                                                                                                                           |
| 7.1   | The system must offer a fully functional training facility for Authority staff and be available during core office hours.                                                                                                                                                                                                                                                             |
| 7.2   | The training facility must be physically separate from the production system.                                                                                                                                                                                                                                                                                                         |
| 7.3   | The training environment must support at least 5 concurrent users.                                                                                                                                                                                                                                                                                                                    |
| 7.4   | The training facility must allow users to design and run training courses for their organization(s).                                                                                                                                                                                                                                                                                  |
| 7.5   | <p>NaFRA2 Training Materials</p> <p>The supplier will provide training and supporting materials to include:</p> <ul style="list-style-type: none"> <li>Word</li> <li>PowerPoint</li> <li>purpose built training application</li> </ul>                                                                                                                                                |
|       | <ul style="list-style-type: none"> <li>Instructional videos</li> <li>and any other suitable format for the following to allow EA Staff to cascade the training if required to the rest of the Environment Agency.</li> <li>The Project Team</li> <li>The NaFRA2 end users</li> <li>Senior Management</li> </ul> <p>Presentation material for External Authorities such as LLFA's.</p> |
| 7.6   | <p>Training Courses – Delivery</p> <p>The supplier will deliver on five separate occasions training for EA staff on the NaFRA2 operational solution. It is expected the number of users at each occasion would be between 12 and 20. Full day. The venues will be on Environment Agency premises.</p>                                                                                 |

## NFR 7b Testing

| NFR7b | Testing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7.7.1 | The Supplier must produce a Test Approach Strategy consistent with the general approach to testing, and including a detailed System Test and Non-Functional Performance Test plans, in adherence to the IEEE 829-1998 standard and to ISO29001 (software testing) . This must include the Test Environment specification, including all interfaces, for System Test, User Acceptance Test and Non-Functional Performance, Stress and Volume testing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7.7.2 | The Supplier must produce its test strategy and Test Plans in conformance with draft Contract Schedule 6.2 –Testing; and with the Defra DDTS Tests strategy.<br>The test stages and accompanying detailed test plans must be adequate to ensure the product quality, covering the functional and non-functional requirements (These are currently as stated in the this Requirements specification documents, and subject to their controlled further development in contract negotiation and during the course of the development project )                                                                                                                                                                                                                                                                                                                                                                                            |
| 7.8.1 | The testing Strategy, Plan and Methodology will include the performance, quality and confidence for a) New National Model outputs, see NNM3.4 – 5 and for b) NaFRA2 Solutionprocessed outputs (e.g. where output data has been interpolated or simulated by the Nafra2 software).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7.8.2 | Acceptance testing will include verification that a list of “minimum standard outputs” (to be agreed in the Blueprint stage – see BP4.8.1) have been derived by the tool reference kit consistently from up-to-date input data and stored in the NaFRA2 database (to form part of the delivery of NaFRA2 into operational service).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 7.9   | The Supplier’s overall Test and Acceptance Strategy, Methodology, and Plan for the overall NaFRA2 Solution / Service and its component parts must be accepted by the EA project team and to the EA internal IT Test group (QA & T) at or before the start of the full Development stage<br><br>The test plan, at that time, will define the specific testing types and stages that will mitigate the risks in implementing the solution that meets the business requirements and nonfunctional requirements<br><br>In this is context, at this tendering stage, please initially outline your testing / acceptance approach in the response box below including reference to the following, for example :<br><br>Stages of testing and who is responsible for each stage<br>Resource requirements expected from the Business and IT teams within the Environment Agency.<br>Tools used for test planning, execution and defect tracking |
|       | Penetration testing processes<br>Performance testing processes<br>The Solutions operational acceptance testing prior to during and after introduction of the full production service<br>Acceptance processes for the suppliers service and support to under BaU in operational service                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 7.10  | QA &T in conjunction with the Agency’s NaFRA2 business team, must produce or approve a Test Approach covering User Acceptance Testing and Assurance activity and a User Acceptance Test Plan.<br><br>The Supplier must work with QA&T to ensure that the Test Plans are consistent and complementary and conform to the testing criteria set out in Appendix 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## NFR 7c Documentation

All documentation and guidance, when taken together should be detailed enough and described sufficiently to allow the system to be replicated by a third party.

| <b>NFR7c</b> | <b>Documentation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ID</b>    | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 7.11         | Each component must have full, on-line user-oriented documentation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7.12         | Help documentation must be fully searchable. Users must be able to 'tag' help elements and searches must be by keyword or tag.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7.13         | Components with user interfaces must feature context specific on-screen help and full documentation describing and supporting their functionality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 7.14         | The supplier must provide documentation on service introduction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 7.15         | Internal Authority's help documentation must be editable by the Authority to reflect changes in business process.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 7.16         | <p>System Documentation:</p> <p>The supplier will provide all system and user documentation in MSWord, MS Excel, MS Project, or MS PowerPoint, relevant to the overall NaFRA2 solution and its component parts.</p> <p>The documentation should be suitable for a variety of audiences ranging from EA IT technical leads to EA Business leads. Typically it should include:</p> <ul style="list-style-type: none"> <li>• Architecture design documentation</li> <li>• Technical Documentation</li> <li>• User Documentation</li> <li>• Marketing/communication Documentation, for use internally by the Environment Agency</li> <li>• Detailed interface/API Documentation</li> </ul> <p>This must include details covering the delivery (both during system implementation and lifetime, including changes to system setup/functionality), operation, support and usage of the solution.</p> <p>In addition to enabling the solution to be maintained, architecture and technical documentation should allow suppliers of future iterations of the solution to understand the solution without having the experience of creating it.</p> <p>User documentation must enable all types of users to use the solution with limited additional training.</p> |
| 7.17         | The supplier will provide technical documentation for the solution that describes the modelling methods used, approaches to analysis, assumptions made, etc.: These will be fully adequate to support potential future changes and improvement by third parties (using e.g. different flood modelling software): The documentation will include specifications and methods for hazard modelling and impacts analysis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 7.18         | <p>For standard outputs, the supplier will produce documentation that</p> <ol style="list-style-type: none"> <li>1. provides detailed schemas for each standard data output product the solution/service delivers</li> <li>2. enables business users to trace the process from input to output. - clearly describing the processing steps and decisions between input data and the output data produced, such that the solution is "transparent" regarding its processing, and not a "black box".</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

#### **NFR 8 Security**

| <b>NFR8</b> | <b>Security</b>    |
|-------------|--------------------|
| <b>ID</b>   | <b>Description</b> |

|             |                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | Note : See also draft contract schedule 2.5 Security for your further information                                                                                                                                                                                                                                                                                                          |
| <b>8.1</b>  | The Supplier must demonstrate any accreditation it holds by providing independent certificates for validation.                                                                                                                                                                                                                                                                             |
| <b>8.2</b>  | The Supplier must maintain security by using a security management plan in the form of a set of security policies and procedures so that security is embedded in the Supplier's business culture.                                                                                                                                                                                          |
| <b>8.3</b>  | The Supplier must provide details of any third parties which are involved in the supplier's service and any services they provide to us so that we can understand what purposes each third party is used for in the safety of the service.                                                                                                                                                 |
| <b>8.4</b>  | The Supplier must ensure all third party suppliers which are involved in the supplier's service will meet the security standards as the Supplier does to keep our data secure so that the risk assessments of confidentiality, integrity and availability of our data/system are not compromised.                                                                                          |
| <b>8.5</b>  | The Supplier must complete a security review with the Authority on the service architecture and the overall security of the service design.                                                                                                                                                                                                                                                |
| <b>8.6</b>  | The Suppliers must provide evidence regarding how they manage security incidents and the actions they will take if things go wrong including the reporting of incidents relating to our data/systems.                                                                                                                                                                                      |
| <b>8.7</b>  | The Supplier must have a robust process for detecting, recording, monitoring and resolving vulnerabilities in the service so that service availability is not compromised by viruses, malware, denial of service attacks etc.                                                                                                                                                              |
| <b>8.8</b>  | The supplier must ensure that vulnerability scans and/ or penetration tests are run regularly so that potential threats to the service that are not covered by IT Health checks are monitored and evaluated.                                                                                                                                                                               |
| <b>8.9</b>  | Prior to go-live the service must be penetration tested and/ or IT Health checked using an approved scope, Supplier and regularly updated Risk Treatment Plan addressing the remediation of risks or risk acceptance for outstanding vulnerabilities (e.g. during warranty) so that the Authority can be assured that the service is, and remains, secure and vulnerabilities are managed. |
| <b>8.10</b> | Any significant changes to the service must be highlighted so that the Authority can confirm whether they require additional penetration testing and/or IT Health checks to be undertaken and continue to be assured that the service remains secure and vulnerabilities are managed.                                                                                                      |
| <b>8.11</b> | The Supplier must provide details of the types of security alerts that will be issued, to who and how they will be sent (including out of hours arrangements) so that the Authority will be kept informed of potential issues.                                                                                                                                                             |
| <b>8.12</b> | The supplier must provide details on how the service is segregated from other customers so that the Authority can determine whether the service is adequately protected.                                                                                                                                                                                                                   |
| <b>8.13</b> | The Supplier must provide details on how they will manage access control, access reviews and limits who will access data held in the service both physically and remotely so that users only get the features or data that they need to use.                                                                                                                                               |
| <b>8.14</b> | All access to the service by Supplier staff must be recorded and remains unchanged so that the Authority can see who has accessed the service and when they did so in the event that analysis of this information is required.                                                                                                                                                             |
| <b>8.15</b> | The Supplier must guarantee the integrity of the service data (e.g. after a service outage) so that users can be confident that their data and metadata will not be compromised.                                                                                                                                                                                                           |
| <b>8.16</b> | The service must be monitored for unusual activity and maintain a record of events so that the Authority can examine the detail of those events.                                                                                                                                                                                                                                           |
| <b>8.17</b> | Data must only be used/stored appropriately for its intended purpose and must compliance with legislation such as the Data Protection Act.                                                                                                                                                                                                                                                 |
| <b>8.18</b> | The service must be capable of supporting data up to a maximum protective marking of OFFICIAL-SENSITIVE and Environment Agency Impact Assessment score of 3-3-3.                                                                                                                                                                                                                           |

|             |                                                                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>8.19</b> | The system data will not be shared with any other party without prior approval, and only the minimum data will be shared to meet the approved needs.                                                 |
| <b>8.20</b> | It must not be possible to edit audit logs, or change their content in any way.                                                                                                                      |
| <b>8.21</b> | A standard set of audit trail reports must be provided. These must be by: <ul style="list-style-type: none"> <li>• Date;</li> <li>• Nature of change; and</li> <li>• User (name and role)</li> </ul> |
| <b>8.22</b> | Audit logs must be held for on-line for a period of 18 months.                                                                                                                                       |
| <b>8.23</b> | After the on-line period has expired, audit logs must be archived along with all other data (see Data Retention and Archive above).                                                                  |
| <b>8.24</b> | Archived audit logs must be able to be made available for querying by the Authority.                                                                                                                 |
| <b>8.25</b> | The supplier must comply with the Defra Security Assurance process and any associated requirements.                                                                                                  |

### 3.7 NaFRA2 Delivery Phases

The Phases and Stages introduced in this section are for convenience of labelling and describing specific work-blocks and work packages: We do not intend this to imply a rigid “waterfall” project delivery.

#### (a) 3.7.1 Phase 1: Project Initiation

This initiation phase will lay the groundwork for the subsequent work. It will include:

- Defining and agreeing project structure, roles and responsibilities and adequate resourcing
- Agreeing Project Management and reporting processes
- Agreeing overall project milestones and initial planning
- Agreeing detailed planning for Phase 2 to immediately follow
- Agreeing levels and escalation routes for change control and risk/issues management
- Agreeing methodology and ways of working, including a project team charter
- Establishing a forward requirements catalogue and technical issues log - and their maintenance and management
- Reviews of pre-existing written requirements and confirmation of supplier’s understanding of them
- Start-up meetings of the core project team and with wider stakeholder groups
- Ongoing discovery and elaboration of additional requirements detail and technical issues

- The supplier receiving, into a managed environment, the initial representative data the Agency identifies for Phase 2 (see SRA1)
- 3.7.2 Phase 2: Blueprint / Proof of Concept / Prototype

The objectives of this phase, overall, are:

1. To reconfirm the scope of project with respect to all the requirements as stated in this tender.
2. To define, elaborate and document Detailed Requirements
3. To document and demonstrate an adequate Design for the NaFRA2 solution ahead of full production build

During this phase, the supplier will work with the Environment Agency to provide:

- a Blueprint of the NaFRA2 solution
- Proof of Concept demonstrations of the feasibility key aspects of functionality, using representative sample data
- and, if needed, a Prototype build showing the integration of key functionality demonstrated in the Proof of Concept

We define each of these as follows:

- A **Blueprint** is a collection of documentation and presentations that provide a description of solutions, focussed on the key challenges.
- A **Proof of Concept** is a collection of functional demonstrations, using sample data provided, that are focussed on key problems. (Parts or all of a PoC may be “throwaway”)
- A **Prototype** is a more integrated basic model of the intended solution, which can functionally demonstrate to users (hands-on) that intended core processing works with a wider set of representative data.  
We envisage that most components and sub-systems within a Prototype would be intended to be reused in the following full solution build and further developed there. If we have already achieved good confidence in the outcomes of the preceding Proof of Concept work then a Prototype stage may be redefined as the initial stage of the full solution build.

#### 3.7.2.1 Blueprint Stage

During this stage, the supplier will work with the Environment Agency to investigate the requirements overall, and with particular emphasis on specific more challenging requirements: in order to set out the overall solution design / architecture and specific technical solutions to key requirements. The supplier will

provide options to resolve, with an evidence-based recommendation. The final decision will be mutually agreed with the EA project team.

The main deliverables will be:

- An updated and maintained requirements catalogue, elaborating detail on the requirements stated in this specification and in the contract
- An overall solution Architecture and the solution Design, to the scope and format defined in
- A detailed technical methodology for each of the challenging requirements investigated during the Blueprint stage
- A technical risks/issues log, including identification of outstanding technical risk / issues and uncertainties
- An agreed detailed plan for the Proof of Concept stage to follow

The format of deliverables from the Blueprint stage may be a combination of written documents, presentations, viewing of pre-existing working components, simple mock ups, etc.

The appraisal method and acceptance of the Blueprint stage will be that a review/QA panel of Agency staff agrees, in partnership with the supplier, and signs off the following:

- that the requirements catalogue is up to date and agreed
- that a feasible overall architecture and solution design has been presented and accepted
- that the feasibility of each key component has been adequately explained;
- or, by agreed exception, that some outstanding issues and uncertainties are recorded and carried forward in a product Risk/Issues log

The appraisal and acceptance may be by progressive iterative reviews and then a final overall signoff.

Scope of Business functional requirements for the Blueprint stage:

| BP1 | Business Functional in BP | Business Functional Requirements in Blueprint stage |
|-----|---------------------------|-----------------------------------------------------|
| ID  | Description               |                                                     |



|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.0 | <p>The format of deliverables and appraisal and evaluation for this stage will be as outlined in the preceding introduction to section 5.2.1.</p> <p>The supplier will describe and evidence if and how the requirements are each feasible and will be achievable in an operational solution delivery. The supplier will also identify any associated risks or issues.</p> <p>The supplier will provide options to resolve, with an evidence-based recommendation. The final decisions will be mutually agreed with the EA project team.</p> <p>The general scope and specific emphasis of the Blueprint stage is detailed in the tables in this section (5.2.1).</p> |
| 1.1 | In general, all Basic (non-Aspirational) Requirements (clauses) in the Business Functional Requirements ("SF") tables                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1.2 | In general, any Aspirational Requirements in the Business Functional Requirements ("SF") tables, that the supplier has agreed to deliver in the scope of an initial operational system                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1.3 | In general: Regarding other Aspirational Requirements that the supplier has NOT agreed to deliver in the scope of an initial contract – the supplier will provide, in the Blueprint stage, appraisal notes on any perceived feasibility, challenges and risks to the subsequent delivery of these longer term Aspirational requirements                                                                                                                                                                                                                                                                                                                               |
| 1.4 | Specifically: With focus and emphasis on the "Table of Key Business Functional Requirements for Blueprint and PoC", following below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**Table of Key Business Functional Requirements for Blueprint and PoC Stages**

| Short title               | CSF ref and all sub clauses | Appraisal criteria: high level description                                                                                                                                                                   | Blueprint (in/out) | PoC (in / out) |
|---------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------|
| Complete coverage         | SFA1                        | Flood risk outputs can provide complete spatial coverage of England.                                                                                                                                         | out                | Out            |
| All sources               | SFA2                        | Supports a common understanding of flood risk from multiple sources.                                                                                                                                         | out                | In             |
| Multiple sources          | SFA3                        | Assesses the contribution of multiple sources to overall flood likelihood.                                                                                                                                   | in                 | In             |
| Flood management assets   | SFA4                        | All flood management assets (EA and 3 <sup>rd</sup> party owned) that affect flows or water levels are considered.                                                                                           | out                | In             |
| Other floodplain features | SFA5                        | Other floodplain features that may affect flood flows can be included (such as road and railway infrastructure).                                                                                             | out                | In             |
| Local                     | SFB1                        | Maximise the value of local detailed flood risk information                                                                                                                                                  | in                 | In             |
| Consistent at all scales  | SFB2                        | Produces a seamless assessment with consistent results which can be interrogated at any level                                                                                                                | in                 | In             |
| Asset level risk          | SFB3                        | Data can be created that enables risk (probability and damages) to be calculated, apportioned to individual assets and aggregated to other management units (such as flood risk systems or groups of assets) | in                 | In             |
| Third party information   | SFB4                        | Flood risk information from third parties (such as Lead Local Flood Authorities, developers and the public) can be incorporated.                                                                             | out                | In             |
| Individual receptor level | SFC1                        | Results are fit for local operational (area FCRM) risk management decisions, including understanding flood impacts at the level of individual receptors.                                                     | in                 | In             |
| Investment impact testing | SFC2                        | Outputs from the solution will enable reports showing the impact of planned investment on risk, to be produced at a property level (and can be built up to communities, catchments and national levels).     | out                | In             |
| Outputs 1                 | SFD1                        | Spatial extent, annual probability and depth outputs can be produced everywhere.                                                                                                                             | out                | In             |

|                                      |      |                                                                                                                                                                                             |     |     |
|--------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|
| Outputs 2                            | SFD2 | Level, velocity, flow, direction, duration and hazard to life outputs can be produced.                                                                                                      | out | In  |
| Outputs 3                            | SFD3 | Frequency, speed of onset and volume outputs can be produced.                                                                                                                               | in  | In  |
| Propagation                          | SFD4 | Flood propagation can be modelled where needed.                                                                                                                                             | in  | In  |
| Direct impacts                       | SFD5 | The direct impacts of flooding can be quantified.                                                                                                                                           | out | In  |
| Indirect impacts                     | SFD6 | The indirect impacts of flooding can be quantified (such as temporary loss of infrastructure or utilities).                                                                                 | in  | In  |
| Health/social impacts                | SFD7 | The impact of flooding on health and society can be quantified.                                                                                                                             | in  | In  |
| Quick testing                        | SFE1 | Foreseeable national or catchment scenarios can be quickly tested (including "what if" questions during incidents).                                                                         | in  | In  |
| Scenarios 1                          | SFE2 | Enables the production of fluvial, tidal, coastal estuarine and surface water scenarios, for a range of annual probabilities and/or events:                                                 | in  | In  |
|                                      |      | • With flood management assets                                                                                                                                                              |     |     |
|                                      |      | • Without flood management assets                                                                                                                                                           |     |     |
| Asset performance                    | SFE4 | • That represent asset performance and asset reliability                                                                                                                                    | in  | In  |
| Scenarios 2                          | SFE3 | Enables the production of fluvial, coastal and estuarine scenarios for a range of annual probabilities and/or events:                                                                       | in  | In  |
|                                      |      | • Breaching                                                                                                                                                                                 |     |     |
|                                      |      | • Blockage assessments                                                                                                                                                                      |     |     |
|                                      |      | • Channel maintenance analysis                                                                                                                                                              |     |     |
|                                      |      | • Land management and other land use changes                                                                                                                                                |     |     |
|                                      |      | • Climate change                                                                                                                                                                            |     |     |
| Multiple scenarios                   | SFE5 | Enables the production of fluvial, coastal and estuarine scenarios that combine multiple scenarios                                                                                          | in  | In  |
| Changes in flood risk                | SFF1 | The information needed to analyse, quantify and monitor changes in flood risk for a range of spatial scales can be produced.                                                                | out | In  |
| Model inventory reporting            | SFF2 | Automated consistent reports can be made available to describe the flood modelling asset base                                                                                               | out | In  |
| Other boundaries                     | SFF3 | Outputs can be analysed and presented in management boundaries (such as groups of assets, communities, flood warning areas).                                                                | out | In  |
| Enable risk tracking                 | SFF4 | Outputs enable comparisons to be drawn between flood risk in different years, to demonstrate benefit and risk reduction from past investment.                                               | out | In  |
| Natural capital                      | SFF5 | Assessment of the effects of flooding and flood risk management interventions on natural capital will be made possible.                                                                     | out | In  |
| Standard modelling approaches        | SFG1 | Based on widely supported industry standard modelling approaches.                                                                                                                           | out | In  |
| Validation against recorded flooding | SFG2 | Recorded flooding (where available, of any flood source) for England can be used to validate the outputs from modelled scenarios.                                                           | out | In  |
| Standard data                        | SFG3 | Data and information can be made available in an industry recognised format with the principles of BIM and the Government Digital Service (GDS).                                            | out | In  |
| Open data                            | SFG4 | Outputs can be made available as Open Data.                                                                                                                                                 | out | In  |
| Limitations                          | SFG6 | Information about the purpose, intended use, suitability and limitations of flood risk data can be provided.                                                                                | in  | In  |
| Efficient local updates              | SFG7 | The process of incorporating changes in input data is quick and efficient so that NaFRA2 outputs remain up to date and we use and share the best available information for decision making. | in  | Out |
| Efficient 3rd party updates          | SFG8 | The process for incorporating 3 <sup>rd</sup> party local modelling is efficient (time).                                                                                                    | out | Out |

Scope of New National Model work for the Blueprint stage:

| BP2   | NNM – Blueprint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | New National Model – Requirements for Blueprint stage |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| ID    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
|       | <i>In this Table section, by default, the rows will be all be achieved in Blueprint stage. A few extended steps to be achieved later are labelled specifically as such</i>                                                                                                                                                                                                                                                                                                                                                                         |                                                       |
| 2.0   | The supplier will describe and evidence if and how the Requirements are each feasible and will be achievable in an operational solution delivery. The supplier will identify any associated risks or issues.                                                                                                                                                                                                                                                                                                                                       |                                                       |
| 2.1   | In general, all Basic (non-Aspirational) Requirements (clauses) in the New National Modelling, Section 4.3 (Tables NNM1 – NNM5).<br>This including agreeing validation, quality and tolerances for NNM.                                                                                                                                                                                                                                                                                                                                            |                                                       |
| 2.2   | In general, any Aspirational Requirements in New National Modelling, Section 4.3 (Tables NNM1 – NNM5) that the supplier has agreed to deliver in the scope of an initial delivery contract.                                                                                                                                                                                                                                                                                                                                                        |                                                       |
| 2.3   | <i>Specifically: With respect to the following requirements / questions</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |
| 2.3.1 | <p>The supplier will provide a recommended approach/es with reasons to resolve:</p> <p><u>Integrated (multiple sources) or separate models.</u></p> <p>Give the pros and cons of each approach, with particular regard to:</p> <ul style="list-style-type: none"> <li>-confidence in overall understanding of flood risk</li> <li>-understanding flood risk from each source separately</li> <li>-understanding the contribution to the overall risk of flooding from each source.</li> <li>-the flexibility to meet future aspirations</li> </ul> |                                                       |
| 2.3.2 | <p>The supplier will provide a recommended approach/es with reasons, to resolve:</p> <p><u>Approach to hydrology</u></p> <ul style="list-style-type: none"> <li>- Show how you will use FEH, or other emerging methods (including those in section 6) to develop rainfall and flows for use as input data for the modelling, which are appropriate in terms of peak rainfall/flow, total volume of rainfall/flow, and shape of hyetograph/hydrograph</li> </ul>                                                                                    |                                                       |
|       | <ul style="list-style-type: none"> <li>- Any method considers future, yet unknown, products and has the flexibility to adapt to those changing approaches</li> <li>- Examine and report on the potential to use hydrology and rainfall from the 2015/16 National Risk Assessment modelling to inform your approach</li> <li>- Test and report on how and where you will use hydrology from local detailed model studies as an input.</li> </ul>                                                                                                    |                                                       |
| 2.3.3 | <p>The supplier will provide a recommended approach with reasons to resolve:</p> <p><u>Channel characteristics</u></p> <p>Through trials, demonstrate how you would ensure that you have a realistic approach to representing river channel characteristics (taking account of variations across urban/rural/large/small rivers, and considering such factors as sedimentation, vegetation etc.) so that the representation of the onset of frequent flooding is reasonable.</p>                                                                   |                                                       |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.3.4 | <p>The supplier will provide a recommended approach with reasons to resolve:</p> <p><u>Approach to modelling flood risk from the sea.</u></p> <p>Describe how you will incorporate best practice from the recent State of the Nation NaFRA to develop national modelling for the sea. How will you consider:</p> <ul style="list-style-type: none"> <li>- joint probability (at estuaries, and sea level/wind/wave/surge)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.3.5 | <p>The supplier will provide a recommended approach with reasons, to resolve:</p> <p><u>DTM details</u></p> <p>For all modelling, test and review a range of options for DTM including: - resolution/grid/TIN size</p> <ul style="list-style-type: none"> <li>- representation of buildings and other floodplain features (e.g. no buildings, stubby buildings)</li> <li>- representation of the floodplain features that are not flood management assets but act as barriers to flow e.g. railway lines, highway embankments</li> </ul> <p>If tests indicate that different DTMs are preferred for different sources of flooding, describe the pros and cons of using a single DTM for all modelling, and the impact this will have on the model results.</p> <p>Describe the pros and cons of each approach, quantifying the accuracy of model outputs, and explain your recommended approach.</p> <p>Note: Further work has been completed on or is planned for our DTM, including varying manual edits to features. See Appendix 6 'DEM' for more information.</p> |
| 2.3.6 | <p>The supplier will provide a recommended approach with reasons, to resolve:</p> <p><u>Representation of flood management assets</u></p> <p>(see Appendix 6 'CDL and AIMS Existing Limitations').</p> <p>For all flood management assets (including, but not limited to raised flood defences, flood storage, flood gates/weirs, flood relief channels, pumps), with and without level or flow controls, describe how you will use available data to ensure the effects (presence, type, height, controls etc.) of these assets are represented in with-flood management assets scenarios.</p> <p>Describe what national modelling will be produced to enable the NaFRA2 solution to take account of the fragility of flood management assets.</p> <p>Describe also how you will develop without-flood management assets modelling,</p>                                                                                                                                                                                                                               |
|       | <p>ensuring that only flood management assets are omitted (i.e. other obstacles to flow are represented e.g. railway lines, highway embankments).</p> <p>Describe how you would model the floodplain unconstrained by flood management assets (i.e. where the removal of flood management assets does not represent the worst case scenario e.g. perched watercourses, downstream conveyance of flood water)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2.3.7 | <p>The supplier will discuss and agree an <u>Updated confidence assessment method.</u></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2.3.8 | <p>The supplier will discuss and agree the <u>uncertainty calculation</u> to use, considering and perhaps building on, the existing uncertainty calculation methods including the guidance for Residual Uncertainty Allowance (SC120014), and with reference to SFG6 (Limitations).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|       |                                                                                                                                                                              |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.3.9 | The supplier will discuss and agree the <u>Standards for processed outputs.</u> (the standards for validating and cleaning outputs, for example OGC and IINSPIRE compliance) |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Other Specifics to address in the Blueprint stage:

| BP3 | Toolkit in BP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Toolkit and database functionality in the Blueprint stage |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| ID  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                           |
| 3.1 | <p>The supplier will discuss and document in the Blueprint stage:</p> <p><u>Approach to asset failure:</u></p> <ul style="list-style-type: none"> <li>- Detail how you will use the data in the simulation library (including the national modelling) to take account of variable asset fragility, condition grade, chance of breach, overtopping, and build these into a credible approach that assigns risk to assets and fulfils the data needs of AIMS Planning? (See SFB3.4)</li> </ul>                                                                                                                   |                                                           |
| 3.2 | <p>The supplier will progress and resolve in Blueprint stage the:</p> <p><u>Approach and logical rules for choosing the single answer</u></p> <p>For example, when there are overlapping models (multiple local models, or local and national models. This must include consideration of whether and where user intervention is needed. If so, this should be an exception rather than a default.</p>                                                                                                                                                                                                          |                                                           |
| 3.3 | <p>The supplier will progress and resolve in Blueprint stage:</p> <p><u>Approach and rules for when to interpolate or emulate</u></p> <p>Describe rules and how they will apply. For example when there is high confidence local modelling but the required scenario is missing; and we have lower confidence in the national modelling. Detail how you will ensure the solution will interpolate/emulate using the available modelling to best effect?</p> <p>This must include consideration of whether and where user intervention is needed. If so, this should be an exception rather than a default.</p> |                                                           |
| 3.4 | <p>The supplier will progress and resolve in Blueprint stage:</p> <p><u>Approach to dealing with boundaries and overlaps between models.</u></p> <p>This means both spatially, between scenarios and between different model types (e.g. probabilistic and deterministic).</p> <ul style="list-style-type: none"> <li>- Detail how you will maintain consistency across the country using the best data from a patchwork of models.</li> </ul>                                                                                                                                                                 |                                                           |
|     | <ul style="list-style-type: none"> <li>- Describe the processes that will ensure the best balance between use of best quality model data, and hydraulic continuity and logic. This must include consideration of whether and where user intervention is needed. If so, this should be an exception rather than a default.</li> </ul>                                                                                                                                                                                                                                                                           |                                                           |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.5 | <p>The supplier will consider how NaFRA2 can support:</p> <p><u>Spatial Flood Simulations</u></p> <p>“Sophisticated methods have emerged for assessing localised risk but with limited capability at larger scales because of the difficulties of accounting for the chances of flooding at multiple locations in any one event.” (A new method to assess the risk of local and widespread flooding on rivers and coasts. Lamb et al., 2010)</p> <p>At the moment we can answer: If this flood happened here, what would be the impact?<br/>We need to answer: What is the impact of multiple concurrent floods across the country?</p>                                                                                                                                                                                                                                 |
| 3.6 | <p>In blueprint stage the supplier will provide a recommended approach with reasons, to resolve:</p> <p><u>Hydrological cataloguing</u></p> <p>This will replace the traditional way of cataloguing model outputs by the probability of occurrence. This will allow us to reuse model outputs more flexibly without prompting unnecessary re-runs.</p> <p>Examine options and propose an approach for referencing models by hydrological attributes appropriate for the flood source and cross referenced to the probability of occurrence. Consider how different scenarios with the same proposed attribute can be identified. Share all options considered with reasons for rejecting unsuccessful ones.</p> <p>Describe the data, attributes and structure required for both local detailed models and national modelling to be catalogued in the way proposed.</p> |

| BP4   | Sys-Funct. / NFR – in Blueprint                                                                                                                                                                                                                                                                                                                                                                                                                             | System Functional Requirements and Non-Functional Requirements in Blueprint stage |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| ID    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                   |
| 4.1   | The supplier will describe and evidence if and how the following Requirements, are each feasible and will be achievable in an operational solution delivery. They will identify any associated risks or issues.                                                                                                                                                                                                                                             |                                                                                   |
| 4.2   | In general, all Basic (non-Aspirational) Requirements tables rows, in the System Functional and Non-Functional Requirements (sections 4.4 and 4.5) .                                                                                                                                                                                                                                                                                                        |                                                                                   |
| 4.3   | In general, any Aspirational Requirements table rows in the System Functional and NonFunctional Requirements section (4.4 and 4.5) that the supplier has agreed to deliver within the scope of an initial operational system.                                                                                                                                                                                                                               |                                                                                   |
|       | <b><i>Specifically:</i></b> With respect to the following requirements / topics / deliverables                                                                                                                                                                                                                                                                                                                                                              |                                                                                   |
| 4.4.1 | <p>Working with the Environment Agency business teams (and IS Business Analyst if available) the supplier will analyse and document the business processes for maintaining the input data consumed by the solution. This will include discussing and agreeing:</p> <ul style="list-style-type: none"> <li>- a set of criteria / triggers and processes (e.g. flowcharts). for data updates that are within the scope of NaFRA2 data consumptions</li> </ul> |                                                                                   |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | <ul style="list-style-type: none"> <li>- the tolerance, standards, preparation and validation for input data updates – e.g.: What cannot be included?</li> <li>- The solution's processing of updates e.g.: <ul style="list-style-type: none"> <li>o How will the solution identify/notify potential changes in (or actively change) its outputs due to the new input information?</li> <li>o What are the interactions between changed inputs and the rules for choosing the way data is used to produce "a single answer"? (including any options for manual user choices regarding way input data is used)</li> <li>o What revised interpolations or emulations will be required based on the new information? Etc.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4.4.2 | <p>Focussing on an agreed list of standard outputs (see BP4.8.1) and working with the Environment Agency business teams (and IS Business Analyst if available) the supplier will analyse and document the business processes for producing outputs from the solution: This will include discussing and agreeing:</p> <ul style="list-style-type: none"> <li>- a set of criteria / triggers and processes (e.g. flowcharts). For data key data outputs.</li> <li>- the format and quality standards for data outputs – e.g.: What cannot or should not be included?</li> <li>- The overall solution's processing to produce and deliver key outputs (including QA and other post processing via external tools, where needed)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4.5   | <p>The supplier will document an overall Solution Architecture for their proposed operational solution, including the following aspects (Note : These are derived from typical EA Solution Architecture document contents)</p> <ul style="list-style-type: none"> <li>• Summary of the solution (high level overview)</li> <li>• Constraints / Assumptions</li> <li>• Application architecture <ul style="list-style-type: none"> <li>o (e.g. application structure, application components, application interfaces)</li> </ul> </li> <li>• Information architecture <ul style="list-style-type: none"> <li>o (e.g. entity models, data flows, data standards)</li> </ul> </li> <li>• Technology/Physical architecture <ul style="list-style-type: none"> <li>o (e.g. with reference to Sim-lib/database, Presentation layer, hosting, network &amp; communications, device targeting, Elastic capacity, Performance - cpu/storage, Resilience – failover, backup, etc.)</li> </ul> </li> <li>• Security <ul style="list-style-type: none"> <li>o (e.g.: types of controls in place to protect the environment, risk assessment, user authentication/authorisation etc.)</li> </ul> </li> <li>• Risks and issues</li> </ul>                                                                                                                                                                                                                       |
| 4.6   | <p>The suppliers Solution Architecture / Blueprint design documentation will include describing</p> <ul style="list-style-type: none"> <li>• Any pre-existing and / or 3rd party products or components used in this design <ul style="list-style-type: none"> <li>o Including details of any license agreements for all components that will form the proposed solution, including details of the license terms and costs</li> </ul> </li> <li>• Any data migration and take-on processes, methods tools or functionality required for the proposed solution as it is developed towards implementation; and then operationally post implementation</li> <li>• Details of the data inputs and outputs of the proposed operational solution, including <ul style="list-style-type: none"> <li>o Automated interfaces and manual invoked uploads</li> <li>o Data standards and formats that will apply or constrain</li> <li>o Protocols supported for communication/transfer <ul style="list-style-type: none"> <li>o How the solution can cope with new or varied data sources</li> <li>o How the proposed solution will operationally handle large data sets, particularly with regards to the data transfers associated with this solution</li> </ul> </li> </ul> </li> <li>• The overall management of data and metadata</li> <li>• Reporting tools and methods, including system monitoring for both end users and administrators;</li> </ul> |

|       |                                                                                                                                                                                                                                                                                                                                                                        |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.7   | In blueprint stage, the supplier will provide a first cut Design for the Simulation Library/database, toolkit and user interfaces, including documentation on all options considered and reasoning for the proposed Design.<br><br>This will Include describing how interpolated or emulated model data derived using the processing toolkit will be stored for reuse. |
| 4.8   | The supplier will maintain a Requirements Catalogue;<br>This will be signed off at the end of BP stage and subsequently maintained                                                                                                                                                                                                                                     |
| 4.8.1 | The requirements catalogue will include a list and specification of NaFRA2 outputs that are designated/agreed as being be the minimum set of "Standard Outputs" that will be a) acceptance-tested as derived from loaded up-to-date input data and b) handed over as part of the initially loaded operational solution                                                 |
| 4.9   | The supplier will maintain a Product Risks / Issues log :<br>This will be signed off at the end of BP stage.<br>And it will be used to confirm the scope and objectives of the PoC stage                                                                                                                                                                               |
| 4.10  | At the end of the Blueprint stage the supplier will propose a detailed plan and costs for the Proof of Concept stage work to follow and agree this with the Environment Agency. If needed, the supplier will also review and revise the overall project plan and costs and agree these with the Agency                                                                 |

Note BP5.1-BP5.4 are deliberately omitted.

| BP5 | BP capability and management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Blueprint capability and management |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| ID  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |
| 5.5 | <b>Innovation and Continuous Improvement</b><br>At the end of the Blueprint stage, the supplier will also provide details of their proposed overall solution / service Roadmap, covering the initial delivery (e.g. in the period remaining in the years 1-4 from award of contract ); plus suggested future changes and enhancements to the proposed solution / service, that are feasible early enhancements after the initial service implementation (e.g in years 3-5 years from initial award of contact), and the longer term solution/service roadmap (e.g. for time periods in the range 6-15 years from initial contact award ). |                                     |
| 5.6 | The supplier will implement and maintain a Continuous Improvement Programme (CIP) in a manner to be agreed with the Environment Agency and consistent with the draft Contract Schedule 2.4 (Continuous Improvement Programme).<br><br>The CIP will maintain the Roadmap following on from Blueprinting - during the solution development and delivery and during the support of the operational service; The CIP will also identify and scope other work packages for consideration which would improve the NaFRA2 solution and its operational service.                                                                                  |                                     |

### 3.7.2.2 Proof of Concept (PoC) Stage

The main deliverables will be:

- A Proof of Concept build - comprising individual or partly integrated components: These may or may not be actual components that will be used in an operational build, but which do adequately demonstrate that the functionality is achievable, working with the sample data that the Agency will provide.
- Relevant components should be on-line viewable by reviewers - including early prototype system access by users to individual components



- An updated and maintained requirements catalogue, further extending detail on the requirements stated in this specification and in the Blueprint stage
- An updated overall architecture and solution design and related technical documentation - updated from the Blueprint stage
- Agreed prioritisation of overall business requirements and of technical dependencies between design/build elements - to inform the content and sequencing of subsequent delivery increments (For example: identifying which components would most likely be deliverable and provide most business benefits if the project were hypothetically to close on only a reduced scope of the expected total delivery)
- A technical risks / issues log, identifying outstanding technical risks, issues and uncertainties (including software problems already identified)
- An agreed detailed plan and costs for the next stage to follow - ie either a working Prototype, if this is agreed to be needed, or the first increment of operational build

The format of deliverables from a PoC will be a combination of:

- Individual or partly integrated functional components,
- Further written documents (eg. Including: “How to” explanations, Methods, Designs); Presentations; Viewing or hands on use of working components etc.

The appraisal method and acceptance of the Blueprint stage will be that a review/QA panel of Agency staff agrees, in partnership with the supplier, and signs off the following:

- that the Requirements Catalogue is maintained up to date and agreed
- that the documents raised in Blueprint stage work are maintained up to date and agreed
- that the feasibility of each key component needing PoC has been adequately proven;
- or, by agreed exception, that outstanding issues and uncertainties are recorded and carried forward in a product Risk/Issues log

This may be achieved by progressive iterative reviews and then a final signoff

Requirements for PoC work

|             |                                     |                                                        |
|-------------|-------------------------------------|--------------------------------------------------------|
| <b>PoC1</b> | <b>Initial requirements for PoC</b> | <b>Initial Requirements for Proof of Concept stage</b> |
|-------------|-------------------------------------|--------------------------------------------------------|

| ID   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1  | <p>The format of deliverables and appraisal and evaluation for the PoC stage will be as outlined in the introduction section, 5.2.2 above</p> <p>The supplier will demonstrate how the Requirements within PoC scope are each feasible and will be achievable in an operational solution delivery.</p> <p>The supplier will also identify any associated risks or issues.</p>                                                                                                                                                                     |
| 1.2  | <p>The supplier will provide a PoC environment and upload sample data to it, provided by the Agency (see SRA1.)<br/>(Subject to progress in NNM work, some sample output data from the New National Model may also be included)</p> <p>Using this environment, and data, the supplier will practically demonstrate how key Requirements will be able to functionally process and be achievable in an operational solution delivery. (And continue to identify any risks or issues in progressing to the delivery of an operational solution).</p> |
|      | <i>The general scope and specific emphasis in the PoC will be as follows in this table.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.3  | The items marked “In” in the “PoC” column of the “Table of Key Business Functional Requirements for Blueprint and PoC” found in the preceding Blueprint section of this document. (following table BP1)                                                                                                                                                                                                                                                                                                                                           |
| 1.4  | Plus with focus on any other Aspirational Requirements in the Business Functional Requirements (“SF”) tables that the supplier has agreed to deliver within the scope of an initial operational system.                                                                                                                                                                                                                                                                                                                                           |
| 1.5  | <p>Plus with focus on any items identified as being technical issues/risks during the Blueprint stage and agreed to be included in PoC scope</p> <p>– So that it can be physically demonstrated that it is technically feasible to deliver an operational solution meeting these requirements: (within time and cost).</p>                                                                                                                                                                                                                        |
|      | <i>Specifically: With the following additional requirements</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1.6  | <p>SFG6 <u>Limitations</u></p> <p>Demonstrate the uncertainty calculation agreed in the Blueprint stage</p>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.7  | The supplier will demonstrate the <u>Updated confidence assessment method</u> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1.8  | The supplier will demonstrate the agreed <u>Standards for processed outputs</u> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1.9  | <p>The supplier will provide for PoC <u>A Viewer</u></p> <p>- ‘Develop an interim viewer for modelled data, so that national modelling can be viewed by LLFAs and internal users at the earliest opportunity for feedback/familiarisation.</p>                                                                                                                                                                                                                                                                                                    |
| 1.10 | The supplier will demonstrate the agreed approach to <u>Hydrological cataloguing</u> .                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1.11 | The supplier may demonstrate the agreed method for how <u>interpolated or emulated model data derived using the processing toolkit will be stored for reuse</u> .                                                                                                                                                                                                                                                                                                                                                                                 |
| 1.12 | The supplier will demonstrate the <u>Approach to asset failure</u> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1.13 | The supplier will demonstrate the validity of the agreed <u>Approach and logical rules for choosing the single answer</u> .                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.14 | The supplier will demonstrate the validity of:<br><u>Approach and logical business rules for when to interpolate or emulate</u> .                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1.15 | The supplier will demonstrate the <u>Approach to dealing with boundaries and overlaps between models</u> , both spatially and between scenarios.                                                                                                                                                                                                                                                                                                                                                                                                  |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.16 | The supplier will maintain a Requirements Catalogue; This will be signed off at the end of PoC stage.                                                                                                                                                                                                                                                                                                                                       |
| 1.17 | The supplier will update the architecture and design documentation from the Blueprint stage, if this needs updates: Updates will be signed off at end of PoC stage.                                                                                                                                                                                                                                                                         |
| 1.18 | The supplier will maintain an agreed prioritisation of overall business requirements and of technical dependencies between design/build elements - to inform the content and sequencing of subsequent delivery stages and increments                                                                                                                                                                                                        |
| 1.19 | The supplier will maintain a Product Risks / Issues log: This will be signed off at the end of PoC stage, and will be used to help determine if a Prototyping stage is needed and, if so, its scope.                                                                                                                                                                                                                                        |
| 1.20 | At the end of the PoC stage the supplier will propose a detailed plan and costs for either a) the following Prototyping stage, if needed, or b) for the initial increment of operational build, if Prototyping is agreed not to be needed: These will plans and costs will be agreed with the Environment Agency.<br>If needed, the supplier will also review and revise the overall project plan and costs and agree these with the Agency |

### 3.7.3 Phase 3: Full operational build and delivery

We currently envisage that the full operational build and delivery phase will be shaped and managed as a number of substantial increments of build and acceptance tests. The number of increments needed and the content of each increment will be progressively refined and agreed - initially during the preceding BP, PoC and Prototype stages (Section 3.7.2) and subsequently during the completion of each successive increment of operational build.

#### 3.7.3.1 Early deliverables in the Initial Increment of operational build

| IN  | First full Increment                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Provisional Requirements for the initial increment of operational build |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| ID  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                         |
| 1.1 | The supplier will provide early New National Model deliverables previously identified in NNM4.2 - plus their User Acceptance criteria, review/test records and sign off.                                                                                                                                                                                                                                                                                              |                                                                         |
| 1.2 | The supplier will provide compatible well managed environments and processes for, eg, Development, Data take-on, Training, Review; System Functional Testing (inc test data) ; Operational acceptance testing                                                                                                                                                                                                                                                         |                                                                         |
| 1.3 | The supplier will upload and maintain a significant volume of representative data, provided by the Agency (see SRA2)                                                                                                                                                                                                                                                                                                                                                  |                                                                         |
| 1.4 | The supplier will provide <ul style="list-style-type: none"> <li>- A baseline initial delivery (to a scope that will be defined during in BP / PoC or optional Prototype stages) of the Database (Simulation Library), Toolkit and User interface</li> <li>- Plus their Test and User Acceptance criteria, review/test records and sign off at this interim level of development.</li> </ul> Outstanding issues will be recorded in the Issues / Risk log (1.6 below) |                                                                         |
| 1.5 | The supplier will maintain the Requirements Catalogue.<br>This will now also include recording any partial or completed delivery status for each requirement.<br>(The catalogue will be maintained and signed off at the end of each delivery increment.)                                                                                                                                                                                                             |                                                                         |
| 1.6 | The supplier will maintain an outstanding Product Risks / Issues log. This will be signed off at the end of any delivery increment.                                                                                                                                                                                                                                                                                                                                   |                                                                         |

|     |                                                                                                                                                                                                                                                                                                                                                                                   |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.7 | (If updates are needed) The supplier will continue to update the architecture and design documentation from the preceding BP/PoC (and any Prototype) stages and now forward through each following incremental stage of operational build.                                                                                                                                        |
| 1.8 | By the end of each increment of operational build, the supplier will, with the Agency, review, revise and agree the prioritisation of overall business requirements and of technical dependencies between design/build elements – to inform the content and sequencing of subsequent increment of operational build.                                                              |
| 1.9 | At the end of any increment of operational build, the supplier will produce a detailed plan and costs for the following increment of operational build – and agree this with the Environment Agency.<br>If needed, the supplier will also review and revise the overall project plan and costs for the full operational build and implementation and agree these with the Agency. |

#### 3.7.3.2 Subsequent increments of operational build

We currently envisage the completion of development and delivery of the full operational solution (within the initial delivery contract) to then be done via several more controlled increments or work-packages - whose number and scope will be agreed with the supplier during each of the preceding delivery stages (eg BP / PoC / Prototype / Operational Build Increment 1 - n) - as outlined in this Section 5 overall.

This will include repeating table rows IN 1.3 and 1.5 - 1.9 above for each subsequent Increment of the Operational Build.

### 3.8 Data availability

We have a wealth of existing data that we want to use to shape and create NaFRA2 and produce the results.

These are summarised in the table below. Data Products are those datasets that we currently publish as our flood risk assessment information and will give you context for what we already produce. A number of these datasets will be replaced with the product of NaFRA2. Data Inputs are those datasets that are likely to be used as input - directly or indirectly - in the creation of NaFRA2. A few of these are also published, such as the LiDAR we collect.

The completeness and quality of some of these datasets will vary. For example, some areas of the country may have a complete spatial record of flood assets (including all relevant attributes). Other areas may have a complete spatial record of flood assets, but may be missing important attributes. Although these datasets are likely to improve over time, independently of this project, consideration must be given to the impact this will have on the supplier's proposed solution.

Early on in the process of developing requirements for the new National Flood Risk Assessment it was identified that there are a significant amount of data dependencies that need to be addressed for the project to be a success. For this reason a parallel project was set up with the aim of making data improvements to support the NaFRA2 core work.

This NaFRA2 data project has been taking a broader look at data improvement requirements including guidance and standards we need to ensure the consistency of our data, the systems that hold our data, the metadata we hold, as well as resourcing data improvements. We have looked at the variety of datasets that may be required to input into NaFRA2 and have put in place a prioritised programme of

data improvements, starting with a focus on those that are likely to have most influence on the quality of outputs of NaFRA2.

The data table following gives more information about which datasets are included in the scope of the NaFRA2 data programme and whether data improvement work is planned (some other data may also be required for the total NaFRA2 solution that are not within the scope of the NaFRA2 data project and so not included in the table below).

Sample datasets are available, additional to this specification document, for you to familiarise yourself with their content and format, and also with the range of quality.

Where sample datasets are listed as ‘available on request’, these are Environment Agency datasets which have not yet been made available under an Open Government Licence. We will therefore need to prepare a conditional data licence before we can release the data. Please contact us via the Bravo portal, confirming which sample datasets you require. The sample datasets will be transmitted using the Environment Agency ShareFile website and a link will be provided to download the data.

At the delivery phase, the ‘on request’ sample datasets can be resupplied as complete versions for those datasets which are required. Where possible, we will continue to distribute these via ShareFile, however in some cases there may be a substantial increase in data volume, therefore delivery will be via encrypted hard disk/s. The Environment Agency will be responsible for providing these hard disks and the collation of the data. A further data licence will be issued to cover the dates of the delivery phase.

Please also note that during the delivery phase, there may be the ability to consume some datasets directly from source. This is currently in development and will be confirmed at the beginning of the delivery phase.

|                                     | Name                                         | Description                                                                                                               | Dataset  | Location                                                                                                                                                                                        | Licensing             |                 | NaFR<br>A2<br>Data<br>Category* |
|-------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------|---------------------------------|
|                                     |                                              |                                                                                                                           |          |                                                                                                                                                                                                 | Tender<br>Sample Data | Project         |                                 |
| DATA PRODUCTS (Mapping & Modelling) |                                              |                                                                                                                           |          |                                                                                                                                                                                                 |                       |                 |                                 |
| 1                                   | Risk of flooding from rivers and sea (RoFRS) | National scale mapping showing the chance of flooding in any given year from rivers and sea, taking into account defences | Map      | <a href="https://data.gov.uk/dataset/risk-offlooding-from-riversand-sea1">https://data.gov.uk/dataset/risk-offlooding-from-riversand-sea1</a>                                                   | Open Data (OGL)       | Open Data (OGL) | C                               |
|                                     |                                              |                                                                                                                           | Postcode | <a href="https://data.gov.uk/dataset/risk-offlooding-from-riversand-sea-postcodesin-areas-at-risk">https://data.gov.uk/dataset/risk-offlooding-from-riversand-sea-postcodesin-areas-at-risk</a> | Open Data (OGL)       | Open Data (OGL) | C                               |

|   |                                                       |                                                                                                                                                                       |                                                                |                                                                                                                                                                                                         |                                                                          |                                                                                                   |   |
|---|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---|
|   |                                                       |                                                                                                                                                                       | Properties                                                     | <a href="https://data.gov.uk/dataset/risk-offlooding-from-riversand-sea-propertiesin-areas-at-risk">https://data.gov.uk/dataset/risk-offlooding-from-riversand-sea-propertiesin-areas-at-risk</a>       | Open Data (OGL)                                                          | Open Data (OGL)                                                                                   | C |
|   |                                                       | Analysis of the numbers of people, property and extent of land within areas at risk of flooding taken from the risk of flooding from rivers and sea (RoFRS) products. | Risk of Flooding from Rivers and Sea - Key Summary Information | <a href="https://data.gov.uk/dataset/risk-offlooding-from-riversand-sea-keysummary-information">https://data.gov.uk/dataset/risk-offlooding-from-riversand-sea-keysummary-information</a>               | Open Data (OGL)                                                          | Open Data (OGL)                                                                                   | C |
| 2 | <b>Flood Map for planning (rivers and sea) (FM4P)</b> | The chance of flooding in any given year from rivers and the sea, without defences, used primarily for development and spatial planning decisions                     | Flood Zone 2                                                   | <a href="https://data.gov.uk/dataset/flood-mapfor-planning-riversand-sea-flood-zone-2">https://data.gov.uk/dataset/flood-mapfor-planning-riversand-sea-flood-zone-2</a>                                 | Open Data (OGL)                                                          | Open Data (OGL)                                                                                   | C |
|   |                                                       |                                                                                                                                                                       | Flood Zone 3                                                   | <a href="https://data.gov.uk/dataset/flood-mapfor-planning-riversand-sea-flood-zone-3">https://data.gov.uk/dataset/flood-mapfor-planning-riversand-sea-flood-zone-3</a>                                 | Open Data (OGL)                                                          | Open Data (OGL)                                                                                   | C |
|   |                                                       |                                                                                                                                                                       | Areas Benefitting from Defences (ABDs)                         | <a href="https://data.gov.uk/dataset/flood-mapfor-planning-riversand-sea-areasbenefiting-fromdefences">https://data.gov.uk/dataset/flood-mapfor-planning-riversand-sea-areasbenefiting-fromdefences</a> | Open Data (OGL)                                                          | Open Data (OGL)                                                                                   | C |
| 3 | <b>Risk of flooding from surface water (RoFSW)</b>    | National scale mapping showing the chance of flooding in any given year from surface water                                                                            | Various datasets including Extents, Depth, Hazard, Speed,      | <a href="https://data.gov.uk/data/search?q=RoFSW+uFMfSW&amp;publisher=environmentagency">https://data.gov.uk/data/search?q=RoFSW+uFMfSW&amp;publisher=environmentagency</a>                             | Conditional license (data can be downloaded for use or accessed via WMS) | Ongoing work to make this Open Data – hoped to be completed by required date (Third party – LLFA) | C |

|   |                                                       |                                                                                                                                                  |                                          |                                                                                                                                                                                   |                                                      |                                                                                                   |   |
|---|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------|---|
|   |                                                       |                                                                                                                                                  | Direction, Model Details and Suitability |                                                                                                                                                                                   |                                                      |                                                                                                   |   |
| 4 | <b>Risk of flooding from multiple sources (RoFMS)</b> | A national scale assessment, giving an indication of what areas of land may be at risk of flooding from more than one source using the RoFRS and | Risk Band                                | <a href="https://data.gov.uk/dataset/risk-offlooding-frommultiple-sourcesrisk-band">https://data.gov.uk/dataset/risk-offlooding-frommultiple-sourcesrisk-band</a>                 | Conditional license (data can be downloaded for use) | Ongoing work to make this Open Data – hoped to be completed by required date (Third party – LLFA) | C |
|   |                                                       |                                                                                                                                                  | Risk Contribution                        | <a href="https://data.gov.uk/dataset/risk-offlooding-frommultiple-sourcesrisk-contribution">https://data.gov.uk/dataset/risk-offlooding-frommultiple-sourcesrisk-contribution</a> | Conditional license (data can be downloaded for use) |                                                                                                   | C |

|                                                                                                              |                                                                                  |                                                                                                                                       |                                                                                                              |                                                                                                                                                                     |                                                                      |                                                                                                                    |            |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------|
|                                                                                                              |                                                                                  | RoFSW                                                                                                                                 | Suitability                                                                                                  | <a href="https://data.gov.uk/dataset/risk-offlooding-frommultiple-sourcesuitability">https://data.gov.uk/dataset/risk-offlooding-frommultiple-sourcesuitability</a> | <a href="#">Conditional license</a> (data can be downloaded for use) |                                                                                                                    | <b>C</b>   |
| 5                                                                                                            | <b>Reservoir Flood Maps</b>                                                      | An indication of the areas that could be affected by reservoir flooding, to use together with local knowledge for emergency response. | Includes simplified (merged) and detailed (individual) reservoir mapping (extents, depths, speed and hazard) | Sample data available on request                                                                                                                                    | Contractor / conditional licence to be made available with data      | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. | <b>C</b>   |
| 6                                                                                                            | <b>Recorded flood data products (rivers, sea, groundwater and surface water)</b> | The combined area of flooding that has occurred, based on information available to the Environment Agency                             | Historic Flood Map                                                                                           | <a href="https://data.gov.uk/dataset/historicflood-map1">https://data.gov.uk/dataset/historicflood-map1</a>                                                         | Open Data ( <a href="#">OGL</a> )                                    | Open Data ( <a href="#">OGL</a> )                                                                                  | <b>C</b>   |
|                                                                                                              |                                                                                  | Individual outlines for each flood event of all our records of recorded flooding from rivers, the sea, groundwater and surface water. | Recorded Flood Outlines                                                                                      | <a href="https://data.gov.uk/dataset/recordedflood-outlines1">https://data.gov.uk/dataset/recordedflood-outlines1</a>                                               | Open Data ( <a href="#">OGL</a> )                                    | Open Data ( <a href="#">OGL</a> )                                                                                  | <b>A</b>   |
| <b>DATA INPUTS (includes some non-Mapping &amp; Modelling Products, which could be used as model inputs)</b> |                                                                                  |                                                                                                                                       |                                                                                                              |                                                                                                                                                                     |                                                                      |                                                                                                                    |            |
| 7                                                                                                            | <b>Local detailed flood modellin</b>                                             | Models that are developed for local area needs, to                                                                                    | Hydraulic 1D, 2D or 1D-2D models /                                                                           | Example datasets of local flood models and outputs available on request                                                                                             | Contractor / conditional licence to be                               | Work required to license for use as input to NaFRA2. Need to review                                                | <b>N/A</b> |
|                                                                                                              | <b>g (rivers, sea)</b>                                                           | support some of the other products and to support local assessments of risk                                                           | correspondin g input data                                                                                    | (Note, includes 1D and 2D outputs, but 1D outputs additionally entered into MapEdit system (see below))                                                             | made available with data                                             | third party / personal data / security issues. (Third party – CEH/various)                                         |            |
|                                                                                                              |                                                                                  |                                                                                                                                       | 2D model output data (incl. flood depths, velocities and hazard).                                            |                                                                                                                                                                     | Contractor / conditional licence to be made available with data      |                                                                                                                    | <b>A</b>   |



|   |                                                                                |                                                                                                                                         |                                                                                                       |                                                                                                                                                                                                                                                              |                                                                 |                                                                                           |            |
|---|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------|
|   |                                                                                |                                                                                                                                         | 1D model output data (incl. flood outlines and levels) as stored in MapEdit                           | Modelled Flood Groups<br>Modelled Flood Outlines<br>Modelled Flood Measurements<br>Node Points (available on request)                                                                                                                                        | Contractor / conditional licence to be made available with data |                                                                                           | <b>A</b>   |
|   |                                                                                |                                                                                                                                         | Model metadata                                                                                        | Currently held as spreadsheet available on request. Due for update by April 2018                                                                                                                                                                             | Contractor / conditional licence to be made available with data | N/A                                                                                       | <b>A</b>   |
| 8 | <b>Recorded flood data inputs (rivers, sea, groundwater and surface water)</b> | Recorded flood data for each flood event of all our records of recorded flooding from rivers, the sea, groundwater and surface water.   | Recorded flood information from MapEdit                                                               | Flood Event Groups<br>Flood Information Locations<br>Recorded Flood Measurements<br>Recorded Flood Outlines (RFOs available as Open Data – listed in products above) (available on request)                                                                  | Contractor / conditional licence to be made available with data | Work required to license for use as input to NaFRA2. Need to review personal data issues. | <b>A</b>   |
|   |                                                                                |                                                                                                                                         | Recorded flood data (unstructured )                                                                   | Flood data collection forms, Flood history report (variable content)<br>Sample available on request, however these vary in content and quality                                                                                                               | Contractor / conditional licence to be made available with data | Work required to license for use as input to NaFRA2. Need to review personal data issues. | <b>N/A</b> |
| 9 | <b>Aerial and bathymetric survey information</b>                               | Surveys using aircraft, boats or other remote sensing equipment, mainly used for topography, as supporting information to develop other | ASCII grids of LIDAR ground elevations at a range of resolutions (2m, 1m, 50cm and 25cm). DSM and DTM | <a href="https://data.gov.uk/data/search?publisher=environmentagency&amp;q=lidar">https://data.gov.uk/data/search?publisher=environmentagency&amp;q=lidar</a>                                                                                                | Open Data (OGL)                                                 | Open Data (OGL)                                                                           | <b>C</b>   |
|   |                                                                                | flood products. See Appendix 6 'Ongoing Digital Elevation Model Work'                                                                   | Aerial Imagery                                                                                        | <a href="https://data.gov.uk/dataset/vertical-aerial-photography">https://data.gov.uk/dataset/vertical-aerial-photography</a><br><a href="https://data.gov.uk/dataset/oblique-aerial-photography">https://data.gov.uk/dataset/oblique-aerial-photography</a> | Open Data (OGL)                                                 | Open Data (OGL)                                                                           | <b>C</b>   |



|    |                                            |                                                                                                                                         |                                                                                                                                                                 |                                                                                                                 |                                                                 |                                                                                                                                            |   |
|----|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---|
|    |                                            | for further information on these datasets.                                                                                              | Bathymetry                                                                                                                                                      | <a href="https://data.gov.uk/dataset/multibeam-bathymetry">https://data.gov.uk/dataset/multibeam-bathymetry</a> | Open Data (OGL)                                                 | Open Data (OGL)                                                                                                                            | C |
|    |                                            |                                                                                                                                         | National Height Product – Integrated Height Model (IHM)                                                                                                         | Sample data available on request                                                                                | Contractor / conditional licence to be made available with data | Work required to license for use as input to NaFRA2. Need to review third party issues. (Third party – OS, Bluesky and NERC)               | B |
|    |                                            |                                                                                                                                         | Seazone+ - Offshore Bathymetry                                                                                                                                  | Provided within the <b>Coastal SWAN Models</b> (listed below ID 27) sample data                                 | N/A                                                             | Work required to license for use as input to NaFRA2 as originally purchased for State of Nation work. Need to review third party issues.   |   |
|    |                                            |                                                                                                                                         | Surf Zone DTM 2014+ - A Digital Elevation Model comprising of the best available lowtide LIDAR and near-shore multibeam SONAR bathymetry of the intertidal zone | Sample data available on request                                                                                | Contractor / conditional licence to be made available with data | Work required to license for use as input to NaFRA2. Need to review third party issues. (Third party – various)                            | B |
| 10 | <b>Topographic and Hydrometric surveys</b> | A range of survey data (such as topographic and hydrometric surveys), catalogued (typically in a GIS database) and stored by each Area. | Includes various channel, topographic, deformation, crest level, culvert, waste site and flood level survey information                                         | Example datasets of local survey available on request                                                           | Contractor / conditional licence to be made available with data | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. (Third party – various) | C |

|    |                                          |                                                                                                                                                                               |                                       |                                                                                                                                                            |                                                                                                                                                     |                                                                                                                                            |          |
|----|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------|
|    |                                          | Property threshold levels captured by detailed survey                                                                                                                         | Property threshold survey information | Example datasets of local property threshold survey data available on request                                                                              | Contractor / conditional licence to be made available with data                                                                                     | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. (Third party – various) | <b>A</b> |
| 11 | <b>Property Level Protection surveys</b> | Survey of flooding information, vulnerability of property to water ingress and potential costs of work to protect. Various surveys carried out locally to national standards. | Property level protection survey data | Example datasets of local survey available on request                                                                                                      | Contractor / conditional licence to be made available with data                                                                                     | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. (Third party – various) | <b>B</b> |
| 12 | <b>Hydrometric Data</b>                  | River level and flow data, rainfall precipitation data, groundwater level data, other telemetered data (such as flood gate position information)                              | Live flood levels                     | <a href="https://floodwarninginformation.service.gov.uk/river-and-sealevels">https://floodwarninginformation.service.gov.uk/river-and-sealevels</a>        | N/A                                                                                                                                                 | N/A                                                                                                                                        | <b>C</b> |
|    |                                          |                                                                                                                                                                               | Archived historic records             | <a href="https://nrfa.ceh.ac.uk/data/search">https://nrfa.ceh.ac.uk/data/search</a><br>Other sites / further records available from local teams on request | <a href="http://nrfa.ceh.ac.uk/coststerms-andconditions">http://nrfa.ceh.ac.uk/coststerms-andconditions</a><br>OR<br>Contractor license as required | Work required to license for use as input to NaFRA2. Need to review third party / personal                                                 | <b>C</b> |

|  |  |                                                                                                                                                                                                                                      |                               |                                                                                                                                   |                                   |                                   |          |
|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|----------|
|  |  |                                                                                                                                                                                                                                      |                               |                                                                                                                                   |                                   | data / security issues.           |          |
|  |  | Locations of monitoring sites storing records of river, tidal, groundwater and reservoir levels, river flows, rainfall and other climate data, effluent discharges, and continuous water quality data for a limited number of sites. | Hydrometric monitoring points | <a href="https://data.gov.uk/dataset/hydrometricmonitoring-points1">https://data.gov.uk/dataset/hydrometricmonitoring-points1</a> | Open Data ( <a href="#">OGL</a> ) | Open Data ( <a href="#">OGL</a> ) | <b>C</b> |

|    |                                        |                                                                                                                                                                                                                                                          |                                                                                                                        |                                        |                            |                                                                                                                                                                                                                                                               |          |
|----|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 13 | <b>National Receptor Dataset (NRD)</b> | A static dataset of risk receptors including properties allowing us to compare impacts on a like for like basis. Includes additional information such as floor level, MCM code, building area and nonaddressable properties to enable damage calculation | Current version: National Receptor Dataset 2014. The NRD is due to be updated in 2018, with subsequent yearly updates. | <a href="#">Partner Data Catalogue</a> | Obtain license through PDC | The NRD is covered under the PSMA for use as input data in NaFRA2. Further discussions are required with the OS on third party rights regarding derived output data (the NRD uses OS AddressBase Premium with additional information derived from MasterMap). | <b>B</b> |
|----|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|

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|----|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 14 | <b>Multi-Coloured Manual (MCM)</b> | MCM codes are assigned to property points in the National Receptor Dataset. The MCM code is used to link the various types of building to one of 14 different depth-damage curves in the Multi-Coloured Manual. This is the code used in the Multi Coloured Manual to apply (£) damage values. | Depthdamage curves (used in damage calculations)<br><br>Land Use Codes (used by NRD)           | The Multi-Coloured Handbook and Data are available to download under licence from a secure section of the <a href="#">MCMOnline</a> | The multicoloured manual can only be provided to organisations licensed for the data by Middlesex University | In order to access the data used in damage calculations, the supplier will be expected to be licensed/ obtain a license for the MCM.       | <b>B</b> |
| 15 | <b>AIMS Asset data</b>             | Linear and point spatial datasets containing flood risk asset information including crest level, standard of protection, asset condition. See Appendix 6: 'CDL and AIMS existing limitations' for further information on this dataset                                                          | Channels, Channel Crossings, Defences, Land, Structures, Sites, Major Civils, Beach Structures | Sample data available on request                                                                                                    | Contractor / conditional licence to be made available with data                                              | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. (Third party – various) | <b>A</b> |

|  |  |                                                            |                                                            |                                                                                                                                                                                   |  |                                   |                                   |
|--|--|------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------|-----------------------------------|
|  |  | Dataset as above but with limited attributes for open data | Spatial Flood Defences (including standardised attributes) | <a href="https://data.gov.uk/dataset/spatialflood-defencesincludingstandardisedattributes/">https://data.gov.uk/dataset/spatialflood-defencesincludingstandardisedattributes/</a> |  | Open Data ( <a href="#">OGL</a> ) | Open Data ( <a href="#">OGL</a> ) |
|--|--|------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------|-----------------------------------|

|    |                                      |                                                                                                                                                                                                                                                                                                                              |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                 |                                                                                                                                  |
|----|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 16 | <b>Continuous Defence Line (CDL)</b> | A continuous defence line running along the side of each river bank and around the coast, including all primary watercourses in the extreme flood outline, containing geometry and attributes from AIMS. Used in current NaFRA. See Appendix 6: 'CDL and AIMS existing limitations' for further information on this dataset. | Continuous Defence Line (CDL) – 3 different versions of this dataset are available. | Sample data available on request                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Contractor / conditional licence to be made available with data | Need to assess requirements to license for use as input to NaFRA2. Need to review third party / personal data / security issues. |
| 17 | <b>Fragility Curves</b>              | Fragility/breach curves have been created for a range of defence types. Fragility curves represent the likelihood of asset failure for a particular flood loading event.                                                                                                                                                     |                                                                                     | Sample data available on request                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Contractor / conditional licence to be made available with data | Need to assess requirements to license for use as input to NaFRA2. Need to review third party / personal data / security issues. |
| 18 | <b>Asset Maintenance programme</b>   | Annual planned work for maintenance of watercourses and assets, such as channels, raised defences, structures and reservoirs carried out by the Environment Agency.                                                                                                                                                          |                                                                                     | <a href="https://www.gov.uk/government/publications/river-andcoastalmaintenanceprogramme">https://www.gov.uk/government/publications/river-andcoastalmaintenanceprogramme</a><br><a href="https://data.gov.uk/data/search?q=%22river+and+coastal+maintenance+programme%22&amp;publisher=environmentagency&amp;themeprimary=Environment">https://data.gov.uk/data/search?q=%22river+and+coastal+maintenance+programme%22&amp;publisher=environmentagency&amp;themeprimary=Environment</a> | Open Data (OGL)                                                 | Open Data (OGL)                                                                                                                  |

|    |                                                  |                                                                                                                                             |                                                                   |                                                                                                                         |                                                                                                                                                         |                                                                                                                                                                                                               |          |
|----|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 19 | <b>River Network</b>                             | River centreline polyline, nodes and offline drainage features (includes main river attribute, but statutory main river should be used)     | Detailed River Network (DRN) v3                                   | <a href="#">Partner Data Catalogue</a>                                                                                  | Obtain license through PDC                                                                                                                              | Possible replacement by OS Water Network layer. Work required to license for use as input to NaFRA2. Need further discussions with OS re third party rights regarding derived output data. (Third party – OS) | <b>C</b> |
|    |                                                  | A spatial (polyline) dataset that defines statutory watercourses designated by the Environment Agency as main rivers                        | Statutory Main River Network                                      | <a href="https://data.gov.uk/dataset/statutorymain-river-map1">https://data.gov.uk/dataset/statutorymain-river-map1</a> | Open Data (OGL)                                                                                                                                         | Open Data (OGL)                                                                                                                                                                                               | <b>C</b> |
| 20 | <b>Flood warning gauge threshold information</b> | Flood impact threshold data: this impact data is made up of recorded levels and the associated contextual impact information                | Flood warning, Operational, Impact and Information threshold data | Sample data available on request                                                                                        | Contractor / conditional licence to be made available with data                                                                                         | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues.                                                                                            | <b>B</b> |
| 21 | <b>Hydrological data</b>                         | Data such as catchment and point descriptors, rainfall rarity/depth data, and detailed catchment boundaries provided by the FEH web service | Rainfall depth/duration data                                      | <a href="https://fehweb.ceh.ac.uk/">https://fehweb.ceh.ac.uk/</a>                                                       | Contractor to access datasets directly (Requires login to purchase credits to download data and licence. A single data point should be representative). | Work required to license for use as input to NaFRA2. Need to review third party issues. (Third party – CEH)                                                                                                   | <b>C</b> |
|    |                                                  |                                                                                                                                             | In channel flow data                                              |                                                                                                                         |                                                                                                                                                         |                                                                                                                                                                                                               | <b>C</b> |
|    |                                                  |                                                                                                                                             | Catchment descriptors                                             |                                                                                                                         |                                                                                                                                                         |                                                                                                                                                                                                               | <b>C</b> |
| 22 | <b>National Fluvial Levels database (NFLD)</b>   | A dataset used for input into MDSF2 created using 1D modelled water levels approved for RoFRS use extracted from                            | National Fluvial Levels database                                  | Sample data available on request                                                                                        | Contractor / conditional licence to be made available with data                                                                                         | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues.                                                                                            | <b>A</b> |

|    |                                           |                                                                                                                                                                                    |                                |                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                 |          |
|----|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|----------|
|    |                                           | MapEdit and other sources. Data cleansing carried out as part of State of Nation work (v3) but not updated at source.                                                              |                                |                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                 |          |
| 23 | <b>Tide Gauge network<sup>+</sup></b>     | Network owned and operated by the Environment Agency, on behalf of the UK Coastal Flood Forecasting service. It records tidal elevations at 44 locations around the UK coast       | UK National Tide Gauge Network | <a href="http://environment.data.gov.uk/floodmonitoring/tidegaug-e/">http://environment.data.gov.uk/floodmonitoring/tidegaug-e/</a>                                                                                                                                                                                                                                                                         | Open Data (OGL) | Open Data (OGL) | <b>C</b> |
| 24 | <b>Coastal Flood Boundary<sup>+</sup></b> | A GIS dataset and supporting information providing design / extreme sea level and typical surge information around the coastline of England and Wales under present day conditions | Extreme Sea Levels             | <a href="https://data.gov.uk/dataset/coastal-design-sea-levels-coastal-flood-boundary-extreme-sea-levels">https://data.gov.uk/dataset/coastal-design-sea-levels-coastal-flood-boundary-extreme-sea-levels</a>                                                                                                                                                                                               | Open Data (OGL) | Open Data (OGL) | <b>C</b> |
|    |                                           |                                                                                                                                                                                    | Confidence Intervals           | <a href="https://data.gov.uk/dataset/coastal-design-sea-levels-coastal-flood-boundary-confidence-intervals">https://data.gov.uk/dataset/coastal-design-sea-levels-coastal-flood-boundary-confidence-intervals</a>                                                                                                                                                                                           | Open Data (OGL) | Open Data (OGL) | <b>C</b> |
|    |                                           |                                                                                                                                                                                    | Estuary Intervals              | <a href="https://data.gov.uk/dataset/coastal-design-sea-levels-coastal-flood-boundary-estuary-intervals">https://data.gov.uk/dataset/coastal-design-sea-levels-coastal-flood-boundary-estuary-intervals</a>                                                                                                                                                                                                 | Open Data (OGL) | Open Data (OGL) | <b>C</b> |
|    |                                           |                                                                                                                                                                                    | Surge Shapes and data          | <a href="https://data.gov.uk/dataset/coastal-design-sea-levels-coastal-flood-boundary-surge-shapes">https://data.gov.uk/dataset/coastal-design-sea-levels-coastal-flood-boundary-surge-shapes</a> <a href="https://data.gov.uk/dataset/coastal-design-sea-levels-coastal-flood-boundary-surge-shape-data">https://data.gov.uk/dataset/coastal-design-sea-levels-coastal-flood-boundary-surge-shape-data</a> | Open Data (OGL) | Open Data (OGL) | <b>C</b> |

|  |  |  |            |                                                                                                                           |                 |                 |   |
|--|--|--|------------|---------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|---|
|  |  |  | Gauge Data | <a href="https://data.gov.uk/dataset/coastaldesign-sea-levels-">https://data.gov.uk/dataset/coastaldesign-sea-levels-</a> | Open Data (OGL) | Open Data (OGL) | C |
|--|--|--|------------|---------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|---|

|    |                                         |                                                                                                                                                                                |                        |                                                 |                                                                 |                                                                                                                    |   |
|----|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---|
|    |                                         |                                                                                                                                                                                |                        | <a href="#">coastal-floodboundary-gaugedata</a> |                                                                 |                                                                                                                    |   |
| 25 | <b>Coastal Event Tracker Database +</b> | A csv file for each asset subject to overtopping or weiring, including the offshore driving conditions, the nearshore conditions, defence toe conditions and overtopping rates | Asset Files            | Sample data available on request                | Contractor / conditional licence to be made available with data | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. | C |
|    |                                         | A GIS database including flood defence schematisations , coastal transect polylines, nearshore and offshore points, extreme overtopping rates and volumes                      | Overtopping Rates      | Sample data available on request                | Contractor / conditional licence to be made available with data | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. | C |
|    |                                         | Image files of beach profile and overtopping rate by return period                                                                                                             | Transect Profile Plots | Sample data available on request                | Contractor / conditional licence to be made available with data | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. | C |



|    |                                               |                                                                                                                                                                                                                                                                                                  |                                       |                                  |                                                                 |                                                                                                                    |          |
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| 26 | <b>National Coastal Load database (NCLD)+</b> | A csv file for nearshore events including water level, wave height / energy / period / direction / spreading / frequency. A shapefile at 1km spacing along the -5m ODN contour including joint probability reading, sea bed elevation, MSL, MHWS, return period at 1in1 to 1in1000 extreme surge | National Coastal Load database (NCLD) | Sample data available on request | Contractor / conditional licence to be made available with data | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. | <b>B</b> |
|----|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------|

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|----|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------|
|    |                                             | for coastal flood boundaries project adjusted to 2014.                                                                                 |                          |                                                                                       |                                                                                                                    |                                                                                                                    |          |
| 27 | <b>Wavewatch III (WWIII) Hindcast data+</b> | Offshore wave climate data including hindcast run by MetOffice. 8km model grid from 01/1980 to 06/2014.                                | Wind and wave parameters | <a href="http://wavenet.cefas.co.uk/hindcast">http://wavenet.cefas.co.uk/hindcast</a> | Contractor to access datasets directly (Requires EA PM email and project code to download - Select all parameters) | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. | <b>C</b> |
| 28 | <b>Coastal SWAN Models+</b>                 | Wave transformation from nearshore to toe of defence.                                                                                  | SWAN 1D Models           | Sample data available on request                                                      | Contractor / conditional licence to be made available with data                                                    | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. |          |
|    |                                             | Surfzone modelling from offshore to -5m ODN contour. Data includes seazone bathymetry. Multivariate extreme analysis has been applied. | SWAN 2D Models           | Sample data available on request                                                      | Contractor / conditional licence to be made available with data                                                    | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues. |          |

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|----|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------|
| 29 | <b>Road and Rail Network</b>      | Road and rail transport network of Great Britain                                                                                                                           | OS MasterMap® Integrated Transport Network™  | <a href="#">Partner Data Catalogue</a>                                                                                                                                               | Obtain license through PDC                                  | Data covered under PSMA. May require further discussions with OS re third party issues. (Third party – OS) | <b>C</b> |
| 30 | <b>Land Cover Map</b>             | Land cover information derived from satellite images and digital cartography for the entire UK. Land cover is based on UK Biodiversity Action Plan Broad Habitats classes. | Land cover map 2015                          | <a href="https://www.ceh.ac.uk/sites/default/files/files/Land_Cover_Map_2015_sample.zip">https://www.ceh.ac.uk/sites/default/files/files/Land_Cover_Map_2015_sample.zip</a> (sample) | Obtain license for sample via link                          | License for national dataset to be agreed with CEH                                                         | <b>C</b> |
| 31 | <b>Environmental Designations</b> | Variety of environmental designations available via the Natural England                                                                                                    | Various datasets provided by Natural England | <a href="http://naturalenglanddefra.opendata.arcgis.com/">http://naturalenglanddefra.opendata.arcgis.com/</a>                                                                        | Open Data ( <a href="#">OGL</a> ) (unless otherwise stated) | All key environmental designations of interest available as Open Data ( <a href="#">OGL</a> )              | <b>C</b> |

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|    |                              | Open Data Geoportal                                                                                                                                                    |                                                                                              |                                                                                                                                                                                                                                               |                                                                                                                                    |                                                                                                                      |          |
| 32 | <b>Agricultural Datasets</b> | Agricultural land classified into five grades. Grade one is best quality and grade five is poorest quality. Uses consistent criteria including climate, site and soil. | Provisional Agricultural Land Classification Grade (2002) ( <i>Natural England dataset</i> ) | <a href="http://naturalenglanddefra.opendata.arcgis.com/datasets/provisional-agriculturalland-classification-alc-england">http://naturalenglanddefra.opendata.arcgis.com/datasets/provisional-agriculturalland-classification-alc-england</a> | Open Data ( <a href="#">OGL</a> )                                                                                                  | Open Data ( <a href="#">OGL</a> )                                                                                    | <b>C</b> |
|    |                              | The Crop Map of England (CROME) Complete is a polygon vector dataset mainly containing the crop types of England.                                                      | Crop Map of England (CROME) 2016 ( <i>Rural Payments Agency Dataset</i> )                    | <a href="https://data.gov.uk/dataset/crop-map-of-england-crome2016-complete">https://data.gov.uk/dataset/crop-map-of-england-crome2016-complete</a>                                                                                           | Open Data ( <a href="#">OGL</a> )                                                                                                  | Open Data ( <a href="#">OGL</a> )                                                                                    | <b>C</b> |
| 33 | <b>Soil Data</b>             | A variety of soil classification, geology and bedrock classification datasets                                                                                          | Various datasets available                                                                   | <a href="http://www.bgs.ac.uk/products/home.html">http://www.bgs.ac.uk/products/home.html</a>                                                                                                                                                 | Licensing information at <a href="http://www.bgs.ac.uk/data/licensing/home.html">http://www.bgs.ac.uk/data/licensing/home.html</a> | If required, would need further discussions with BGS re third party issues and licensing for use as input to NaFRA2. | <b>C</b> |

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|----|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------|----------|
|    |                               | Spatial mapping of soils at a variety of scales from LandIS (Land Information System)                                           | National Soil Resources Institute (NSRI)                    | <a href="http://www.landis.org.uk/data/index.cfm">http://www.landis.org.uk/data/index.cfm</a>                                                                         | Access arrangements to data shown on website. | If required, would need to check with NSRI whether current licence conditions cover use as input to NaFRA2. | <b>C</b> |
| 34 | <b>Flood Warning Areas</b>    | Geographical areas where we expect flooding to occur and where we provide a Flood Warning Service                               | Flood Warning Areas                                         | <a href="https://data.gov.uk/dataset/floodwarning-areas3">https://data.gov.uk/dataset/floodwarning-areas3</a>                                                         | Open Data ( <a href="#">OGL</a> )             | Open Data ( <a href="#">OGL</a> )                                                                           | <b>C</b> |
|    |                               | Geographical areas where it is possible for flooding to occur from rivers sea and in some locations groundwater                 | Flood Alert Areas                                           | <a href="https://data.gov.uk/dataset/flood-alertareas2">https://data.gov.uk/dataset/flood-alertareas2</a>                                                             | Open Data ( <a href="#">OGL</a> )             | Open Data ( <a href="#">OGL</a> )                                                                           | <b>C</b> |
| 35 | <b>Indices of Deprivation</b> | The Indices of Deprivation provide a set of relative                                                                            | Index of Multiple Deprivation                               | <a href="https://www.gov.uk/government/statistics/english-indices-ofdeprivation-2015">https://www.gov.uk/government/statistics/english-indices-ofdeprivation-2015</a> | Open Data ( <a href="#">OGL</a> )             | Open Data ( <a href="#">OGL</a> )                                                                           | <b>C</b> |
|    |                               | measures for small areas across England. The Index of Multiple Deprivation (IMD) is an overall relative measure of deprivation. | (IMD) ( <i>DCLG dataset</i> )                               |                                                                                                                                                                       |                                               |                                                                                                             |          |
| 36 | <b>Health Data</b>            | National datasets for clinical analysis, public health, primary care and demographic data.                                      | SHAPE (Strategic Health Asset Planning and Evaluation) data | <a href="https://shape.phe.org.uk/">https://shape.phe.org.uk/</a>                                                                                                     | Access arrangements to data shown on website. | If required, would need to review licensing with PHE for use as input to NaFRA2.                            | <b>C</b> |

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|----|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------|
| 37 | <b>Floodplain features affecting flow</b> | Product being trialled for use in NaFRA2 - derived from the DTM, representing features such as underpasses / culverts, road/rail embankments. See Appendix 6 'Ongoing Digital Elevation Model Work May2018' for further information on this dataset | Proof-of-concept dataset being developed by NaFRA2 data discovery project | N/A                              | N/A                                                                  | Licensing considerations will be taken into account when developing this product. Open Data will be used where possible as input data. | <b>B</b> |
| 38 | <b>Climate change data</b>                | Currently climate change included in modelling through national projections. Spatial or gridded data outputs may become available during course of project.                                                                                         | Ongoing updates to climate change research and guidance                   | N/A                              | N/A                                                                  | Any datasets produced during the project will need to be reviewed regarding licensing for use as input to NaFRA2.                      | <b>C</b> |
| 39 | <b>Overland Flow</b>                      | Probable Overland Flow Routes, Ponding Areas and Sub-Catchment Boundaries derived from the EA_IHM_2014 DTM                                                                                                                                          | Hydro layer products derived from the Integrated Height Model 2014        | Sample data available on request | Contractor / condition that a licence to be made available with data | Work required to license for use as input to NaFRA2. Need to review third party / personal data / security issues.                     | <b>C</b> |

\*Where:

- A: Data to be improved as part of NaFRA2 Data project (largely Area data)
- B: Nationally owned data and subject to business as usual change (may be a need to improve these datasets through NaFRA2 or a dependency project)
- C: Data in this category are either existing products (outputs from models) or 3rd party data that would be supplied (without improvement) directly to NaFRA2 Core in liaison with the relevant data owner to ensure that the licencing or IPR conditions are met, any cost liabilities are accounted for and that any risks of data not being fit for purpose are identified early and managed appropriately

+

Dataset used in State of the Nation coastal modelling or produced by State of the Nation project.

NB. Table colour coding for licensing columns

|  |                                                                                                                                                |
|--|------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Open Data                                                                                                                                      |
|  | Data not open but available under license                                                                                                      |
|  | Further work required during course of NaFRA2 project to review licensing conditions for use in NaFRA2 once requirements are better understood |

### 3.9 Alignment with other projects and business drivers

| (a) Theme                          | (b) Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (c) Links to other projects<br>(d) | <p>(e) NaFRA2 must align with the direction and conclusions of any ongoing or planned work, avoiding duplication and building knowledge in a mutually beneficial way. (f)</p> <p>(g) There are many initiatives underway internally, externally and internationally across the FCRM community that may have bearing on this project. Rather than try to list them at tender stage, we will identify any others that are/will be relevant during Blueprint stage.</p> <p>(h)</p> <p>(i) Below is a non-exhaustive list of those we are already aware of:</p> <p>(j)</p> <ul style="list-style-type: none"> <li>Long-Term Investment Scenarios (LTIS)<br/>(<a href="https://www.gov.uk/government/publications/flood-and-coastal-riskmanagement-in-england-long-term-investment">https://www.gov.uk/government/publications/flood-and-coastal-riskmanagement-in-england-long-term-investment</a>)</li> <li>UKCP18 (<a href="http://ukclimateprojections.metoffice.gov.uk/24125">http://ukclimateprojections.metoffice.gov.uk/24125</a>)</li> <li>Recreation Tourism and Health Economics R&amp;D briefing July 2017 (Appendix 6)</li> <li>Environment Agency research project SC150009<br/>(<a href="http://evidence.environment-agency.gov.uk/FCERM/en/Default/FCRM/Project.aspx?ProjectID=67f918-89-524d-4662-96a1-4575ac398fea&amp;PageID=4c167c62-3bba-475d-8965d6528b5d5f61">http://evidence.environment-agency.gov.uk/FCERM/en/Default/FCRM/Project.aspx?ProjectID=67f918-89-524d-4662-96a1-4575ac398fea&amp;PageID=4c167c62-3bba-475d-8965d6528b5d5f61</a>)</li> <li>Lancaster University Digital Technologies Research: 'EPSRC Senior Fellowship in the Role of Digital Technology in Understanding, Mitigating and Adapting to Environmental Change'<br/>(<a href="https://www.ensembleprojects.org/">https://www.ensembleprojects.org/</a>)</li> <li>Existing R&amp;D (RUA, FD2308, JP update, coastal models R&amp;D)</li> </ul> |
|                                    | <ul style="list-style-type: none"> <li>Future Flood Forecasting System (FFFS)</li> <li>Flood Reporting Service (FRS)</li> <li>Flooding from Intensive Rainfall Programme<br/>(<a href="https://blogs.reading.ac.uk/flooding">https://blogs.reading.ac.uk/flooding</a>)</li> <li>The English national cohort study of flooding and health: cross-sectional analysis of mental health outcomes at year one<br/>(<a href="https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-0164000-2">https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-0164000-2</a>)</li> <li>Effect of evacuation and displacement on the association between flooding and mental health outcomes: a cross-sectional analysis of UK survey data<br/>(<a href="https://www.thelancet.com/journals/lanplh/article/PIIS25425196(17)30047-5/fulltext">https://www.thelancet.com/journals/lanplh/article/PIIS25425196(17)30047-5/fulltext</a>)</li> <li>Creating Asset Management Capacity (CAMC) Programme</li> </ul> <p>(k)</p> <p>(l)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (m) Policy, Guidance & Standards<br>(n)<br>(o) | <p>(p) RA2 must comply with our policy, guidance and standards. In addition to those in x 6, the following also apply:</p> <p>(q)</p> <ul style="list-style-type: none"> <li>• 5 star deployment scheme for Open Data (<a href="http://5stardata.info/en/">http://5stardata.info/en/</a>)</li> <li>• Accounting for residual uncertainty - updating the freeboard guide (<a href="http://evidence.environment-agency.gov.uk/FCERM/en/Default/FCRM/Project.aspx?ProjectID=ACADE47A-D154-4F97-A44C-8E6EED14F499&amp;PageId=a0fe6dfc-506a-452c9bff-a7ec06b4e6b0">http://evidence.environment-agency.gov.uk/FCERM/en/Default/FCRM/Project.aspx?ProjectID=ACADE47A-D154-4F97-A44C-8E6EED14F499&amp;PageId=a0fe6dfc-506a-452c9bff-a7ec06b4e6b0</a>)</li> <li>• Flood risk assessments: climate change allowances (<a href="https://www.gov.uk/guidance/flood-risk-assessments-climate-changeallowances">https://www.gov.uk/guidance/flood-risk-assessments-climate-changeallowances</a>)</li> <li>• Fluvial design guide (<a href="http://evidence.environmentagency.gov.uk/FCERM/en/FluvialDesignGuide.aspx">http://evidence.environmentagency.gov.uk/FCERM/en/FluvialDesignGuide.aspx</a>)</li> <li>• Government Building Information Modelling (<a href="https://www.gov.uk/government/publications/building-informationmodelling">https://www.gov.uk/government/publications/building-informationmodelling</a>)</li> <li>• Government Digital Services (GDS) (<a href="https://www.gov.uk/government/organisations/government-digital-service">https://www.gov.uk/government/organisations/government-digital-service</a>)</li> <li>• INSPIRE (<a href="https://guidance.data.gov.uk/inspire.html">https://guidance.data.gov.uk/inspire.html</a>)</li> <li>• Open Geospatial Consortium (OGC) (<a href="http://www.opengeospatial.org/docs/is">http://www.opengeospatial.org/docs/is</a>)</li> </ul> <p>(r)</p> |
| (s) Legislation                                | <ul style="list-style-type: none"> <li>• <a href="#">Flood Risk Regulations (2009)</a></li> <li>• <a href="#">Flood and Water Management Act (2010)</a></li> <li>• <a href="#">National Planning Policy Framework 2012</a></li> <li>• <a href="#">Reservoirs Act 1975</a></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| (t) Other drivers                              | <ul style="list-style-type: none"> <li>• <a href="#">National Flood Resilience Review (NFRR) – 2016</a> and associated surface water review</li> </ul> <p>(u)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

### 3.10 Alignment with other projects and business drivers

| OPM2 | Overall Project Management                                                                                                                                                                                                                                                                |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ID   | Description                                                                                                                                                                                                                                                                               |
| 10.3 | <p>The Blueprint stage is a critical stage in the project.</p> <p>Therefore during this stage the supplier will co-locate a joint project team with the Environment Agency Team in one of its EA offices up to 5 days per week in order to improve Blueprint delivery during Phase 2.</p> |
|      | <p>(This is likely to be at the York Environment Agency Offices).</p> <p>This approach may continue if desired during the remainder of the project; This will be kept under review during the life of the project.</p>                                                                    |
| 10.4 | <p>Collaborative Office working platform.</p> <p>The supplier will provide a cloud based collaborative office working platform in order to work efficiently with the Environment Agency team. This will enable information and data sharing between the two teams.</p>                    |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.5 | <p>Routine reporting and project monitoring during the life of the delivery project.</p> <p>The supplier will monitor and report progress against the project plan, costs, issues and risks.</p> <p>The Supplier will maintain a project plan in MS Project, shared in both MS Project and pdf format during the life of the project.</p> <p>The supplier will provide an online system for the suppliers and the Environment Agency's project teams to view and download the current status of the project in real time in the form of a dashboard to cover the most important aspects of the NaFRA2 project. The Dashboard will be in a suitable format shareable at NaFRA2 project boards.</p> |
| 10.6 | <p>Project Stage Audit/Status Reports:</p> <p>The supplier will provide a Status report at each of the stages in the project, e.g. after the Blueprint stage, Proof of Concept, etc.</p> <p>These will cover: Progress to plan, costs incurred to date, projected costs, projected completion timescales, risks and issues and any improvement proposals accompanied by a cost benefit analysis.</p> <p>Reports should also give a narrative of the 'journey' to key decisions, referring to options considered and detailing any qualitative information that supported the decision.</p>                                                                                                        |
| 10.7 | <p>Project meetings with the Environment Agency</p> <p>The supplier will attend daily project calls with the Environment Agency's management and team to review progress on the project. This may reduce to weekly dependant on the complexity during various delivery stages.</p> <p>It is envisaged that as a minimum NaFRA2 project boards will be scheduled every 2 months. The supplier will be expected to attend a number of these throughout the project. These project boards will be a mixture of face to face and webex/telecons.</p>                                                                                                                                                  |
| 10.8 | <p>Issue Escalation and Change Management</p> <p>The supplier will propose, for the Environment Agency to agree, an Escalation and Change process covering the duration of the solution development and its implementation into service</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 10.9 | <p>Professional Project Manager</p> <p>It is essential that the supplier provides the right skills to project manage a project of this size and complexity. The supplier will provide an experienced qualified project manager and not a technical expert who takes on the role of the project manager. This needs to be a separate role in its own right.</p>                                                                                                                                                                                                                                                                                                                                    |





## **MODEL AGREEMENT FOR SERVICES SCHEDULES**

### **SCHEDULE 2.2**

#### **PERFORMANCE LEVELS**

## Performance Levels

### 1 DEFINITIONS

In this Schedule, the following definitions shall apply:

|                                        |                                                                                                                                                                                    |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Available”</b>                     | has the meaning given in Paragraph 1.2 of Part II of Annex 1;                                                                                                                      |
| <b>“End User”</b>                      | any person authorised by the Authority to use the IT Environment and/or the Services;                                                                                              |
| <b>“Help Desk”</b>                     | the single point of contact help desk set up and operated by the Supplier for the purposes of this Agreement;                                                                      |
| <b>“Non-Available”</b>                 | in relation to the IT Environment or the Services, that the IT Environment or the Services are not Available;                                                                      |
| <b>“Performance Monitoring Report”</b> | has the meaning given in Paragraph 1.1(a) of Part B;                                                                                                                               |
| <b>“Performance Review Meeting”</b>    | the regular meetings between the Supplier and the Authority to manage and review the Supplier's performance under this Agreement, as further described in Paragraph 1.5 of Part B; |
| <b>“Repeat KPI Failure”</b>            | has the meaning given in Paragraph 3.1 of Part A;                                                                                                                                  |
| <b>“Satisfaction Survey”</b>           | has the meaning given in Paragraph 6 of Part II of Annex 1;                                                                                                                        |
| <b>“Service Availability”</b>          | has the meaning given in Paragraph 2 of Part II of Annex 1                                                                                                                         |
| <b>“Service Downtime”</b>              | any period of time during which any of the Services are not Available; and                                                                                                         |
| <b>“System Response Time”</b>          | has the meaning given in Paragraph 2.1 of Part II of Annex 1.                                                                                                                      |

## PART A: PERFORMANCE INDICATORS AND SERVICE CREDITS

### 1 PERFORMANCE INDICATORS

- 1.1 Annex 1 sets out the Key Performance Indicators and Subsidiary Performance Indicators which the Parties have agreed shall be used to measure the performance of the Services by the Supplier.
- 1.2 The Supplier shall monitor its performance against each Performance Indicator and shall send the Authority a report detailing the level of service actually achieved in accordance with Part B.
- 1.3 Service Points, and therefore Service Credits, shall accrue for any KPI Failure and shall be calculated in accordance with Paragraphs 2, 3 and 5.

## 2 SERVICE POINTS

- 2.1 If the level of performance of the Supplier during a Service Period achieves the Target Performance Level in respect of a Key Performance Indicator, no Service Points shall accrue to the Supplier in respect of that Key Performance Indicator.
- 2.2 If the level of performance of the Supplier during a Service Period is below the Target Performance Level in respect of a Key Performance Indicator, Service Points shall accrue to the Supplier in respect of that Key Performance Indicator as set out in Paragraph 2.3.
- 2.3 The number of Service Points that shall accrue to the Supplier in respect of a KPI Failure shall be the applicable number as set out in Annex 1 depending on whether the KPI Failure is a Minor KPI Failure, a Serious KPI Failure or a Severe KPI Failure, unless the KPI Failure is a Repeat KPI Failure when the provisions of Paragraph 3.2 shall apply.

## 3 REPEAT KPI FAILURES AND RELATED KPI FAILURES

### Repeat KPI Failures

- 3.1 If a KPI Failure occurs in respect of the same Key Performance Indicator in any two consecutive Measurement Periods, the second and any subsequent such KPI Failure shall be a "Repeat KPI Failure".
- 3.2 The number of Service Points that shall accrue to the Supplier in respect of a KPI Failure that is a Repeat KPI Failure shall be calculated as follows:

SP = P x 2 where:

SP = the number of Service Points that shall accrue for the Repeat KPI Failure; and

P = the applicable number of Service Points for that KPI Failure as set out in Annex 1 depending on whether the Repeat KPI Failure is a Minor KPI Failure, a Serious KPI Failure, a Severe KPI Failure or a failure to meet the KPI Service Threshold.

*Worked example based on the following Service Points regime for Service Availability:*

| Service Availability Severity Levels | Service Points |
|--------------------------------------|----------------|
| Target Performance Level: 99%        | 0              |
| Minor KPI Failure: 98.0% - 98.9%     | 1              |
| Serious KPI Failure: 97.0% - 97.9%   | 2              |
| Severe KPI Failure: 96.0% - 96.9%    | 3              |
| KPI Service Threshold: below 96%     | 4              |

**Example 1:**

*If the Supplier achieves Service Availability of 98.5% in a given Measurement Period, it will incur a Minor KPI Failure for Service Availability in that Measurement Period and accordingly accrue 1 Service Point. If, in the next Measurement Period, it achieves Service Availability of 96.5%, it will incur a Severe KPI Failure and accordingly accrue 3 Service Points, but as the failure is a Repeat Failure, this amount is doubled and so the Supplier will incur 6 Service Points for the failure (i.e.  $SP = 3 \times 2$ ). If in the next Measurement Period it achieves Service Availability of 96.5%, the Supplier will again incur 6 Service Points.*

**Example 2:**

*If the Supplier achieves Service Availability of 96.5% in a given Measurement Period, it will incur a Severe KPI Failure for Service Availability in that Measurement Period and accordingly accrue 3 Service Points. If, in the next Measurement Period, it achieves Service Availability of 98.5%, it will incur a Minor KPI Failure and accordingly accrue 1 Service Point, but as the failure is a Repeat Failure, this amount is doubled and so the Supplier will incur 2 Service Points for the failure (i.e.  $SP = 1 \times 2$ ). If in the next Measurement Period it achieves Service Availability of 96.5%, the Supplier will incur 6 Service Points.*

**Related KPI Failures**

3.3 If any specific Key Performance Indicators refer to both Service Availability and System Response Times, the System Response Times achieved by the Supplier for any period of time during a Service Period during which the relevant Service or element of a Service is determined to be Non-Available shall not be taken into account in calculating the average System Response Times over the course of that Service Period. Accordingly, the Supplier shall not incur any Service Points for failure to meet System Response Times in circumstances where such failure is a result of, and the Supplier has already incurred Service Points for, the Service being NonAvailable.

**4 PERMITTED MAINTENANCE**

4.1 The Supplier shall be allowed to book a maximum of 12 hours Service Downtime for Permitted Maintenance in any one Service Period which shall take place between the

hours and on the day specified in the Maintenance Schedule unless otherwise agreed in writing with the Authority.

5 SERVICE CREDITS

- 5.1 Schedule 7.1 (*Charges and Invoicing*) sets out the mechanism by which Service Points shall be converted into Service Credits.
- 5.2 The Authority shall use the Performance Monitoring Reports provided pursuant to Part B, among other things, to verify the calculation and accuracy of the Service Credits (if any) applicable to each Service Period.

## **PART B: PERFORMANCE MONITORING**

### **1 PERFORMANCE MONITORING AND PERFORMANCE REVIEW**

#### **1.1 Within ten (10) Working Days of the end of each Service Period, the Supplier shall provide:**

- (a) a report to the Authority Representative which summarises the performance by the Supplier against each of the Performance Indicators as more particularly described in Paragraph 1.2 (the "Performance Monitoring Report"); and
- (b) a report to the Authority's senior responsible officer which summarises the Supplier's performance over the relevant Service Period as more particularly described in Paragraph 1.3 (the "Balanced Scorecard Report").

#### **Performance Monitoring Report**

#### **1.2 The Performance Monitoring Report shall be in such format as agreed between the Parties from time to time and contain, as a minimum, the following information:**

##### Information in respect of the Service Period just ended

- (a) for each Key Performance Indicator and Subsidiary Performance Indicator, the actual performance achieved over the Service Period, and that achieved over the previous 3 Measurement Periods;
- (b) a summary of all Performance Failures that occurred during the Service Period;
- (c) the severity level of each KPI Failure which occurred during the Service Period and whether each PI Failure which occurred during the Service Period fell below the PI Service Threshold;
- (d) which Performance Failures remain outstanding and progress in resolving them;
- (e) for any Material KPI Failures or Material PI Failures occurring during the Service Period, the cause of the relevant KPI Failure or PI Failure and the action being taken to reduce the likelihood of recurrence;
- (f) the status of any outstanding Rectification Plan processes, including:
  - (i) whether or not a Rectification Plan has been agreed; and
  - (ii) where a Rectification Plan has been agreed, a summary of the Supplier's progress in implementing that Rectification Plan;
- (g) for any Repeat Failures, actions taken to resolve the underlying cause and prevent recurrence;
- (h) the number of Service Points awarded in respect of each KPI Failure;

- (i) the Service Credits to be applied, indicating the KPI Failure(s) to which the Service Credits relate;
- (j) the conduct and performance of any agreed periodic tests that have occurred, such as the annual failover test of the Service Continuity Plan;
- (k) relevant particulars of any aspects of the Supplier's performance which fail to meet the requirements of this Agreement;
- (l) such other details as the Authority may reasonably require from time to time; and

#### Information in respect of previous Service Periods

- (m) a rolling total of the number of Performance Failures that have occurred over the past six Service Periods;
- (n) the amount of Service Credits that have been incurred by the Supplier over the past six Service Periods;
- (o) the conduct and performance of any agreed periodic tests that have occurred in such Service Period such as the annual failover test of the Service Continuity Plan; and

#### Information in respect of the next Quarter

- (p) any scheduled Service Downtime for Permitted Maintenance and Updates that has been agreed between the Authority and the Supplier for the next Quarter.

#### Balanced Scorecard Report

1.3 The Balanced Scorecard Report shall be presented in the form of a dashboard and, as a minimum, shall contain a high level summary of the Supplier's performance over the relevant Service Period, including details of the following:

- (a) financial indicators;
- (b) the Target Performance Levels achieved;
- (c) behavioural indicators;
- (d) performance against its obligation to pay its Sub-contractors within 30 days of receipt of an undisputed invoice;
- (e) Milestone trend chart, showing performance of the overall programme; and
- (f) sustainability and energy efficiency indicators (if requested), for example energy consumption and recycling performance.

- 1.4 The Performance Monitoring Report and the Balanced Scorecard Report shall be reviewed and their contents agreed by the Parties at the next Performance Review Meeting held in accordance with Paragraph 1.5.
- 1.5 The Parties shall attend meetings on a monthly basis (unless otherwise agreed) to review the Performance Monitoring Reports and the Balanced Scorecard Reports. The Performance Review Meetings shall (unless otherwise agreed):
- (a) take place within five (5) Working Days of the Performance Monitoring Report being issued by the Supplier;
  - (b) take place at such location and time (within normal business hours) as the Authority shall reasonably require (unless otherwise agreed in advance); and
  - (c) be attended by the Supplier Representative and the Authority Representative.
- 1.6 The Authority shall be entitled to raise any additional questions and/or request any further information from the Supplier regarding any KPI Failure and/or PI Failure.

## 2 PERFORMANCE RECORDS

- 2.1 The Supplier shall keep appropriate documents and records (including Help Desk records, staff records, timesheets, training programmes, staff training records, goods received documentation, supplier accreditation records, complaints received etc) in relation to the Services being delivered. Without prejudice to the generality of the foregoing, the Supplier shall maintain accurate records of call histories for a minimum of 12 months and provide prompt access to such records to the Authority upon the Authority's request. The records and documents of the Supplier shall be available for inspection by the Authority and/or its nominee at any time and the Authority and/or its nominee may make copies of any such records and documents.
- 2.2 In addition to the requirement in Paragraph 2.1 to maintain appropriate documents and records, the Supplier shall provide to the Authority such supporting documentation as the Authority may reasonably require in order to verify the level of the performance of the Supplier both before and after each Operational Service Commencement Date and the calculations of the amount of Service Credits for any specified period.
- 2.3 The Supplier shall ensure that the Performance Monitoring Report, the Balanced Scorecard Report and any variations or amendments thereto, any reports and summaries produced in accordance with this Schedule and any other document or record reasonably required by the Authority are available to the Authority on-line and are capable of being printed.

## 3 PERFORMANCE VERIFICATION



The Authority reserves the right to verify the Availability of the IT Environment and/or the Services and the Supplier's performance under this Agreement against the Performance Indicators including by sending test transactions through the IT Environment or otherwise.

## ANNEX 1: KEY PERFORMANCE INDICATORS AND SUBSIDIARY PERFORMANCE INDICATORS

### PART I: KEY PERFORMANCE INDICATORS AND SUBSIDIARY PERFORMANCE INDICATORS TABLES

The Key Performance Indicators and Subsidiary Performance Indicators that shall apply to the Operational Services are set out below:

#### 1 Key Performance Indicators

| No.  | Key Performance Indicator Title | Definition                               | Frequency of Measurement | Severity Levels                                                                                                                                                                                       | Service Points                        |
|------|---------------------------------|------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| KPI1 | Service Availability            | See Paragraph 1 of Part II of this Annex | Quarterly                | Target Performance Level: 99.95%<br><br>Minor KPI Failure: 98.5% - 99.94%<br><br>Serious KPI Failure: 97.5% - 98.4%<br><br>Severe KPI Failure: 96.0% - 97.49%<br><br>KPI Service Threshold: below 96% | 0<br><br>1<br><br>2<br><br>3<br><br>4 |
| KPI2 | Supplier System Response Times  | See Paragraph 3 of Part II of this Annex | Quarterly                | Target Performance Level: 4 seconds<br><br>Minor KPI Failure: 4-6 seconds<br><br>Serious KPI Failure: 6-8 seconds<br><br>Severe KPI Failure: 8-10 seconds                                             | 0<br><br>1<br><br>2<br><br>3          |

|      |                                    |                                                   |                             |                                                                                                                                                                                                                 |                                       |
|------|------------------------------------|---------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
|      |                                    |                                                   |                             | KPI Service Threshold:<br>>10 seconds                                                                                                                                                                           | 4                                     |
| KPI3 | Help Desk<br>Response Times        | See<br>Paragraph 4 of<br>Part II of this<br>Annex | Quarterly                   | Target Performance<br>Level: 10 seconds<br><br>Minor KPI Failure: 1130<br>seconds                                                                                                                               | 0<br><br>1                            |
| No.  | Key Performance<br>Indicator Title | Definition                                        | Frequency of<br>Measurement | Severity Levels                                                                                                                                                                                                 | Service<br>Points                     |
|      |                                    |                                                   |                             | Serious KPI Failure:<br>31-60 seconds                                                                                                                                                                           | 2                                     |
|      |                                    |                                                   |                             | Severe KPI Failure:<br>61-120 seconds                                                                                                                                                                           | 3                                     |
|      |                                    |                                                   |                             | KPI Service Threshold:<br>[>120 seconds                                                                                                                                                                         | 4                                     |
| KPI4 | Fix Times                          | See<br>Paragraph 5 of<br>Part II of this<br>Annex | Quarterly                   | Target Performance<br>Level: 4 hours<br><br>Minor KPI Failure: 4 – 8<br>hours<br><br>Serious KPI Failure: 8 –<br>16 hours<br><br>Severe KPI Failure: 16 –<br>40 hours<br><br>KPI Service Threshold:<br>40 hours | 0<br><br>1<br><br>2<br><br>3<br><br>4 |
| KPI5 | Satisfaction Surveys               | See<br>Paragraph 6 of<br>Part II of this<br>Annex | Quarterly                   | Target Performance<br>Level: 80%<br><br>Minor KPI Failure:<br>60%-79%%                                                                                                                                          | 0<br><br>1                            |

|  |  |  |  |                                     |   |
|--|--|--|--|-------------------------------------|---|
|  |  |  |  | Serious KPI Failure:<br>40% - 59%%  | 2 |
|  |  |  |  | Severe KPI Failure:<br>30% - 39%    | 3 |
|  |  |  |  | KPI Service Threshold:<br>below 30% | 4 |

2 NOT USED

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

## PART II: DEFINITIONS

### 1 AVAILABLE

1.1 The IT Environment and/or the Services shall be Available when:

- (a) End Users are able to access and utilise all the functions of the Supplier System and/or the Services; and
- (b) the Supplier System is able to process the Authority Data and to provide any required reports within the timescales set out in the Services Description (as measured on a 24 x 7 basis); and
- (c) all Performance Indicators other than Service Availability are above the KPI Service Threshold.

### 2 SERVICE AVAILABILITY

2.1 Service Availability shall be measured as a percentage of the total time in a Service Period, in accordance with the following formula and shall exclude downtime due to the Defra AWS service which is out of the control of the Supplier:

$$(MP - SD) \times 100 \div MP$$

Service Availability % = \_\_\_\_\_

where:

MP = total number of minutes, excluding Permitted Maintenance, within the relevant Service Period; and

SD = total number of minutes of Service Downtime, excluding Permitted Maintenance, in the relevant Service Period.

2.2 When calculating Service Availability in accordance with this Paragraph 2:

- (a) Service Downtime arising due to Permitted Maintenance that is carried out by the Supplier in accordance with Clause 9.4 (*Maintenance*) shall be subtracted from the total number of hours in the relevant Service Period; and
- (b) Service Points shall accrue if:
  - (i) any Service Downtime occurs as a result of Emergency Maintenance undertaken by the Supplier; or
  - (ii) where maintenance undertaken by the Supplier exceeds 12 hours in any Service Period.

### 3 RESPONSE TIMES

- 3.1 The “System Response Time” is the round trip time taken to process a message or request of the IT Environment and/or the Services, and shall be measured from the moment the last packet of data which relates to a particular message is received at the external interface of the IT Environment until a response is generated and/or the first block of data leaves the external interface. It is acknowledged that the system will be required to undertake significant processing which will require extended processing times beyond the targets, in these cases the system response time KPI shall be based on the time taken for the system to provide feedback that a process has been initiated and therefore excludes the necessary data processing. Response times delays due to the Defra AWS service are excluded from the KPI measure.
- 3.2 The Supplier System Response Time shall be the average System Response Time measured over the course of a Service Period.

#### 4 HELP DESK RESPONSE TIMES

- 4.1 Measurement of Help Desk response times will be based on the time taken for a Help Desk operative to answer a call. Calls receiving an automated response or placed into a queuing system shall be deemed not to have been answered.
- 4.2 The Supplier shall monitor the Help Desk response times and shall provide the results of such monitoring to the Authority in accordance with the provisions of Part B of this Schedule.

#### 5 FIX TIMES

- 5.1 The “Fix Time” of a Service Incident is the period from the time that the Service Incident has been reported to the Supplier to the point of its Resolution and “Resolution” means in relation to a Service Incident either:
- (a) the root cause of the Service Incident has been removed and the Services are being provided in accordance with the Services Description and Service Levels; or
  - (b) the Authority has been provided with a workaround in relation to the Service Incident deemed acceptable by the Authority; or
  - (c) where (a) and (b) are not practical, a resolution plan has been provided to the Authority which the Authority subsequently accepts, and the Supplier delivers to the agreed resolution plan.
- 5.2 Fix Times for Severity 3 Service Incidents, Severity 4 Service Incidents and Severity 5 Service Incidents shall be measured in Operational Hours.

*Worked example:* if the Operational Hours for a fault are 0800-1800, then the clock stops measuring Fix Time at 1800 in the evening and restarts at 0800 the following day).

- 5.3 Fix times for Severity 1 Service Incidents and Severity 2 Service Incidents shall be measured 24x7.
- 5.4 The Supplier shall measure Fix Times as part of its service management responsibilities and report periodically to the Authority on Fix Times as part of the Performance Monitoring Report.
- 5.5 For the purposes of this Paragraph 5, the following expressions shall have the meanings set opposite them below:

“Operational Hours” In relation to any Service, the hours for which that Service is to be operational as set out in Schedule 2.1 (*Services Description*);

“Service Incident” a reported occurrence of a failure to deliver any part of the Services in accordance with the Authority Requirements or the Performance Indicators;

“Severity 1 Service Incident” a Service Incident which, in the reasonable opinion of the Authority:

- (a) constitutes a loss of the Service which prevents a large group of End Users from working;
- (b) has a critical impact on the activities of the Authority;
- (c) causes significant financial loss and/or disruption to the Authority; or
- (d) results in any material loss or corruption of Authority Data;

*Non-exhaustive examples:*

- a loss of power to a data centre causing failure of Services; or
- a failure of the Services to provide user authentication service; a Service Incident which, in the reasonable opinion of the

“Severity 2 Service Incident” Authority has the potential to:

- (a) have a major (but not critical) adverse impact on the activities of the Authority and no workaround acceptable to the Authority is available;

- (b) have a major (but not critical) adverse impact on the activities of the Authority and no workaround acceptable to the Authority is available; or
- (c) cause a financial loss and/or disruption to the Authority which is more than trivial but less severe than the significant financial loss described in the definition of a Severity 1 Service Failure;

*Non-exhaustive examples:*

- corruption of organisational database tables;
- or • loss of ability to update Authority Data.

“Severity 3 Service Incident”

a Service Incident which, in the reasonable opinion of the Authority has the potential to:

- (a) have a major adverse impact on the activities of the Authority which can be reduced to a moderate adverse impact due to the availability of a workaround acceptable to the Authority; or
- (b) have a moderate adverse impact on the activities of the Authority;

*Non-exhaustive example:*

- inability to access data for a class of customers;

“Severity 4 Service Incident”

a Service Incident which, in the reasonable opinion of the Authority has the potential to have a minor adverse impact on the provision of the Services to End Users

*Non-exhaustive example:*

inability to access data for a single customer; and

“Severity 5 Service Incident”

a Service Incident comprising a flaw which is cosmetic and, as such, does not undermine the End User’s confidence in the information being displayed;

*Non-exhaustive examples:*

- spelling error; or
- misalignment of data on screen display.

- 6.1 In order to assess the level of performance of the Supplier, the Authority may undertake satisfaction surveys in respect of End Users or various groups of End Users (each such survey a "Satisfaction Survey"), the results of which may be reflected in the Balanced Scorecard Report. The subject matter of Satisfaction Surveys may include:
- (a) the assessment of the Supplier's performance by the End Users against the agreed Key Performance Indicators and Subsidiary Performance Indicators; and/or
  - (b) other suggestions for improvements to the Services.
- 6.2 The Authority shall reflect in the Balanced Scorecard Report any aspects of the Supplier's performance of the Services which the responses to the Satisfaction Surveys reasonably suggest are not meeting the Services Description.



## **MODEL AGREEMENT FOR SERVICES SCHEDULES**

### **SCHEDULE 2.3**

#### **STANDARDS**

## Standards

### 1 DEFINITIONS

In this Schedule, the following definitions shall apply:

**“Standards Hub”** standards the Government’s open and transparent adoption process as documented at <http://standards.data.gov.uk/>; and

**“Suggested Challenge”** a submission to suggest the adoption of new or emergent standards in the format specified on Standards Hub.

### 2 GENERAL

2.1 Throughout the term of this Agreement, the Parties shall monitor and notify each other of any new or emergent standards which could affect the Supplier’s provision, or the Authority’s receipt, of the Services. Any changes to the Standards, including the adoption of any such new or emergent standard, shall be agreed in accordance with the Change Control Procedure.

2.2 Where a new or emergent standard is to be developed or introduced by the Authority, the Supplier shall be responsible for ensuring that the potential impact on the Supplier’s provision, or the Authority’s receipt, of the Services is explained to the Authority (in a reasonable timeframe), prior to the implementation of the new or emergent standard.

2.3 Where Standards referenced conflict with each other or with Good Industry Practice, then the later Standard or best practice shall be adopted by the Supplier. Any such alteration to any Standard(s) shall require the prior written agreement of the Authority and shall be implemented within an agreed timescale.

### 3 TECHNOLOGY AND DIGITAL SERVICES PRACTICE

The Supplier shall (when designing, implementing and delivering the Services) adopt the applicable elements of HM Government’s Technology Code of Practice as documented at <https://www.gov.uk/servicemanual/technology/code-of-practice.html>.

### 4 OPEN DATA STANDARDS & STANDARDS HUB

4.1 The Supplier shall comply to the extent within its control with UK Government’s Open Standards Principles as documented at <https://www.gov.uk/government/publications/open-standardsprinciples/open-standards-principles>, as they relate to the specification of standards for software interoperability, data and document formats in the IT Environment.

4.2 Without prejudice to the generality of Paragraph 2.2, the Supplier shall, when implementing or updating a technical component or part of the Software or Supplier Solution where there is a requirement under this Agreement or opportunity to use a new or emergent standard, submit a Suggested Challenge compliant with the UK Government's Open Standards Principles (using the process detailed on Standards Hub and documented at <http://standards.data.gov.uk/>). Each Suggested Challenge submitted by the Supplier shall detail, subject to the security and confidentiality provisions in this Agreement, an illustration of such requirement or opportunity within the IT Environment, Supplier Solution and Government's IT infrastructure and the suggested open standard.

4.3 The Supplier shall ensure that all documentation published on behalf of the Authority pursuant to this Agreement is provided in a non-proprietary format (such as PDF or Open Document Format (ISO 26300 or equivalent)) as well as any native file format documentation in accordance with the obligation under Paragraph 4.1 to comply with the UK Government's Open Standards Principles, unless the Authority otherwise agrees in writing.

## **5 TECHNOLOGY ARCHITECTURE STANDARDS**

The Supplier shall produce full and detailed technical architecture documentation for the Supplier Solution in accordance with Good Industry Practice. If documentation exists that complies with TOGAF 9.1 or its equivalent, then this shall be deemed acceptable.

## **6 ACCESSIBLE DIGITAL STANDARDS**

The Supplier shall comply with (or with equivalents to):

- (a) the World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI) Web Content Accessibility Guidelines (WCAG) 2.0 Conformance Level AA; and
- (b) ISO/IEC 13066-1: 2011 Information Technology - Interoperability with assistive technology (AT) - Part 1: Requirements and recommendations for interoperability.

## **7 SERVICE MANAGEMENT SOFTWARE & STANDARDS**

7.1 Subject to Paragraphs 2 to 4 (inclusive), the Supplier shall reference relevant industry and HM Government standards and best practice guidelines in the management of the Services, including the following and/or their equivalents:

- (a) ITIL v3 2011;
- (b) ISO/IEC 20000-1 2011 "ITSM Specification for Service Management";
- (c) ISO/IEC 20000-2 2012 "ITSM Code of Practice for Service Management";

- (d) ISO 10007 “Quality management systems - Guidelines for configuration management”; and
- (e) BS25999-1:2006 “Code of Practice for Business Continuity Management” and, ISO/IEC 27031:2011, ISO 22301 and ISO/IEC 24762:2008 in the provision of “IT Service Continuity Strategy” or “Disaster Recovery” plans.

7.2 For the purposes of management of the Services and delivery performance the Supplier shall make use of Software that complies with Good Industry Practice including availability, change, incident, knowledge, problem, release & deployment, request fulfilment, service asset and configuration, service catalogue, service level and service portfolio management. If such Software has been assessed under the ITIL Software Scheme as being compliant to “Bronze Level”, then this shall be deemed acceptable.

## **8 ENVIRONMENTAL STANDARDS**

8.1 The Supplier warrants that it has obtained ISO 14001 (or equivalent) certification for its environmental management and shall comply with and maintain certification requirements throughout the Term. The Supplier shall follow a sound environmental management policy, ensuring that any Goods and the Services are procured, produced, packaged, delivered, and are capable of being used and ultimately disposed of in ways appropriate to such standard.

8.2 The Supplier shall comply with relevant obligations under the Waste Electrical and Electronic Equipment Regulations 2006 in compliance with Directive 2002/96/EC and subsequent replacements (including those in compliance with Directive 2012/19/EU).

8.3 The Supplier shall (when designing, procuring, implementing and delivering the Services) ensure compliance with Article 6 and Annex III of the Energy Efficiency Directive 2012/27/EU and subsequent replacements.

8.4 The Supplier shall comply with the EU Code of Conduct on Data Centres’ Energy Efficiency. The Supplier shall ensure that any data centre used in delivering the Services are registered as a Participant under such Code of Conduct.

8.5 The Supplier shall comply with the Authority and HM Government’s objectives to reduce waste and meet the aims of the Greening Government: IT strategy contained in the document “Greening Government: ICT Strategy issue (March 2011)” at <https://www.gov.uk/government/publications/greeninggovernment-ict-strategy>.

## **9 HARDWARE SAFETY STANDARDS**

9.1 The Supplier shall comply with those BS or other standards relevant to the provision of the Services, including the following or their equivalents:

- (a) any new hardware required for the delivery of the Services (including printers), shall conform to BS EN 60950-1:2006+A12:2011 or subsequent replacements. In considering where to site any such hardware, the Supplier shall consider the future working user environment and shall position the hardware sympathetically, wherever possible;
- (b) any new audio, video and similar electronic apparatus required for the delivery of the Services, shall conform to the following standard: BS EN 60065:2002+A12:2011 or any subsequent replacements;
- (c) any new laser printers or scanners using lasers, required for the delivery of the Services, shall conform to either of the following safety Standards: BS EN 60825-1:2007 or any subsequent replacements ; and
- (d) any new apparatus for connection to any telecommunication network, and required for the delivery of the Services, shall conform to the following safety Standard: BS EN 41003:2009 or any subsequent replacements.

9.2 Where required to do so as part of the Services, the Supplier shall perform electrical safety checks in relation to all equipment supplied under this Agreement in accordance with the relevant health and safety regulations.



MODEL AGREEMENT FOR SERVICES SCHEDULES

SCHEDULE 2.4

SECURITY MANAGEMENT

1. Definitions

In this Schedule, the following definitions shall apply:

|                                        |                                                                                                                                                                                                                                                            |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>"Risk Management Documentation"</b> | has the meaning given in Paragraph 6.3;                                                                                                                                                                                                                    |
| <b>"Information Management System"</b> | means the Core Information Management System and the Wider Information Management System;                                                                                                                                                                  |
| <b>"Accreditation"</b>                 | the assessment of the Core Information Management System in accordance with Paragraph 6 by the Authority or an independent information risk manager/professional appointed by the Authority, which results in an Accreditation Decision;                   |
| <b>"Accreditation Decision"</b>        | is the decision of the Authority, taken in accordance with the process set out in Paragraph 6, to issue the Supplier with a Risk Management Approval Statement or a Risk Management Rejection Notice in respect of the Core Information Management System; |
| <b>"Accreditation Plan"</b>            | the Supplier's plan to attain an Accreditation Approval Statement from the Authority, which is prepared by the Supplier and approved by the Authority in accordance with Paragraph 6.4;                                                                    |
| <b>"Breach of Security"</b>            | the occurrence of:<br>(a) any unauthorised access to or use of the Services, the Authority Premises, the Sites, the Supplier System, the Authority System and/or any information or data                                                                   |

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             | (including the Confidential Information and the Authority Data) used by the Authority, the Supplier or any Sub-contractor in connection with this Agreement;                                                                                                                                                                                                                                                           |
|                                             | (b) the loss (physical or otherwise) and/or unauthorised disclosure of any information or data (including the Confidential Information and the Authority Data), including copies of such information or data, used by the Authority, the Supplier or any Sub-contractor in connection with this Agreement; and/or                                                                                                      |
|                                             | (c) any part of the Supplier System ceasing to be compliant with the Certification Requirements,                                                                                                                                                                                                                                                                                                                       |
|                                             | in each case as more particularly set out in the security requirements in Schedule 2.1 ( <i>Services Description</i> ) and the Baseline Security Requirements;                                                                                                                                                                                                                                                         |
| <b>"Certification Requirements"</b>         | the requirements set out in Paragraph 7;                                                                                                                                                                                                                                                                                                                                                                               |
| <b>"Core Information Management System"</b> | those information assets, ICT systems and/or Sites which will be used by the Supplier and/or its Sub-contractors to Process Authority Data, together with the associated information management system (including organisational structure, controls, policies, practices, procedures, processes and resources, which the Authority has determined in accordance with Paragraph 4.2 shall be subject to Accreditation; |
| <b>"IT Health Check"</b>                    | has the meaning given Paragraph 8.1.1;                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Personal Data</b>                        | has the meaning given in the Data Protection Legislation;                                                                                                                                                                                                                                                                                                                                                              |
| <b>Personal Data Breach</b>                 | has the meaning given in the Data Protection Legislation;                                                                                                                                                                                                                                                                                                                                                              |
| <b>Personal Data Processing Statement</b>   | sets out: (i) the types of Personal Data which the Supplier and/or its Sub-contractors are Processing on behalf of the                                                                                                                                                                                                                                                                                                 |



Authority; (ii) the categories of Data Subjects whose Personal Data the Supplier and/or its Sub-contractors are Processing on behalf of the Authority; the nature and purpose of such Processing; (iii) the locations at which the Supplier and/or its Subcontractors Process Authority Data; and, (iv) the Protective Measures that the Supplier and, where applicable, its Subcontractors have implemented to protect the Authority Data against a Security Breach including a Personal Data Breach, which shall be prepared by the Supplier in accordance with Paragraph 6.4 of Schedule 2.4 (Security Management) and included in the Risk Management Documentation;

**"Process Authority Data"**

any operation which is performed on Authority Data, whether or not by automated means, including adapting, altering, collecting, combining, copying, destroying, erasing, organising, publishing retrieving, storing, structuring, transmitting or otherwise using Authority Data;

**"Required Changes Register"**

is a register which forms part of the Risk Management Documentation which records each of the changes that the Supplier has agreed with the Authority shall be made to the Core Information System and/or the Risk Management Documentation as a consequence of the occurrence of any of the events set out in Paragraph 6.13.1 to 6.13.8 together with the date on which each such change shall be implemented and the date on which each such change was implemented;

**"Risk Management Approval Statement"**

a notice issued by the Authority which sets out the information risks associated with using the Core Information

Management System and confirms that the Authority is satisfied that the identified risks have been adequately and appropriately addressed and that the residual risks are understood and accepted by the Authority;

**"Risk Management Reject** has the meaning given in Paragraph 6.7.2; **Notice"**

**"Security Test"** has the meaning given Paragraph 8.1; and

**"Statement of Information** has the meaning given in Paragraph 5.1;. **Risk Appetite"**

**"Vulnerability Correction Plan"** has the meaning given in Paragraph 8.3.3(a); and

**"Wider Information Management System"** those information assets, ICT systems and/or Sites which will be used by the Supplier and/or its Sub-contractors to Process Authority Data which have not been determined by the Authority to form part of the Core Information Management System together with the associated information management system (including organisational structure, controls, policies, practices, procedures, processes and resources.

## 2. Introduction

2.1 This Schedule sets out:

2.1.1 the principles which the Supplier shall comply with when performing its obligations under this Agreement in order to ensure the security of the Authority Data, the IT Environment, the Supplier Solution and the Information Management System;

2.1.2 the process which shall apply to the Accreditation of the Core Information Management System in Paragraph 6;

2.1.3 the Certification Requirements applicable to the Wider Information Management System in Paragraph 7;

2.1.4 the Security Tests which the Supplier shall conduct during the Term in Paragraph 8;

2.1.5 the Security Tests which the Authority may conduct during the Term in Paragraph 8.6;

2.1.6 the requirements to patch vulnerabilities in the Core Information Management System in Paragraph 9;

2.1.7 the obligations on the Supplier to prevent the introduction of Malicious Software into the Information Management System and to scan for, contain the spread of, and minimise the impact of Malicious Software which is introduced into the Information Management System in Paragraph 10; and

2.1.8 each Party's obligations in the event of an actual or attempted Breach of Security in Paragraph 11.

### **3. Principles of Security**

3.1 The Supplier acknowledges that the Authority places great emphasis on the confidentiality, integrity and availability of the Authority Data and, consequently on the security of:

3.1.1 the IT Environment;

3.1.2 the Supplier Solution; and

3.1.3 the Information Management System.

3.2 Notwithstanding the involvement of the Authority in the Accreditation of the Core Information Management System, the Supplier shall be and shall remain responsible for:

3.2.1 the security, confidentiality, integrity and availability of the Authority Data whilst that Authority Data is under the control of the Supplier or any of its Subcontractors;

3.2.2 the security of the Supplier Solution; and

3.2.3 the security of the Information Management System.

3.3 The board shall, in addition to its responsibilities set out in Schedule 8.1 (Governance), monitor and may also provide recommendations to the Supplier on the Accreditation of the Core Information Management System.

3.4 Each Party shall provide access to members of its information assurance personnel to facilitate the Supplier's design, implementation, operation, management and continual improvement of the Risk Management Documentation and the security of the Supplier Solution and Information Management System and otherwise at reasonable times on reasonable notice.

### **4. Information Management System**

4.1 The Information Management System comprises the Core Information Management System and the Wider Information Management System.

4.2 The component parts of the Core Information Management System and its boundary with the Wider Information Management System are shown in the diagram in Annex 2.

4.3 Any proposed change to the component parts of and/or boundary of the Core Information Management System shall be notified and processed in accordance with the Change Control Procedure.

## 5. **Statement of Information Risk Appetite and Baseline Security Requirements**

5.1 The Supplier acknowledges that the Authority has provided and the Supplier has received a statement of information risk appetite for the Supplier System and the Services (the "**Statement of Information Risk Appetite**").

5.2 The Authority's Baseline Security Requirements in respect of the Core Information Management System are set out in Annex 1.

5.3 The Statement of Information Risk Appetite and the Baseline Security Requirements shall inform the Accreditation of the Core Information Management System.

## 6. **Accreditation of the Core Information Management System**

6.1 The Core Information Management System shall be subject to Accreditation in accordance with this Paragraph 6.

6.2 The Accreditation shall be performed by the Authority or by representatives appointed by the Authority.

6.3 Prior to the Operational Services Commencement Date, the Supplier shall prepare and submit to the Authority the risk management documentation for the Core Information Management System, which shall comply with, and be subject to approval by the Authority in accordance with, this Paragraph 6 (the "**Risk Management Documentation**").

6.4 The Risk Management Documentation shall be structured in accordance with the template as set out in Annex 3 and include:

6.4.1 the Accreditation Plan, which shall include:

- (a) the dates on which each subsequent iteration of the Risk Management Documentation will be delivered to the Authority for review and staged approval; and
- (b) the date by which the Supplier is required to have received a Risk Management Approval Statement from the Authority together with details of each of the tasks which must be completed by the Supplier, Milestones which must be Achieved and the Authority Responsibilities which must be completed in order for the Supplier to receive a Risk Management Approval Statement pursuant to Paragraph 6.7.1

- 6.4.2 a formal risk assessment of the Core Information Management System and a risk treatment plan for the Core Information Management System;
  - 6.4.3 a completed ISO 27001:2013 Statement of Applicability for the Core Information Management System; the process for managing any security risks from Sub-contractors and third parties authorised by the Authority with access to the Services, processes associated with the delivery of the Services, the Authority Premises, the Sites, the Supplier System, the Authority System (to extent that it is under the control of the Supplier) and any IT, Information and data (including the Authority Confidential Information and the Authority Data) and any system that could directly or indirectly have an impact on that Information, data and/or the Services;
  - 6.4.4 unless such requirement is waived by the Authority, proposed controls that will be implemented in respect of all aspects of the Services and all processes associated with the delivery of the Services, including the Authority Premises, the Sites, the Supplier System, the Authority System (to the extent that it is under the control of the Supplier) and any IT, Information and data (including the Authority Confidential Information and the Authority Data) to the extent used by the Authority or the Supplier in connection with this Agreement or in connection with any system that could directly or indirectly have an impact on that Information, data and/or the Services;
  - 6.4.5 the Required Changes Register;
  - 6.4.6 evidence that the Supplier and each applicable Sub-contractor is compliant with the Certification Requirements; and
  - 6.4.7 a Personal Data Processing Statement.
- 6.5 If the Risk Management Documentation submitted to the Authority pursuant to Paragraph 6.3 (or Paragraph 6.10, as applicable) is approved by the Authority, it shall be adopted by the Supplier immediately and thereafter operated and maintained in accordance with this Schedule. If the Risk Management Documentation is not approved by the Authority, the Supplier shall amend it within 10 Working Days of a notice of non-approval from the Authority and resubmit it to the Authority for approval. The Parties shall use all reasonable endeavours to ensure that the approval process takes as little time as possible and in any event no longer than fifteen (15) Working Days (or such other period as the Parties may agree in writing) from the date of its first submission to the Authority. If the Authority does not approve the Risk Management Documentation following its resubmission, the matter shall be resolved in accordance with the Dispute Resolution Procedure. No approval to be given by the Authority pursuant to this Paragraph may be unreasonably withheld or delayed. However, any failure to approve the Risk Management Documentation on the grounds that it does not comply with the requirements set out in Paragraph 6.4 shall be deemed to be reasonable.
- 6.6 To facilitate Accreditation of the Core Information Management System, the Supplier shall provide the Authority and its authorised representatives with:

- 6.6.1 access to the Sites, ICT information assets and ICT systems within the Core Information Management System on request or in accordance with the Accreditation Plan; and
- 6.6.2 such other information and/or documentation that the Authority or its authorised representatives may reasonably require, to enable the Authority to establish that the Core Information Management System is compliant with the Risk Management Documentation.
- 6.7 The Authority shall, by the relevant date set out in the Accreditation Plan, review the identified risks to the Core Information Management System and issue to the Supplier either:
  - 6.7.1 a Risk Management Approval Statement which will then form part of the Risk Management Documentation, confirming that the Authority is satisfied that the identified risks to the Core Information Management System have been adequately and appropriately addressed and that the residual risks are understood and accepted by the Authority; or
  - 6.7.2 a rejection notice stating that the Authority considers that the residual risks to the Core Information Management System have not been reduced to a level acceptable by the Authority and the reasons why ("**Risk Management Rejection Notice**").
- 6.8 If the Authority issues a Risk Management Rejection Notice, the Supplier shall, within 20 Working Days of the date of the Risk Management Rejection Notice:
  - 6.8.1 address all of the issues raised by the Authority in such notice; and
  - 6.8.2 notify the Authority that the Core Information Management System is ready for an Accreditation Decision.
- 6.9 If the Authority determines that the Supplier's actions taken pursuant to the Risk Management Rejection Notice have not reduced the residual risks to the Core Information Management System to an acceptable level and issues a further Risk Management Rejection Notice, the failure to receive a Risk Management Approval Statement shall constitute a material Default and the Authority may by terminate this Agreement with immediate effect by issuing a Termination Notice to the Supplier in accordance with Clause 33.1(b).
- 6.10 The process set out in Paragraph 6.7 and Paragraph 6.8 shall be repeated until such time as the Authority issues a Risk Management Approval Statement to the Supplier or terminates this Agreement.
- 6.11 The Supplier acknowledges that it shall not be permitted to use the Core Information Management System to Process Authority Data prior to receiving a Risk Management Approval Statement.

6.12 The Supplier shall keep the Core Information Management System and Risk Management Documentation under review and shall update the Risk Management Documentation annually in accordance with this Paragraph and

the Authority shall review the Accreditation Decision annually and following the occurrence of any of the events set out in Paragraph 6.13.

6.13 The Supplier shall notify the Authority within five (5) Working Days after becoming aware of:

6.13.1 a significant change to the components or architecture of the Core Information Management System;

6.13.2 a new risk or vulnerability is identified to the components or architecture of the Core Information Management System;

6.13.3 a change in the threat profile;

6.13.4 a Sub-contractor failure to comply with the Core Information Management System code of connection;

6.13.5 a significant change to any risk component;

6.13.6 a significant change in the quantity of Personal Data held within the Core Information Management System;

6.13.7 a proposal to change any of the Sites from which any part of the Services are provided; and/or

6.13.8 an ISO27001 audit report produced in connection with the Certification Requirements indicates significant concerns,

update the Required Changes Register and provide the updated Required Changes Register to the Authority for review and approval within ten (10) Working Days after the initial notification or such other timescale as may be agreed with the Authority.

6.14 If the Supplier fails to implement a change which is set out in the Required Changes Register by the date agreed with the Authority, such failure shall constitute a material Default and the Supplier shall:

6.14.1 immediately cease using the Core Information Management System to Process Authority Data until the Default is remedied, unless directed otherwise by the Authority in writing and then it may only continue to Process Authority Data in accordance with the Authority's written directions; and

6.14.2 where such Default is capable of remedy, the Supplier shall remedy such Default within the timescales set by the Authority and, should the Supplier fail to remedy the Default within such timescales, the Authority may terminate this

Agreement with immediate effect by issuing a Termination Notice to the Supplier in accordance with Clause 33.1(b).

6.15 The Supplier shall review each Change Request against the Risk Management Documentation to establish whether the documentation would need to be amended should such Change Request be agreed and, where a Change Request would require an amendment to the Risk Management Documentation, the Supplier shall set out any proposed amendments to the documentation in the Impact Assessment associated with such Change Request for consideration and approval by the Authority.

6.16 The Supplier shall be solely responsible for the costs associated with developing and updating the Risk Management Documentation and carrying out any remedial action required by the Authority as part of the Accreditation process.

## **7. Certification Requirements**

7.1 The Supplier shall ensure, at all times during the Term, that the Supplier and any Sub-contractor with access to Authority Data or who will Process Authority Data are certified as compliant with:

7.1.1 ISO/IEC 27001:2013 by a UKAS approved certification body or are included within the scope of an existing certification of compliance with ISO/IEC 27001:2013; and

7.1.2 Cyber Essentials,

and shall provide the Authority with a copy of each such certificate of compliance before the Supplier or the relevant Sub-contractor (as applicable) shall be permitted to use the Core Information Management System to receive, store or Process any Authority Data. Any exceptions to the flow-down of the certification requirements to third party suppliers and sub-contractors must be agreed with the Authority.

7.2 The Supplier shall ensure, at all times during the Term, that the Supplier and each Sub-contractor who is responsible for the secure destruction of Authority Data:

7.2.1 securely destroys Authority Data only on Sites which are included within the scope of an existing certification of compliance with ISO/IEC 27001:2013; and

7.2.2 are certified as compliant with the NCSC Assured Service (CAS) Service Requirement Sanitisation Standard or an alternative standard as agreed by the Authority.

7.3 The Supplier shall provide the Authority with evidence of its and its Subcontractor's compliance with the requirements set out in this Paragraph before the Supplier or the relevant Sub-contractor (as applicable) shall be permitted to carry out the secure destruction of the Authority Data.



7.4 The Supplier shall notify the Authority as soon as reasonably practicable and, in any event within two (2) Working Days, if the Supplier or any Sub-contractor ceases to be compliant with the Certification Requirements and, on request from the Authority, shall or shall procure that the relevant Sub-contractor shall:

7.4.1 immediately ceases using the Authority Data; and

7.4.2 procure that the relevant Sub-contractor promptly returns, destroys and/or erases the Authority Data in accordance with Baseline Security Requirements.

## **8. Security Testing**

8.1 The Supplier shall, at its own cost and expense:

8.1.1 procure a CHECK IT Health Check of the Core Information Management System (an "IT Health Check") by a NCSC approved member of the CHECK Scheme:

- (a) prior to it submitting the Risk Management Documentation to the Authority for an Accreditation Decision;
- (b) if directed to do so by the Authority in accordance with Paragraph 8.2; and
- (c) once every 12 months during the Term.

8.1.2 conduct vulnerability scanning and assessments of the Core Information Management System monthly;

8.1.3 conduct an assessment as soon as reasonably practicable following receipt by the Supplier or any of its Sub-contractors of a critical vulnerability alert from a Supplier of any software or other component of the Core Information Management System to determine whether the vulnerability affects the Core Information Management System; and

8.1.4 conduct such other tests as are required by:

- (a) any Vulnerability Correction Plans;
- (b) the ISO27001 certification requirements;
- (c) the Risk Management Documentation; and
- (d) the Authority following a Breach of Security or a significant change to the components or architecture of the Core Information Management System,

(each a "Security Test").

- 8.2 The Supplier shall provide the Authority with the results of such Security Tests (in a form approved by the Authority in advance) as soon as practicable after completion of each Security Test.
- 8.3 In relation to each IT Health Check, the Supplier shall:
- 8.3.1 agree with the Authority the aim and scope of the IT Health Check;
- 8.3.2 promptly, following receipt of each IT Health Check report, provide the Authority with a copy of the IT Health Check report;
- 8.3.3 in the event that the IT Health Check report identifies any vulnerabilities, the Supplier shall:
- (a) prepare a remedial plan for approval by the Authority (each a **"Vulnerability Correction Plan"**) which sets out in respect of each vulnerability identified in the IT Health Check report:
    - (i) how the vulnerability will be remedied;
    - (ii) the date by which the vulnerability will be remedied;
    - (iii) the tests which the Supplier shall perform or procure to be performed (which may, at the discretion of the Authority, include a further IT Health Check) to confirm that the vulnerability has been remedied;
  - (b) comply with the Vulnerability Correction Plan; and
  - (c) conduct such further Security Tests on the Core Information Management System as are required by the Vulnerability Correction Plan to confirm that the Vulnerability Correction Plan has been complied with.
- 8.4 The Security Tests shall be designed and implemented by the Supplier so as to minimise the impact on the delivery of the Services and the date, timing, content and conduct of such Security Tests shall be agreed in advance with the Authority. Subject to the Supplier complying with this Paragraph 8.4, if a Security Test causes a Performance Failure in a particular Measurement Period, the Supplier shall be granted relief in respect of such Performance Failure for that Measurement Period.
- 8.5 The Authority shall be entitled to send a representative to witness the conduct of the Security Tests. Without prejudice to the Supplier's obligations under Paragraph 8.3, the Supplier shall provide the Authority with the results of such Security Tests (in a form approved by the Authority in advance) as soon as practicable after completion of each Security Test.
- 8.6 The Authority and/or its authorised representatives shall be entitled, at any time and without giving notice to the Supplier, to carry out such tests (including

penetration tests) as it may deem necessary in relation to the Service, the Information System and/or the Supplier's compliance with the Risk Management Documentation ("**Authority Security Tests**"). The Authority shall take reasonable steps to notify the Supplier prior to carrying out such Authority Security Test to the extent that it is reasonably practicable for it to do so taking into account the nature of the Authority Security Test.

- 8.7 The Authority shall notify the Supplier of the results of such Authority Security Tests after completion of each Authority Security Test.
- 8.8 The Authority Security Tests shall be designed and implemented so as to minimise their impact on the delivery of the Services. If an Authority Security Test causes a Performance Failure in a particular Measurement Period, the Supplier shall be granted relief in respect of such Performance Failure for that Measurement Period.
- 8.9 Without prejudice to the provisions of Paragraph 8.3.3, where any Security Test carried out pursuant to this Paragraph 8 reveals any actual or potential Breach of Security or weaknesses (including un-patched vulnerabilities, poor configuration and/or incorrect system management), the Supplier shall promptly notify the Authority of any changes to the Core Information Management System and/or the Risk Management Documentation (and the implementation thereof) which the Supplier proposes to make in order to correct such failure or weakness. Subject to the Authority's prior written approval, the Supplier shall implement such changes to the Core Information Management System and/or the Risk Management Documentation and repeat the relevant Security Tests in accordance with the timetable agreed with the Authority or, otherwise, as soon as reasonably possible.
- 8.10 If the Authority unreasonably withholds its approval to the implementation of any changes proposed by the Supplier to the Risk Management Documentation in accordance with Paragraph 8.8 above, the Supplier shall not be deemed to be in breach of this Agreement to the extent it can be shown that such breach:
  - 8.10.1 has arisen as a direct result of the Authority unreasonably withholding its approval to the implementation of such proposed changes; and
  - 8.10.2 would have been avoided had the Authority given its approval to the implementation of such proposed changes.
- 8.11 For the avoidance of doubt, where a change to the Core Information Management System and/or the Risk Management Documentation is required to remedy non-compliance with the Risk Management Documentation, the Baseline Security Requirements and/or any obligation in this Agreement, the Supplier shall effect such change at its own cost and expense.
- 8.12 If any repeat Security Test carried out pursuant to Paragraph 8.9 reveals an actual or potential Breach of Security or weakness exploiting the same root cause failure, such circumstance shall constitute a material Default and the

Authority may by terminate this Agreement with immediate effect by issuing a Termination Notice to the Supplier in accordance with Clause [33.1(b)].

8.13 The Supplier shall, by [31 March] of each year during the Term, provide to the Authority a letter from its chief executive officer (or equivalent officer) confirming that having made due and careful enquiry:

8.13.1 the Supplier has in the previous year carried out all tests and has in place all procedures required in relation to security matters under this Agreement; and

8.13.2 the Supplier is confident that its security and risk mitigation procedures with respect to the Services remain effective.

## **9. Vulnerabilities and Corrective Action**

9.1 The Authority and the Supplier acknowledge that from time to time vulnerabilities in the Information System will be discovered which unless mitigated will present an unacceptable risk to the Authority Data.

9.2 The severity of vulnerabilities for Supplier COTS Software and Third Party COTS Software shall be categorised by the Supplier as 'Critical', 'Important' and 'Other' by aligning these categories to the vulnerability scoring according to the agreed method in the Risk Management Documentation and using the appropriate vulnerability scoring systems including:

9.2.1 the 'National Vulnerability Database' 'Vulnerability Severity Ratings': 'High', 'Medium' and 'Low' respectively (these in turn are aligned to CVSS scores as set out by NIST at <http://nvd.nist.gov/cvss.cfm>); and

9.2.2 Microsoft's 'Security Bulletin Severity Rating System' ratings 'Critical', 'Important', and the two remaining levels ('Moderate' and 'Low') respectively.

9.3 Subject to Paragraph 9.4, the Supplier shall procure the application of security patches to vulnerabilities in the Core Information Management System within:

9.3.1 seven (7) days after the public release of patches for those vulnerabilities categorised as 'Critical';

9.3.2 thirty (30) days after the public release of patches for those vulnerabilities categorised as 'Important'; and

9.3.3 sixty (60) days after the public release of patches for those vulnerabilities categorised as 'Other'.

9.4 The timescales for applying patches to vulnerabilities in the Core Information Management System set out in Paragraph 9.3 shall be extended where:

9.4.1 the Supplier can demonstrate that a vulnerability in the Core Information Management System is not exploitable within the context of the Services (e.g. because it resides in a Software component which is not involved in running in

the Services) provided such vulnerabilities shall be remedied by the Supplier within the timescales set out in Paragraph 9.3 if the vulnerability becomes exploitable within the context of the Services;

9.4.2 the application of a 'Critical' or 'Important' security patch adversely affects the Supplier's ability to deliver the Services in which case the Supplier shall be granted an extension to such timescales of 5 days, provided the Supplier had followed and continues to follow the security patch test plan agreed with the Authority; or

9.4.3 the Authority agrees a different maximum period after a case-by-case consultation with the Supplier under the processes defined in the Risk Management Documentation.

9.5 The Risk Management Documentation shall include provisions for major version upgrades of all Supplier COTS Software and Third Party COTS Software to be kept up to date such that all Supplier COTS Software and Third Party COTS Software are always in mainstream support throughout the Term unless otherwise agreed by the Authority in writing.

9.6 The Supplier shall:

9.6.1 implement a mechanism for receiving, analysing and acting upon threat information supplied by NCSC, or any other competent Central Government Body;

9.6.2 promptly notify NCSC of any actual or sustained attempted Breach of Security;

9.6.3 ensure that the Core Information Management System is monitored to facilitate the detection of anomalous behaviour that would be indicative of system compromise;

9.6.4 ensure it is knowledgeable about the latest trends in threat, vulnerability and exploitation that are relevant to the Core Information Management System by actively monitoring the threat landscape during the Term;

9.6.5 pro-actively scan the Core Information Management System for vulnerable components and address discovered vulnerabilities through the processes described in the Risk Management Documentation;

9.6.6 from the date specified in the Accreditation Plan and within 5 Working Days of the end of each subsequent month during the Term, provide the Authority with a written report which details both patched and outstanding vulnerabilities in the Core Information Management System, the elapsed time between the public release date of patches and either time of application or for outstanding vulnerabilities the time of issue of such report and any failure to comply with the timescales set out in Paragraph 9.3 for applying patches to vulnerabilities in the Core Information Management System;

- 9.6.7 propose interim mitigation measures to vulnerabilities in the Core Information Management System known to be exploitable where a security patch is not immediately available;
  - 9.6.8 remove or disable any extraneous interfaces, services or capabilities that are not needed for the provision of the Services (in order to reduce the attack surface of the Core Information Management System); and
  - 9.6.9 inform the Authority when it becomes aware of any new threat, vulnerability or exploitation technique that has the potential to affect the security of the Core Information Management System and provide initial indications of possible mitigations.
- 9.7 If the Supplier is unlikely to be able to mitigate the vulnerability within the timescales under Paragraph 10, the Supplier shall immediately notify the Authority.
- 9.8 If the Supplier fails to patch vulnerabilities in the Core Information Management System in accordance with Paragraph 9.3, such failure shall constitute a material Default and the Authority may by terminate this Agreement with immediate effect by issuing a Termination Notice to the Supplier in accordance with Clause 33.1(b).

## **10. Malicious Software**

- 10.1 The Supplier shall install and maintain anti-Malicious Software or procure that latest versions of anti-virus definitions and anti-Malicious Software is installed and maintained on any part of the Information Management System, which may Process Authority Data and ensure that such anti-Malicious Software is configured to perform automatic software and definition updates as well as regular scans of the Information Management System to check for, prevent the introduction of Malicious Software or where Malicious Software has been introduced into the Information Management System, to identify, contain the spread of, and minimise the impact of Malicious Software.
- 10.2 If Malicious Software is found, the Parties shall cooperate to reduce the effect of the Malicious Software and, particularly if Malicious Software causes loss of operational efficiency or loss or corruption of Authority Data, assist each other to mitigate any Losses and to restore the Services to their desired operating efficiency.
- 10.3 any cost arising out of the actions of the Parties taken in compliance with the provisions of Paragraph 10.2 shall be borne by the Parties as follows:
- 10.3.1 by the Supplier where the Malicious Software originates from the Supplier Software, the Third Party Software supplied by the Supplier (except where the Authority has waived the obligation set out in Clause 20.13) or the Authority Data (whilst the Authority Data was under the control of the Supplier) unless the Supplier can demonstrate that such Malicious Software was present and not

quarantined or otherwise identified by the Authority when provided to the Supplier; and

10.3.2 otherwise by the Authority.

## **11. Breach of Security**

11.1 If either Party becomes aware of a Breach of Security or an attempted Breach of Security, it shall notify the other in accordance with the security incident management process as set out in the Risk Management Documentation.

11.2 The security incident management process set out in the Risk Management Documentation shall, as a minimum, require the Supplier upon becoming aware of a Breach of Security or an attempted Breach of Security to:

11.2.1 immediately take all reasonable steps (which shall include any action or changes reasonably required by the Authority which shall be completed within such timescales as the Authority may reasonably require) necessary to:

- (a) minimise the extent of actual or potential harm caused by such Breach of Security;
- (b) remedy such Breach of Security to the extent possible and protect the integrity of the Information System against any such potential or attempted Breach of Security;
- (c) apply a tested mitigation against any such Breach of Security or potential or attempted Breach of Security and, provided that reasonable testing has been undertaken by the Supplier, if the mitigation adversely affects the Supplier's ability to deliver the Services so as to meet any Performance Indicator, the Supplier shall be granted relief against the failure to meet such affected Performance Indicator for such period as the Authority, acting reasonably, may specify by written notice to the Supplier; and
- (d) prevent a further Breach of Security or attempted Breach of Security in the future exploiting the same root cause failure;

11.2.2 as soon as reasonably practicable and, in any event, within 2 Working Days, following the Breach of Security or attempted Breach of Security, provide to the Authority full details of the Breach of Security or attempted Breach of Security, including a root cause analysis where required by the Authority.

11.3 In the event that any action is taken in response to a Breach of Security or attempted Breach of Security which occurred as a result of non-compliance of the Information System and/or the Risk Management Documentation with the Baseline Security Requirements and/or this Agreement, then such action and any required change to the Information System and/or Risk Management Documentation shall be completed by the Supplier at no cost to the Authority.

- 11.4 If the Supplier fails to comply with its obligations set out in this Paragraph 11, such failure shall constitute a material Default, which if not remedied to the satisfaction of the Authority, shall permit the Authority to terminate this Agreement with immediate effect by issuing a Termination Notice to the Supplier in accordance with Clause 33.1(b).

**12. Data Processing, Storage, Management and Destruction**

- 12.1 In addition to the obligations on the Supplier set out Clause 23 (Protection of Personal Data) in respect of Processing Personal Data and compliance with the Data Protection Legislation, the Supplier shall:

12.1.1 Process Authority Data only at the Sites and such Sites must not be located outside of the European Union except where the Authority has given its consent to a transfer of the Authority Data to outside of the European Union in accordance with Clause 23;

12.1.2 on demand, provide the Authority with all Authority Data in an agreed open format;

12.1.3 have documented processes to guarantee availability of Authority Data in the event of the Supplier ceasing to trade;

12.1.4 securely erase any or all Authority Data held by the Supplier when requested to do so by the Authority; and

12.1.5 securely destroy all media that has held Authority Data at the end of life of that media in accordance with any specific requirements in this Agreement and, in the absence of any such requirements, as directed by the Authority.



## **Annex 1: Baseline Security Requirements**

### **1. Security Classification of Information**

If the provision of the Services requires the Supplier to Process Authority Data which is classified as:

- 1.1 OFFICIAL-SENSITIVE, the Supplier shall implement such additional measures as agreed with the Authority from time to time in order to ensure that such information is safeguarded in accordance with the applicable Standards; and/or
- 1.2 SECRET or TOP SECRET, the Supplier shall only do so where it has notified the Authority prior to receipt of such Authority Data and the Supplier shall implement additional measures as agreed with the Authority from time to time in order to ensure that such information is safeguarded in accordance with the applicable Standards.

### **2. End User Devices**

- 2.1 The Supplier shall ensure that any Authority Data which resides on a mobile, removable or physically uncontrolled device is stored encrypted using a product or system component which has been formally assured through a recognised certification process agreed with the Authority except where the Authority has given its prior written consent to an alternative arrangement.
- 2.2 The Supplier shall ensure that any device which is used to Process Authority Data meets all of the security requirements set out in the NCSC End User Devices Platform Security Guidance, a copy of which can be found at:  
<https://www.ncsc.gov.uk/guidance/end-user-device-security>.

### **3. Networking**

The Supplier shall ensure that any Authority Data which it causes to be transmitted over any public network (including the Internet, mobile networks or un-protected enterprise network) or to a mobile device shall be encrypted when transmitted.

### **4. Personnel Security**

- 4.1 All Supplier Personnel shall be subject to a pre-employment check before they may participate in the provision and or management of the Services. Such preemployment checks must include all pre-employment checks which are required by the HMG Baseline Personnel Security Standard including: verification of the individual's identity; verification of the individual's nationality and immigration status; and, verification of the individual's employment history; verification of the individual's criminal record.
- 4.2 The Authority and the Supplier shall review the roles and responsibilities of the Supplier Personnel who will be involved in the management and/or provision

of the Services in order to enable the Authority to determine which roles require additional vetting and a specific national security vetting clearance (e.g. a Counter Terrorist Check; a Security Check). Roles which are likely to require additional vetting and a specific national security vetting clearance include system administrators whose role would provide those individuals with privileged access to IT systems which Process Authority Data or data which is classified as OFFICIAL-SENSITIVE.

4.3 The Supplier shall not permit Supplier Personnel who fail the security checks required by Paragraphs 4.1 and 4.2 to be involved in the management and/or provision of the Services except where the Authority has expressly agreed in writing to the involvement of the named individual in the management and/or provision of the Services.

4.4 The Supplier shall ensure that Supplier Personnel are only granted such access to Authority Data as is necessary to enable the Supplier Personnel to perform their role and to fulfil their responsibilities.

4.5 The Supplier shall ensure that Supplier Personnel who no longer require access to the Authority Data (e.g. they cease to be employed by the Supplier or any of its Sub-contractors), have their rights to access the Authority Data revoked within 1 Working Day.

## **5. Identity, Authentication and Access Control**

5.1 The Supplier shall operate an access control regime to ensure:

5.1.1 all users and administrators of the Supplier System are uniquely identified and authenticated when accessing or administering the Services; and

5.1.2 all persons who access the Sites are identified and authenticated before they are allowed access to the Sites.

5.2 The Supplier shall apply the 'principle of least privilege' when allowing persons access to the Supplier System and Sites so that such persons are allowed access only to those parts of the Sites and the Supplier System they require.

5.3 The Supplier shall retain records of access to the Sites and to the Supplier System and shall make such record available to the Authority on request.

## **6. Audit and Protective Monitoring**

6.1 The Supplier shall collect audit records which relate to security events in Core Information Management System (as shown in Annex 2) or that would support the analysis of potential and actual compromises. In order to facilitate effective monitoring and forensic readiness such Supplier audit records should (as a minimum) include regular reports and alerts setting out details of access by users of the Core Information Management System (as shown in Annex 2), to enable the identification of (without limitation) changing access trends, any

unusual patterns of usage and/or accounts accessing higher than average amounts of Authority Data.

6.2 The Supplier and the Authority shall work together to establish any additional audit and monitoring requirements for the Core Information Management System.

6.3 The retention periods for audit records and event logs must be agreed with the Authority and documented in the Risk Management Documentation.

## **7. Secure Architecture**

7.1 The Supplier shall design the Core Information Management System in accordance with:

7.1.1 the NCSC "Security Design Principles for Digital Services", a copy of which can be found at: <https://www.ncsc.gov.uk/guidance/security-design-principlesdigital-services-main>;

7.1.2 the NCSC "Bulk Data Principles", a copy of which can be found at: <https://www.ncsc.gov.uk/guidance/protecting-bulk-personal-data-main>; and

7.1.3 the NCSC "Cloud Security Principles", a copy of which can be found at: <https://www.ncsc.gov.uk/guidance/implementing-cloud-security-principles> and which are summarised below:

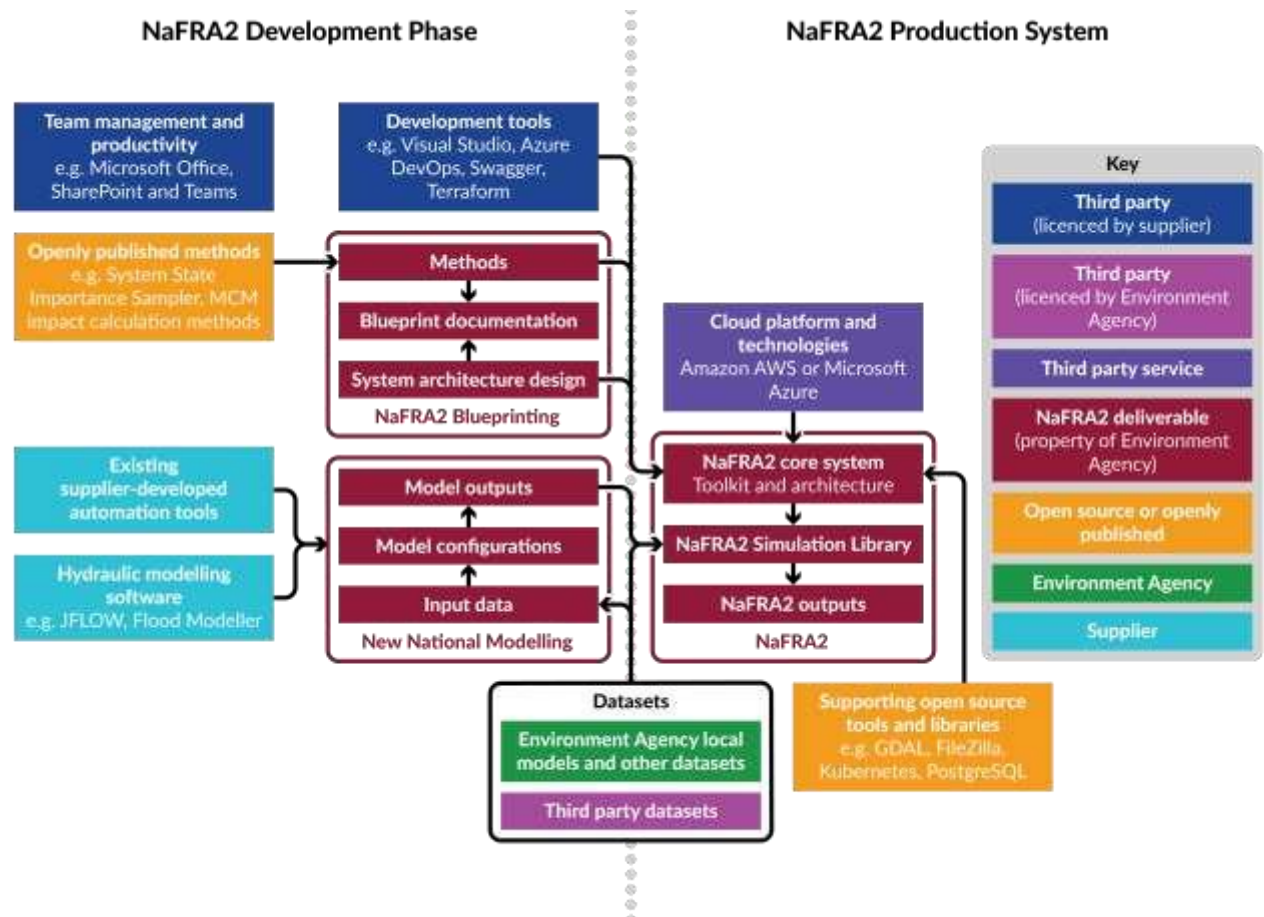
- (a) "Cloud Security Principle 1: data in transit protection" which, amongst other matters, requires that user data transiting networks should be adequately protected against tampering and eavesdropping;
- (b) "Cloud Security Principle 2: asset protection and resilience" which, amongst other matters, requires that user data, and the assets storing or processing it, should be protected against physical tampering, loss, damage or seizure;
- (c) "Cloud Security Principle 3: separation between users" which, amongst other matters, requires that a malicious or compromised user of the service should not be able to affect the service or data of another;
- (d) "Cloud Security Principle 4: governance framework" which, amongst other matters, requires that the Supplier should have a security governance framework which coordinates and directs its management of the Services and information within it;
- (e) "Cloud Security Principle 5: operational security" which, amongst other matters, requires that the Services need to be operated and managed securely in order to impede, detect or prevent a Breach of Security;
- (f) "Cloud Security Principle 6: personnel security" which, amongst other matters, requires that where Supplier Personnel have access to

Authority Data and/or the Authority System that those personnel be subject to appropriate security screening and regular security training;

- (g) "Cloud Security Principle 7: secure development" which, amongst other matters, requires that the Services be designed and developed to identify and mitigate threats to their security;
- (h) "Cloud Security Principle 8: supply chain security" which, amongst other matters, requires the Supplier to ensure that appropriate security controls are in place with its Sub-contractors and other suppliers;
- (i) "Cloud Security Principle 9: secure user management" which, amongst other matters, requires the Supplier to make the tools available for the Authority to securely manage the Authority's use of the Service;
- (j) "Cloud Security Principle 10: identity and authentication" which, amongst other matters, requires the Supplier to implement appropriate controls in order to ensure that access to Service interfaces is constrained to authenticated and authorised individuals;
- (k) "Cloud Security Principle 11: external interface protection" which, amongst other matters, requires that all external or less trusted interfaces with the Services should be identified and appropriately defended;
- (l) "Cloud Security Principle 12: secure service administration" which, amongst other matters, requires that any ICT system which is used for administration of a cloud service will have highly privileged access to that service;
- (m) "Cloud Security Principle 13: audit information for users" which, amongst other matters, requires the Supplier to be able to provide the Authority with the audit records it needs to monitor access to the Service and the Authority Data held by the Supplier and/or its Subcontractors;
- (n) "Cloud Security Principle 14: secure use of the service" which, amongst other matters, requires the Supplier to educate Supplier Personnel on the safe and secure use of the Information Management System.

Annex 2

CORE INFORMATION MANAGEMENT SYSTEM DIAGRAM



OFFICIAL CONFIDENTIAL

**Annex 3**

**Risk Management Documentation Template**

*Author:*

*Owner:*

*Date:*

*Version:*

**1 EXECUTIVE SUMMARY**

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*<This section should contain a brief summary of the business context of the system, any key IA controls, the assurance work done, any off-shoring considerations and any significant residual risks that need acceptance.>*

Change History

| Version Number | Date of Change | Change made by | Nature and reason for change |
|----------------|----------------|----------------|------------------------------|
|                |                |                |                              |
|                |                |                |                              |
|                |                |                |                              |

References, Links and Dependencies

This document is dependent on the supporting information and assurance provided by the following documents.

| ID | Document Title | Reference | Date |
|----|----------------|-----------|------|
| 1. |                |           |      |
| 2. |                |           |      |



OFFICIAL CONFIDENTIAL

|    |  |  |  |
|----|--|--|--|
| 3. |  |  |  |
|----|--|--|--|

## **2 SYSTEM DESCRIPTION**

### **2.1 Background**

*< A short description of the project/product/system. Describe its purpose, functionality, aim and scope.>*

### **2.2 Organisational Ownership/Structure**

*< Who owns the system and operates the system and the organisational governance structure. This should include how any ongoing security management is integrated into the project governance e.g. how a Security Working Group reports to the project board.>*

### **2.3 Information assets and flows**

*<The information assets processed by the system which should include a simple high level diagram on one page. Include a list of the type and volumes of data that will be processed, managed and stored within the supplier system. If personal data, please include the fields used such as name, address, department DOB, NI number etc.>*

### **2.4 System Architecture**

*<A description of the physical system architecture, to include the system management. A diagram will be needed here>*

### **2.5 Users**

*<A brief description of the system users, to include HMG users as well as any service provider users and system managers. If relevant, security clearance level requirements should be included.>*

### **2.6 Locations**

*<Where the data assets are stored and managed from. If any locations hold independent security certifications (e.g. ISO27001:2013) these should be noted. Any off-shoring considerations should be detailed.>*

### **2.7 Test and Development Systems**

*<Include information about any test and development systems, their locations and whether they contain live system data.>*

### **2.8 Key roles and responsibilities**

*<A brief description of the lead security roles such as that of the SIRO, IAO, Security manager, Accreditor >*

## **3 RISK ASSESSMENT**

**3.1 Accreditation/Assurance Scope**

*<This section describes the scope of the Accreditation/Assurance for the system. The scope of the assurance assessment should be clearly indicated, with components of the architecture upon which reliance is placed but assurance will not be done clearly shown e.g. a cloud hosting service. A logical diagram should be used along with a brief description of the components.>*

**3.2 Risk appetite**

*<A risk appetite should be agreed with the SIRO/SRO and included here.>*

**3.3 Business impact assessment**

*< A description of the information assets and the impact of their loss or corruption (e.g. large amounts of Official Sensitive personal data the loss of which would be severely damaging to individuals, embarrassing to HMG, and make HMG liable to ICO investigations) in business terms should be included. This section should cover the impact on loss of confidentiality, integrity and availability of the assets. The format of this assessment may be dependent on the risk assessment method chosen.>*

**3.4 Risk assessment**

*<The content of this section will depend on the risk assessment methodology chosen, but should contain the output of the formal information risk assessment in a prioritised list using business language. Experts on the system and business process should have been involved in the risk assessment to ensure the formal risk methodology used has not missed out any risks. The example table below should be used as the format to identify the risks and document the controls used to mitigate those risks. >*

| Risk ID | Inherent risk                             | Inherent risk level | Vulnerability                                                       | Controls                                                                                                                                                                                                                                                                       | Residual risk level |
|---------|-------------------------------------------|---------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| R1      | Internet attackers could hack the system. | Medium              | The service systems are exposed to the internet via the web portal. | C1: Internet-facing firewalls<br>C2: Internet-facing IP whitelist<br>C3: System hardening<br>C4: Protective monitoring<br>C5: Application access control<br>C16: Anti-virus for incoming files<br>C54: Files deleted when processed<br>C59: Removal of departmental identifier | Very low            |

|    |                                                                                |             |                                                                            |                                                                                                                                                                                                                                              |          |
|----|--------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| R2 | Remote attackers could intercept or disrupt information crossing the internet. | Medium      | File sharing with organisations across the internet.                       | C9: TLS communications<br>C10: PGP file-sharing                                                                                                                                                                                              | Very low |
| R3 | Internal users could maliciously or accidentally alter bank details.           | Medium-High | Users bank details can be altered as part of the normal business function. | C12. System administrators hold SC clearance.<br>C13. All changes to user information are logged and audited.<br>C14. Letters are automatically sent to users home addresses when bank details are altered.<br>C15. Staff awareness training | Low      |

### 3.5 Controls

*<The controls listed above to mitigate the risks identified should be detailed. There should be a description of each control, further information and configuration details where relevant, and an assessment of the implementation status of, and assurance in, the control. A sample layout is included below.>*

| ID  | Control title               | Control description                                                                                                                              | Further information and assurance status  |
|-----|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| C1  | Internetfacing firewalls    | Internet-facing firewalls are in place between the internet and the system', which restrict access from the internet to the required ports only. | Assured via ITHC firewall rule check      |
| C2  | Internetfacing IP whitelist | An IP whitelist is in place for all access from the internet.                                                                                    | Assured via ITHC                          |
| C15 | Staff awareness training    | All staff must undertake annual security awareness training and this process is audited and monitored by line managers.                          | Assured as part of ISO27001 certification |

**3.6 Residual risks and actions**

*<A summary of the residual risks which are likely to be above the risk appetite stated after all controls have been applied and verified should be listed with actions and timescales included.>*

**4 IN-SERVICE CONTROLS**

*< This section should describe the controls relating to the information lifecycle, including development, testing, in-service, termination and on-going risk management and accreditation assurance. Details of any formal assurance requirements specified in the contract such as security CHECK testing or maintained ISO27001 certification should be included. This section should include at least:*

- a) information risk management and timescales and triggers for a review;*
- b) contractual patching requirements and timescales for the different priorities of patch;*
- c) protective monitoring arrangements to include how anomalous behaviour is identified and acted upon as well as how logging and auditing of user activity is done;*
- d) configuration and change management;*
- e) incident management;*
- f) vulnerability management;*
- g) user access management; and*
- h) data sanitisation and disposal.>*

**5 SECURITY OPERATING PROCEDURES (SYOPS)**

*< If needed any SyOps requirements should be included and referenced here.>*

**6 MAJOR HARDWARE AND SOFTWARE AND END OF SUPPORT DATES**

*< This should be a table which lists the end of support dates for hardware and software products and components. An example table is shown below.>*

| Name        | Version | End of mainstream Support/Extended Support | Notes/RAG Status |
|-------------|---------|--------------------------------------------|------------------|
| Server Host | HP XXXX | Feb 2020/ March 2022                       |                  |

**7 INCIDENT MANAGEMENT PROCESS**

*<The suppliers' process, as agreed with the Authority/Customer, should be included here. It must as a minimum include the protocol for how and when incidents will be reported to the Authority/customer and the process that will be undertaken to mitigate the incidents and investigate the root cause.>*

**8 SECURITY REQUIREMENTS FOR USER ORGANISATIONS**

*<Any security requirements for connecting organisations or departments should be included or referenced here.>*

**9 REQUIRED CHANGES REGISTER**

*<The table below shows the headings for the Required Changes Register which should be maintained and used to update the contents of this document at least annually.>*

| Ref | Section | Change                                                 | Agreed With    | Date agreed | Documentation update | Status |
|-----|---------|--------------------------------------------------------|----------------|-------------|----------------------|--------|
| 1   | 6.4     | A new Third Party                                      | Authority name | 11/11/2018  | Jul-2019             | Open   |
|     |         | supplier XXXX will be performing the print capability. |                |             |                      |        |

**10 PERSONAL DATA PROCESSING STATEMENT**

*<This should include: (i) the types of Personal Data which the Supplier and/or its Sub-contractors are Processing on behalf of the Authority; (ii) the categories of Data Subjects whose Personal Data the Supplier and/or its Subcontractors are Processing on behalf of the Authority; the nature and purpose of such Processing; (iii) the locations at which the Supplier and/or its Subcontractors Process Authority Data; and, (iv) the Protective Measures that the Supplier and, where applicable, its Subcontractors have implemented to protect the Authority Data against a Security Breach including a Personal Data Breach.>*

**11 ANNEX A. ISO27001 AND/OR CYBER ESSENTIAL CERTIFICATES**

*<Any certifications relied upon should have their certificates included>*

- 12 Annex B. Cloud Security Principles assessment  
*<A spreadsheet may be attached>*
- 13 Annex C. Protecting Bulk Data assessment if required by the Authority/Customer  
*<A spreadsheet may be attached>*
- 14 Annex E. Latest ITHC report and Vulnerability Correction Plan





## **AGREEMENT FOR SERVICES SCHEDULES**

### **SCHEDULE 2.5**

#### **INSURANCE REQUIREMENTS**

## **Insurance Requirements**

### **1 OBLIGATION TO MAINTAIN INSURANCES**

- 1.1 Without prejudice to its obligations to the Authority under this Agreement, including its indemnity and liability obligations, the Supplier shall for the periods specified in this Schedule take out and maintain, or procure the taking out and maintenance of the insurances as set out in Annex 1 and any other insurances as may be required by applicable Law (together the “**Insurances**”). The Supplier shall ensure that each of the Insurances is effective no later than the date on which the relevant risk commences.
- 1.2 The Insurances shall be maintained in accordance with Good Industry Practice and (so far as is reasonably practicable) on terms no less favourable than those generally available to a consultant in respect of risks insured in the international insurance market from time to time.
- 1.3 The Insurances shall be taken out and maintained with insurers who are:
- (a) of good financial standing;
  - (b) appropriately regulated;
  - (c) regulated by the applicable regulatory body and is in good standing with that regulator; and
  - (d) except in the case of any Insurances provided by an Affiliate of the Supplier, of good repute in the international insurance market.

### **2 GENERAL OBLIGATIONS**

Without limiting the other provisions of this Agreement, the Supplier shall:

- (a) take or procure the taking of all reasonable risk management and risk control measures in relation to the Services as it would be reasonable to expect of a prudent consultant acting in accordance with Good Industry Practice, including the investigation and reports of relevant claims to insurers;
- (b) promptly notify the insurers in writing of any relevant material fact relevant to the Services under any Insurances of which the Supplier is or becomes aware; and
- (c) hold all policies in respect of the Insurances and cause any insurance broker effecting the Insurances to hold any insurance slips and other evidence of placing cover representing any of the Insurances to which it is a party.

### **3 FAILURE TO INSURE**

3.1 The Supplier shall not take any action or fail to take any action or (insofar as is reasonably within its power) permit anything to occur in relation to it which would entitle any insurer to refuse to pay any claim under any of the Insurances.

3.2 Where the Supplier has failed to purchase any of the Insurances or maintain any of the Insurances in full force and effect, the Authority may elect (but shall not be obliged) following written notice to the Supplier to purchase the relevant Insurances, and the Authority shall be entitled to recover the reasonable premium and other reasonable costs incurred in connection therewith as a debt due from the Supplier.

### **4 EVIDENCE OF INSURANCES**

The Supplier shall upon the Effective Date and within fifteen (15) Working Days after the renewal or replacement of each of the Insurances, provide evidence, in the form of a broker's certificate, that the Insurances are in force and effect and meet in full the requirements of this Schedule. Receipt of such evidence by the Authority shall not in itself relieve the Supplier of any of its liabilities and obligations under the Agreement.

### **5 CANCELLATION**

5.1 Subject to Paragraph 5.2, the Supplier shall notify the Authority in writing at least five (5) Working Days prior to the cancellation, suspension, termination or nonrenewal of any of the Insurances.

5.2 Without prejudice to the Supplier's obligations under Paragraph 4, Paragraph 5.1 shall not apply where the termination of any Insurances occurs purely as a result of a change of insurer in respect of any of the Insurances required to be taken out and maintained in accordance with this Schedule.

### **6 INSURANCE CLAIMS, PREMIUMS AND DEDUCTIBLES**

6.1 The Supplier shall promptly notify to insurers any matter arising from, or in relation to, the Services and/or this Agreement for which it may be entitled to claim under any of the Insurances. In the event that the Authority receives a claim relating to or arising out of the Services and/or this Agreement, the Supplier shall co-operate with the Authority and assist it in dealing with such claims at its own expense including without limitation providing information and documentation in a timely manner.

6.2 The Supplier shall maintain a register of all claims under the Insurances in connection with this Agreement and shall allow the Authority to review such register at any time.

6.3 Where any Insurance requires payment of a premium, the Supplier shall be liable for and shall promptly pay such premium.

- 6.4 Where any Insurance is subject to an excess or deductible below which the indemnity from insurers is excluded, the Supplier shall be liable for such excess or deductible. The Supplier shall not be entitled to recover from the Authority any sum paid by way of excess or deductible under the Insurances whether under the terms of this Agreement or otherwise unless such claim against the Insurance has been caused by or is a result of any action or non-action by the Authority.

## **ANNEX 1: REQUIRED INSURANCES**

### **PART A: INSURANCE CLAIM NOTIFICATION**

Except where the Authority is the claimant party, the Supplier shall give the Authority notice within twenty (20) Working Days after any incident that it is reasonable to consider could result in an insurance claim in excess of £500,000 relating to or arising out of the provision of the Services or this Agreement on any of the Insurances or which, but for the application of the applicable policy excess, could be made on any of the Insurances.

### **PART B: THIRD PARTY PUBLIC LIABILITY INSURANCE**

**1 Insured**

The Supplier.

**2 Interest**

To indemnify the Insured in respect of all sums which the Insured shall become legally liable to pay as damages, including claimant's costs and expenses, in respect of accidental:

- (a) death or bodily injury to or sickness, illness or disease contracted by any person; and
- (b) loss of or damage to physical property;

happening during the period of insurance (as specified in Paragraph 5) and arising out of or in connection with the provision of the Services and in connection with this Agreement.

**3 Limit of indemnity**

**REDACTED** in respect of any one occurrence, a number of occurrences and in the aggregate in an annual policy period in respect of public liability.

**4 Territorial limits**

**United Kingdom.**

**5 Period of insurance**

From the date of this Agreement for the Term and renewable on an annual basis unless agreed otherwise by the Authority in writing.

**6 Cover features and extensions**

6.1 Indemnity to principals clause under which the Authority shall be indemnified in respect of claims made against the Authority in respect of death or bodily injury or third party property damage arising out of or in connection with the Agreement and for which the Supplier is legally liable.

**7 Principal exclusions**

7.1 War and related perils.

7.2 Nuclear and radioactive risks.

7.3 Liability for death, illness, disease or bodily injury sustained by employees of the Insured arising out of the course of their employment.

7.4 Liability arising out of the use of mechanically propelled vehicles whilst required to be compulsorily insured by applicable Law in respect of such vehicles.

7.5 Liability in respect of predetermined penalties or liquidated damages imposed under any contract entered into by the Insured.

7.6 Liability arising out of technical or professional advice other than in respect of death or bodily injury to persons or damage to third party property.

7.7 Liability arising from the ownership, possession or use of any aircraft or marine vessel.

7.8 Liability arising from seepage and pollution unless caused by a sudden, unintended and unexpected occurrence.

**8 Maximum deductible threshold**

Not to exceed **REDACTED** for each and every third party property damage claim (personal injury claims to be paid in full).

**PART C: UNITED KINGDOM COMPULSORY INSURANCES**

The Supplier shall meet its insurance obligations under applicable Law in full, including, United Kingdom employers' liability insurance and motor third party liability insurance.



**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 3**

**AUTHORITY RESPONSIBILITIES**

## Authority Responsibilities

### 1 INTRODUCTION

- 1.1 The responsibilities of the Authority set out in this Schedule shall constitute the Authority Responsibilities under this Agreement. Any obligations of the Authority in Schedule 2.1 (*Services Description*) and Schedule 4.1 (*Supplier Solution*) shall not be Authority Responsibilities and the Authority shall have no obligation to perform any such obligations unless they are specifically stated to be “Authority Responsibilities” and cross referenced in the table in Paragraph 3.
- 1.2 The responsibilities specified within this Schedule shall be provided to the Supplier free of charge, unless otherwise agreed between the Parties.

### 2 GENERAL OBLIGATIONS

The Authority shall:

- (a) perform those obligations of the Authority which are set out in the Clauses of this Agreement and the Paragraphs of the Schedules (except Schedule 2.1 (*Services Description*) and Schedule 4.1 (*Supplier Solution*));
- (b) use its reasonable endeavours to provide the Supplier with access to appropriate members of the Authority’s staff, as such access is reasonably requested by the Supplier in order for the Supplier to discharge its obligations throughout the Term and the Termination Assistance Period;
- (c) provide sufficient and suitably qualified staff to fulfil the Authority’s roles and duties under this Agreement as defined in the Implementation Plan;
- (d) use its reasonable endeavours to provide such documentation, data and/or other information that the Supplier reasonably requests that is necessary to perform its obligations under the terms of this Agreement provided that such documentation, data and/or information is available to the Authority and is authorised for release by the Authority; and
- (e) procure for the Supplier such agreed access and use of the Authority Premises (as a licensee only) and facilities (including relevant IT systems) as is reasonably required for the Supplier to comply with its obligations under this Agreement, such access to be provided during the Authority’s normal working hours on each Working Day or as otherwise agreed by the Authority (such agreement not to be unreasonably withheld or delayed).

### 3 SPECIFIC OBLIGATIONS

The Authority shall, in relation to this Agreement perform the Authority’s responsibilities identified as such in this Agreement the details of which are set out below:



| Obligation / Document                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Location (Paragraph)                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Timely staff input to support method development, decision-making, reviewing and testing the solution and data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Throughout Schedule 4.1.                                                                                                       |
| Sufficient and timely access permissions to the Defra AWS system/account to enable the supplier to a) produce the New National Modelling, and b) provision, develop, test, deploy and maintain the NaFRA2 system and its various environments, as required by the core delivery requirements and without hinderance.                                                                                                                                                                                                                                                                                                                                                   | Throughout Schedule 4.1.                                                                                                       |
| To provide the data and information identified in Schedule 2.1 Section 3.8 ("Data availability"), at the time(s) indicated in the Detailed Implementation Plan, to enable the NaFRA2 solution and its supporting datasets to be developed and delivered according to the programme. This will include appropriate sample datasets at the blueprinting, proof of concept and prototyping stages, and full datasets for a) the New National Modelling and b) data take-on as part of the full system build.                                                                                                                                                              | Schedule 2.1 Section 3.8 ("Data availability"). Some specific datasets from this list are referred to throughout Schedule 4.1. |
| In addition to the above data, any additional datasets identified and agreed during blueprinting, and those outlined in the supplier's technical proposal (Schedule 4.1). As above, this will include appropriate sample datasets at the blueprinting, proof of concept and prototyping stages, and full datasets for a) the New National Modelling and b) data take-on as part of the full system build.<br>Key datasets referred to in Schedule 4.1 but excluded from Schedule 2.1 Section 3.8 ("Data availability") are listed below. <b>Where these are not readily and freely available to the Supplier then they are an Authority responsibility to provide.</b> | Throughout Schedule 4.1, as detailed below, and as per the outlined blueprint methodology development process.                 |
| Ordnance Survey MasterMap Topography, Highways Network and Water Network Layers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Schedule 4.1: SFA5.0                                                                                                           |
| Rail Delivery Group (Association of Train Operating Companies) timetable data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Schedule 4.1: SFD6.1.1.1                                                                                                       |
| Station usage statistics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Schedule 4.1: SFD6.1.1.1                                                                                                       |
| Highways Agency Drainage Data Management System (HADDMS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Schedule 4.1: NNM                                                                                                              |

|                                                                                   |                          |
|-----------------------------------------------------------------------------------|--------------------------|
| Office of Road and Rail (ORR) statistics                                          | Schedule 4.1: SFD6.1.1.1 |
| Statistics on delays and cancellations (railways)                                 | Schedule 4.1: SFD6.1.1.1 |
| Compensation from Network Rail to Train Operating Companies                       | Schedule 4.1: SFD6.1.1.1 |
| Department for Transport traffic statistics of hourly flow rates for trunk routes | Schedule 4.1: SFD6.1.1.1 |

| Obligation / Document                                                                                                               | Location (Paragraph)     |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Department for Transport estimates of the values associated with travellers' time (for different types of vehicle, published in MCM | Schedule 4.1: SFD6.1.1.1 |
| Average speed per road and an estimated duration of disruption                                                                      | Schedule 4.1: SFD6.1.1.1 |
| Census statistics                                                                                                                   | Schedule 4.1: SFD6.1.1.1 |
| EA Water Management and Public Facing Area Boundaries                                                                               | Schedule 4.1: SFF3.0     |
| Land use datasets on habitat type                                                                                                   | Schedule 4.1: SFF5.0     |
| DTM metadata                                                                                                                        | Schedule 4.1: SFG6.0     |
| NFCDD Defence (for third parties)                                                                                                   | Schedule 4.1: SFA4.1     |
| RMA Asset Register                                                                                                                  | Schedule 4.1: SFA4.1     |
| The previous RoFSW DEM edit locations                                                                                               | Schedule 4.1: NNM2.0     |
| SOTN Thinned DRN                                                                                                                    | Schedule 4.1: SFA1.1     |
| Overtopping rates from detailed local models                                                                                        | Schedule 4.1: NNM2.2     |
| Updated defence profiles from detailed local models                                                                                 | Schedule 4.1: NNM2.2     |
| Hydrology from detailed local models, including associated reports                                                                  | Schedule 4.1: NNM2.2     |
| Coastal Overtopping Rates                                                                                                           | Schedule 4.1: NNM2.2     |
| Bridge and culvert geometries                                                                                                       | Schedule 4.1: NNM2.2     |

|                                                                                                                                             |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Net rainfall grids                                                                                                                          | Schedule 4.1: NNM2.4        |
| Surveyed beach profile data                                                                                                                 | Schedule 4.1: NNM2.5        |
| Flood Risk Management System boundaries                                                                                                     | Schedule 4.1: NNM2.6        |
| Flow duration curve statistics at river gauges                                                                                              | Schedule 4.1: NNM2.3.4      |
| Single-site growth curves, plus longer-term flood history                                                                                   | Schedule 4.1: NNM2.3.4      |
| Results of non-stationary flood frequency analysis                                                                                          | Schedule 4.1: NNM2.3.4      |
| Network Rail Network data                                                                                                                   | Schedule 4.1: SFD5.7        |
| Polygon information describing local model domain                                                                                           | Schedule 4.1: SFB1          |
| Model coverage                                                                                                                              | Schedule 4.1: SFF4.0        |
| Model outputs metadata                                                                                                                      | Schedule 4.1: SFE2.1        |
| National River Flow Archive                                                                                                                 | Schedule 4.1: SFA1.6        |
| <b>Obligation / Document</b>                                                                                                                | <b>Location (Paragraph)</b> |
| Access to flood risk information and other required data from third parties, to enable the solution to meet the core delivery requirements. | Schedule 4.1: SFB4          |

## MODEL AGREEMENT FOR SERVICES SCHEDULES

### SCHEDULE 4.1

SUPPLIER SOLUTION **ALL REDACTED**



# **MODEL AGREEMENT FOR SERVICES SCHEDULES**

## **SCHEDULE 4.2**

### **COMMERCIALLY SENSITIVE INFORMATION**

Commercially Sensitive Information

| No. | Date     | Item(s)  | Duration of Confidentiality |
|-----|----------|----------|-----------------------------|
| 1   | REDACTED | REDACTED | REDACTED                    |
| 2   | REDACTED | REDACTED | REDACTED                    |
| 3   | REDACTED | REDACTED | REDACTED                    |
| 4   | REDACTED | REDACTED | REDACTED                    |
| 5   | REDACTED | REDACTED | REDACTED                    |
|     |          |          |                             |
|     |          |          |                             |
|     |          |          |                             |
|     |          |          |                             |
|     |          |          |                             |
|     |          |          |                             |
|     |          |          |                             |



## MODEL AGREEMENT FOR SERVICES SCHEDULES

Model Services Agreement Combined Schedules v1.08A

4.2

2

### SCHEDULE 4.3

NOTIFIED KEY SUB-CONTRACTORS

|                                                    |     |   |
|----------------------------------------------------|-----|---|
| Model Services Agreement Combined Schedules v1.08A | 4.3 | 1 |
|----------------------------------------------------|-----|---|

**MODEL AGREEMENT FOR SERVICES SCHEDULES**  
**Notified Key Sub-Contractors**

In accordance with Clause 15.7 (*Appointment of Key Sub-contractors*), the Supplier is entitled to sub-contract its obligations under this Agreement to the Key Subcontractors listed in the table below.

- 2 The Parties agree that they will update this Schedule periodically to record any Key Sub-contractors appointed by the Supplier with the consent of the Authority after the Effective Date for the purposes of the delivery of the Services.

| Key Subcontractor name and address (if not the same as the registered office) | Registered office and company number | Related product/Service description                                  | Key Subcontract price expressed as a percentage of total projected Charges over the Term | Key role in delivery of the Services                                                                            | Credit Rating Threshold |
|-------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------|
| REDACTED                                                                      | REDACTED                             | Modelling, method development, data analysis and system development. | REDACTED                                                                                 | Joint development of NaFRA2 solution, supporting datasets including new national modelling and ongoing support. | Level 1                 |

## **SCHEDULE 4.4**

### **THIRD PARTY CONTRACTS**

## MODEL AGREEMENT FOR SERVICES SCHEDULES

Model Services Agreement Combined Schedules v1.08A

4.4

1

### Third Party Contracts

The contracts listed in the table below constitute Third Party Contracts entered into exclusively for the purposes of delivering the Services.

- 2 The Supplier shall be entitled to update this Schedule in accordance with Clause 15.5 (*Appointment of Sub-contractors*).

| Third party supplier name and address (if not the same as the registered office) | Registered office and company number | Related product/service description |
|----------------------------------------------------------------------------------|--------------------------------------|-------------------------------------|
| REDACTED                                                                         | REDACTED                             | REDACTED                            |
| REDACTED                                                                         | REDACTED                             | REDACTED                            |
| REDACTED                                                                         | REDACTED                             | REDACTED                            |
| REDACTED                                                                         | REDACTED                             | REDACTED                            |



## **MODEL AGREEMENT FOR SERVICES SCHEDULES**

### **SCHEDULE 5**

#### **SOFTWARE**

## Software

### THE SOFTWARE

- 1.1 Notwithstanding any other provision of this Schedule, the following provisions shall be subject always to Clauses 16 (*Intellectual Property Rights*) and 17 (*Licences Granted by the Supplier*) of the Agreement.
- 1.2 The Software below is licensed to the Authority in accordance with Clauses 16 (*Intellectual Property Rights*) and 17 (*Licences Granted by the Supplier*).
- 1.3 The Parties agree that they will update this Schedule to record any Supplier Software or Third Party Software subsequently licensed by the Supplier or third parties for the purposes of the delivery of the Services.

## 2 SUPPLIER SOFTWARE

The Supplier Software includes the following items:

| Software                                            | Supplier (if an Affiliate of the Supplier) | Purpose                                                                                                              | Number of Licences      | Restrictions | Number of Copies | Type (COTS or Non-COTS) | Term/ Expiry                                |
|-----------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------|--------------|------------------|-------------------------|---------------------------------------------|
| JFlow®                                              | JBA                                        | JFlow® is not part of the NaFRA2 core solution, but will be used to deliver New National Modelling Outputs.          | 5                       | TBC          | N/A              | COTS                    | 3 years from end of initial contract period |
| JBA Third Party Flood Model Output Processing Tools | JBA                                        | Processing third party flood model outputs. May be required in NaFRA2 solution, to be confirmed during blueprinting. | TBC during blueprinting | TBC          | TBC              | Non-COTS                | TBC                                         |
|                                                     |                                            |                                                                                                                      |                         |              |                  |                         |                                             |
|                                                     |                                            |                                                                                                                      |                         |              |                  |                         |                                             |
|                                                     |                                            |                                                                                                                      |                         |              |                  |                         |                                             |
|                                                     |                                            |                                                                                                                      |                         |              |                  |                         |                                             |

## 3 THIRD PARTY SOFTWARE

The Third Party Software shall include the following items:

| Third Party Software | Supplier | Purpose | Number of Licences | Restrictions | Number of Copies | Type (COTS or Non-COTS) | Term/ Expiry |
|----------------------|----------|---------|--------------------|--------------|------------------|-------------------------|--------------|
|----------------------|----------|---------|--------------------|--------------|------------------|-------------------------|--------------|



|                                            |                                         |                                                                                           |           |                       |           |      |     |
|--------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------|-----------|-----------------------|-----------|------|-----|
| Python                                     | Python Software Foundation              | Interpreter for Python code. May be needed as part of the NaFRA2 system.                  | As needed | Free and open source. | As needed | COTS | N/A |
| PostgreSQL                                 | The PostgreSQL Global Development Group | Database system. May be needed as part of the NaFRA2 system.                              | As needed | Free and open source. | As needed | COTS | N/A |
| .NET Core                                  | Microsoft                               | App development platform. May be needed as part of the NaFRA2 system.                     | As needed | Free and open source. | As needed | COTS | N/A |
| Geospatial Data Abstraction Library (GDAL) | Open Source Geospatial Foundation       | Geospatial data manipulation. May be needed as part of the NaFRA2 system.                 | As needed | Free and open source. | As needed | COTS | N/A |
| Kubernetes                                 | Cloud Native Computing Foundation       | Management of containerised web applications. May be needed as part of the NaFRA2 system. | As needed | Free and open source. | As needed | COTS | N/A |
| React                                      | Facebook Open Source                    | User interface development library. May be needed as part of the NaFRA2 system.           | As needed | Free and open source. | As needed | COTS | N/A |

**ANNEX 1: FORM OF LETTER RE SUB-LICENSING OF SUPPLIER COTS SOFTWARE AND  
SUPPLIER COTS BACKGROUND IPRS**

[Supplier letterhead]

[insert Authority name  
and address]

[Date]

Dear Sirs

LICENCES FOR SUPPLIER COTS SOFTWARE AND SUPPLIER COTS BACKGROUND IPRs

We refer to the agreement between us dated [insert date] in respect of [brief summary of subject of the Agreement] (the “Agreement”). Capitalised expressions used in this letter have the same meanings as in the Agreement.

In accordance with Clause 17.4 of the Agreement we confirm that:

1.1 the Supplier hereby grants to the Authority a perpetual royalty-free non-exclusive licence to use without limitation any Know-How, trade secrets or Confidential Information contained within the Specially Written Software or the Project Specific IPRs.

1. Yours faithfully,

Signed:

On behalf of [name of the Supplier]

**ANNEX 2: FORM OF CONFIDENTIALITY UNDERTAKING**

**CONFIDENTIALITY AGREEMENT THIS**

**AGREEMENT** is made on [date] 20

**BETWEEN:**

(1) [insert name] of [insert address] (the “Sub-licensee”); and

- (2) *[insert name]* of *[insert address]* (the “**Supplier**” and together with the Supplier, the “**Parties**”).

**WHEREAS:**

- (A) *[insert name of Authority]* (the “**Authority**”) and the Supplier are party to a contract dated *[insert date]* (the “**Contract**”) for the provision by the Supplier of *[insert brief description of services]* to the Authority.
- (B) The Authority wishes to grant a sub-licence to the Sub-licensee in respect of certain software and intellectual property rights licensed to the Authority pursuant to the Contract (the “**Sub-licence**”).
- (C) It is a requirement of the Contract that, before the Authority grants such sub-licence to the Sub-licensee, the Sub-licensee execute a confidentiality agreement in favour of the Supplier in or substantially in the form of this Agreement to protect the Confidential Information of the Supplier.

**IT IS AGREED as follows:**

**1 Interpretation**

**1.1** In this Agreement, unless the context otherwise requires:

**“Confidential Information”** means:

(a) Information, including all personal data within the meaning of the Data Protection Act 2018, and however it is conveyed, provided by the Authority to the Sub-licensee pursuant to or in connection with the Sub-licence that relates to:

- (i) the Supplier; or
- (ii) the operations, business, affairs, developments, intellectual property rights, trade secrets, know-how and/or personnel of the Supplier;

(b) the source code and the object code of the software sub-licensed to the Sub-licensee pursuant to the Sub-licence together with build information, relevant design and development information, technical specifications of all functionality including those not included in standard manuals (such as those that modify system performance and access levels), configuration details, test scripts, user manuals, operating manuals, process definitions and procedures, and all such other documentation supplied by the Supplier to the Authority pursuant to or in connection with the Sub-licence;

(c) other Information provided by the Authority pursuant to this Agreement to the Sub-licensee that is clearly designated as being confidential or equivalent or that ought reasonably to be considered to be confidential which comes (or has come) to the Sub-licensee's attention or into the Sub-licensee's possession in connection with the Sub-licence; and (d) Information derived from any of the above, but not including any Information that:

(a) Was in the possession of the Sub-licensee without obligation of confidentiality prior to its disclosure by the Authority;

(b) the Sub-licensee obtained on a non-confidential basis from a third party who is not, to the Sub-licensee's knowledge or belief, bound by a confidentiality agreement with the Supplier or otherwise prohibited from disclosing the information to the Sub-licensee;

(c) was already generally available and in the public domain at the time of disclosure otherwise than by a breach of this Agreement or breach of a duty of confidentiality; or

(d) was independently developed without access to the Confidential Information;

**“Information”** means all information of whatever nature, however conveyed and in whatever form, including in writing, orally, by demonstration, electronically and in a tangible, visual or machine-readable medium (including CD-ROM, magnetic and digital form); and

**“Sub-licence”** has the meaning given to that expression in recital (B) to this Agreement.

**1.2 In this Agreement:**

- (a) a reference to any gender includes a reference to other genders;
- (b) the singular includes the plural and vice versa;
- (c) the words “include” and cognate expressions shall be construed as if they were immediately followed by the words “without limitation”;
- (d) references to any statutory provision include a reference to that provision as modified, replaced, amended and/or re-enacted from time to time (before or after the date of this Agreement) and any prior or subsequent subordinate legislation made under it;
- (e) headings are included for ease of reference only and shall not affect the interpretation or construction of this Agreement; and
- (f) references to Clauses are to clauses of this Agreement.

**2 Confidentiality Obligations**

**2.1 In consideration of the Authority entering into the Sub-licence, the Sub-licensee shall:**

- (a) treat all Confidential Information as secret and confidential;
- (b) have in place and maintain proper security measures and procedures to protect the confidentiality of the Confidential Information (having regard to its form and nature);
- (c) not disclose or permit the disclosure of any of the Confidential Information to any other person without obtaining the prior written consent of the Supplier or except as expressly set out in this Agreement;
- (d) not transfer any of the Confidential Information outside the United Kingdom;
- (e) not use or exploit any of the Confidential Information for any purpose whatsoever other than as permitted under the Sub-licence;

- (f) immediately notify the Supplier in writing if it suspects or becomes aware of any unauthorised access, copying, use or disclosure in any form of any of the Confidential Information; and
- (g) upon the expiry or termination of the Sub-licence:
  - (i) destroy or return to the Supplier all documents and other tangible materials that contain any of the Confidential Information;
  - (ii) ensure, so far as reasonably practicable, that all Confidential Information held in electronic, digital or other machine-readable form ceases to be readily accessible (other than by the information technology staff of the Sub-licensee) from any computer, word processor, voicemail system or any other device; and
  - (iii) make no further use of any Confidential Information.

### **3 Permitted Disclosures**

3.1 The Sub-licensee may disclose Confidential Information to those of its directors, officers, employees, consultants and professional advisers who:

- (a) reasonably need to receive the Confidential Information in connection with the Sub-licence; and
- (b) have been informed by the Sub-licensee of the confidential nature of the Confidential Information; and
- (c) have agreed to terms similar to those in this Agreement.

3.2 The Sub-licensee shall be entitled to disclose Confidential Information to the extent that it is required to do so by applicable law or by order of a court or other public body that has jurisdiction over the Sub-licensee.

3.3 Before making a disclosure pursuant to Clause 3.2, the Sub-licensee shall, if the circumstances permit:

- (a) notify the Supplier in writing of the proposed disclosure as soon as possible (and if possible before the court or other public body orders the disclosure of the Confidential Information); and
- (b) ask the court or other public body to treat the Confidential Information as confidential.

### **4 General**

4.1 The Sub-licensee acknowledges and agrees that all property, including intellectual property rights, in Confidential Information disclosed to it by the Supplier shall remain with and be vested in the Supplier.

4.2 This Agreement does not include, expressly or by implication, any representations, warranties or other obligations:

- (a) to grant the Sub-licensee any licence or rights other than as may be expressly stated in the Sub-licence;
- (b) to require the Supplier to disclose, continue disclosing or update any Confidential Information; or
- (c) as to the accuracy, efficacy, completeness, capabilities, safety or any other qualities whatsoever of any Information or materials provided pursuant to or in anticipation of the Sub-licence.

4.3 The rights, powers and remedies provided in this Agreement are cumulative and not exclusive of any rights, powers or remedies provided by law. No failure or delay by either Party to exercise any right, power or remedy will operate as a waiver of it nor will any partial exercise preclude any further exercise of the same, or of some other right, power or remedy.

4.4 Without prejudice to any other rights or remedies that the Supplier may have, the Sub-licensee acknowledges and agrees that damages alone may not be an adequate remedy for any breach by the Sub-licensee of any of the provisions of this Agreement. Accordingly, the Sub-licensee acknowledges that the Supplier shall be entitled to the remedies of injunction and specific performance as well as any other equitable relief for any threatened or actual breach of this Agreement and/or breach of confidence and that no proof of special damages shall be necessary for the enforcement of such remedies.

4.5 The maximum liability of the Sub-licensee to the Supplier for any breach of this Agreement shall be limited to ten million pounds (£10,000,000).

4.6 For the purposes of the Contracts (Rights of Third Parties) Act 1999 no one other than the Parties has the right to enforce the terms of this Agreement.

4.7 Each Party shall be responsible for all costs incurred by it or on its behalf in connection with this Agreement.

4.8 This Agreement may be executed in any number of counterparts and by the Parties on separate counterparts, but shall not be effective until each Party has executed at least one counterpart. Each counterpart shall constitute an original of this Agreement, but all the counterparts shall together constitute but one and the same instrument.

## 5 Notices

5.1 Any notice to be given under this Agreement (each a “**Notice**”) shall be given in writing and shall be delivered by hand and shall be deemed to have been duly given at the time of delivery provided that such Notice is sent to the relevant physical address, and expressly marked for the attention of the relevant individual, set out in Clause 5.2.

5.2 Any Notice:

(a) if to be given to the Supplier shall be sent to:

[Address]

Attention: [Contact name and/or position, e.g. "The Finance Director"]

(b) if to be given to the Sub-licensee shall be sent to:

[Name of Organisation]  
[Address]

Attention: [ ]

6 Governing law

6.1 This Agreement shall be governed by, and construed in accordance with, English law and any matter claim or dispute arising out of or in connection with this Agreement whether contractual or non-contractual, shall be governed by and determined in accordance with English law.

6.2 Each Party hereby irrevocably submits to the exclusive jurisdiction of the English courts in respect of any claim or dispute arising out of or in connection with this Agreement.

**IN WITNESS** of the above this Agreement has been signed by the duly authorised representatives of the Parties on the date which appears at the head of page 1. **For and on behalf of [name of Supplier]**

Signature:

\_\_\_\_\_

Date:

Name:

Position:

**For and on behalf of [name of Sub-licensee]**

Signature:

Date:



---

Name:

Position:



# **MODEL AGREEMENT FOR SERVICES SCHEDULES**

## **SCHEDULE 6.1**

### **IMPLEMENTATION PLAN**

## Implementation Plan

### 1 INTRODUCTION

#### 1.1 This Schedule:

- (a) defines the process for the preparation and implementation of the Outline Implementation Plan and Detailed Implementation Plan; and
- (b) identifies the Milestones (and associated Deliverables) including the Milestones which trigger payment to the Supplier of the applicable Milestone Payments following the issue of the applicable Milestone Achievement Certificate.

### 2 OUTLINE IMPLEMENTATION PLAN

#### 2.1 The Outline Implementation Plan is set out in Annex 1.

#### 2.2 All changes to the Outline Implementation Plan shall be subject to the Change Control Procedure provided that the Supplier shall not attempt to postpone any of the Milestones using the Change Control Procedure or otherwise (except in accordance with Clause 31 (*Authority Cause*)).

### 3 APPROVAL OF THE DETAILED IMPLEMENTATION PLAN

#### 3.1 The Supplier shall submit a draft of the Detailed Implementation Plan to the Authority for approval within thirty-five (35) Working Days of the Effective Date.

#### 3.2 The Supplier shall ensure that the draft Detailed Implementation Plan:

- (a) incorporates all of the Milestones and Milestone Dates set out in the Outline Implementation Plan;
- (b) includes (as a minimum) the Supplier's proposed timescales in respect of the following for each of the Milestones:
  - (i) the completion of each design document;
  - (ii) the completion of the build phase;
  - (iii) the completion of any Testing to be undertaken in accordance with Schedule 6.2 (*Testing Procedures*); and
  - (iv) training and roll-out activities;
- (c) clearly outlines all the steps required to implement the Milestones to be achieved in the next fifteen (15) months, together with a high level plan for the rest of the programme, in conformity with the Authority Requirements;

- (d) clearly outlines the required roles and responsibilities of both Parties, including staffing requirements; and
- (e) is produced using a software tool as specified, or agreed by the Authority.

3.3 Prior to the submission of the draft Detailed Implementation Plan to the Authority in accordance with Paragraph 3.1, the Authority shall have the right:

- (a) to review any documentation produced by the Supplier in relation to the development of the Detailed Implementation Plan, including:
  - (i) details of the Supplier's intended approach to the Detailed Implementation Plan and its development;
  - (i) copies of any drafts of the Detailed Implementation Plan produced by the Supplier; and
  - (ii) any other work in progress in relation to the Detailed Implementation Plan; and
- (b) to require the Supplier to include any reasonable changes or provisions in the Detailed Implementation Plan.

3.4 Following receipt of the draft Detailed Implementation Plan from the Supplier, the Authority shall:

- (a) review and comment on the draft Detailed Implementation Plan as soon as reasonably practicable; and
- (b) notify the Supplier in writing that it approves or rejects the draft Detailed Implementation Plan no later than twenty (20) Working Days after the date on which the draft Detailed Implementation Plan is first delivered to the Authority.

3.5 If the Authority rejects the draft Detailed Implementation Plan:

- (a) the Authority shall inform the Supplier in writing of its reasons for its rejection; and
- (b) the Supplier shall then revise the draft Detailed Implementation Plan (taking reasonable account of the Authority's comments) and shall re-submit a revised draft Detailed Implementation Plan to the Authority for the Authority's approval within twenty (20) Working Days of the date of the Authority's notice of rejection. The provisions of Paragraph 3.4 and this Paragraph 3.5 shall apply again to any resubmitted draft Detailed Implementation Plan, provided that either Party may refer any disputed matters for resolution by the Dispute Resolution Procedure at any time.

3.6 If the Authority approves the draft Detailed Implementation Plan, it shall replace the Outline Implementation Plan from the date of the Authority's notice of approval.

## **4 UPDATES TO AND MAINTENANCE OF THE DETAILED IMPLEMENTATION PLAN**

### **4.1 Following the approval of the Detailed Implementation Plan by the Authority:**

- (a) the Supplier shall submit a revised Detailed Implementation Plan to the Authority every three (3) months starting three (3) months from the Effective Date;
- (b) without prejudice to Paragraph 4.1(a), the Authority shall be entitled to request a revised Detailed Implementation Plan at any time by giving written notice to the Supplier and the Supplier shall submit a draft revised Detailed Implementation Plan to the Authority within twenty (20) Working Days of receiving such a request from the Authority (or such longer period as the Parties may agree provided that any failure to agree such longer period shall be referred to the Dispute Resolution Procedure);
- (c) any revised Detailed Implementation Plan shall (subject to Paragraph 4.2) be submitted by the Supplier for approval in accordance with the procedure set out in Paragraph 3; and
- (d) the Supplier's performance against the Implementation Plan shall be monitored at meetings of the Service Management Board (as defined in Schedule 8.1 (*Governance*)). In preparation for such meetings, the current Detailed Implementation Plan shall be provided by the Supplier to the Authority not less than five (5) Working Days in advance of each meeting of the Service Management Board.

### **4.2 Save for any amendments which are of a type identified and notified by the Authority (at the Authority's discretion) to the Supplier in writing as not requiring approval, any material amendments to the Detailed Implementation Plan shall be subject to the Change Control Procedure provided that:**

- (a) any amendments to elements of the Detailed Implementation Plan which are based on the contents of the Outline Implementation Plan shall be deemed to be material amendments.

### **4.3 Any proposed amendments to the Detailed Implementation Plan shall not come into force until they have been approved in writing by the Authority.**

## **5 GOVERNMENT REVIEWS**

The Supplier acknowledges that the Services may be subject to Government review at key stages of the project. The Supplier shall cooperate with any bodies undertaking such review and shall allow for such reasonable assistance as may be required for this purpose within the Charges.

## **ANNEX 1: OUTLINE IMPLEMENTATION PLAN**

REDACTED

Model Services Agreement Combined Schedules v1.08A - Schedule 6.1





**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 6.2**

**TESTING PROCEDURES**

## Testing Procedures

### 1 DEFINITIONS

In this Schedule, the following definitions shall apply:

|                                    |                                                                                                                                                                                                                                      |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Component”</b>                 | any constituent parts of the infrastructure for a Service, hardware or Software;                                                                                                                                                     |
| <b>“Material Test Issue”</b>       | a Test Issue of Severity Level 1 or Severity Level 2;                                                                                                                                                                                |
| <b>“Severity Level”</b>            | the level of severity of a Test Issue, the criteria for which are described in Annex 1;                                                                                                                                              |
| <b>“Test Certificate”</b>          | a certificate materially in the form of the document contained in Annex 2 issued by the Authority when a Deliverable has satisfied its relevant Test Success Criteria;                                                               |
| <b>“Test Issue”</b>                | any variance or non-conformity of a Deliverable from its requirements (such requirements being set out in the relevant Test Success Criteria);                                                                                       |
| <b>“Test Issue Threshold”</b>      | in relation to the Tests applicable to a Milestone, a maximum number of Severity Level 3, Severity Level 4 and Severity Level 5 Test Issues as set out in the relevant Test Plan ;                                                   |
| <b>“Test Issue Management Log”</b> | a log for the recording of Test Issues as described further in Paragraph 9.1;                                                                                                                                                        |
| <b>“Test Plan”</b>                 | <p>a plan:</p> <ul style="list-style-type: none"><li>(a) for the Testing of Deliverables; and</li><li>(b) setting out other agreed criteria related to the achievement of Milestones, as described further in Paragraph 5;</li></ul> |
| <b>“Test Reports”</b>              | the reports to be produced by the Supplier setting out the results of Tests;                                                                                                                                                         |
| <b>“Test Specification”</b>        | the specification that sets out how Tests will demonstrate that the Test Success Criteria have been satisfied, as described in more detail in Paragraph 7;                                                                           |
| <b>“Test Strategy”</b>             | a strategy for the conduct of Testing as described further in Paragraph 4;                                                                                                                                                           |

**“Test Success** in relation to a Test, the test success criteria **Criteria**” for that Test as referred to in Paragraph 6;

**“Test Witness”** any person appointed by the Authority pursuant to Paragraph 10.1; and

**“Testing** the applicable testing procedures and Test **Procedures”** Success Criteria set out in this Schedule .

## **2 RISK**

2.1 The issue of a Test Certificate, a Milestone Achievement Certificate and/or a conditional Milestone Achievement Certificate shall not:

- (a) operate to transfer any risk that the relevant Deliverable or Milestone is complete or will meet and/or satisfy the Authority's requirements for that Deliverable or Milestone; or
- (b) affect the Authority's right subsequently to reject:
  - (i) all or any element of the Deliverables to which a Test Certificate relates; or
  - (i) any Milestone to which the Milestone Achievement Certificate relates.

2.2 Subject to clause 2.3, notwithstanding the issuing of any Milestone Achievement Certificate (including the Milestone Achievement Certificate in respect of Authority to Proceed), the Supplier shall remain solely responsible for ensuring that:

- (a) the Supplier Solution as designed and developed is suitable for the delivery of the Services and meets the Authority Requirements;
- (b) the Services are implemented in accordance with this Agreement; and
- (c) each Target Performance Level is met from the relevant Operational Service Commencement Date.

2.3 Notwithstanding any other provision of this Agreement, the Supplier's Solution shall be taken over by the Authority when the ATP Milestone Certificate has been issued in accordance with the Agreement. Upon issue of the ATP Milestone Certificate the Supplier's Solution shall be deemed to have been completed in all respects in accordance with the Agreement including meeting the Authority Requirements except for any warranty obligations. Risk in the Supplier Solution shall transfer to the Authority upon issue of the ATP Milestone Certificate.

## **3 TESTING OVERVIEW**

3.1 All Tests conducted by the Supplier shall be conducted in accordance with the Test Strategy, the Test Plans and the Test Specifications.

3.2 The Supplier shall not submit any Deliverable for Testing:

- (a) unless the Supplier is reasonably confident that it will satisfy the relevant Test Success Criteria;
  - (b) until the Authority has issued a Test Certificate in respect of any prior, dependant Deliverable(s); and
  - (c) until the Parties have agreed the Test Plan and the Test Specification relating to the relevant Deliverable(s).
- 3.3 The Supplier shall use reasonable endeavours to submit each Deliverable for Testing or re-Testing by or before the date set out in the Implementation Plan for the commencement of Testing in respect of the relevant Deliverable.
- 3.4 Prior to the issue of a Test Certificate, the Authority shall be entitled to review the relevant Test Reports and the Test Issue Management Log.
- 3.5 Any Disputes between the Authority and the Supplier regarding Testing shall be referred to the Dispute Resolution Procedure using the Expedited Dispute Timetable.

#### **4 TEST STRATEGY**

- 4.1 The Supplier shall develop the final Test Strategy as soon as practicable after the Effective Date but in any case no later than 60 Working Days prior to commencement of Testing.
- 4.2 The final Test Strategy shall include:
- (a) an overview of how Testing will be conducted in accordance with the Implementation Plan;
  - (b) the process to be used to capture and record Test results and the categorisation of Test Issues;
  - (c) the method for mapping the expected Test results to the Test Success Criteria;
  - (d) the procedure to be followed if a Deliverable fails to satisfy the Test Success Criteria or produces unexpected results, including a procedure for the resolution of Test Issues;
  - (e) the procedure to be followed to sign off each Test;
  - (f) the process for the production and maintenance of Test Reports and reporting, including templates for the Test Reports and the Test Issue Management Log, and a sample plan for the resolution of Test Issues;
  - (g) the names and contact details of the Authority's and the Supplier's Test representatives;

- (h) a high level identification of the resources required for Testing, including facilities, infrastructure, personnel and Authority and/or third party involvement in the conduct of the Tests;
- (i) the technical environments required to support the Tests; and
- (j) the procedure for managing the configuration of the Test environments.

## 5 TEST PLANS

5.1 The Supplier shall develop Test Plans and submit these for the approval of the Authority as soon as practicable but in any case no later than 20 Working Days (or such other period as the Parties may agree in the Test Strategy or otherwise agree in writing) prior to the start date for the relevant Testing (as specified in the Implementation Plan).

5.2 Each Test Plan shall include as a minimum:

- (a) the relevant Test definition and the purpose of the Test, the Milestone to which it relates, the requirements being tested and, for each Test, the specific Test Success Criteria to be satisfied;
- (b) a detailed procedure for the Tests to be carried out, including:
  - (i) the timetable for the Tests, including start and end dates;
  - (i) the Testing mechanism;
  - (ii) dates and methods by which the Authority can inspect Test results or witness the Tests in order to establish that the Test Success Criteria have been met;
  - (iii) the mechanism for ensuring the quality, completeness and relevance of the Tests;
  - (iv) the format and an example of Test progress reports and the process with which the Authority accesses daily Test schedules;
  - (v) the process which the Authority will use to review Test Issues and the Supplier's progress in resolving these in a timely basis;
  - (vi) the Test Schedule;
  - (vii) the re-Test procedure, the timetable and the resources which would be required for re-Testing; and
  - (viii) the process for escalating Test Issues from a re-test situation to the taking of specific remedial action to resolve the Test Issue.

5.3 The Authority shall not unreasonably withhold or delay its approval of the Test Plans provided that the Supplier shall incorporate any reasonable requirements of the Authority in the Test Plans.

## **6 TEST SUCCESS CRITERIA**

The Test Success Criteria for:

- (a) each Test that must be Achieved for the Supplier to Achieve either the ATP Milestone or a CPP Milestone are set out in Annex 4; and
- (b) all other Tests shall be agreed between the Parties as part of the relevant Test Plan pursuant to Paragraph 5.

## **7 TEST SPECIFICATION**

7.1 Following approval of a Test Plan, the Supplier shall develop the Test Specification for the relevant Deliverables as soon as reasonably practicable and in any event at least 10 Working Days (or such other period as the Parties may agree in the Test Strategy or otherwise agree in writing) prior to the start of the relevant Testing (as specified in the Implementation Plan).

7.2 Each Test Specification shall include as a minimum:

- (a) the specification of the Test data, including its source, scope, volume and management, a request (if applicable) for relevant Test data to be provided by the Authority and the extent to which it is equivalent to live operational data;
- (b) a plan to make the resources available for Testing;
- (c) Test scripts;
- (d) Test pre-requisites and the mechanism for measuring them; and
- (e) expected Test results, including:
  - (i) a mechanism to be used to capture and record Test results; and
  - (ii) a method to process the Test results to establish their content.

## **8 TESTING**

8.1 Before submitting any Deliverables for Testing the Supplier shall subject the relevant Deliverables to its own internal quality control measures.

8.2 The Supplier shall manage the progress of Testing in accordance with the relevant Test Plan and shall carry out the Tests in accordance with the relevant Test Specification. Tests may be witnessed by the Test Witnesses in accordance with Paragraph 10.

- 8.3 The Supplier shall notify the Authority at least ten (10) Working Days (or such other period as the Parties may agree in writing) in advance of the date, time and location of the relevant Tests and the Authority shall ensure that the Test Witnesses attend the Tests, except where the Authority has specified in writing that such attendance is not necessary.
- 8.4 The Authority may raise and close Test Issues during the Test witnessing process.
- 8.5 The Supplier shall provide to the Authority in relation to each Test:
- (a) a draft Test Report not less than two (2) Working Days (or such other period as the Parties may agree in writing) prior to the date on which the Test is planned to end; and
  - (b) the final Test Report within five (5) Working Days (or such other period as the Parties may agree in writing) of completion of Testing.
- 8.6 Each Test Report shall provide a full report on the Testing conducted in respect of the relevant Deliverables, including:
- (a) an overview of the Testing conducted;
  - (b) identification of the relevant Test Success Criteria that have been satisfied;
  - (c) identification of the relevant Test Success Criteria that have not been satisfied together with the Supplier's explanation of why those criteria have not been met;
  - (d) the Tests that were not completed together with the Supplier's explanation of why those Tests were not completed;
  - (e) the Test Success Criteria that were satisfied, not satisfied or which were not tested, and any other relevant categories, in each case grouped by Severity Level in accordance with Paragraph 9.1; and
  - (f) the specification for any hardware and software used throughout Testing and any changes that were applied to that hardware and/or software during Testing.

## **9 TEST ISSUES**

- 9.1 Where a Test Report identifies a Test Issue, the Parties shall agree the classification of the Test Issue using the criteria specified in Annex 1 and the Test Issue Management Log maintained by the Supplier shall log Test Issues reflecting the Severity Level allocated to each Test Issue.
- 9.2 The Supplier shall be responsible for maintaining the Test Issue Management Log and for ensuring that its contents accurately represent the current status of each Test Issue at all relevant times. The Supplier shall make the Test Issue Management Log available to the Authority upon request.

9.3 The Authority shall confirm the classification of any Test Issue unresolved at the end of a Test in consultation with the Supplier. If the Parties are unable to agree the classification of any unresolved Test Issue, the Dispute shall be dealt with in accordance with the Dispute Resolution Procedure using the Expedited Dispute Timetable.

## 10 TEST WITNESSING

10.1 The Authority may, in its sole discretion, require the attendance at any Test of one or more Test Witnesses selected by the Authority, each of whom shall have appropriate skills to fulfil the role of a Test Witness.

10.2 The Supplier shall give the Test Witnesses access to any documentation and Testing environments reasonably necessary and requested by the Test Witnesses to perform their role as a Test Witness in respect of the relevant Tests.

10.3 The Test Witnesses:

- (a) shall actively review the Test documentation;
- (b) will attend and engage in the performance of the Tests on behalf of the Authority so as to enable the Authority to gain an informed view of whether a Test Issue may be closed or whether the relevant element of the Test should be re-Tested;
- (c) shall not be involved in the execution of any Test;
- (d) shall be required to verify that the Supplier conducted the Tests in accordance with the Test Success Criteria and the relevant Test Plan and Test Specification;
- (e) may produce and deliver their own, independent reports on Testing, which may be used by the Authority to assess whether the Tests have been Achieved;
- (f) may raise Test Issues on the Test Issue Management Log in respect of any Testing; and
- (g) may require the Supplier to demonstrate the modifications made to any defective Deliverable before a Test Issue is closed.

## 11 TEST QUALITY AUDIT

11.1 Without prejudice to its rights pursuant to Clause 12.2(b) (*Records, Reports, Audits & Open Book Data*), the Authority may perform on-going quality audits in respect of any part of the Testing (each a “**Testing Quality Audit**”) subject to the provisions set out in the agreed Quality Plan.

11.2 The focus of the Testing Quality Audits shall be on:

- (a) adherence to an agreed methodology;



- (b) adherence to the agreed Testing process;
  - (c) adherence to the Quality Plan;
  - (d) review of status and key development issues; and
  - (e) identification of key risk areas.
- 11.3 The Supplier shall allow sufficient time in the Test Plan to ensure that adequate responses to a Testing Quality Audit can be provided.
- 11.4 The Authority will give the Supplier at least five (5) Working Days' written notice of the Authority's intention to undertake a Testing Quality Audit and the Supplier may request, following receipt of that notice, that any Testing Quality Audit be delayed by a reasonable time period if in the Supplier's reasonable opinion, the carrying out of a Testing Quality Audit at the time specified by the Authority will materially and adversely impact the Implementation Plan.
- 11.5 A Testing Quality Audit may involve document reviews, interviews with the Supplier Personnel involved in or monitoring the activities being undertaken pursuant to this Schedule, the Authority witnessing Tests and demonstrations of the Deliverables to the Authority. Any Testing Quality Audit shall be limited in duration to a maximum time to be agreed between the Supplier and the Authority on a case by case basis (such agreement not to be unreasonably withheld or delayed). The Supplier shall provide all reasonable necessary assistance and access to all relevant documentation required by the Authority to enable it to carry out the Testing Quality Audit.
- 11.6 If the Testing Quality Audit gives the Authority concern in respect of the Testing Procedures or any Test, the Authority shall:
- (a) discuss the outcome of the Testing Quality Audit with the Supplier, giving the Supplier the opportunity to provide feedback in relation to specific activities; and
  - (b) subsequently prepare a written report for the Supplier detailing its concerns,
- and the Supplier shall, within a reasonable timeframe, respond in writing to the Authority's report.
- 11.7 In the event of an inadequate response to the Authority's report from the Supplier, the Authority (acting reasonably) may withhold a Test Certificate (and consequently delay the grant of a Milestone Achievement Certificate) until the issues in the report have been addressed to the reasonable satisfaction of the Authority.

## 12 OUTCOME OF TESTING

- 12.1 The Authority shall issue a Test Certificate within 10 working days when the Deliverables satisfy the Test Success Criteria in respect of that Test without any Test Issues.
- 12.2 If the Deliverables (or any relevant part) do not satisfy the Test Success Criteria then the Authority shall notify the Supplier and:

- (a) the Authority may issue a Test Certificate conditional upon the remediation of the Test Issues;
- (b) where the Parties agree that there is sufficient time prior to the relevant Milestone Date, the Authority may extend the Test Plan by such reasonable period or periods as the Parties may reasonably agree and require the Supplier to rectify the cause of the Test Issue and re-submit the Deliverables (or the relevant part) to Testing; or
- (c) where the failure to satisfy the Test Success Criteria results, or is likely to result, in the failure (in whole or in part) by the Supplier to meet a Milestone, then without prejudice to the Authority's other rights and remedies, such failure shall constitute a Notifiable Default for the purposes of Clause 27.1 (*Rectification Plan Process*).

12.3 The Authority shall be entitled, without prejudice to any other rights and remedies that it has under this Agreement, to recover from the Supplier any reasonable additional costs it may incur as a direct result of further review or re-Testing which is required for the Test Success Criteria for that Deliverable to be satisfied.

### **13 ISSUE OF MILESTONE ACHIEVEMENT CERTIFICATE**

13.1 The Authority shall issue a Milestone Achievement Certificate in respect of a given Milestone within 10 working days following:

- (a) the issuing by the Authority of Test Certificates and/or conditional Test Certificates in respect of all Deliverables related to that Milestone which are due to be Tested; and
- (b) performance by the Supplier to the reasonable satisfaction of the Authority of any other tasks identified in the Implementation Plan as associated with that Milestone (which may include the submission of a Deliverable that is not due to be Tested, such as the production of Documentation).

13.2 The grant of a Milestone Achievement Certificate shall entitle the Supplier to the receipt of a payment in respect of that Milestone in accordance with the provisions of Schedule 7.1 (*Charges and Invoicing*).

13.3 If a Milestone is not Achieved, the Authority shall issue a report to the Supplier within 5 working days

- (a) the applicable Test Issues; and
- (b) any other reasons for the relevant Milestone not being Achieved.

13.4 If there are Test Issues but these do not exceed the Test Issues Threshold, then provided there are no Material Test Issues, the Authority shall issue a Milestone Achievement Certificate.

13.5 Without prejudice to the Authority's other remedies the following shall constitute a Notifiable Default for the purposes of Clause 27.1 (Rectification Plan Process) and the Authority shall refuse to issue a Milestone Achievement Certificate where:

- (a) there is one or more Material Test Issue(s); or
- (b) the information required under Schedule 8.4 (Reports and Records Provisions) Annex 3 (Virtual Library) has not been uploaded to the Virtual Library in accordance with Paragraph 3 of that Schedule.

13.6 If there are Test Issues which exceed the Test Issues Threshold but there are no Material Test Issues, the Authority may at its discretion (without waiving any rights in relation to the other options) choose to issue a Milestone Achievement Certificate conditional on the remediation of the Test Issues in accordance with an agreed Rectification Plan provided that:

- (a) any Rectification Plan shall be agreed before the issue of a conditional Milestone Achievement Certificate unless the Authority agrees otherwise (in which case the Supplier shall submit a Rectification Plan for approval by the Authority within 10 Working Days of receipt of the Authority's report pursuant to Paragraph 13.3); and
- (b) where the Authority issues a conditional Milestone Achievement Certificate, it may (but shall not be obliged to) revise the failed Milestone Date and any subsequent Milestone Date.

## ANNEX 1: TEST ISSUES - SEVERITY LEVELS

- 1 **Severity Level 1 Test Issue:** a Test Issue that causes non-recoverable conditions, e.g. it is not possible to continue using a Component, a Component crashes, there is database or file corruption, or data loss;
- 2 **Severity Level 2 Test Issue:** a Test Issue for which, as reasonably determined by the Authority, there is no practicable workaround available, and which:
  - (a) causes a Component to become unusable;
  - (b) causes a lack of functionality, or unexpected functionality, that has an impact on the current Test; or
  - (c) has an adverse impact on any other Component(s) or any other area of the Services;
- 3 **Severity Level 3 Test Issue:** a Test Issue which:
  - 3.1 causes a Component to become unusable;
  - 3.2 causes a lack of functionality, or unexpected functionality, but which does not impact on the current Test; or
  - 3.3 has an impact on any other Component(s) or any other area of the Services;  
but for which, as reasonably determined by the Authority, there is a practicable workaround available;
- 4 **Severity Level 4 Test Issue:** a Test Issue which causes incorrect functionality of a Component or process, but for which there is a simple, Component based, workaround, and which has no impact on the current Test, or other areas of the Services; and
- 5 **Severity Level 5 Test Issue:** a Test Issue that causes a minor problem, for which no workaround is required, and which has no impact on the current Test, or other areas of the Services

## ANNEX 2: TEST CERTIFICATE

To: [NAME OF SUPPLIER]  
FROM: [NAME OF AUTHORITY]  
[Date]

Dear Sirs,

## TEST CERTIFICATE

Deliverables: [*insert description of Deliverables*]

We refer to the agreement (the “**Agreement**”) relating to the provision of the Services between the [*name of Authority*] (the “**Authority**”) and [*name of Supplier*] (the “**Supplier**”) dated [*date*].

Capitalised terms used in this certificate have the meanings given to them in Schedule 1 (*Definitions*) or Schedule 6.2 (*Testing Procedures*) of the Agreement.

[We confirm that the Deliverables listed above have been tested successfully in accordance with the Test Plan relevant to those Deliverables.]

OR

[This Test Certificate is issued pursuant to Paragraph 12.1 of Schedule 6.2 (*Testing Procedures*) of the Agreement on the condition that any Test Issues are remedied in accordance with the Rectification Plan attached to this certificate.]\*

*\*delete as appropriate*

Yours faithfully

[*Name*] [*Position*] acting on behalf of

[*name of Authority*] ANNEX 3:

## MILESTONE ACHIEVEMENT

### CERTIFICATE

To: [*NAME OF SUPPLIER*]

FROM: [*NAME OF AUTHORITY*]

[*Date*]

Dear Sirs,

## MILESTONE ACHIEVEMENT CERTIFICATE

Milestone: [*insert description of Milestone*]

We refer to the agreement (the “**Agreement**”) relating to the provision of the Services between the [*name of Authority*] (the “**Authority**”) and [*name of Supplier*] (the “**Supplier**”) dated [*date*].

Capitalised terms used in this certificate have the meanings given to them in Schedule 1 (*Definitions*) or Schedule 6.2 (*Testing Procedures*) of the Agreement.

[We confirm that all the Deliverables relating to Milestone **[number]** have been tested successfully in accordance with the Test Plan relevant to this Milestone [or that a conditional Test Certificate has been issued in respect of those Deliverables that have not satisfied the relevant Test Success Criteria.]]\*

OR

[This Milestone Achievement Certificate is granted pursuant to Paragraph 13.1 of Schedule 6.2 (*Testing Procedures*) of the Agreement on the condition that any Test Issues are remedied in accordance with the Rectification Plan attached to this certificate.]\*

[You may now issue an invoice in respect of the Milestone Payment associated with this Milestone in accordance with the provisions of Schedule 7.1 (*Charges and Invoicing*)]\*

*\*delete as appropriate*

Yours faithfully

**[Name]**

**[Position]**

acting on behalf of **[Authority]**

#### ANNEX 4: TEST SUCCESS CRITERIA

##### To be completed during delivery

##### 1. Tests to be Achieved in order to Achieve the ATP Milestone

| Test                                              | Pre-conditions* | Test Success Criteria |
|---------------------------------------------------|-----------------|-----------------------|
| <i>[List all Tests relating to ATP Milestone]</i> |                 |                       |
|                                                   |                 |                       |

\* Note: The Pre-Conditions are that e.g. the Success Criteria for the previous Tests must be satisfied before the ATP Milestone tests are commenced

##### 2. Tests to be Achieved in order to Achieve a CPP Milestone

| CPP Milestone Charge No. | Test | Test Success Criteria |
|--------------------------|------|-----------------------|
|--------------------------|------|-----------------------|

|  |                                                          |  |
|--|----------------------------------------------------------|--|
|  | [List all Tests relating to CPP<br>Milestone Charge No.] |  |
|  |                                                          |  |





## **MODEL AGREEMENT FOR SERVICES SCHEDULES**

### **SCHEDULE 7.1**

#### **CHARGES AND INVOICING**

## Charges and Invoicing

### DEFINITIONS

In this Schedule, the following definitions shall apply:

|                                                  |                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Achieved Profit Margin”</b>                  | Not used                                                                                                                                                                                                                                                                                         |
| <b>“Anticipated Contract Life Profit Margin”</b> | the anticipated Supplier Profit Margin over the Term as reflected in the Financial Model                                                                                                                                                                                                         |
| <b>“Capped ADR”</b>                              | Not used                                                                                                                                                                                                                                                                                         |
| <b>“Certificate of Costs”</b>                    | Not used                                                                                                                                                                                                                                                                                         |
| <b>“Costs”</b>                                   | Not used                                                                                                                                                                                                                                                                                         |
| <b>“Delay Payment Rate”</b>                      | has the meaning given in Paragraph 1.1(a) of Part C;                                                                                                                                                                                                                                             |
| <b>“The Employer Pension Contributions”</b>      | Not used                                                                                                                                                                                                                                                                                         |
| <b>“European Standard”</b>                       | in relation to an electronic invoice means the European standard and any of the syntaxes published in Commission Implementing Decision (EU) 2017/1870.                                                                                                                                           |
| <b>“Fixed Price”</b>                             | Shall mean the pricing method used to calculate the fee in advance in accordance with the rates based in Annex 1 table 1 for the Services as set out in Schedule 2.1 (Services description) for a fixed amount subject always to any variations and indexation in accordance with the Agreement  |
| <b>“Forecast Contingency Costs”</b>              | the costs which the Supplier forecasts may be incurred in relation to the risks and contingencies that are identified in the Risk Register, such costs being those set out in the column headed ‘Forecast Contingency Costs’ in the Risk Register (as such costs are updated from time to time); |
| <b>“Incurred Costs”</b>                          | Not used.                                                                                                                                                                                                                                                                                        |

|                                          |                                                                                                                                                                                                                                                                                     |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Indexation” and “Index”</b>          | the adjustment of an amount or sum in accordance with Paragraph 5 of Part C;                                                                                                                                                                                                        |
| <b>“Man Day”</b>                         | Not used.                                                                                                                                                                                                                                                                           |
| <b>“Man Hours”</b>                       | Not used.                                                                                                                                                                                                                                                                           |
| <b>“Maximum Permitted Profit Margin”</b> | Not used.                                                                                                                                                                                                                                                                           |
| <b>“Milestone Group”</b>                 | Not used.                                                                                                                                                                                                                                                                           |
| <b>“Milestone Retention”</b>             | has the meaning given in Paragraph 1.3 of Part B;                                                                                                                                                                                                                                   |
| <b>“Overhead”</b>                        | Not used.                                                                                                                                                                                                                                                                           |
| <b>Expenses”</b>                         | Not used. <b>“Reimbursable</b>                                                                                                                                                                                                                                                      |
| <b>“Supplier Profit”</b>                 | in relation to a period or a Milestone (as the context requires), the difference between the total Charges (in nominal cash flow terms but excluding any Deductions) and total Costs (in nominal cash flow terms) for the relevant period or in relation to the relevant Milestone; |
| <b>“Supplier Profit Margin”</b>          | in relation to a period or a Milestone (as the context requires), the Supplier Profit for the relevant period or in relation to the relevant Milestone divided by the total Charges over the same period or in relation to the relevant Milestone and expressed as a percentage;    |
| <b>“Supporting Documentation”</b>        | sufficient information in writing to enable the Authority reasonably to assess whether the Charges, and other sums due from the Authority detailed in the information are properly payable, including copies of any applicable Milestone Achievement Certificates or receipts;      |
| <b>“Target Cost”</b>                     | Not used.                                                                                                                                                                                                                                                                           |
| <b>“Target Price”</b>                    | Not used.                                                                                                                                                                                                                                                                           |
| <b>“Verification Period”</b>             | in relation to an Allowable Assumption, the period from (and including) the Effective Date to (and including) the date at which the relevant Allowable Assumption expires, as set out against the relevant Allowable Assumption in column 11 in the table in Annex 5.               |

## **PART A: Pricing**

## 1

### APPLICABLE PRICING MECHANISM

- 1.1 Milestone Payments and Service Charges shall be calculated using the pricing mechanism specified in Annex 2 and on the basis of the rates and prices specified in Annex 1 as more particularly set out in this Schedule.
- 1.2 Table 1 of Annex 2 sets out which pricing mechanism shall be used to calculate each Milestone Payment, which shall be on the basis of “**Fixed Price**”. Table 2 of Annex 2 sets out which pricing mechanism shall be used to calculate each Service Charge, which shall be “**Fixed Price**”.

## 2 FIXED PRICE MILESTONE PAYMENTS OR SERVICE CHARGES

- 2.1 Where Table 1 Annex 2 indicates that a Milestone Payment or Service Charge is to be calculated by reference to a Fixed Price pricing mechanism, the relevant Charge shall be the amount set out against that Charge in Table 5 of Annex 1.
- 2.2 Charges calculated by reference to a Fixed Price pricing mechanism shall be subject to increase by way of Indexation.

### PART B: Charging Mechanisms

## 1 MILESTONE PAYMENTS

- 1.1. Subject to the provisions of Paragraph 1.3 of Part C in relation to the deduction of Delay Payments, payment shall be made against the payment schedule in Table 1B Annex 2. Where future Sub-Milestones (eg M1-1, M3-2, etc) have been achieved or partially achieved ahead of their respective payment date, the Supplier shall be entitled to invoice the Authority for the respective percentage of the Sub-Milestone Payment associated with that Sub-Milestone less the applicable Milestone Retention in accordance with this Part B. On complete Achievement of the respective Milestone (being 100% completion), the Supplier shall then invoice for the remainder of the Milestone Payment.
- 1.2. Each invoice relating to a Milestone Payment shall be supported by:
- (a) a Milestone Achievement Certificate;
- 1.3. The “**Milestone Retention**” for each Milestone shall be calculated as follows:
- where the Milestone Payment for the relevant Milestone is determined by reference to Fixed Price pricing mechanism, 0% of the Charges for that Milestone,

## 2 SERVICE CHARGES

2.1 Each Service to which a Service Charge relates shall commence on the Achievement of the Milestone set out against that Service in the “*Service Charge Trigger Event*” column of Table 2 of Annex 2.

2.2 Service Charges shall be invoiced by the Supplier for each Service Period in arrears in accordance with the requirements of Part E.

2.3 If a Service Charge is to be calculated by reference to a Fixed Price pricing mechanism and the relevant Service:

(b) commences on a day other than the first day of a month; and/or

(c) ends on a day other than the last day of a month,

the Service Charge for the relevant Service Period shall be pro-rated based on the proportion which the number of days in the month for which the Service is provided bears to the total number of days in that month.

2.4 Any Service Credits that accrue during a Service Period shall be deducted from the Service Charges payable for the next following Service Period. An invoice for a Service Charge shall not be payable by the Authority unless all adjustments (including Service Credits) relating to the Service Charges for the immediately preceding Service Period have been agreed.

## 3 OPTIONAL SERVICES

If the Authority gives notice pursuant to Clause 5.10 (*Optional Services*) that it requires the Supplier to provide Optional Services and the Supplier agrees to provide such Optional Services, then subject to the relevant Indexation:

(a) the Milestone Payments (if any) for the relevant Optional Services shall be calculated by reference to the pricing mechanism for those Optional Services set out in Table 3 of Annex 2; and

(b) the Service Charges for the relevant Optional Services shall be calculated by reference to the pricing mechanism for those Optional Services set out in Table 4 of Annex 2, in both cases using the relevant rates and prices specified in Annex 1.

## PART C: ADJUSTMENTS TO THE CHARGES AND RISK REGISTER

### DELAY PAYMENTS

1.1 If a Key Milestone has not been Achieved on or before the relevant Milestone Date, the Supplier shall subject to Paragraph 1.1(c) below, pay Delay Payments to the Authority in respect of that Key Milestone. Delay Payments shall, subject always to Clause 25.4(d) in the Agreement, accrue:

1

- (a) for each Working Day only, at the daily rate determined in accordance with Paragraph 1.2 (hereinafter the “**Delay Payment Rate**”);
- (b) subject to Paragraph 1.1(c) below, from (but excluding) the relevant Milestone Date to (and including) the earlier of the date on which the Key Milestone is Achieved or the expiry of the Delay Deduction Period;
- (c) in the relevant Key Milestone calculated in accordance with sub-clause 1.1(b) above subject to such Delay period being carried over into the Key Milestone 7 such that the accrued Delay under sub-clause 1.1 (b) above may be reduced or eradicated by the Supplier against the Milestone Date for Key Milestone 7 and therefore, the days against which Delay Payments are payable shall be the total days of Delay held in the subsequent Key Milestone and not the Key Milestone specified in sub-clause 1.1(b) above.

The intention being that if, for example, the Supplier is 10 days late for Key Milestone 4 and Delay Payments were (for illustrative purposes only) £500/day then:  $KM4 = 10 \text{ days late} = 10 \times 500 = £5,000$ . However, those 10 days of delay for Key Milestone 4 would be carried into the Milestone Date for Key Milestone 7. If by the time the Supplier achieves Key Milestone 7 and is only 5 days late of the Milestone Date for Key Milestone 7, having reduced the 10 day period to 5 then using the same illustrative rates,  $KM7 = 5 \text{ days late} = 5 \times £500 = £2,500$  and  $KM4 = 5 \text{ days late} = 5 \times £500 = £2,500$  (in place of the £5,000 due under Key Milestone 4) so a total of £5,000 would be payable and this value would supersede the value for Delay Payments which occurred in the previous Key Milestone. Accordingly, delays to Key Milestone 5 would also be calculated in the same manner.

- 1.2 The Parties agree that Delay Payments calculated in accordance with the applicable Delay Payment Rates are in each case a genuine pre-estimate of the Losses which the Authority will incur as a result of any failure by the Supplier to Achieve the relevant Key Milestone by the Milestone Date. Delay Payment Rates are stated exclusive of VAT.
- 1.3 The Delay Payment in respect of Key Milestone 4 and Key Milestone 5 shall be shown as a deduction from the amount due from the Authority to the Supplier in the invoice due to be issued by the Supplier after the date on which Key Milestone 7 is Achieved.

## 2 PAYMENTS FOR DELAYS DUE TO AUTHORITY CAUSE

2.1 If the Supplier is entitled in accordance with Clause 31.1(iii)(D) (Authority Cause) to compensation for failure to Achieve a Milestone by its Milestone Date, then, subject always to Clause 25 (Limitations on Liability), such compensation shall be determined in accordance with the following principles:

- (a) the compensation shall reimburse the Supplier for additional Costs incurred by the Supplier that the Supplier:

- (i) can demonstrate it has incurred solely and directly as a result of the Authority Cause; and
- (ii) is, has been, or will be unable to mitigate, having complied with its obligations under Clause 31.1 (*Authority Cause*)

together with an amount equal to the Anticipated Contract Life Profit Margin thereon;

- (b) the compensation shall not operate so as to put the Supplier in a better position than it would have been in but for the occurrence of the Authority Cause;
- (c) where the relevant Milestone Payment is to be calculated based upon a Fixed Price or a Firm Price pricing mechanism, the compensation shall include such amount as is appropriate to maintain the Supplier Profit Margin set out in respect of the relevant Milestone in Table 5 or Table 6 of Annex 1; and

2.2 The Supplier shall provide the Authority with any reasonable information the Authority may require in order to assess the validity of the Supplier's claim to compensation.

### 3 SERVICE CREDITS

3.1 Service Credits shall be calculated by reference to the number of Service Points accrued in any one Service Period pursuant to the provisions of Schedule 2.2 (*Performance Levels*).

3.2 For each Service Period:

- (a) the Service Points accrued shall be converted to a percentage deduction from the Service Charges for the relevant Service Period on the basis of one point equating to a 0.1% deduction in the Service Charges; and
- (b) the total Service Credits applicable for the Service Period shall be calculated in accordance with the following formula:

$$SC = TSP \times X \times AC$$

where:

|     |                                                                                                                           |
|-----|---------------------------------------------------------------------------------------------------------------------------|
| SC  | is the total Service Credits for the relevant Service Period;                                                             |
| TSP | is the total Service Points that have accrued for the relevant Service Period;                                            |
| X   | is 0.1%; and                                                                                                              |
| AC  | is the total Services Charges payable for the relevant Service Period (prior to deduction of applicable Service Credits). |

- 3.3 The liability of the Supplier in respect of Service Credits shall be subject to Clause 25.4(c) (*Financial and other Limits*) provided that, for the avoidance of doubt, the operation of the Service Credit Cap shall not affect the continued accrual of Service Points in excess of such financial limit in accordance with the provisions of Schedule 2.2 (*Performance Levels*).
- 3.4 Service Credits are a reduction of the Service Charges payable in respect of the relevant Services to reflect the reduced value of the Services actually received and are stated exclusive of VAT.
- 3.5 Service Credits shall be shown as a deduction from the amount due from the Authority to the Supplier in the invoice for the Service Period immediately succeeding the Service Period to which they relate.

#### 4 CHANGES TO CHARGES

- 4.1 Any Changes to the charges shall be developed and agreed by the Parties in accordance with Schedule 8.2 (*Change Control Procedure*) and on the basis that the Supplier Profit Margin on such Charges shall be no greater than that applying to charges using the same pricing mechanism as at the Effective Date (as set out in the Contract Inception Report);
- 4.2 The Authority may request that any Impact Assessment presents Charges without Indexation for the purposes of comparison.

#### 5 INDEXATION

- 5.1 Any amounts or sums in this Agreement which are expressed to be “subject to Indexation” shall be adjusted in accordance with the provisions of this Paragraph 5 to reflect the effects of inflation.
- 5.2 Where Indexation applies, the relevant adjustment shall be:
- (a) applied on the first day of the second April following the Effective Date except in the event the Effective Date falls in any of the months of April to December 2020, in which case the relevant adjustment shall be applied on the first day of the first April following the Effective Date and on the first day of April in each subsequent year (each such date an “**adjustment date**”); and
  - (b) determined by multiplying the relevant amount or sum by the percentage increase or changes in the Consumer Price Index published for the 12 months ended on the 31 January immediately preceding the relevant adjustment date.
- 5.3 Except as set out in this Paragraph 5, neither the Charges nor any other costs, expenses, fees or charges shall be adjusted to take account of any inflation, change to exchange rate, change to interest rate or any other factor or element which might otherwise increase the cost to the Supplier or Sub-contractors of the performance of their obligations.



## **6 ALLOWABLE ASSUMPTIONS**

- 6.1 The Supplier shall determine whether each Allowable Assumption is accurate within its Verification Period.
- 6.2 During each Verification Period, the Authority shall provide the Supplier with reasonable assistance and access to information within its possession or reasonable control and which the Authority deems is relevant to the Allowable Assumption being verified.
- 6.3 Within ten (10) Working Days of the end of each Verification Period, the Supplier shall provide the Authority with a written report setting out the results of the Supplier's verification activity for the relevant Allowable Assumption, including whether the Allowable Assumption is accurate or whether the Implementation Plan and/or the Contract Inception Report require adjustment.
- 6.4 Each Allowable Assumption shall be deemed accurate unless adjusting for the relevant Allowable Assumption has an impact:
- (a) on the Financial Model greater than the associated trigger for invocation, as set out in column 9 of the table in Annex 5; or
  - (b) on the Implementation Plan which would require adjustment under the Change Control Procedure, as identified in column 3 of the table in Annex 5, in which case Paragraph 6.5 shall apply.
- 6.5 Where the Parties agree that an Allowable Assumption is not accurate and the Financial Model and/or Implementation Plan require adjusting:
- (a) the Supplier shall take all reasonable steps to mitigate the impact of the Allowable Assumption on the Financial Model and/or the Implementation Plan;
  - (b) the Supplier may (subject to Paragraph 6.5(c)) propose a Change to take account of the impact of the adjustment of the Allowable Assumption and such Change Request shall be considered in accordance with the Change Control Procedure; and
  - (c) where the Supplier proposes a Change to the Charges under Paragraph 6.5(b), the Change Request shall reflect the requirements of the table in Annex 5, including the requirement that any proposed adjustment to the Charges shall not exceed the maximum impact on the relevant Charges as specified in column 7 of the table in Annex 5.

## **7 RISK REGISTER**

The Parties shall review the Risk Register set out in Annex 4 at least quarterly and as otherwise required for the purposes of Schedule 8.1 (*Governance*).

## **PART E: INVOICING AND PAYMENT TERMS**

## 1 SUPPLIER INVOICES

1.1 The Authority shall accept for processing any electronic invoice that complies with the European Standard, provided that it is valid and undisputed.

1.2 If the Supplier proposes to submit for payment an invoice that does not comply with the European Standard the Supplier shall comply with the requirements of the Authority's e-invoicing system. In the alternative the Supplier shall:

- (a) prepare and provide to the Authority for approval of the format a template invoice within ten (10) Working Days of the Effective Date which shall include, as a minimum, the details set out in Paragraph 1.3 together with such other information as the Authority may reasonably require to assess whether the Charges that will be detailed therein are properly payable; and
- (b) make such amendments as may be reasonably required by the Authority if the template invoice outlined in (b) is not approved by the Authority.

1.3 The Supplier shall ensure that each invoice contains the following information:

- (a) the date of the invoice;
- (b) a unique invoice number;
- (c) the Service Period or other period(s) to which the relevant Charge(s) relate;
- (d) the correct reference for this Agreement;
- (e) the reference number of the purchase order to which it relates (if any);
- (f) the dates between which the Services subject of each of the Charges detailed on the invoice were performed;
- (g) a description of the Services;
- (h) the pricing mechanism used to calculate the Charges being Fixed Price,
- (i) any payments due in respect of Achievement of a Milestone, including the Milestone Achievement Certificate number for each relevant Milestone;
- (j) the total Charges gross and net of any applicable deductions and, separately, any VAT or other sales tax payable in respect of each of the same;
- (k) details of any Service Credits or Delay Payments or similar deductions that shall apply to the Charges detailed on the invoice;
- (l) reference to any reports required by the Authority in respect of the Services to which the Charges detailed on the invoice relate (or in the case of reports issued by the Supplier for validation by the Authority, then to any such reports as are validated by the Authority in respect of the Services);

- (m) a contact name and telephone number of a responsible person in the Supplier's finance department in the event of administrative queries;
  - (n) the banking details for payment to the Supplier via electronic transfer of funds (i.e. name and address of bank, sort code, account name and number); and
  - (o) where the Services have been structured into separate Service lines, the information at (a) to (n) of this paragraph 1.3 shall be broken down in each invoice per Service line.
- 1.4 The Supplier shall invoice the Authority in respect of Services in accordance with the requirements of Part B. The Supplier shall first submit to the Authority a draft invoice setting out the Charges payable. The Parties shall endeavour to agree the draft invoice within five (5) Working Days of its receipt by the Authority, following which the Supplier shall be entitled to submit its invoice.
- 1.5 Each invoice shall at all times be accompanied by Supporting Documentation. Any assessment by the Authority as to what constitutes Supporting Documentation shall not be conclusive and the Supplier undertakes to provide to the Authority any other documentation reasonably required by the Authority from time to time to substantiate an invoice.
- 1.6 The Supplier shall submit all invoices and Supporting Documentation by:
- email to [pay@gov.sscl.com](mailto:pay@gov.sscl.com); and also by
- post to:
- SSCL (Environment Agency)  
PO Box 797  
Newport  
Gwent  
NP10 8FZ
- with a copy (again including any Supporting Documentation) to such other person and at such place as the Authority may notify to the Supplier from time to time.
- 1.7 All Supplier invoices shall be expressed in sterling or such other currency as shall be permitted by the Authority in writing.
- 1.8 The Authority shall regard an invoice as valid only if it complies with the provisions of this Part E. Where any invoice does not conform to the Authority's requirements set out in this Part E, the Authority shall promptly return the disputed invoice (and in any case no later than five (5) Working Days of receipt) to the Supplier and the Supplier shall promptly issue a replacement invoice which shall comply with such requirements.
- 1.9 If the Authority fails to consider and verify an invoice in accordance with paragraphs 1.4 and 1.8, the invoice shall be regarded as valid and undisputed for the purpose of

paragraph 2.1 [*Payment in 30 days*] after a reasonable time has passed and in any case no later than five (5) Working Days.

## **2 PAYMENT TERMS**

- 2.1 The Authority shall make payment to the Supplier within 30 calendar days of receipt of a valid and undisputed invoice.
- 2.2 Unless the Parties agree otherwise in writing, all Supplier invoices shall be paid in sterling by electronic transfer of funds to the bank account that the Supplier has specified on its invoice.

## ANNEX 1: PRICING MECHANISM

### 1 TABLE 1: SUPPLIER PERSONNEL RATE CARD FOR CALCULATION OF TIME AND MATERIALS CHARGES

| Staff Grade | Hourly Rate (£)<br>(subject to indexation - Part C para 5) |
|-------------|------------------------------------------------------------|
| REDACTED    | REDACTED                                                   |
| REDACTED    | REDACTED                                                   |
| REDACTED    | REDACTED                                                   |
| REDACTED    | REDACTED                                                   |
| REDACTED    | REDACTED                                                   |
| REDACTED    | REDACTED                                                   |
| REDACTED    | REDACTED                                                   |

### 2 TABLE 2: MAXIMUM TIME AND MATERIALS CHARGES

NOT USED

### 3 TABLE 3: DAY COST FOR CALCULATION OF GUARANTEED MAXIMUM PRICE WITH TARGET COST CHARGES

NOT USED

### 4 Table 4: GUARANTEED MAXIMUM PRICE WITH TARGET COSTS CHARGES

NOT USED

### 5 TABLE 5: FIXED PRICES

| Charge | Fixed Charge (£) - subject to indexation |
|--------|------------------------------------------|
|--------|------------------------------------------|

|          |          |
|----------|----------|
| REDACTED | REDACTED |
| REDACTED | REDACTED |
| REDACTED | REDACTED |
| REDACTED | REDACTED |
| REDACTED | REDACTED |
| REDACTED | REDACTED |
| REDACTED | REDACTED |
| REDACTED | REDACTED |
| REDACTED | REDACTED |
| REDACTED | REDACTED |
| REDACTED | REDACTED |

**6 TABLE 6: FIRM PRICES**

NOT USED

**7 TABLE 7: VOLUME CHARGES**

NOT USED

**ANNEX 2: CHARGING MECHANISM AND ADJUSTMENTS**

**1 TABLE 1: MILESTONE PAYMENTS AND DELAY PAYMENTS**

| Charge Number | Pricing Mechanism<br>(FIX / FIRM / GMPTC / | CPP Milestone Charge Number | Delay Payments (if Key Milestone)<br>(£ per day) |
|---------------|--------------------------------------------|-----------------------------|--------------------------------------------------|
|---------------|--------------------------------------------|-----------------------------|--------------------------------------------------|

|                        | T&M) |     | <3<br>months'<br>notice | 3-6<br>months'<br>notice | >6<br>months'<br>notice |
|------------------------|------|-----|-------------------------|--------------------------|-------------------------|
| M1 Mobilisation        | FIX  | KM4 | REDACTED                | REDACTED                 | REDACTED                |
| M2 Blueprinting        | FIX  | KM4 | REDACTED                | REDACTED                 | REDACTED                |
| M3 Proof of Concept    | FIX  | KM4 | REDACTED                | REDACTED                 | REDACTED                |
| KM4 Prototype          | FIX  | KM5 | REDACTED                | REDACTED                 | REDACTED                |
| KM5 New National Model | FIX  | KM7 | REDACTED                | REDACTED                 | REDACTED                |
| M6 Initial Build       | FIX  | KM7 | REDACTED                | REDACTED                 | REDACTED                |
| KM7 Transition         | FIX  | KM7 | REDACTED                | REDACTED                 | REDACTED                |

**Table 1B: Monthly payments (excluding VAT and subject to indexation)**

[illegible]



[illegible]

[illegible]

|              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED |
| REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED | REDAC<br>TED |

**2      TABLE 2: SERVICE CHARGES**

| Charge Number | Pricing Mechanism (VOL / FIX / T&M) | Service Charge Trigger Event | Service Charge Expiration Trigger Event |
|---------------|-------------------------------------|------------------------------|-----------------------------------------|
| S1-Q1         | FIX                                 | KM7                          | N/A                                     |
| S1-Q2         | FIX                                 | KM7 + 1 Quarter              | N/A                                     |
| S1-Q3         | FIX                                 | KM7 + 2 Quarters             | N/A                                     |
| S1-Q4         | FIX                                 | KM7 + 3 Quarters             | N/A                                     |

**3      TABLE 3: OPTIONAL SERVICES MILESTONE PAYMENTS**

NOT USED

**4      TABLE 4: OPTIONAL SERVICES SERVICE CHARGES**

NOT USED

### **ANNEX 3: PRO-FORMA CERTIFICATE OF COSTS**

Not used



#### ANNEX 4: RISK REGISTER

| ID | Risk Name                                                                         | Description of risk                                                                                                                                                    | Impact (description)                                                                                                                                                                                                                                                                                                                            | Pre-mitigation |                    | Mitigation                                                                                                                                                                                                                                                                                                                                                                                                         | Risk allowance - Supplier owned risks only (£) | Owner |
|----|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-------|
|    |                                                                                   |                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                 | Impact (H/M/L) | Likelihood (H/M/L) |                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                |       |
| 1  | Local model results (coverage and suitable quality) & metadata inadequacies       | Issues with local model data (and metadata). Not provided in readily useable formats and/or insufficient data to fully support inclusion of local models (NP109, SFB1) | Either can't include the local model or extra cost/time required to generate the metadata from reports etc. Impact is NaFRA2 simulation library doesn't have adequate local model content and core principle not achieved. Could result in need for further development of NNM and data collection. Potential impact on quality/programme/cost. | H              | M                  | Define metadata spec early and commission work to create the metadata and process the local model outputs and metadata before April 2020.                                                                                                                                                                                                                                                                          |                                                | EA    |
| 2  | General data issues, including data not available in time for Supplier programme. | Many parts of NaFRA2 could be impacted by input data availability/accuracy (NP8)                                                                                       | Inadequate accuracy or lack of availability of data could impact many methods within NaFRA2, resulting in preferred approaches not being achievable or reduced confidence in NaFRA2 outputs. Potential impact on quality/programme/cost.                                                                                                        | H              | M                  | 1) Early identification of key datasets, especially those where the risk of inadequate data completeness or quality has the greatest potential impacts on NaFRA2 output quality, and planning for data collection/synthesis.<br>2) Where necessary, early work to either improve the datasets, identify the need for alternative approaches, or accept the lower confidence (and manage stakeholder expectations). |                                                | EA    |

|   |                                |                                                                                                                                                            |                                                                                                                                                                                                             |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |    |
|---|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----|
| 3 | Hosted data volume uncertainty | Supplier does not know the actual volumes and access needs for the data managed by the NaFRA solution. Assumptions have been made for the bid (NP13, NP19) | The actual data volumes and access needs could be higher than those assumed at the time of bidding. Potential impact on a) cost, and, possibly, <del>on</del> b) storage model and c) solution performance. | M | M | Cost estimates for 20TB and 80TB have been provided, together with information on how costs can vary with different assumptions on storage tier split.<br>1) Recommend EA owns contingency budget for increased storage costs. (In the context that, as a default position, EA/Defra will provide the production system cloud hosting capacity) 2) (for impact c), During the prototyping phase supplier will be working with representative larger volume datasets and so will be better able then to assess the optimum distribution of storage |  | EA |
|---|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----|

| ID | Risk Name                                                                      | Description of risk                                                                                                                                                                                     | Impact (description)                                                                                                                                                                                                                           | Pre-mitigation |                    | Mitigation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Risk allowance - Supplier owned risks only (£) | Owner                 |
|----|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------|
|    |                                                                                |                                                                                                                                                                                                         |                                                                                                                                                                                                                                                | Impact (H/M/L) | Likelihood (H/M/L) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                |                       |
|    |                                                                                |                                                                                                                                                                                                         |                                                                                                                                                                                                                                                |                |                    | between database, file and blob storage and between rapid and slower service access layers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                |                       |
| 4  | Limited sharing or automated interfacing of data mastered externally to NaFRA2 | (Manually invoked upload of diverse data to NaFRA2 WILL be provided but...) Automated interfacing of data updates or sharing of data without uploading is likely to be limited in the first three years | There may be more work than expected / desirable on Business staff - to monitor relevant data change-triggers and then to manually invoke data uploads of relevant new / updated data held in, e.g., MapEdit, AIMS, DSP, elsewhere into NaFRA2 | M              | H                  | a) Supplier will assure manually invoked uploading is easy to use and the NaFRA2 data repository content is easy to administer and manage<br>b) Supplier will assure in BP / PoC overall solution architecture that the solution is technically capable of supporting data sharing or automated uploading<br>c) Agency and Supplier will continually keep under review the application of the criteria proposed/agreed for cases where data sharing or auto-interfacing MAY be worthwhile in the initial solution implementation<br>d) Agency will make contingency funding available for the potential provision of some sharing / auto-interfacing identified in c) above – for i) additional costs spend with the NaFRA2 Supplier and ii) for additional spend with other suppliers (e.g. suppliers of Mapedit, AIMS, DSP) |                                                | Joint EA and Supplier |



|   |                                                   |                                                                                                 |                                                                                                                                                                                                                                                                                                                                            |   |   |                                                                                                                                                                                                                                          |          |          |
|---|---------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| 5 | Multiple data take-ons for NNM during development | Supplier assumed there will be only one take-on of each data set during NNM development (NP109) | If significant updates to NNM input data are identified and the EA want updates brought into the NNM process (after initial take on per data set), this will trigger rework and have a cost impact.<br><br>Additional cost implication if we need to address data structure/data format of the take-on data to align with the NNM process. | L | M | EA to either have a contingency for this potential extra cost, or ensure initial data take on is sufficiently robust. EA to work with supplier to optimise timing of initial data take on.                                               |          | EA       |
| 6 | Metadata & confidence propagation                 | There will be limitations to the feasibility of propagating metadata and generating usable      | If all metadata are propagated and contribute to confidence, then the system could be overly complex and not practical/effective. Potential impact on quality.                                                                                                                                                                             | L | L | During the blueprinting, Supplier will work with EA to identify the metadata and confidence reporting requirements for each output dataset and work back through the processing steps to identify which metadata needs to be propagated. | REDACTED | Supplier |

| ID | Risk Name | Description of risk            | Impact (description)                                                                                      | Pre-mitigation |                    | Mitigation | Risk allowance - Supplier owned risks only (£) | Owner |
|----|-----------|--------------------------------|-----------------------------------------------------------------------------------------------------------|----------------|--------------------|------------|------------------------------------------------|-------|
|    |           |                                |                                                                                                           | Impact (H/M/L) | Likelihood (H/M/L) |            |                                                |       |
|    |           | confidence information (NP120) | If that is not the case than we will need additional validation methods/processes to ensure data quality. |                |                    |            |                                                |       |

|    |                                               |                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |                                                                                                                                                                                                                                                            |  |    |
|----|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----|
| 7  | Third party data inclusion                    | Poor engagement and/or including data receipt, from 3 <sup>rd</sup> parties (e.g. FRAs, coastal authorities) (NP39, SFB4)                          | Significant risk to local acceptance of NaFRA2 outputs if relevant 3 <sup>rd</sup> parties are not engaged and given the opportunity to provide data on hydraulic structures and flood defence assets. Associated risk is that 3 <sup>rd</sup> parties provide data in a format that is inefficient to use – could be ‘politically’ difficult to not use the data, but could lead to cost/programme impacts if it is used due to reformatting costs/delays. | M | H | EA to prepare 3 <sup>rd</sup> parties and explain benefits to them of their involvement. Early specification of format (together with examples) and how best to provide data required. Implement approach that is efficient for the 3 <sup>rd</sup> party. |  | EA |
| 8  | DTM edits - anomalies                         | Supplier priced for limited number (1000) of fixes for anomalies in the DTM. Based on previous experience, more fixes could be required. (NNM 2.0) | Potential cost and programme impact of implementing additional fixes (or quality impact for NNM if limit to fixes of 1000 is applied).                                                                                                                                                                                                                                                                                                                      | M | H | Work with Geomatics to decide how and who’s best able to address the DTM improvements needed for NaFRA2. EA to budget for additional costs.                                                                                                                |  | EA |
| 9  | General assumptions on ‘volume’ of activities | Supplier included in proposal a number of assumptions on volume of activities (DTM editing is one example) – more may be needed.                   | Potential impact on programme and/cost, or on quality if the assumed limit is adhered to.                                                                                                                                                                                                                                                                                                                                                                   | M | M | Blueprinting may help identify where the assumptions may not be appropriate. Maintain contingency budget.                                                                                                                                                  |  | EA |
| 10 | NNM processing                                | IT processing resources for NNM generation need to be bigger than estimated to achieve programme                                                   | Potential cost and/or programme impact, and need for additional AWS resources                                                                                                                                                                                                                                                                                                                                                                               | M | L | During blueprinting, once grid/catchment resolution decisions have been made, reevaluate processing resource needs using trials and latest available hardware.                                                                                             |  | EA |

| ID | Risk Name | Description of risk | Impact (description) | Pre-mitigation |                    | Mitigation | Risk allowance - Supplier owned risks only (£) | Owner |
|----|-----------|---------------------|----------------------|----------------|--------------------|------------|------------------------------------------------|-------|
|    |           |                     |                      | Impact (H/M/L) | Likelihood (H/M/L) |            |                                                |       |

|    |                                                  |                                                                                                                                                                                              |                                                                                                                                                                                                            |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |                       |
|----|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|
|    |                                                  | (for EA selected grid/catchment resolution)                                                                                                                                                  |                                                                                                                                                                                                            |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |                       |
| 11 | NNM output storage                               | IT storage during NNM generation needs to be bigger than estimated to achieve programme (for EA selected grid/catchment resolution)                                                          | Potential cost impact                                                                                                                                                                                      | M | L | During blueprinting, once grid/catchment resolution decisions made, re-evaluate storage resource needs using trials.<br><br>(See risk ID 3 – overall storage volumes – which will include the NNM outputs held in NaFRA2)                                                                                                                                                                                                                                |          | EA                    |
| 12 | Interim deliverables including early NNM outputs | Issues cause delay in providing interim deliverables (e.g. for LTIS or for initial inputs to the NaFRA2 software development) and/or rework following review.                                | Client: programme impact<br>Supplier: financial and programme impact<br>Potential dependencies cause delays in software development.                                                                       | L | M | Strong planning, change management and general project management. Agree requirements early on. Make the most of the blueprinting processes to help predict issues early. Strong communications to enable 'no surprises' culture. Maintain links with the LTIS team so 'no surprises'. Resolve/maintain ASAP in initial DIP and subsequently what dependencies there are on verified NNM outputs for the PoC/PT/development of NaFRA2 solution software. | REDACTED | Supplier              |
| 13 | Insufficient review of NNM results               | Insufficient time or resource for the review of the draft NNM results impacts on their quality and local buyin.                                                                              | a) Potential impact of inadequate or late quality-assured stable NNM outputs as input data to the rest of NaFRA2 solution development. b) Potential impact on quality and/or buy-in to NNM at local level. | M | M | Review programme. Plan the reviews. Assure this is part of overall testing / quality strategy for the project as a whole including resource planning. Confirm both. Suitable communications plan needed and consider early involvement of local staff.                                                                                                                                                                                                   |          | EA                    |
| 14 | Year 1 and 2 programme constrained               | Significant amount of work to do during blueprinting, NNM, PoC, prototyping, system build phases – potential for programme slippage. Significant demands on Supplier and EA staff resources. | Potential delays to programme or compromised deliveries if original timescales are maintained.                                                                                                             | M | M | Need effective planning, approvals and change management processes. Need to review/revise the programme during Detailed Implementation Planning (DIP). Consider de-scoping from the initial contract / delivery period some of the "Aspirational" that the supplier has proposed to meet in full. Need input data ready at start of contract. Undertake data improvements etc. before award. Links to Risk ID 25.                                        |          | Joint EA and Supplier |

| ID | Risk Name | Description of risk | Impact (description) | Pre-mitigation | Mitigation |  | Owner |
|----|-----------|---------------------|----------------------|----------------|------------|--|-------|
|----|-----------|---------------------|----------------------|----------------|------------|--|-------|

|    |                                     |                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                         | Impact<br>(H/M/L) | Likelihood<br>(H/M/L) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Risk allowance -<br>Supplier owned risks only (£) |                       |
|----|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------|
| 15 | Supplier staffing                   | Non-availability of key staff.                                                                                                                                                                                                                                                        | Potential impact on quality/programme/cost.                                                                                                                                                                                                                                                                                                             | M                 | M                     | Identify and ringfence necessary resources and secure senior management agreement. Ensure 'deputies' in place. Good documentation. Work as a team. Good planning.                                                                                                                                                                                                                                                                                                                                                                                                       | REDACTED                                          | Supplier              |
| 16 | EA staffing                         | Non-availability of key staff                                                                                                                                                                                                                                                         | Potential impact on quality/programme/cost.                                                                                                                                                                                                                                                                                                             | M                 | M                     | Identify and ringfence necessary resources and secure senior management agreement. Ensure 'deputies' in place. Good documentation. Work as a team. Good planning.                                                                                                                                                                                                                                                                                                                                                                                                       |                                                   | EA                    |
| 17 | Method development / implementation | General risk of not being able to successfully develop/implement all the methods that are needed to meet the specification given the reality of available data. Examples include some of the wider impact classes (e.g. mental health) and risk at asset level for non-linear assets. | <p>Potential failure to achieve some aspects of the specification. Quality impact. Cost impact if Supplier has to spend more time than budgeted for developing methods.</p> <p><i>Note that this risk links to risk item 27 &amp; 28. Item 27 &amp; 28 are Supplier owned item, whereas this is joint owned and likely to trigger Change event.</i></p> | M                 | M                     | <p>Sharing of team knowledge and blueprinting will help identify where this risk is most significant. Strong link to data quality/availability (see Risk ID 2).</p> <p>Work together to solve problems. Develop 'fall back' methods (e.g. uplift factors for wider impacts).</p> <p>May need to descope some items from the 'basic' requirements - recommend joint definition of the Minimum Viable Product (see Risks 14 &amp; 25).</p> <p>Some methods may require new science via FCERM R&amp;D programme (liaison required). Update 'future roadmap' as needed.</p> |                                                   | Joint EA and Supplier |
| 18 | Software development risks          | General risks associated with developing a new software system.                                                                                                                                                                                                                       | Cost impact if more time required than budgeted for build, test, acceptance, etc. Could impact the scope of what's delivered (if MVP changes from original scope) and the delivery of associated benefits longer term if delivery against core requirements is compromised.                                                                             | M                 | M                     | <p>Strong change management. Agile approaches – including identifying an operational MVP (that focusses on optimising on max benefits x minimum risks etc) as "Increment 1" for delivery asap within the overall delivery programme planned in DIP. Work together to solve problems.</p> <p>Use commercial off-the-shelf product where possible in preference to bespoke development. Regular review of MVP to ensure it fulfils both minimum requirements and is sufficient to secure benefits. Use of POC and pilot to reduce risks of software development.</p>      | REDACTED                                          | Supplier              |

|    |           |                                                |                                             |   |   |                                                           |  |                       |
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| 19 | NFR risks | General risks associated with meeting the non- | Potential impact on quality/programme/cost. | M | M | Work together to ensure NFRs are relevant and achievable. |  | Joint EA and Supplier |
|----|-----------|------------------------------------------------|---------------------------------------------|---|---|-----------------------------------------------------------|--|-----------------------|

| ID | Risk Name          | Description of risk                                                | Impact (description)                                                                                                                                                                                                    | Pre-mitigation |                    | Mitigation                                                                                                                                                                                                                                                                                                 | Risk allowance - Supplier owned risks only (£) | Owner                 |
|----|--------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------|
|    |                    |                                                                    |                                                                                                                                                                                                                         | Impact (H/M/L) | Likelihood (H/M/L) |                                                                                                                                                                                                                                                                                                            |                                                |                       |
|    |                    | functional requirements.                                           | Includes achieving key NFRs such as Processing Performance (e.g. during data upload, data access, calculations, outputs), Resilience, Usability, Portability, Extensibility, Security, standards, facility levels, etc. |                |                    | Assure via inclusion in Blueprinting (solution architecture), PoC, PT and Testing strategy. Progressive incremental testing imbedded during production build and transition. Strong change management. Use EA & Defra established technology patterns where applicable.                                    |                                                |                       |
| 20 | EA decision making | Protracted decision making means that programme can't be achieved. | Potential impact on programme, costs and benefits case.                                                                                                                                                                 | M              | M                  | Define appropriate and nimble decision-making process. Ensure appropriate people are empowered to take/make decisions. Good planning (and delivery to the plan) to enable decision makers and their advisors to manage their time. Supplier and EA working as one team, to achieve 'no surprises' culture. |                                                | EA                    |
| 21 | Scope creep        | Uncontrolled expansion of scope (scope creep).                     | Potential impact on quality/programme/cost/delivery and benefits.                                                                                                                                                       | M              | M                  | Strong management and change management. DIP planning (inc. DIP maintenance) and control required throughout programme. See also Risk ID 17, 18 and 25.                                                                                                                                                    |                                                | Joint EA and Supplier |

|    |                     |                                                                 |                                                                                        |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |    |
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| 22 | Business acceptance | Wider business does not 'accept' NaFRA2 and its outputs         | Benefits are not achieved; service is not fully utilised.                              | M | M | Ensure the project has developed a robust methodology and good model quality Programme Comms plan defining programme of continual engagement, involvement, testing, and communications.<br>Strong change management.<br>Consider phased role out.<br>Continual targeted (input) data improvements.<br>NNM and system development to specification.<br>Assure Project Delivery acceptance steps are part of wider "business acceptance / change" process steps.<br>Identify / assign accountabilities for achieving business acceptance and NaFRA2 usage (or non-usage). |  | EA |
| 23 | NNM-related "review | GDS may require the NNM review website to meet higher standards | Potential impact on price and delivery if rework etc is required to meet the standard. | M | M | We have based our assumptions on similar review websites we have delivered for the EA and other public bodies. We will confirm actual                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | EA |

| ID | Risk Name            | Description of risk                                                                        | Impact (description)                            | Pre-mitigation |                    | Mitigation                                                                                                                          | Risk allowance - Supplier owned risks only (£) | Owner |
|----|----------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------|----------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-------|
|    |                      |                                                                                            |                                                 | Impact (H/M/L) | Likelihood (H/M/L) |                                                                                                                                     |                                                |       |
|    | website" standards   | than Supplier has assumed in pricing.                                                      |                                                 |                |                    | requirements early during delivery. Regular, active engagement with GDS.                                                            |                                                |       |
| 24 | Local model data NNM | It may not be feasible to extract useful information from local models for use in the NNM. | May impact on the confidence in the NNM results | M              | M                  | Early identification of key data from local models. Evaluation of benefits and value of extracting this data. Other actions as ID1. |                                                | EA    |

|    |                                                 |                                                                                                                                                                                           |                                                                                                                                                  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                       |
|----|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|
| 25 | Detailed Implementation Plan                    | a) Challenge of delivering draft DIP within 20 working days of award.<br>b) Challenge of agreeing and maintaining a realistic, feasible and practical DIP for life of project thereafter. | Potential impact on quality/programme. Failure to proactively manage and reactively control the project adequately.                              | M | H | a) Planning for the DIP needs to start before award, including agreeing dates for workshops and securing staff resources for both EA and Supplier.<br>Focus for DIP detail should be year one with subsequent years only covered at high level. NNM covered at high level in the initial DIP, with more detailed planning for NNM following in month 3.<br>b) Assure that approved and onwardly maintained DIP will have: a) realistic measurable milestones and sub-milestones, b) realistic dependency set so impacts of slippage are always overt, c) realistic resource estimates and actual resource-person assignments wrt constraints in EA and Supplier total resources / costs and key skills, d) realistic representation / understanding in respect of "agile within waterfall" overall approach. |          | Joint EA and Supplier |
| 26 | Input data format change                        | Changes in formats of input data could result in the system import not working                                                                                                            | Potential impact on quality and in level of confidence in the service. Potential additional cost to provide ETL environment to align data format | M | H | Ensure during Blueprinting that the system will be developed so that it is easy to adjust to changes in input formats.<br>Ensure the documentation explains how to make the changes.<br>Ensure suitable change management process is in place so that any changes are discussed early so that the impact/cost etc can be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          | EA                    |
| 27 | Method implementation challenges - Blueprinting | General risk of method development/ implementation issues where the risk is                                                                                                               | Supplier: financial and programme impacts.                                                                                                       | M | M | Mitigation as risk item 17 (which is similar but covers method development/implementation risks which are client or jointly owned and are likely to trigger Change event).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | REDACTED | Supplier              |

| ID | Risk Name | Description of risk                                             | Impact (description) | Pre-mitigation |                    | Mitigation | Risk allowance - Supplier owned risks only (£) | Owner |
|----|-----------|-----------------------------------------------------------------|----------------------|----------------|--------------------|------------|------------------------------------------------|-------|
|    |           |                                                                 |                      | Impact (H/M/L) | Likelihood (H/M/L) |            |                                                |       |
|    |           | owned by the Supplier and doesn't trigger a formal Change event |                      |                |                    |            |                                                |       |

| 28 | Method implementation challenges – After Blueprinting                      | General risk of method development/ implementation issues where the risk is owned by the Supplier and doesn't trigger a formal Change event                                                   | Supplier: financial and programme impacts.                               | M              | M                  | Mitigation as risk item 17 (which is similar but covers method development/implementation risks which are client or jointly owned and are likely to trigger Change event).                                                                                                                                                          | REDACTED                                       | Supplier              |
|----|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------|
| 29 | Joint probability analysis for estuaries/tidal rivers                      | Joint probability water levels for estuaries /tidal rivers not available/ appropriate.                                                                                                        | Potential quality/ programme/ financial impact                           | M              | H                  | EA to organise delivery of suitable JP water level data ahead of requirement to use in the NNM.                                                                                                                                                                                                                                     |                                                | EA                    |
| 30 | JFLOW not fully suitable, particularly for 2D coastal inundation modelling | JFLOW may prove to be unacceptable (after ongoing fixes) for some modelling (inc. coastal inundation modelling) and there may be the need to switch to alternative software (such as TUFLOW). | Potential financial and programme impacts.                               | M              | M                  | Need to have 'success' criteria agreed and gateways defined. Assessment needs to be undertaken during blueprinting to minimise potentially abortive work. Where practical, set up methods and data to enable future switch of modelling software.<br>May need to carry out more detailed 2D and/or 1D/2D modelling where necessary. |                                                | Joint EA and Supplier |
| 31 | CEH Catchment Descriptors for inland hydrology                             | Risks associated with used of Descriptors provided by third party linked to older data sets.                                                                                                  | Potential impact on quality of hydrology inputs to NNM fluvial mapping.  | L              | L                  | Assess and plan any further necessary mitigation during blueprinting, building from the knowledge and approach used in the national flood risk assessment Wales.                                                                                                                                                                    |                                                | EA                    |
| 32 | Fragility requirement and necessary development for all assets             | Fragility curves do not currently exist for some flood defence asset types.                                                                                                                   | Potential impact on coverage for asset management uses and for LTIS use. | M              | M                  | Discussions undertaken prior to award, including development of simple 'binary' fragility curves for some asset types. Further early work recommended and now included in Blueprinting. Ensure the NaFRA2 system can easily be updated with new fragility curves as they become available without requiring new NNM modelling.      |                                                | EA                    |
| ID | Risk Name                                                                  | Description of risk                                                                                                                                                                           | Impact (description)                                                     | Pre-mitigation |                    | Mitigation                                                                                                                                                                                                                                                                                                                          | Risk allowance - Supplier owned risks only (£) | Owner                 |
|    |                                                                            |                                                                                                                                                                                               |                                                                          | Impact (H/M/L) | Likelihood (H/M/L) |                                                                                                                                                                                                                                                                                                                                     |                                                |                       |



|    |                                                                                |                                                                                                                                           |                                                    |   |   |                                                                                         |  |                       |
|----|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---|---|-----------------------------------------------------------------------------------------|--|-----------------------|
| 33 | Risks around joint probability, coastal modelling – overtopping and coastal 2D | SoN data does not cover all required locations/scenarios and approach proposed by Supplier is not sufficient. Also see Risk ID 29 and 30. | Potential financial, quality and programme impacts | M | M | See Risk IDs 29 and 30. Review further during blueprinting and/or potential early work. |  | Joint EA and Supplier |
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## ANNEX 5: ALLOWABLE ASSUMPTIONS

| Col 1 | Col 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Col 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Col 4                                                                                        | Col 5                               | Col 6                    | Col 7                                                                                        | Col 8                                                          | Col 9                                                                                                                                | Col 10                                                                   | Col 11                                                  |
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| Ref   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Impact if the Allowable Assumption is not accurate                                                                                                                                                                                                                                                                                                                                                                                                                                | Cost Impact                                                                                  | Basis of Calculation of Cost Impact | Applicable Profit Margin | Charge Impact                                                                                | Verification Method                                            | Trigger for Invocation                                                                                                               | Period of Impact                                                         | Expiry Date                                             |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <i>(maximum, minimum and most likely values if the Allowable Assumption is not accurate)</i> |                                     |                          | <i>(maximum, minimum and most likely values if the Allowable Assumption is not accurate)</i> | <i>(how the Supplier will verify the Allowable Assumption)</i> | <i>(what will determine that the Implementation Plan and/or Financial Model may require adjustment for the Allowable Assumption)</i> | <i>(period that the updated assumption will have an impact)</i>          | <i>(Date at which the Allowable Assumption expires)</i> |
| 1     | <b>Availability of Data</b><br><br>The availability, coverage, quality, format, completeness and currency of Environment Agency and thirdparty data and metadata (including local models) cannot be fully known at the time of tender. Full discovery could impact on many aspects of delivery, including NNM and NaFRA2 core system development and deployment. Details on assumptions are provided in the Supplier response to the Specification (Schedule 4.1) and in the risk register (Schedule 7.1 Annex 4) | The Supplier acknowledgment under Clause 2.1(a) is on the basis that the information and documents made available to the Supplier by the Authority at the time of tender are limited and incomplete and such information and documents will be made available over the course of the Agreement at times specified in Schedule 4.1.<br><br>If the information and documents are not made available at these times then it may require changes in approach, programme and/or costs. | To be agreed by Authority and Supplier if allowable assumption is not accurate               |                                     | N/A                      | To be agreed by Authority and Supplier if allowable assumption is not accurate               |                                                                |                                                                                                                                      | At 'Authority to Proceed' or earlier if agreed by Authority and Supplier |                                                         |

|   |                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                       |                                                                                |     |                                                                                |                                                                          |
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| 2 | <b>Accuracy of Due Diligence Information</b><br><br>The Supplier's ability to satisfy themselves as to the accuracy and adequacy of Authority Data has not been afforded during the tender process and pre-contract signing. | The Supplier acknowledgment under Clause 2.1 (b) and (c) is on the basis that the information and documents made available to the Supplier by the Authority at the time of tender are limited and incomplete and as such the Supplier has not been possible to fully satisfy itself as the accuracy and adequacy of the Due Diligence | To be agreed by Authority and Supplier if allowable assumption is not accurate | N/A | To be agreed by Authority and Supplier if allowable assumption is not accurate | At 'Authority to Proceed' or earlier if agreed by Authority and Supplier |
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| Col 1 | Col 2       | Col 3                                                                                                                                                                                                                                                                                                                                                                                    | Col 4       | Col 5                               | Col 6                    | Col 7         | Col 8               | Col 9                  | Col 10           | Col 11      |
|-------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------------|--------------------------|---------------|---------------------|------------------------|------------------|-------------|
| Ref   | Description | Impact if the Allowable Assumption is not accurate                                                                                                                                                                                                                                                                                                                                       | Cost Impact | Basis of Calculation of Cost Impact | Applicable Profit Margin | Charge Impact | Verification Method | Trigger for Invocation | Period of Impact | Expiry Date |
|       |             | Information. Where possible issues with accuracy and adequacy which have been identified are listed in Schedule 4.1 and Schedule 7.1 Annex 4. Further assessment of the information and documents will be undertaken over the course of the Agreement and further issues with the accuracy and adequacy may be identified which may require changes in approach, programme and/or costs. |             |                                     |                          |               |                     |                        |                  |             |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                    |                                                                                |                                     |                          |                                                                                |                     |                        |                                                                          |             |
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| 3     | <b>Methods</b><br><br>NaFRA2 needs to implement methods for calculation of interim and final outputs. Details of some of these methods are not available to the Supplier, such as the mental health approach developed by the Environment Agency. Assumptions have had to be made that these methods are practical for implementation in NaFRA2. Details on assumptions are provided in the Supplier response to the Specification (Schedule 4.1) and in the risk register (Schedule 7.1 Annex 4). | The allowable assumption is that the methods that need to be developed and implemented are not fully known at the time of tender.<br><br>Development and implementation of the methods may require change in the approach, programme and/or costs. | To be agreed by Authority and Supplier if allowable assumption is not accurate |                                     | N/A                      | To be agreed by Authority and Supplier if allowable assumption is not accurate |                     |                        | At 'Authority to Proceed' or earlier if agreed by Authority and Supplier |             |
| 4     | <b>Interaction with other systems</b><br><br>NaFRA2 needs to interact with other systems (either directly through a programme interface or via more 'manual' data transfer processes such as export and import). Details of these other systems are not fully available to the Supplier at the time of tender. Details on assumptions                                                                                                                                                              | The allowable assumption is that the methods for interaction with other systems are not fully known at the time of tender.<br><br>Development and implementation of the methods may require change in the approach, programme and/or costs.        | To be agreed by Authority and Supplier if allowable assumption is not accurate |                                     | N/A                      | To be agreed by Authority and Supplier if allowable assumption is not accurate |                     |                        | At 'Authority to Proceed' or earlier if agreed by Authority and Supplier |             |
| Col 1 | Col 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Col 3                                                                                                                                                                                                                                              | Col 4                                                                          | Col 5                               | Col 6                    | Col 7                                                                          | Col 8               | Col 9                  | Col 10                                                                   | Col 11      |
| Ref   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Impact if the Allowable Assumption is not accurate                                                                                                                                                                                                 | Cost Impact                                                                    | Basis of Calculation of Cost Impact | Applicable Profit Margin | Charge Impact                                                                  | Verification Method | Trigger for Invocation | Period of Impact                                                         | Expiry Date |
|       | are provided in the Supplier response to the Specification (Schedule 4.1) and in the risk register (Schedule 7.1 Annex 4).                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                    |                                                                                |                                     |                          |                                                                                |                     |                        |                                                                          |             |

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| 5 | <b>Cloud resources</b><br><br>Capabilities and ease of use by the Supplier of the Defra AWS system is not known at the time of tender. The Supplier has assumed that capabilities and ease of use will be the same as if the Supplier was directly contracting with AWS, however it could be significantly less efficient than this assumption. | The allowable assumption is that the capabilities and ease of use by the Supplier of the Defra AWS services is the same as if directly contracted.<br><br>If it is significantly less efficient then this may trigger a change in approach, programme and/or costs. | To be agreed by Authority and Supplier if allowable assumption is not accurate | N/A | To be agreed by Authority and Supplier if allowable assumption is not accurate | At 'Authority to Proceed' or earlier if agreed by Authority and Supplier |
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**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 7.2**

**PAYMENTS ON TERMINATION**

## Payments on Termination

### 1 DEFINITIONS

1.1 In this Schedule, the following definitions shall apply:

- “Applicable Supplier Personnel”** any Supplier Personnel who:
- (i) at the Termination Date:
    - a) are employees of the Supplier;
    - b) are Dedicated Supplier Personnel;
    - c) have not transferred (and are not in scope to transfer at a later date) to the Authority or the Replacement Supplier by virtue of the Employment Regulations; and
  - (ii) are dismissed or given notice of dismissal by the Supplier within:
    - d) forty (40) Working Days of the Termination Date; or
    - e) such longer period required by Law, their employment contract (as at the Termination Date) or an applicable collective agreement; and
  - (iii) have not resigned or given notice of resignation prior to the date of their dismissal by the Supplier; and
  - (iv) the Supplier can demonstrate to the satisfaction of the Authority:
    - a) are surplus to the Supplier's requirements after the Termination Date notwithstanding its obligation to provide services to its other customers; b) are genuinely being dismissed for reasons of redundancy; and
    - c) have been selected for redundancy by the Supplier on objective grounds other than the fact that the Supplier is entitled to reimbursement under this provision in respect of such employees;



**“Assets”** all tangible property used by the Supplier to provide the Services in accordance with this Agreement but excluding Authority Assets and Supplier Software and Supplier intellectual

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Breakage Costs Payment”</b>       | property rights;<br>an amount equal to the Redundancy Costs and the Contract Breakage Costs as at the Termination Date as determined in accordance with Paragraph 3;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>“Compensation Payment”</b>         | the payment calculated in accordance with Paragraph 6;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>“Contract Breakage Costs”</b>      | the amounts payable by the Supplier to its Key Sub-contractors or other third parties (as applicable) for terminating all relevant Key Sub-contracts or Third Party Contracts as a direct result of the early termination of this Agreement;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>“Dedicated Supplier Personnel”</b> | all Supplier Personnel then assigned to the Services or any part of the Services. If the Supplier is unsure as to whether Supplier Personnel are or should be regarded as so assigned, it shall consult with the Authority whose view shall be determinative provided that the employee has been materially involved in the provision of the Services or any part of the Services;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>“Profit Already Paid”</b>          | the Supplier Profit paid or payable to the Supplier under this Agreement for the period from the Effective Date up to (and including) the Termination Date; the total sum of any of the following sums paid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>“Redundancy Costs”</b>             | to Applicable Supplier Personnel, each amount apportioned between the Supplier and the Authority based on the time spent by such employee on the Services as a proportion of the total Service duration: <ul style="list-style-type: none"> <li>(a) any statutory redundancy payment; and</li> <li>(b) in respect of an employee who was a Transferring Former Supplier Employee or a Transferring Authority Employee, any contractual redundancy payment (or where such a contractual benefit on redundancy is a benefit payable from a pension scheme, the increase in cost to the Supplier as a net present value compared to the benefit payable on termination of employment without redundancy), provided that such employee was entitled to such contractual redundancy payment immediately prior to his or her transfer to the Supplier under the Employment Regulations;</li> </ul> |

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Request for Estimate”</b> | a written request sent by the Authority to the Supplier, requiring that the Supplier provide it with an accurate estimate of the Termination Payment and Compensation Payment that would be payable if the Authority exercised its right under Clause 33.1(a) ( <i>Termination by the Authority</i> ) to terminate this Agreement for convenience on a specified Termination Date;                                                                           |
| <b>“Shortfall Period”</b>     | has the meaning given in Paragraph 6.2;                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>“Termination Estimate”</b> | has the meaning given in Paragraph 11.2;                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>“Third Party Contract”</b> | a contract with a third party entered into by the Supplier exclusively for the purpose of delivering the Services, as listed in Schedule 4.4 ( <i>Third Party Contracts</i> );                                                                                                                                                                                                                                                                               |
| <b>“Total Costs Incurred”</b> | the Costs incurred by the Supplier up to the Termination Date in the performance of this Agreement and detailed in the Financial Model (but excluding Contract Breakage Costs, Redundancy Costs and any costs the Supplier would not otherwise be able to recover through the Charges) less any Deductions up to (and including) the Termination Date;                                                                                                       |
| <b>“Unrecovered Costs”</b>    | the Costs incurred by the Supplier in the performance of this Agreement (as summarised in the Financial Model) to the extent that the same remain at the Termination Date to be recovered through Charges that but for the termination of this Agreement would have been payable by the Authority after the Termination Date in accordance with Schedule 7.1 ( <i>Charges and Invoicing</i> ) as such Costs and Charges are forecast in the Financial Model; |
| <b>“Unrecovered Payment”</b>  | an amount equal to the lower of: <ul style="list-style-type: none"> <li>(a) the sum of the Unrecovered Costs and the Unrecovered Profit; and</li> <li>(b) the amount specified in Paragraph 4; and</li> </ul>                                                                                                                                                                                                                                                |
| <b>“Unrecovered Profit”</b>   | (Total Costs Incurred x Anticipated Contract Life Profit Margin) - Profit Already Paid + Milestone Retentions remaining unpaid at the Termination Date.                                                                                                                                                                                                                                                                                                      |

## 2 TERMINATION PAYMENT

The Termination Payment payable pursuant to Clause 34.3 (*Payments by the Authority*) shall be an amount equal to the aggregate of the Breakage Costs Payment and the Unrecovered Payment.

### **3 BREAKAGE COSTS PAYMENT**

3.1 The Supplier may recover through the Breakage Costs Payment only those costs incurred by the Supplier directly as a result of the termination of this Agreement which:

- (a) would not have been incurred had this Agreement continued until expiry of the Initial Term, or in the event that the Term has been extended, the expiry of the Extension Period;
- (b) are unavoidable, proven, reasonable, and not capable of recovery;
- (c) are incurred under arrangements or agreements that are directly associated with this Agreement;
- (d) are not Contract Breakage Costs relating to contracts or Sub-contracts with Affiliates of the Supplier; and
- (e) relate directly to the termination of the Services.

#### **Limitation on Breakage Costs Payment**

3.2 The Breakage Costs Payment shall not exceed the lower of:

- (a) the relevant limit set out in Annex 1; and
- (b) one hundred and twenty percent (120%) of the estimate for the Breakage Costs Payment set out in any relevant Termination Estimate.

#### **Redundancy Costs**

3.3 The Authority shall not be liable under this Schedule for any costs associated with Supplier Personnel (whether relating to redundancy, redeployment or otherwise) other than the Redundancy Costs.

3.4 Where the Supplier can demonstrate that a member of Supplier Personnel will be made redundant following termination of this Agreement, but redeployment of such person is possible and would offer value for money to the Authority when compared with redundancy, then the Authority shall pay the Supplier the actual direct costs incurred by the Supplier or its Sub-contractor arising out of the redeployment of such person (including retraining and relocation costs) subject to a maximum amount of £30,000 per relevant member of the Supplier Personnel.

#### **Contract Breakage Costs**

3.5 The Supplier shall be entitled to Contract Breakage Costs only in respect of Third Party Contracts or Sub-contracts which:

- (a) are not assigned or novated to a Replacement Supplier at the request of the Authority in accordance with Schedule 8.5 (*Exit Management*); and

- (b) the Supplier can demonstrate:
  - (i) are surplus to the Supplier's requirements after the Termination Date, whether in relation to use internally within its business or in providing services to any of its other customers; and
  - (ii) have been entered into by it in the ordinary course of business.

3.6 The Supplier shall seek to negotiate termination of any Third Party Contracts or Subcontracts with the relevant third party or Sub-contractor (as the case may be) using all Good Industry Practice to minimise the cancellation or termination charges.

3.7 Except with the prior written agreement of the Authority, the Authority shall not be liable for any costs (including cancellation or termination charges) that the Supplier is obliged to pay in respect of:

- (a) the termination of any contractual arrangements for occupation of, support of and/or services provided for Supplier premises which may arise as a consequence of the termination of this Agreement; and/or
- (b) Assets not yet installed at the Termination Date.

#### **4 UNRECOVERED PAYMENT**

The Unrecovered Payment shall not exceed the lowest of:

- (a) the relevant limit set out in Annex 1;
- (b) one hundred and twenty percent (120%) of the estimate for the Unrecovered Payment set out in any relevant Termination Estimate; and
- (c) the Charges that but for the termination of this Agreement would have been payable by the Authority after the Termination Date in accordance with Schedule 7.1 (*Charges and Invoicing*) as forecast in the Financial Model.

#### **5 MITIGATION OF CONTRACT BREAKAGE COSTS, REDUNDANCY COSTS AND UNRECOVERED COSTS**

5.1 The Supplier agrees to use Good Industry Practice minimise and mitigate Contract Breakage Costs, Redundancy Costs and Unrecovered Costs by:

- (a) the appropriation of Assets, employees and resources for other purposes;
- (b) at the Authority's request, assigning any Third Party Contracts and Subcontracts to the Authority or a third party acting on behalf of the Authority; and

- (c) in relation Third Party Contracts and Sub-contract that are not to be assigned to the Authority or to another third party, terminating those contracts at the earliest possible date without breach or where contractually permitted.

5.2 If Assets, employees and resources can be used by the Supplier for other purposes, then there shall be an equitable reduction in the Contract Breakage Costs, Redundancy Costs and Unrecovered Costs payable by the Authority or a third party to the Supplier. In the event of any Dispute arising over whether the Supplier can use any Assets, employees and/or resources for other purposes and/or over the amount of the relevant equitable reduction, the Dispute shall be referred to an Expert for determination in accordance with the procedure detailed in Schedule 8.3 (*Dispute Resolution Procedure*).

## 6 COMPENSATION PAYMENT

6.1 The Compensation Payment payable pursuant to Clause 34 (*Payments by the Authority*) shall be an amount equal to the total forecast Charges over the Shortfall Period (as stated in the Financial Model) multiplied by the Anticipated Contract Life Profit Margin.

6.2 For the purposes of Paragraph 6.1, the “**Shortfall Period**” means:

- (a) where the Authority terminates this Agreement pursuant to Clause 33.1(a) (*Termination by the Authority*), a number of days equal to the number of days by which the notice given (or deemed given pursuant to Paragraph 2.1(a) of Part D of Schedule 7.1 (*Charges and Invoicing*)) falls short of 365 days; or
- (b) where the Supplier terminates this Agreement pursuant to Clause 33.3(a) (*Termination by the Supplier*), a number of days equal to the number of days by which the period from (and including) the date of the nonpayment by the Authority to (and including) the Termination Date falls short of 365 days, but in each case subject to the limit set out in Paragraph 6.3.

6.3 The Compensation Payment shall be no greater than the lower of:

- (a) the relevant limit set out in Annex 1; and
- (b) one hundred and twenty percent (120%) of the estimate for the Compensation Payment set out in the relevant Termination Estimate.

## 7 FULL AND FINAL SETTLEMENT

Any Termination Payment and/or Compensation Payment paid under this Schedule shall be in full and final settlement of any claim, demand and/or proceedings of the Supplier in relation to any termination by the Authority pursuant to Clause 33.1(a) (*Termination by the Authority*) or termination by the Supplier pursuant to Clause 33.3(a) (*Termination by the Supplier*) (as applicable), and the Supplier shall be

excluded from all other rights and remedies it would otherwise have been entitled to in respect of any such termination.

## **8 INVOICING FOR THE PAYMENTS ON TERMINATION**

All sums due under this Schedule shall be payable by the Authority to the Supplier in accordance with the payment terms set out in Schedule 7.1 (*Charges and Invoicing*).

### **9 SET OFF**

The Authority shall be entitled to set off any outstanding liabilities due and owing from the Supplier against any amounts that are payable by it pursuant to this Schedule.

## **10 NO DOUBLE RECOVERY**

10.1 If any amount payable under this Schedule (in whole or in part) relates to or arises from any Transferring Assets then, to the extent that the Authority makes any payments pursuant to Schedule 8.5 (*Exit Management*) in respect of such Transferring Assets, such payments shall be deducted from the amount payable pursuant to this Schedule.

10.2 The value of the Termination Payment and/or the Compensation Payment shall be reduced or extinguished to the extent that the Supplier has already received the Charges or the financial benefit of any other rights or remedy given under this Agreement so that there is no double counting in calculating the relevant payment.

10.3 Any payments that are due in respect of the Transferring Assets shall be calculated in accordance with the provisions of the Exit Plan.

## **11 ESTIMATE OF TERMINATION PAYMENT AND COMPENSATION PAYMENT**

11.1 The Authority may issue a Request for Estimate at any time during the Term provided that no more than two (2) Requests for Estimate may be issued in any six (6) month period.

11.2 The Supplier shall within twenty (20) Working Days of receiving the Request for Estimate (or such other timescale agreed between the Parties), provide an accurate written estimate of the Termination Payment and the Compensation Payment that would be payable by the Authority based on a postulated Termination Date specified in the Request for Estimate (such estimate being the “**Termination Estimate**”). The Termination Estimate shall:

- (a) be based on the relevant amounts set out in the Financial Model;
- (b) include:
  - (i) details of the mechanism by which the Termination Payment is calculated;

- (ii) full particulars of the estimated Contract Breakage Costs in respect of each Sub-contract or Third Party Contract and appropriate supporting documentation; and
    - (iii) such information as the Authority may reasonably require; and
  - (c) state the period for which that Termination Estimate remains valid, which shall be not less than twenty (20) Working Days.
- 11.3 The Supplier acknowledges that issue of a Request for Estimate shall not be construed in any way as to represent an intention by the Authority to terminate this Agreement.
- 11.4 If the Authority issues a Termination Notice to the Supplier within the stated period for which a Termination Estimate remains valid, the Supplier shall use the same mechanism to calculate the Termination Payment as was detailed in the Termination Estimate unless otherwise agreed in writing between the Supplier and the Authority.



### ANNEX 1: MAXIMUM PAYMENTS ON TERMINATION

The table below sets out, by Contract Year, the maximum amount of the Unrecovered Payment, Breakage Costs Payment and Compensation Payment that the Authority shall be liable to pay to the Supplier pursuant to this Agreement:

| Termination Date                    | Maximum Unrecovered Payment                                                      | Maximum Breakage Costs Payment                                                   | Maximum Compensation Payment                                                     |
|-------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Anytime in the first Contract Year  | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b |
| Anytime in the second Contract Year | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b |
| Anytime in the third Contract Year  | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b |
| Anytime in the fourth Contract Year | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b |

|                                    |                                                                                  |                                                                                  |                                                                                  |
|------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Anytime in the fifth Contract Year | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b | Cost to completion of next three submilestones in Schedule 7.1 Annex 2, Table 1b |
|------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|

**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 7.3**

**BENCHMARKING**

## Benchmarking

### 1 DEFINITIONS

In this Schedule, the following definitions shall apply:

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Benchmarked Service”</b>      | a Service that the Authority elects to include in a Benchmark Review under Paragraph 2.3;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>“Benchmarker”</b>              | the independent third party appointed under Paragraph 3.1;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>“Benchmark Report”</b>         | the report produced by the Benchmarker following the Benchmark Review as further described in Paragraph 5;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>“Benchmark Review”</b>         | a review of one or more of the Services carried out in accordance with Paragraph 4 to determine whether those Services represent Good Value;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>“Comparable Service”</b>       | in relation to a Benchmark Service, a service that is identical or materially similar to the Benchmark Service (including in terms of scope, specification, volume and quality of performance);                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>“Comparison Group”</b>         | in relation to a Comparable Service, a sample group of organisations providing the Comparable Service identified by the Benchmarker under Paragraph 4.8 which consists of organisations which are either of similar size to the Supplier or which are similarly structured in terms of their business and their service offering so as to be (in the Benchmarkers professional opinion) fair comparators with the Supplier or which, in the professional opinion of the Benchmarker, are best practice organisations and, where there are a reasonable number of such organisations, referencing only those organisations that are carrying on at least a significant part of their business within the United Kingdom; |
| <b>“Equivalent Services Data”</b> | in relation to a Comparable Service, data derived from an analysis of the Comparable Service provided by the Comparison Group as adjusted in accordance with Paragraphs 4.8(a) and 4.9 provided that the Benchmarker shall not use any such data that relates to a period which ended more than 36 months prior to the date of the appointment of the Benchmarker;                                                                                                                                                                                                                                                                                                                                                      |

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Good Value”</b>     | in relation to a Benchmarked Service, that: <ul style="list-style-type: none"> <li>(a) having taken into account the Performance Indicators and Target Service Levels, the value for money of the Charges attributable to that Benchmarked Service is at least as good as the value for money of the Upper Quartile; and</li> <li>(b) any Performance Indicators and Target Service Levels applicable to that Benchmarked Service are, having taken into account the Charges, equal to or better than the median service levels for the Comparable Service using Equivalent Services Data; and</li> </ul> |
| <b>“Upper Quartile”</b> | the top 25% of instances of provision of a Comparable Service by members of the Comparison Group ranked by best value for money to the recipients of that Comparable Service.                                                                                                                                                                                                                                                                                                                                                                                                                             |

## 2 FREQUENCY, PURPOSE AND SCOPE OF BENCHMARK REVIEW

- 2.1 The Authority may, by written notice to the Supplier, require a Benchmark Review of any or all of the Services in order to establish whether a Benchmarked Service is, and/or the Benchmarked Services as a whole are, Good Value.
- 2.2 The Authority shall not be entitled to carry out a Benchmark Review of any Services during the twelve (12) month period from the Operational Service Commencement Date for those Services, nor at intervals of less than twelve (12) months after any previous Benchmark Review relating to the same Services.
- 2.3 The Services that are to be the Benchmarked Services shall be identified by the Authority in the notice given under Paragraph 2.1.

## 3 APPOINTMENT OF BENCHMARKER

- 3.1 The Authority shall appoint as the Benchmarker to carry out the Benchmark Review either an organisation on the list of organisations set out in Annex 1 or such other organisation as may agreed in writing between the Parties.
- 3.2 The Authority shall, at the written request of the Supplier, require the Benchmarker to enter into a confidentiality agreement with the Supplier in, or substantially in, the form set out in Annex 2.
- 3.3 The costs and expenses of the Benchmarker and the Benchmark Review shall be borne by The Authority provided that each Party shall bear its own internal costs of the Benchmark Review. The Benchmarker shall not be compensated on a contingency fee or incentive basis.

3.4 The Authority shall be entitled to pay the Benchmarker's costs and expenses in full.

#### **4 BENCHMARK REVIEW**

4.1 The Authority shall require the Benchmarker to produce, and to send to each Party for approval, a draft plan for the Benchmark Review within ten (10) Working Days after the date of the appointment of the Benchmarker, or such longer period as the Benchmarker shall reasonably request in all the circumstances. The plan must include:

- (a) a proposed timetable for the Benchmark Review;
- (b) a description of the information that the Benchmarker requires each Party to provide;
- (c) a description of the benchmarking methodology to be used;
- (d) a description that clearly illustrates that the benchmarking methodology to be used is capable of fulfilling the benchmarking objectives under Paragraph 2.1;
- (e) an estimate of the resources required from each Party to underpin the delivery of the plan;
- (f) a description of how the Benchmarker will scope and identify the Comparison Group;
- (g) details of any entities which the Benchmarker proposes to include within the Comparison Group; and
- (h) if in the Benchmarker's professional opinion there are no Comparable Services or the number of entities carrying out Comparable Services is insufficient to create a Comparison Group, a detailed approach for meeting the relevant benchmarking objective(s) under Paragraph 2.1 using a proxy for the Comparison Services and/or Comparison Group as applicable.

4.2 The Parties acknowledge that the selection and or use of proxies for the Comparison Group (both in terms of number and identity of entities) and Comparable Services shall be a matter for the Benchmarker's professional judgment.

4.3 Each Party shall give notice in writing to the Benchmarker and to the other Party within ten (10) Working Days after receiving the draft plan either approving the draft plan or suggesting amendments to that plan which must be reasonable. Where a Party suggests amendments to the draft plan pursuant to this Paragraph 4.3, the Benchmarker shall, if it believes the amendments are reasonable, produce an amended draft plan. Paragraph 4.1 and this Paragraph 4.3 shall apply to any amended draft plan.

4.4 Failure by a Party to give notice under Paragraph 4.3 shall be treated as approval of the draft plan by that Party. If the Parties fail to approve the draft plan within thirty

(30) Working Days of its first being sent to them pursuant to Paragraph 4.1 then the Benchmarker shall prescribe the plan.

- 4.5 Once the plan is approved by both Parties or prescribed by the Benchmarker, the Benchmarker shall carry out the Benchmark Review in accordance with the plan. Each Party shall procure that all the information described in the plan, together with any additional information reasonably required by the Benchmarker is provided to the Benchmarker without undue delay. If the Supplier fails to provide any information requested from it by the Benchmarker and described in the plan, such failure shall constitute a material Default for the purposes of Clause 27.1(c) (*Rectification Plan Process*).
- 4.6 Each Party shall co-operate fully with the Benchmarker, including by providing access to records, technical documentation, premises, equipment, systems and personnel at times reasonably requested by the Benchmarker, provided that the Benchmarker shall be instructed to minimise any disruption to the Services.
- 4.7 Either Party may provide additional material to the Benchmarker to assist the Benchmarker in conducting the Benchmark Review.
- 4.8 Once it has received the information it requires, the Benchmarker shall:
- (a) finalise the sample of entities constituting the Comparison Group and collect data relating to Comparable Services. The final selection of the Comparison Group (both in terms of number and identity of entities) and of the Comparable Services shall be a matter for the Benchmarker's professional judgment;
  - (b) derive the Equivalent Services Data by applying the adjustment factors listed in Paragraph 4.9 and from an analysis of the Comparable Services;
  - (c) derive the relative value for money of the charges payable for the Comparable Services using the Equivalent Services Data and from that derive the Upper Quartile;
  - (d) derive the median service levels relating to the Comparable Services using the Equivalent Services Data;
  - (e) compare the value for money of the Charges attributable to the Benchmarked Services (having regard in particular to the applicable Performance Indicators and Target Service Levels) to the value for money of the Upper Quartile;
  - (f) compare the Performance Indicators and Target Service Levels attributable to the Benchmarked Services (having regard to the Charges and Service Credits) with the median service levels using the Equivalent Services Data; and
  - (g) determine whether or not each Benchmarked Service is and/or the Benchmarked Services as a whole are, Good Value.

4.9 The Benchmarker shall have regard to the following matters when performing a comparative assessment of a Benchmarked Service and a Comparable Service in order to derive Equivalent Services Data:

- (a) the contractual and business environment under which the Services are being provided (including the scope, scale, complexity and geographical spread of the Services);
- (b) any front-end investment and development costs of the Supplier;
- (c) the Supplier's risk profile including the financial, performance or liability risks associated with the provision of the Services as a whole;
- (d) the extent of the Supplier's management and contract governance responsibilities;
- (e) any other reasonable factors demonstrated by the Supplier, which, if not taken into consideration, could unfairly cause the Supplier's pricing to appear non-competitive (such as erroneous costing, non-sustainable behaviour including excessive consumption of energy or over-aggressive pricing).

## **5 BENCHMARK REPORT**

5.1 The Benchmarker shall be required to prepare a Benchmark Report and deliver it simultaneously to both Parties, at the time specified in the plan approved under Paragraph 4, setting out its findings. The Benchmark Report shall:

- (a) include a finding as to whether or not each Benchmarked Service is and/or whether the Benchmarked Services as a whole are, Good Value;
- (b) include other findings (if any) regarding the quality and competitiveness or otherwise of those Services;
- (c) if any Benchmarked Service is not Good Value, or the Benchmarked Services as a whole are not Good Value, specify the changes that would be required to the Charges, Performance Indicators and/or Target Performance Levels, that would be required to make that Benchmarked Service or those Benchmarked Services as a whole Good Value; and
- (d) illustrate the method used for any normalisation of the Equivalent Services Data.

5.2 The Benchmarker shall act as an expert and not as an arbitrator.

5.3 If the Benchmark Report states that any Benchmarked Service is not Good Value or that the Benchmarked Services as a whole are not Good Value, then the Supplier shall (subject to Paragraphs 5.5 and 5.6) implement the changes set out in the Benchmark Report as soon as reasonably practicable within timescales agreed with the Authority but in any event within no more than three (3) months. Any associated



changes to the Charges shall take effect only from the same date and shall not be retrospective.

- 5.4 The Supplier acknowledges and agrees that Benchmark Reviews shall not result in any increase to the Charges, disapplication of the Performance Indicators or any reduction in the Target Performance Levels.
- 5.5 The Supplier shall be entitled to reject any Benchmark Report if the Supplier reasonably considers that the Benchmarker has not followed the procedure for the related Benchmark Review as set out in this Schedule in any material respect.
- 5.6 The Supplier shall not be obliged to implement any Benchmark Report to the extent this would cause the Supplier to provide the Services at a loss (as determined, by reference to the Financial Model), or to the extent the Supplier cannot technically implement the recommended changes.
- 5.7 In the event of any Dispute arising over whether the Benchmarker has followed the procedure for the related Benchmark Review under Paragraph 5.5 and/or any matter referred to in Paragraph 5.6, the Dispute shall be referred to Expert Determination. For the avoidance of doubt in the event of a Dispute between the Parties, the Authority shall continue to pay the Charges to the Supplier in accordance with the terms of this Agreement and the Performance Indicators and Target Performance Levels shall remain unchanged pending the conclusion of the Expert Determination.
- 5.8 On conclusion of the Expert Determination:
  - (a) if the Expert determines that all or any part of the Benchmark Report recommendations regarding any reduction in the Charges shall be implemented by the Supplier, the Supplier shall immediately repay to the Authority the difference between the Charges paid by the Authority up to and including the date of the Expert's determination and the date upon which the recommended reduction in Charges should have originally taken effect pursuant to Paragraph 5.3 together with interest thereon at the applicable rate under the Late Payment Of Commercial Debts (Interest) Act 1998; and
  - (b) if the Expert determines that all or any part of the Benchmark Report recommendations regarding any changes to the Performance Indicators and/or Target Performance Levels shall be implemented by the Supplier:
    - (i) the Supplier shall immediately implement the relevant changes;
    - (ii) the Supplier shall immediately pay an amount equal to any Service Credits which would have accrued up to and including the date of the Expert's determination if the relevant changes had taken effect on the date determined pursuant to Paragraph 5.3 together with interest thereon at the applicable rate under the Late Payment Of Commercial Debts (Interest) Act 1998; and

- (iii) the relevant changes shall thereafter be subject to the Change Control Procedure for the purposes of formalising and documenting the relevant change or amendment for the purposes of this Agreement.

5.9 Any failure by the Supplier to implement the changes as set out in the Benchmark Report in accordance with the relevant timescales determined in accordance with Paragraph 5.3 (unless the provisions of Paragraph 5.6 and/or Paragraph 5.7 apply) or in accordance with Paragraph 5.8 shall, without prejudice to any other rights or remedies of the Authority, constitute a Supplier Termination Event.

## **ANNEX 1: APPROVED BENCHMARKERS**

## ANNEX 2: CONFIDENTIALITY AGREEMENT

### CONFIDENTIALITY AGREEMENT THIS

AGREEMENT is made on [date]

BETWEEN:

- (1) [insert name] of [insert address] (the “Supplier”); and
- (2) [*insert name*] of [*insert address*] (the “Benchmarker” and together with the Supplier, the “Parties”).

WHEREAS:

- (A) [insert name of Authority] (the “Authority”) and the Supplier are party to a contract dated [insert date] (the “Contract”) for the provision by the Supplier of [insert brief description of services] to the Authority.
- (B) The Benchmarker is to receive Confidential Information from the Supplier for the purpose of carrying out a benchmarking review for the Authority of one or more of such services pursuant to the terms of the Contract (the “Permitted Purpose”).

IT IS AGREED as follows:

#### 1 Interpretation

- 1.1 In this Agreement, unless the context otherwise requires:

“Confidential  
Information” means:

a) Information, including all personal data within the meaning of the Data Protection Act 2018, and however it is conveyed, provided by the Supplier to the Benchmarker pursuant to this Agreement that relates to:

(i) the Supplier; or

(ii) the operations, business, affairs, developments, intellectual property rights, trade secrets, know-how and/or personnel of the Supplier;

b) other Information provided by the Supplier pursuant to this Agreement to the Benchmarker that is clearly designated as being confidential or equivalent or that ought reasonably to be considered to be

confidential which comes (or has come) to the Benchmarkers' attention or into the Benchmarkers' possession in connection with the Permitted Purpose;

c) discussions, negotiations, and correspondence between the Supplier or any of its directors, officers, employees, consultants or professional advisers and the Benchmarkers or any of its directors, officers, employees, consultants and professional advisers in connection with the Permitted Purpose and all matters arising therefrom; and

d) Information derived from any of the above,

but not including any Information that:

e) was in the possession of the Benchmarkers without obligation of confidentiality prior to its disclosure by the Supplier;

f) the Benchmarkers obtained on a non-confidential basis from a third party who is not, to the Benchmarkers' knowledge or belief, bound by a confidentiality agreement with the Supplier or otherwise prohibited from disclosing the information to the Benchmarkers;

g) was already generally available and in the public domain at the time of disclosure otherwise than by a breach of this Agreement or breach of a duty of confidentiality; or

h) was independently developed without access to the Confidential Information;

**"Information"**

means all information of whatever nature, however conveyed and in whatever form, including in writing, orally, by demonstration, electronically and in a tangible, visual or machine-readable medium (including CD-ROM, magnetic and digital form); and

**"Permitted Purpose"**

has the meaning given to that expression in recital (B) to this Agreement.

**1.2 In this Agreement:**

(a) a reference to any gender includes a reference to other genders;

- (b) the singular includes the plural and vice versa;
- (c) the words “include” and cognate expressions shall be construed as if they were immediately followed by the words “without limitation”;
- (d) references to any statutory provision include a reference to that provision as modified, replaced, amended and/or re-enacted from time to time (before or after the date of this Agreement) and any prior or subsequent subordinate legislation made under it;
- (e) headings are included for ease of reference only and shall not affect the interpretation or construction of this Agreement; and
- (f) references to Clauses are to clauses of this Agreement.

## **2 Confidentiality Obligations**

2.1 In consideration of the Supplier providing Confidential Information to the Benchmark, the Benchmark shall:

- (a) treat all Confidential Information as secret and confidential;
- (b) have in place and maintain proper security measures and procedures to protect the confidentiality of the Confidential Information (having regard to its form and nature);
- (c) not disclose or permit the disclosure of any of the Confidential Information to any other person without obtaining the prior written consent of the Supplier or, if relevant, other owner or except as expressly set out in this Agreement;
- (d) not transfer any of the Confidential Information outside the United Kingdom;
- (e) not use or exploit any of the Confidential Information for any purpose whatsoever other than the Permitted Purpose;
- (f) immediately notify the Supplier in writing if it suspects or becomes aware of any unauthorised access, copying, use or disclosure in any form of any of the Confidential Information; and
- (g) once the Permitted Purpose has been fulfilled:
  - (i) destroy or return to the Supplier all documents and other tangible materials that contain any of the Confidential Information;
  - (ii) ensure, so far as reasonably practicable, that all Confidential Information held in electronic, digital or other machine-readable form ceases to be readily accessible (other than by the information technology staff of the Benchmark) from any computer, word processor, voicemail system or any other device; and

- (iii) make no further use of any Confidential Information.

### **3 Permitted Disclosures**

3.1 The Benchmarker may disclose Confidential Information to those of its directors, officers, employees, consultants and professional advisers who:

- (a) reasonably need to receive the Confidential Information in connection with the Permitted Purpose; and
- (b) have been informed by the Benchmarker of the confidential nature of the Confidential Information; and
- (c) have agreed to terms similar to those in this Agreement.

3.2 The Benchmarker shall be entitled to disclose Confidential Information to the Authority for the Permitted Purpose and to any Expert appointed in relation to a Dispute as referred to in paragraph 5.7 of schedule 7.3 (*Benchmarking*) to the Contract.

3.3 The Benchmarker shall be entitled to disclose Confidential Information to the extent that it is required to do so by applicable law or by order of a court or other public body that has jurisdiction over the Benchmarker.

3.4 Before making a disclosure pursuant to Clause 3.3, the Benchmarker shall, if the circumstances permit:

- (a) notify the Supplier in writing of the proposed disclosure as soon as possible (and if possible before the court or other public body orders the disclosure of the Confidential Information); and
- (b) ask the court or other public body to treat the Confidential Information as confidential.

### **4 General**

4.1 The Benchmarker acknowledges and agrees that all property, including intellectual property rights, in Confidential Information disclosed to it by the Supplier shall remain with and be vested in the Supplier.

4.2 This Agreement does not include, expressly or by implication, any representations, warranties or other obligations:

- (a) to grant the Benchmarker any licence or rights other than as may be expressly stated in this Agreement;
- (b) to require the Supplier to disclose, continue disclosing or update any Confidential Information; or

- (c) as to the accuracy, efficacy, completeness, capabilities, safety or any other qualities whatsoever of any Information or materials provided pursuant to or in anticipation of this Agreement.
- 4.3 The rights, powers and remedies provided in this Agreement are cumulative and not exclusive of any rights, powers or remedies provided by law. No failure or delay by either Party to exercise any right, power or remedy will operate as a waiver of it nor will any partial exercise preclude any further exercise of the same, or of some other right, power or remedy.
- 4.4 Without prejudice to any other rights or remedies that the Supplier may have, the Benchmarkers acknowledge and agree that damages alone may not be an adequate remedy for any breach by the Benchmarkers of any of the provisions of this Agreement. Accordingly, the Benchmarkers acknowledge that the Supplier shall be entitled to the remedies of injunction and specific performance as well as any other equitable relief for any threatened or actual breach of this Agreement and/or breach of confidence and that no proof of special damages shall be necessary for the enforcement of such remedies.
- 4.5 The maximum liability of the Benchmarkers to the Supplier for any breach of this Agreement shall be limited to ten million pounds (£10,000,000).
- 4.6 For the purposes of the Contracts (Rights of Third Parties) Act 1999 no one other than the Parties has the right to enforce the terms of this Agreement.
- 4.7 Each Party shall be responsible for all costs incurred by it or on its behalf in connection with this Agreement.
- 4.8 This Agreement may be executed in any number of counterparts and by the Parties on separate counterparts, but shall not be effective until each Party has executed at least one counterpart. Each counterpart shall constitute an original of this Agreement, but all the counterparts shall together constitute but one and the same instrument.

## 5 Notices

- 5.1 Any notice to be given under this Agreement (each a “Notice”) shall be given in writing and shall be delivered by hand and shall be deemed to have been duly given at the time of delivery provided that such Notice is sent to the relevant physical address, and expressly marked for the attention of the relevant individual, set out in Clause 5.2.
- 5.2 Any Notice:
  - (a) if to be given to the Supplier shall be sent to:

[Address]

Attention: [Contact name and/or position, e.g. “The Finance Director”]

(b) if to be given to the Benchmarkers shall be sent to:

[Name of Organisation]  
[Address]

Attention: [ ]

## 6 Governing law

6.1 This Agreement shall be governed by, and construed in accordance with, English law and any matter claim or dispute arising out of or in connection with this Agreement whether contractual or non-contractual, shall be governed by and determined in accordance with English law.

6.2 Each Party hereby irrevocably submits to the exclusive jurisdiction of the English courts in respect of any claim or dispute arising out of or in connection with this Agreement.

**IN WITNESS** of the above this Agreement has been signed by the duly authorised representatives of the Parties on the date which appears at the head of page 1. **For and on behalf of [name of Supplier]**

Signature:

\_\_\_\_\_

Date:

Name:

Position:

**For and on behalf of [name of Benchmarkers]**

Signature:

\_\_\_\_\_

Date:

Name:

Position:







**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 7.4**

**FINANCIAL DISTRESS**

## Financial Distress

### 1 DEFINITIONS

In this Schedule, the following definitions shall apply:

- "Applicable Financial Indicators"** means the financial indicators from Paragraph 5.1 of this Schedule which are to apply to the Monitored Suppliers as set out in Paragraph 5.2 of this Schedule;
- "Board"** means the Supplier's board of directors;
- "Board Confirmation"** means written confirmation from the Board in accordance with Paragraph 8 of this Schedule;
- "FDE Group"** means the Supplier;
- "Financial Indicators"** in respect of the Supplier means each of the financial indicators set out at paragraph 5.1 of this Schedule; and in respect of each Monitored Supplier, means those Applicable Financial Indicators;
- "Financial Target Thresholds"** means the target thresholds for each of the Financial Indicators set out at paragraph 5.1 of this Schedule;
- "Monitored Suppliers"** means those entities specified at paragraph 5.2 of this Schedule;

### 2 WARRANTIES AND DUTY TO NOTIFY

2.1 The Supplier warrants and represents to the Authority for the benefit of the Authority that as at the Effective Date:

- (a) the financial position or, as appropriate, the financial performance of each of the Supplier satisfies the Financial Target Thresholds.

2.2 The Supplier shall:

- (a) monitor and report on the Financial Indicators for each entity in the FDE Group against the Financial Target Thresholds at least at the frequency set out for each at Paragraph 5.1 (where specified) and in any event, on a regular basis and no less than once a year within one hundred and twenty (120) days after the Accounting Reference Date; and

- (b) promptly notify (or shall procure that its auditors promptly notify) the Authority in writing following the occurrence of a Financial Distress Event or any fact, circumstance or matter which could cause a Financial Distress Event (and in any event, ensure that such notification is made within ten (10) Working Days of the date on which the Supplier first becomes aware of the Financial Distress Event or the fact, circumstance or matter which could cause a Financial Distress Event).

2.3 Each report submitted by the Supplier pursuant to paragraph 2.3(b) shall:

- (a) be a single report with separate sections for each of the FDE Group entities;
- (b) contain a sufficient level of information to enable the Authority to verify the calculations that have been made in respect of the Financial Indicators;
- (c) include key financial and other supporting information (including any accounts data that has been relied on) as separate annexes;
- (d) be based on the audited accounts for the date or period on which the Financial Indicator is based or, where the Financial Indicator is not linked to an accounting period or an accounting reference date, on unaudited management accounts prepared in accordance with their normal timetable; and
- (e) include a history of the Financial Indicators reported by the Supplier in graph form to enable the Authority to easily analyse and assess the trends in financial performance.

#### FINANCIAL DISTRESS EVENTS

2.4 The following shall be Financial Distress Events:

- (a) an FDE Group entity issuing a profits warning to a stock exchange or making any other public announcement, in each case about a material deterioration in its financial position or prospects;
- (b) there being a public investigation into improper financial accounting and reporting, suspected fraud or any other impropriety of an FDE Group entity;
- (c) an FDE Group entity committing a material breach of covenant to its lenders;
- (d) a Key Subcontractor notifying the Authority that the Supplier has not satisfied any material sums properly due under a specified invoice and not subject to a genuine dispute;
- (e) any of the following:
  - (i) commencement of any litigation against an FDE Group entity with respect to financial indebtedness greater than £5m or obligations under a service contract with a total contract value greater than £5m;

- (ii) non-payment by an FDE Group entity of any financial indebtedness;
- (iii) any financial indebtedness of an FDE Group entity becoming due as a result of an event of default;
- (iv) the cancellation or suspension of any financial indebtedness in respect of an FDE Group entity; or
- (v) the external auditor of an FDE Group entity expressing a qualified opinion on, or including an emphasis of matter in, its opinion on the statutory accounts of that FDE entity;

in each case which the Authority reasonably believes (or would be likely reasonably to believe) could directly impact on the continued performance and delivery of the Services in accordance with this Agreement; and

- (f) any [one] of the Financial Indicators set out at Paragraph 5 for any of the FDE Group entities failing to meet the required Financial Target Threshold.

#### CONSEQUENCES OF FINANCIAL DISTRESS EVENTS

- 2.5 Immediately upon notification by the Supplier of a Financial Distress Event (or if the Authority becomes aware of a Financial Distress Event without notification and brings the event to the attention of the Supplier), the Supplier shall have the obligations and the Authority shall have the rights and remedies as set out in Paragraphs 4.3 to 4.6.
- 2.6 In the event of a late or non-payment of a Key Sub-contractor pursuant to Paragraph 3.1(e), the Authority shall not exercise any of its rights or remedies under Paragraph 4.3 without first giving the Supplier ten (10) Working Days to:
  - (a) rectify such late or non-payment; or
  - (b) demonstrate to the Authority's reasonable satisfaction that there is a valid reason for late or non-payment.
- 2.7 The Supplier shall:
  - (a) at the request of the Authority, meet the Authority as soon as reasonably practicable (and in any event within three (3) Working Days of the initial notification (or awareness) of the Financial Distress Event or such other period as the Authority may permit and notify to the Supplier in writing) to review the effect of the Financial Distress Event on the continued performance and delivery of the Services in accordance with this Agreement; and
  - (b) where the Authority reasonably believes (taking into account the discussions and any representations made under Paragraph 4.3(a) that the Financial Distress Event could impact on the continued performance and delivery of the Services in accordance with this Agreement:

- (i) submit to the Authority for its approval, a draft Financial Distress Remediation Plan as soon as reasonably practicable (and in any event, within ten (10) Working Days of the initial notification (or awareness) of the Financial Distress Event or such other period as the Authority may permit and notify to the Supplier in writing); and
  - (ii) to the extent that it is legally permitted to do so and subject to Paragraph 4.8, provide such information relating to the Supplier, as the Authority may reasonably require in order to understand the risk to the Services, which may include forecasts in relation to cash flow, orders and profits and details of financial measures being considered to mitigate the impact of the Financial Distress Event.
- 2.8 The Authority shall not withhold its approval of a draft Financial Distress Remediation Plan unreasonably. If the Authority does not approve the draft Financial Distress Remediation Plan, it shall inform the Supplier of its reasons and the Supplier shall take those reasons into account in the preparation of a further draft Financial Distress Remediation Plan, which shall be resubmitted to the Authority within five (5) Working Days of the rejection of the first draft. This process shall be repeated until the Financial Distress Remediation Plan is approved by the Authority or referred to the Dispute Resolution Procedure under Paragraph 4.5.
- 2.9 If the Authority considers that the draft Financial Distress Remediation Plan is insufficiently detailed to be properly evaluated, will take too long to complete or will not ensure the continued performance of the Supplier's obligations in accordance with the Agreement, then it may either agree a further time period for the development and agreement of the Financial Distress Remediation Plan or escalate any issues with the draft Financial Distress Remediation Plan using the Dispute Resolution Procedure.
- 2.10 Following approval of the Financial Distress Remediation Plan by the Authority, the Supplier shall:
  - (a) on a regular basis (which shall not be less than fortnightly):
    - (i) review and make any updates to the Financial Distress Remediation Plan as the Supplier may deem reasonably necessary and/or as may be reasonably requested by the Authority, so that the plan remains adequate, up to date and ensures the continued performance and delivery of the Services in accordance with this Agreement; and
    - (ii) provide a written report to the Authority setting out its progress against the Financial Distress Remediation Plan, the reasons for any changes made to the Financial Distress Remediation Plan by the Supplier and/or the reasons why the Supplier may have decided not to make any changes;
  - (b) where updates are made to the Financial Distress Remediation Plan in accordance with Paragraph 4.6(a), submit an updated Financial Distress Remediation Plan to the Authority for its approval, and the provisions of Paragraphs 4.4 and 4.5 shall apply to the review and approval process for the

- (a) REDACTED updated Financial Distress Remediation Plan; and
  - (b) comply with the Financial Distress Remediation Plan (including any updated Financial Distress Remediation Plan) and ensure that it achieves the financial and performance requirements set out in the Financial Distress Remediation Plan.
- 2.11 Where the Supplier reasonably believes that the relevant Financial Distress Event under Paragraph 4.1 (or the circumstance or matter which has caused or otherwise led to it) no longer exists, it shall notify the Authority and the Parties may agree that the Supplier shall be relieved of its obligations under Paragraph 4.6.
- 2.12 The Supplier shall use reasonable endeavours to put in place the necessary measures to ensure that the information specified at paragraph 4.3(b)(ii) is available when required and on request from the Authority and within reasonable timescales. Such measures may include:
- (a) putting in place any other reasonable arrangements to enable the information to be lawfully disclosed to the Authority (which may include making price sensitive information available to Authority nominated personnel through confidential arrangements, subject to their consent); and
  - (b) disclosing the information to the fullest extent that it is lawfully entitled to do so, including through the use of redaction, anonymisation and any other techniques to permit disclosure of the information without breaching a duty of confidentiality.

### 3 FINANCIAL INDICATORS

Subject to the calculation methodology set out at Annex 4 of this Schedule, the Financial Indicators and the corresponding calculations and thresholds used to determine whether a Financial Distress Event has occurred in respect of those Financial Indicators, shall be as follows: REDACTED

### 4 TERMINATION RIGHTS

The Authority shall be entitled to terminate this Agreement in accordance with Clause 33.1 (*Termination by the Authority*) of the Agreement



## **5 BOARD CONFIRMATION**

- 5.1 If this Agreement has been specified as a Critical Service Contract under Paragraph 10.1 of Part 2 to Schedule 8.6 (Service Continuity Plan and Corporate Resolution Planning) then, subject to Paragraph 8.4 of this Schedule, the Supplier shall within one hundred and twenty (120) days after each Accounting Reference Date or within 15 months of the previous Board Confirmation (whichever is the earlier) provide a Board Confirmation to the Authority in the form set out at Annex 5 of this Schedule, confirming that to the best of the Board's knowledge and belief, it is not aware of and has no knowledge:
- (a) that a Financial Distress Event has occurred since the later of the Effective Date or the previous Board Confirmation or is subsisting; or
  - (b) of any matters which have occurred or are subsisting that could reasonably be expected to cause a Financial Distress Event.
- 5.2 The Supplier shall ensure that in its preparation of the Board Confirmation it exercises due care and diligence and has made reasonable enquiry of all relevant Supplier Personnel and other persons as is reasonably necessary to understand and confirm the position.
- 5.3 In respect of the first Board Confirmation to be provided under this Agreement, the Supplier shall provide the Board Confirmation within fifteen (15) months of the Effective Date if earlier than the timescale for submission set out in Paragraph 8.1 of this Schedule.
- 5.4 Where the Supplier is unable to provide a Board Confirmation in accordance with Paragraphs 8.1 to 8.3 of this Schedule due to the occurrence of a Financial Distress Event or knowledge of subsisting matters which could reasonably be expected to cause a Financial Distress Event, it will be sufficient for the Supplier to submit in place of the Board Confirmation, a statement from the Board of Directors to the Authority (and where the Supplier is a Strategic Supplier, the Supplier shall send a copy of the statement to the Cabinet Office Markets and Suppliers Team) setting out full details of any Financial Distress Events that have occurred and/or the matters which could reasonably be expected to cause a Financial Distress Event.

### **ANNEX 1: RATING AGENCIES AND THEIR STANDARD RATING SYSTEM**

Not used

Jacobs UK Ltd do not hold credit rating with Standard and Poors, Moodys, etc ANNEX 2: Not Used

### ANNEX 3: CREDIT RATINGS AND CREDIT RATING THRESHOLDS

Not used

Jacobs UK Ltd do not hold credit rating with Standard and Poors, Moodys, etc



### ANNEX 4: Calculation Methodology for Financial Indicators

1.1 The Supplier shall ensure that it uses the following general and specific methodologies for calculating the Financial Indicators against the Financial Target Thresholds:

#### General methodology

1. **Terminology:** The terms referred to in this Annex are those used by UK companies in their financial statements. Where the entity is not a UK company, the corresponding items should be used even if the terminology is slightly different (for example a charity would refer to a surplus or deficit rather than a profit or loss).
2. **Groups:** Where the entity is the holding company of a group and prepares consolidated financial statements, the consolidated figures should be used.
3. **Foreign currency conversion:** Figures denominated in foreign currencies should be converted at the exchange rate in force at the relevant date for which the Financial Indicator is being calculated.
4. **Treatment of non-underlying items:** Financial Indicators should be based on the figures in the financial statements before adjusting for non-underlying items.

#### Specific Methodology

| Financial Indicator | Specific Methodology |
|---------------------|----------------------|
|                     |                      |

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1</p> <p><u>[Operating Margin]</u></p> | <p>[The elements used to calculate the Operating Margin should be shown on the face of the Income Statement in a standard set of financial statements.</p> <p>Figures for Operating Profit and Revenue should exclude the entity's share of the results of any joint ventures or Associates.</p> <p>Where an entity has an operating loss (i.e. where the operating profit is negative), Operating Profit should be taken to be zero.]</p> |
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|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2</p> <p><u>[Free Cash Flow to Net Debt Ratio]</u></p> | <p><i>["Free Cash Flow" = Net Cash Flow from Operating Activities - Capital Expenditure</i></p> <p><i>"Capital Expenditure" = Purchase of property, plant &amp; equipment + purchase of intangible assets</i></p> <p><i>"Net Debt" = Bank overdrafts + Loans and borrowings + Finance Leases + Deferred consideration payable - Cash and cash equivalents</i></p> <p>The majority of the elements used to calculate the Free Cash Flow to Net Debt Ratio should be shown on the face of the Statement of Cash Flows and the Balance Sheet in a standard set of financial statements.</p> <ul style="list-style-type: none"> <li>• <u>Net Cash Flow from Operating Activities</u>: This should be stated after deduction of interest and tax paid.</li> <li>• <u>Capital expenditure</u>: The elements of capital expenditure may be described slightly differently but will be found under 'Cash flows from investing activities' in the Statement of Cash Flows; they should be limited to the purchase of fixed assets (including intangible assets) for the business and exclude acquisitions. The figure should be shown gross without any deduction for any proceeds of sale of fixed assets.</li> <li>• <u>Net Debt</u>: The elements of Net Debt may also be described slightly differently and should be found either on the face of the Balance Sheet or in the relevant note to the financial statements. All interest bearing liabilities (other than retirement benefit obligations) should be treated as borrowings as should, where disclosed, any liabilities (less any assets) in respect of any hedges designated as linked to borrowings (but not non-designated hedges). Borrowings should also include balances owed to other group members.</li> </ul> |
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|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>OR</p> <p><u>[Net Debt to EBITDA Ratio]</u></p> | <p>Deferred consideration payable should be included in Net Debt despite typically being non-interest bearing.</p> <p>Cash and cash equivalents should include short-term financial investments shown in current assets.</p> <p>Where Net debt is negative (i.e. an entity has net cash), the relevant Financial Target Threshold should be treated as having been met.]</p> <p style="text-align: center;">OR</p> <p><i>["Net Debt" = Bank overdrafts + Loans and borrowings + Finance leases + Deferred consideration payable - Cash and cash equivalents</i></p> <p><i>"EBITDA" = Operating profit + Depreciation charge + Amortisation charge</i></p> <p>The majority of the elements used to calculate the Net Debt to EBITDA Ratio should be shown on the face of the Balance sheet, Income statement and Statement of Cash Flows in a standard set of financial statements but will otherwise be found in the notes to the financial statements.</p> <ul style="list-style-type: none"> <li>• <u>Net Debt</u>: The elements of Net Debt may be described slightly differently and should be found either on the face of the Balance Sheet or in the relevant note to the financial statements. All interest bearing liabilities (other than retirement benefit obligations) should be included as borrowings as should, where disclosed, any liabilities (less any assets) in respect of any hedges designated as linked to borrowings (but not non-designated hedges). Borrowings should also include balances owed to other group members.</li> </ul> <p>Deferred consideration payable should be included in Net Debt despite typically being non-interest bearing.</p> <p>Cash and cash equivalents should include short-term financial investments shown in current assets.</p> <p>Where Net debt is negative (i.e. an entity has net cash), the relevant Financial Target Threshold should be treated as having been met.</p> <ul style="list-style-type: none"> <li>• <u>EBITDA</u>: Operating profit should be shown on the face of the Income Statement and, for the purposes of calculating this Financial Indicator, should include the entity's share</li> </ul> |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|  |                                                                                                                                |
|--|--------------------------------------------------------------------------------------------------------------------------------|
|  | <p>of the results of any joint ventures or Associates. <i>The depreciation and amortisation charges for the period may</i></p> |
|--|--------------------------------------------------------------------------------------------------------------------------------|

|  |                                                                                                                                                                                                                                                                                                                                             |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><i>be found on the face of the Statement of Cash Flows or in a Note to the Accounts. Where EBITDA is negative, the relevant Financial Target Threshold should be treated as not having been met (unless Net Debt is also negative, in which case the relevant Financial Target Threshold should be treated as having been met).]</i></p> |
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|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>3</p> <p>[Net Debt + Net Pension Deficit to EBITDA ratio]</p> | <p><i>[“Net Debt” = Bank overdrafts + Loans and borrowings + Finance leases + Deferred consideration payable - Cash and cash equivalents</i></p> <p><i>“Net Pension Deficit” = Retirement Benefit Obligations - Retirement Benefit Assets</i></p> <p><i>“EBITDA” = Operating profit + Depreciation charge + Amortisation charge</i></p> <p>The majority of the elements used to calculate the Net Debt + Net Pension Deficit to EBITDA Ratio should be shown on the face of the Balance sheet, Income statement and Statement of Cash Flows in a standard set of financial statements but will otherwise be found in the notes to the financial statements.</p> <ul style="list-style-type: none"> <li>• <u>Net Debt</u>: The elements of Net Debt may be described slightly differently and should be found either on the face of the Balance Sheet or in the relevant note to the financial statements. All interest bearing liabilities (other than retirement benefit obligations) should be included as borrowings as should, where disclosed, any liabilities (less any assets) in respect of any hedges designated as linked to borrowings (but <i>not</i> non-designated hedges). Borrowings should also include balances owed to other group members.</li> </ul> <p>Deferred consideration payable should be included in Net Debt despite typically being non-interest bearing.</p> <p>Cash and cash equivalents should include short-term financial investments shown in current assets.</p> <ul style="list-style-type: none"> <li>• <u>Net Pension Deficit</u>: Retirement Benefit Obligations and Retirement Benefit Assets may be shown on the face of the Balance Sheet or in the notes to the financial statements. They may also be described as pension benefits / obligations, post-employment obligations or other similar terms.</li> </ul> |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



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|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | <p>Where 'Net Debt + Net Pension Deficit' is negative, the relevant Financial Target Threshold should be treated as having been met.</p> <p>• <b>EBITDA:</b> Operating profit should be shown on the face of the Income Statement and, for the purposes of calculating this Financial Indicator, should include the entity's share of the results of any joint ventures or Associates.</p> <p>The depreciation and amortisation charges for the period may be found on the face of the Statement of Cash Flows or in a Note to the Accounts.</p> <p>Where EBITDA is negative, the relevant Financial Target Threshold should be treated as not having been met (unless 'Net Debt + Net Pension Deficit' is also negative, in which case the relevant Financial Target Threshold should be regarded as having been met).]</p> |
| <p>4</p> <p>[Net Interest Paid Cover]</p> | <p><b><i>["Earnings Before Interest and Tax" = Operating profit</i></b></p> <p><b><i>"Net Interest Paid" = Interest paid - Interest received</i></b></p> <p>Operating profit should be shown on the face of the Income Statement in a standard set of financial statements and, for the purposes of calculating this Financial Indicator, should include the entity's share of the results of any joint ventures or Associates.</p> <p>Interest received and interest paid should be shown on the face of the Cash Flow statement.</p> <p>Where Net interest paid is negative (i.e. the entity has net interest received), the relevant Financial Target Threshold should be treated as having been met.].</p>                                                                                                               |
| <p>5</p> <p>[Acid Ratio]</p>              | <p>[All elements that are used to calculate the Acid Ratio are available on the face of the Balance Sheet in a standard set of financial statements.]</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                                   |                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>6</p> <p>[Net Asset value]</p> | <p>[Net Assets are shown (but sometimes not labelled) on the face of the Balance Sheet of a standard set of financial statements. Net Assets are sometimes called net worth or 'Shareholders' Funds'. They represent the net assets available to the</p>                                                                                         |
|                                   | <p>shareholders. Where an entity has a majority interest in another entity in which there are also minority or non-controlling interests (i.e. where it has a subsidiary partially owned by outside investors), Net Assets should be taken inclusive of minority or non-controlling interests (as if the entity owned 100% of such entity).]</p> |

## **ANNEX 5: Board Confirmation**

**Supplier Name:**

**Contract Reference Number:**

We, Jacobs UK Limited (“Jacobs”), hereby acknowledge the requirements set out at paragraph 8 of Schedule 7.4 (Financial Distress) and confirm that the Supplier has exercised due care and diligence and made reasonable enquiry of all relevant Supplier Personnel and other persons as is reasonably necessary to enable the Board to prepare this statement.

Jacobs confirm, to the best of its knowledge and belief, that as at the date of this confirmation it is not aware of and has no knowledge:

- a) that a Financial Distress Event has occurred since the later of the previous Board Confirmation and the Effective Date or is subsisting; or
- b) of any matters which have occurred or are subsisting that could reasonably be expected to cause a Financial Distress Event

On behalf of Jacobs UK Limited:

Authorised Signatory .....

Signed .....

Date .....



**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 7.5**

**FINANCIAL REPORTS AND AUDIT RIGHTS**

## Financial Reports and Audit Rights

### 1 DEFINITIONS

In this Schedule, the following definitions shall apply:

|                                            |     |                                                                                                                                                                                                                             |
|--------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Annual Contract Report”</b>            |     | the annual contract report to be provided by the Supplier to the Authority pursuant to Paragraph 1 of Part B;                                                                                                               |
| <b>“Audit Agents”</b>                      | (a) | the Authority’s internal and external auditors;                                                                                                                                                                             |
|                                            | (b) | the Authority’s statutory or regulatory auditors;                                                                                                                                                                           |
|                                            | (c) | the Comptroller and Auditor General, their staff and/or any appointed representatives of the National Audit Office;                                                                                                         |
|                                            | (d) | HM Treasury or the Cabinet Office;                                                                                                                                                                                          |
|                                            | (e) | any party formally appointed by the Authority to carry out audit or similar review functions; and                                                                                                                           |
|                                            | (f) | successors or assigns of any of the above;                                                                                                                                                                                  |
| <b>“Contract Amendment Report”</b>         |     | the contract amendment report to be provided by the Supplier to the Authority pursuant to Paragraph 1 of Part B;                                                                                                            |
| <b>“Final Reconciliation Report”;</b>      |     | the final reconciliation report to be provided by the Supplier to the Authority pursuant to Paragraph 1 of Part B;                                                                                                          |
| <b>“Financial Model”</b>                   |     | the Contract Inception Report, the latest Annual Contract Report or the latest Contract Amendment Report, whichever has been most recently approved by the Authority in accordance with Paragraph 2 of Part B;              |
| <b>“Financial Reports”</b>                 |     | the Contract Inception Report and the reports listed in the table in Paragraph 1.1 of Part B;                                                                                                                               |
| <b>“Financial Representative”</b>          |     | a reasonably skilled and experienced member of the Supplier’s staff who has specific responsibility for preparing, maintaining, facilitating access to, discussing and explaining the Open Book Data and Financial Reports; |
| <b>“Financial Transparency Objectives”</b> |     | has the meaning given in Paragraph 1 of Part A;                                                                                                                                                                             |
| <b>“Material Change”</b>                   |     | a Change which:                                                                                                                                                                                                             |

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  | <ul style="list-style-type: none"> <li>(a) materially changes the profile of the Charges;<br/>or</li> <li>(b) varies the total Charges payable during the Term (as forecast in the latest Financial Model) by: <ul style="list-style-type: none"> <li>(i) 5% or more; or</li> <li>(ii) £1m or more;</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>“Onerous Contract”</b>        | a contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it, as defined under International Accounting Standard 37;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>“Onerous Contract Report”</b> | means a report provided by the Supplier pursuant to Paragraph 3 of Part A to this Schedule;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>“Open Book Data”</b>          | <p>complete and accurate financial and nonfinancial information which is sufficient to enable the Authority to verify the Charges already paid or payable and Charges forecast to be paid during the remainder of the Term, including details and all assumptions relating to:</p> <ul style="list-style-type: none"> <li>(a) the Supplier’s Costs broken down against each Service and/or Deliverable, including actual capital expenditure (including capital replacement costs) and the unit cost and total actual costs of all hardware and software;</li> <li>(b) operating expenditure relating to the provision of the Services including an analysis showing: <ul style="list-style-type: none"> <li>(i) the unit costs and quantity of consumables and bought-in services;</li> <li>(ii) manpower resources broken down into the number and grade/role of all Supplier Personnel (free of any contingency) together with a list of agreed rates against each manpower grade;</li> <li>(iii) a list of Costs underpinning those rates for each manpower grade, being the agreed rate less the Supplier’s Profit Margin; and</li> <li>(iv) Reimbursable Expenses;</li> </ul> </li> <li>(c) Overheads;</li> </ul> |

- (d) all interest, expenses and any other third party financing costs incurred in relation to the provision of the Services;
- (e) the Supplier Profit achieved over the Term and on an annual basis;
- (f) confirmation that all methods of Cost apportionment and Overhead allocation are consistent with and not more onerous than such methods applied generally by the Supplier;
- (g) an explanation of the type and value of risk and contingencies associated with the provision of the Services, including the amount of money attributed to each risk and/or contingency; and (h) the actual Costs profile for each Service Period.



## **PART A: FINANCIAL TRANSPARENCY OBJECTIVES AND OPEN BOOK DATA**

### **1 FINANCIAL TRANSPARENCY OBJECTIVES**

The Supplier acknowledges that the provisions of this Schedule are designed (inter alia) to facilitate, and the Supplier shall co-operate with the Authority in order to achieve, the following objectives:

#### **Understanding the Charges**

- (a) for the Authority to understand any payment sought from it by the Supplier including an analysis of the Costs, Overhead recoveries (where relevant), time spent by Supplier Personnel in providing the Services and the Supplier Profit Margin;
- (b) for both Parties to be able to understand the Financial Model and Cost forecasts and to have confidence that these are based on justifiable numbers and appropriate forecasting techniques;
- (c) to facilitate the use of Guaranteed Maximum Price with Target Cost pricing mechanisms (where relevant as referred to in Schedule 7.1 (*Charges and Invoicing*));

#### **Agreeing the impact of Change**

- (d) for both Parties to agree the quantitative impact of any Changes that affect ongoing costs and to identify how these could be mitigated and/or reflected in the Supplier's Charges;
- (e) for both Parties to be able to review, address issues with and re-forecast progress in relation to the provision of the Services;

#### **Continuous improvement**

- (f) for the Parties to challenge each other with ideas for efficiency and improvements; and
- (g) to enable the Authority to demonstrate that it is achieving value for money for the tax payer relative to current market prices,

(together the "Financial Transparency Objectives").

### **2 OPEN BOOK DATA**

2.1 The Supplier acknowledges the importance to the Authority of the Financial Transparency Objectives and the Authority's need for complete transparency in the way in which the Charges are calculated.

2.2 During the Term, and for a period of seven (7) years following the end of the Term, the Supplier shall:

- (a) maintain and retain the Open Book Data; and

- (b) disclose and allow the Authority and/or the Audit Agents access to the Open Book Data.

### **3 ONEROUS CONTRACTS**

3.1 If the Supplier publicly designates the Agreement as an Onerous Contract (including where the Supplier has identified the Agreement as such in any published accounts or public reports and announcements), the Supplier shall promptly notify the Authority of the designation and shall prepare and deliver to the Authority within the timescales agreed by the Parties (an in any event, no later than two (2) months following the publication of the designation) a draft Onerous Contract Report which includes the following:

- (a) an initial root cause analysis of the issues and circumstances which may have contributed to the Agreement being designated as an Onerous Contract;
- (b) an initial risk analysis and impact assessment on the provision of the Services as a result of the Supplier's designation of the Agreement as an Onerous Contract;
- (c) the measures which the Supplier intends to put in place to minimise and mitigate any adverse impact on the provision on the Services;
- (d) details of any other options which could be put in place to remove the designation of the Agreement as an Onerous Contract and/or which could minimise and mitigate any adverse impact on the provision of the Services.

3.2 Following receipt of the Onerous Contract Report, the Authority shall review and comment on the report as soon as reasonably practicable and the Parties shall cooperate in good faith to agree the final form of the report, which shall be submitted to the Executive Board, such final form report to be agreed no later than one (1) month following the Authority's receipt of the draft Onerous Contract Report.

3.3 The Executive Board shall meet within fourteen (14) Working Days of the final Onerous Contract Report being agreed by the Parties to discuss the contents of the report; and the Parties shall procure the attendance at the meeting of any key participants where reasonably required (including the Cabinet Office Markets and Supplier's team where the Supplier is a Relevant Supplier; representatives from any Monitored Suppliers; and the project's senior responsible officers (or equivalent) for each Party).

3.4 The Supplier acknowledges and agrees that the report is submitted to the Authority and Executive Board on an information only basis and the Authority and Executive Board's receipt of and comments in relation to the report shall not be deemed to be an acceptance or rejection of the report nor shall it relieve the Supplier of any liability under this Agreement. Any Changes to be agreed by the Parties pursuant to the report shall be subject to the Change Control Procedure.

## PART B: FINANCIAL REPORTS

### 1 PROVISION OF THE FINANCIAL REPORTS

#### 1.1 The Supplier shall provide

- (a) the Contract Inception Report on or before the Effective Date; and
- (b) during the Term the following financial reports to the Authority, in the frequency specified below:

| Financial Report            | When to be provided                                                                           |
|-----------------------------|-----------------------------------------------------------------------------------------------|
| Contract Amendment Report   | Within one (1) month of a Material Change being agreed between the Supplier and the Authority |
| Quarterly Contract Report   | Within one (1) month of the end of each Quarter                                               |
| Annual Contract Report      | Within one (1) month of the end of the Contract Year to which that report relates             |
| Final Reconciliation Report | Within six (6) months after the end of the Term                                               |

#### 1.2 The Supplier shall provide to the Authority the Financial Reports in the same software package (Microsoft Excel or Microsoft Word), layout and format as the blank templates which have been issued by the Authority to the Supplier on or before the Effective Date for the purposes of this Agreement. The Authority shall be entitled to modify the template for any Financial Report by giving written notice to the Supplier, including a copy of the updated template.

#### 1.3 A copy of each Financial Report shall be held by both the Authority and the Supplier. If there is a Dispute regarding a Financial Report, the Authority's copy of the relevant Financial Report shall be authoritative.

#### 1.4 Each Financial Report shall:

- (a) be completed by the Supplier using reasonable skill and care;
- (b) incorporate and use the same defined terms as are used in this Agreement;
- (c) quote all monetary values in pounds sterling;
- (d) quote all Costs as exclusive of any VAT; and

- (e) quote all Costs and Charges based on current prices.

1.5 Each Annual Contract Report and the Final Reconciliation Report shall be certified by the Supplier's Authorised Signatories (or equivalent as agreed in writing by the Authority in advance of issue of the relevant Financial Report), acting with express authority, as:

- (a) being accurate and not misleading;
- (b) having been prepared in conformity with generally accepted accounting principles within the United Kingdom;
- (c) being a true and fair reflection of the information included within the Supplier's management and statutory accounts; and
- (d) compliant with the requirements of Paragraph 1.6.

1.6 The Supplier shall:

- (a) prepare each Financial Report using the same methodology as that used for the Contract Inception Report;
- (b) ensure that each Annual Contract Report and each Contract Amendment Report (if any) is a true and fair reflection of the Costs and Supplier Profit Margin forecast by the Supplier;
- (c) the Final Reconciliation Report is a true and fair reflection of the Costs; and
- (d) not have any other internal financial model in relation to the Services inconsistent with the Financial Model.

1.7 During the Term, and for a period of eighteen (18) months following the end of the Term, the Supplier shall make available the Financial Representative at reasonable times and on reasonable notice to answer any queries that the Authority may have on any of the Financial Reports and/or Open Book Data.

1.8 If the Supplier becomes aware of the occurrence, or the likelihood of the future occurrence, of an event which will or may have a material effect on the following:

- (a) the Costs incurred (or those forecast to be incurred) by the Supplier; and/or
- (b) the forecast Charges for the remainder of the Term,

the Supplier shall, as soon as practicable, notify the Authority in writing of the event in question detailing the actual or anticipated effect. For the avoidance of doubt, notifications provided in accordance with this Paragraph 1.8 shall not have the effect of amending any provisions of this Agreement.

## **2 FINANCIAL MODEL**

2.1 Following the delivery by the Supplier of each Annual Contract Report and any Contract Amendment Report:

- (a) the Parties shall meet to discuss its contents within ten (10) Working Days of receipt (or such other period as the Parties shall agree). The Financial Representative shall attend the meeting;
- (b) the Supplier shall make appropriate Supplier Personnel and advisers available to discuss any variations between the relevant Financial Report and the Contract Inception Report or immediately preceding Annual Contract Report or Contract Amendment Report (as the case may be) and to explain such variations (with reference to supporting evidence) to the satisfaction of the Authority; and
- (c) the Authority shall either within ten (10) Working Days of the meeting referred to in Paragraph 2.1(a) notify the Supplier that:
  - (i) the relevant Financial Report contains errors or omissions or that further explanations or supporting information is required, in which event the Supplier shall make any necessary modifications to the Financial Report and/or supply the Authority with such supporting evidence as is required to address the Authority's concerns within ten (10) Working Days of such notification and the Authority shall following receipt of such amended Financial Report and/or supporting information, approve or reject such Financial Report; or
  - (ii) the Authority has approved the relevant Financial Report.

2.2 Following approval by the Authority of the relevant Financial Report in accordance with Paragraph 2.1(c), that version shall become, with effect from the date of such approval, the current approved version of the Financial Model for the purposes of this Agreement, a version of which shall be held by both the Authority and the Supplier. If there is a Dispute regarding a Financial Report, the Authority's copy of the relevant Financial Report shall be authoritative.

2.3 If the Parties are unable to reach agreement on any Financial Report within thirty (30) Working Days of its receipt by the Authority, the matter shall be referred for determination in accordance with Schedule 8.3 (*Dispute Resolution Procedure*).

## **3 Discussion of Quarterly Contract Reports and FINAL RECONCILIATION REPORT**

3.1 Following the delivery by the Supplier of each Quarterly Contract Report, the Parties shall meet to discuss its contents within ten (10) Working Days of receipt (or such other period as the Parties shall agree). The Financial Representative shall attend the meeting.

3.2 Following the delivery by the Supplier of the Final Reconciliation Report, the Parties shall meet to discuss its contents within ten (10) Working Days of receipt (or such

other period as the Parties shall agree). The Financial Representative shall attend the meeting.

#### **4 Key Sub-contractors**

4.1 The Supplier shall, if requested by the Authority, provide (or procure the provision of) a report or reports including the level of information set out in the Financial Reports in relation to the costs and expenses to be incurred by any of its Key Subcontractors.

4.2 Without prejudice to Paragraph 1.1 of Part C, the Supplier shall:

- (a) be responsible for auditing the financial models/reports of its Key Subcontractors and for any associated costs and expenses incurred or forecast to be incurred; and
- (b) on written request by the Authority, provide the Authority or procure that the Authority is provided with:
  - (i) full copies of audit reports for the Key Sub-contractors. The Authority shall be entitled to rely on such audit reports; and
  - (ii) further explanation of, and supporting information in relation to, any audit reports provided.

## PART C: AUDIT RIGHTS

### 1 AUDIT RIGHTS

1.1 The Authority, acting by itself or through its Audit Agents, shall have the right during the Term and for a period of eighteen (18) months thereafter, to assess compliance by the Supplier and/or its Key Sub-contractors of the Supplier's obligations under this Agreement, including for the following purposes:

- (a) to verify the integrity and content of any Financial Report;
- (b) to verify the accuracy of the Charges and any other amounts payable by the Authority under this Agreement (and proposed or actual variations to such Charges and payments);
- (c) to verify the Costs (including the amounts paid to all Sub-contractors and any third party suppliers);
- (d) to verify the Certificate of Costs and/or the Open Book Data;
- (e) to verify the Supplier's and each Key Sub-contractor's compliance with this Agreement and applicable Law;
- (f) to identify or investigate actual or suspected fraud, impropriety or accounting mistakes or any breach or threatened breach of security and in these circumstances the Authority shall have no obligation to inform the Supplier of the purpose or objective of its investigations;
- (g) to identify or investigate any circumstances which may impact upon the financial stability of the Supplier, the Guarantor and/or any Key Subcontractors or their ability to perform the Services;
- (h) to obtain such information as is necessary to fulfil the Authority's obligations to supply information for parliamentary, ministerial, judicial or administrative purposes including the supply of information to the Comptroller and Auditor General;
- (i) to review any books of account and the internal contract management accounts kept by the Supplier in connection with this Agreement;
- (j) to carry out the Authority's internal and statutory audits and to prepare, examine and/or certify the Authority's annual and interim reports and accounts;
- (k) to enable the National Audit Office to carry out an examination pursuant to Section 6(1) of the National Audit Act 1983 of the economy, efficiency and effectiveness with which the Authority has used its resources;
- (l) to verify the accuracy and completeness of any Management Information delivered or required by this Agreement;

- (m) to review any Performance Monitoring Reports and/or other records relating to the Supplier's performance of the Services and to verify that these reflect the Supplier's own internal reports and records;
  - (n) to inspect the IT Environment (or any part of it) and the wider service delivery environment (or any part of it);
  - (o) to review the accuracy and completeness of the Registers;
  - (p) to review any records created during the design and development of the Supplier System and pre-operational environment such as information relating to Testing;
  - (q) to review the Supplier's quality management systems (including all relevant Quality Plans and any quality manuals and procedures);
  - (r) to review the Supplier's compliance with the Standards;
  - (s) to inspect the Authority Assets, including the Authority's IPRs, equipment and facilities, for the purposes of ensuring that the Authority Assets are secure and that any register of assets is up to date; and/or
  - (t) to review the integrity, confidentiality and security of the Authority Data.
- 1.2 Except where an audit is imposed on the Authority by a regulatory body or where the Authority has reasonable grounds for believing that the Supplier has not complied with its obligations under this Agreement, the Authority may not conduct an audit of the Supplier or of the same Key Sub-contractor more than twice in any Contract Year.
- 1.3 Nothing in this Agreement shall prevent or restrict the rights of the Comptroller and/or Auditor General and/or their representatives from carrying out an audit, examination or investigation of the Supplier and/or any of the Key Sub-contractors for the purposes of and pursuant to applicable Law.

## **2 CONDUCT OF AUDITS**

- 2.1 The Authority shall during each audit comply with those security, sites, systems and facilities operating procedures of the Supplier that the Authority deems reasonable and use its reasonable endeavours to ensure that the conduct of each audit does not unreasonably disrupt the Supplier or delay the provision of the Services.
- 2.2 Subject to the Authority's obligations of confidentiality, the Supplier shall on demand provide the Authority and the Audit Agents with all reasonable co-operation and assistance (and shall procure such co-operation and assistance from its Subcontractors) in relation to each audit, including:
- (a) all information requested by the Authority within the permitted scope of the audit;
  - (b) reasonable access to any Sites and to any equipment used (whether



exclusively or non-exclusively) in the performance of the Services; (c)  
access to the Supplier System; and  
(d) access to Supplier Personnel.

2.3 The Supplier shall implement all measurement and monitoring tools and procedures necessary to measure and report on the Supplier's performance of the Services against the applicable Performance Indicators at a level of detail sufficient to verify compliance with the Performance Indicators.

2.4 The Authority shall endeavour to (but is not obliged to) provide at least fifteen (15) Working Days' notice of its intention to conduct an audit.

2.5 The Parties agree that they shall bear their own respective costs and expenses incurred in respect of compliance with their obligations under this Paragraph 2, unless the audit identifies a material Default by the Supplier in which case the Supplier shall reimburse the Authority for all the Authority's reasonable costs incurred in connection with the audit.

### **3 USE OF SUPPLIER'S INTERNAL AUDIT TEAM**

3.1 As an alternative to the Authority's right pursuant to Paragraph 1.1 to exercise an audit either itself or through its Audit Agents, the Authority may require in writing that an audit is undertaken by the Supplier's own internal audit function for any of the purposes set out in Paragraph 1.1.

3.2 Following the receipt of a request from the Authority under Paragraph 3.1 above, the Supplier shall procure that the relevant audit is undertaken as soon as reasonably practicable and that the Authority has unfettered access to:

- (a) the resultant audit reports; and
- (b) all relevant members of the Supplier's internal audit team for the purpose of understanding such audit reports.

### **4 RESPONSE TO AUDITS**

4.1 If an audit undertaken pursuant to Paragraphs 1 or 3 identifies that:

- (a) the Supplier has committed a Default, the Authority may (without prejudice to any rights and remedies the Authority may have) require the Supplier to correct such Default as soon as reasonably practicable and, if such Default constitutes a Notifiable Default, to comply with the Rectification Plan Process;
- (b) there is an error in a Financial Report, the Supplier shall promptly rectify the error;
- (c) the Authority has overpaid any Charges, the Supplier shall pay to the Authority:

- (i) the amount overpaid;
- (ii) interest on the amount overpaid at the applicable rate under the Late Payment of Commercial Debts (Interest) Act 1998, accruing on a daily basis from the date of overpayment by the Authority up to the date of repayment by the Supplier; and
- (iii) the reasonable costs incurred by the Authority in undertaking the audit,

the Authority may exercise its right to deduct such amount from the Charges if it prefers; and

- (d) the Authority has underpaid any Charges, the Supplier shall not be entitled to increase the Charges paid or payable by the Authority.



**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 7.6**

Not Used

## **MODEL AGREEMENT FOR SERVICES SCHEDULES**

### **SCHEDULE 8.1**

#### **GOVERNANCE**

## Governance

### 1 DEFINITIONS

In this Schedule, the following definitions shall apply:

|                                   |                                                                                                                                                                                                |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Board Member”</b>             | the initial persons appointed by the Authority and Supplier to the Boards as set out in Annex 1 and any replacements from time to time agreed by the Parties in accordance with Paragraph 3.3; |
| <b>“Boards”</b>                   | the Service Management Board, Executive Board, Change Management Board, Technical Board and Risk Management Board and <b>“Board”</b> shall mean any of them;                                   |
| <b>“Change Management Board”</b>  | the body described in Paragraph 6;                                                                                                                                                             |
| <b>“Executive Board”</b>          | The body as described in Paragraph 5; <b>Board”</b>                                                                                                                                            |
| <b>“Project Managers”</b>         | the individuals appointed as such by the Authority and the Supplier in accordance with Paragraph 1; and                                                                                        |
| <b>“Risk Management Board”</b>    | the body described in Paragraph 8;                                                                                                                                                             |
| <b>“Service Management Board”</b> | the body described in Paragraph 4; and                                                                                                                                                         |
| <b>“Technical Board”</b>          | the body described in Paragraph 7. <b>Board”</b>                                                                                                                                               |

### 2 MANAGEMENT OF THE SERVICES

- 2.1 The Supplier and the Authority shall each appoint a project manager for the purposes of this Agreement through whom the Services shall be managed at a day-to-day.
- 2.2 Both Parties shall ensure that appropriate resource is made available on a regular basis such that the aims, objectives and specific provisions of this Agreement can be fully realised.

### **3       BOARDS**

#### **Establishment and structure of the Boards**

- 3.1 The Boards shall be established by the Authority for the purposes of this Agreement on which both the Supplier and the Authority shall be represented.

3.2 In relation to each Board, the:

- (a) Authority Board Members;
- (b) Supplier Board Members;
- (c) frequency that the Board shall meet (unless otherwise agreed between the Parties);
- (d) location of the Board's meetings; and
- (e) planned start date by which the Board shall be established, shall be as set out in Annex 1.

3.3 In the event that either Party wishes to replace any of its appointed Board Members, that Party shall notify the other in writing of the proposed change for agreement by the other Party (such agreement not to be unreasonably withheld or delayed). Notwithstanding the foregoing it is intended that each Authority Board Member has at all times a counterpart Supplier Board Member of equivalent seniority and expertise.

#### **Board meetings**

3.4 Each Party shall ensure that its Board Members shall make all reasonable efforts to attend Board meetings at which that Board Member's attendance is required. If any Board Member is not able to attend a Board meeting, that person shall use all reasonable endeavours to ensure that:

- (a) a delegate attends the relevant Board meeting in his/her place who (wherever possible) is properly briefed and prepared; and
- (b) that he/she is debriefed by such delegate after the Board Meeting.

3.5 A chairperson shall be appointed by the Authority for each Board as identified in Annex 1. The chairperson shall be responsible for:

- (a) scheduling Board meetings;
- (b) setting the agenda for Board meetings and circulating to all attendees in advance of such meeting;
- (c) chairing the Board meetings;
- (d) monitoring the progress of any follow up tasks and activities agreed to be carried out following Board meetings;
- (e) ensuring that minutes for Board meetings are recorded and disseminated electronically to the appropriate persons and to all Board meeting participants within seven (7) Working Days after the Board meeting; and



- (f) facilitating the process or procedure by which any decision agreed at any Board meeting is given effect in the appropriate manner.
- 3.6 Board meetings shall be quorate as long as at least two representatives from each Party are present.
- 3.7 The Parties shall ensure, as far as reasonably practicable, that all Boards shall as soon as reasonably practicable resolve the issues and achieve the objectives placed before them. Each Party shall endeavour to ensure that Board Members are empowered to make relevant decisions or have access to empowered individuals for decisions to be made to achieve this.

#### **4 ROLE OF THE SERVICE MANAGEMENT BOARD**

The Service Management Board shall be responsible for the executive management of the Services and shall:

- (a) be accountable to the Executive Board for comprehensive oversight of the Services and for the senior management of the operational relationship between the Parties;
- (b) report to the Executive Board on significant issues requiring decision and resolution by the Executive Board and on progress against the high level Implementation Plan;
- (c) receive reports from the Project Managers on matters such as issues relating to delivery of existing Services and performance against Performance Indicators, progress against the Implementation Plan and possible future developments;
- (d) review and report to the Executive Board on service management, co-ordination of individual projects and any integration issues;
- (e) deal with the prioritisation of resources and the appointment of Project Managers on behalf of the Parties;
- (f) consider and resolve Disputes (including Disputes as to the cause of a Delay or the performance of the Services) in the first instance and if necessary escalate the Dispute to the Executive Board; and
- (g) develop operational/supplier relationship and develop and propose the relationship development strategy and ensure the implementation of the same.

#### **5 ROLE OF THE EXECUTIVE BOARD**

- 5.1 The Executive Board shall:
  - (a) provide senior level guidance, leadership and strategy for the overall delivery of the Services;

- (b) be the point of escalation from the Change Management Board, the Technical Board and the Service Management Board; and
- (c) carry out the specific obligations attributed to it in Paragraph 5.2.

**5.2 The Executive Board shall:**

- (a) ensure that this Agreement is operated throughout the Term in a manner which optimises the value for money and operational benefit derived by the Authority and the commercial benefit derived by the Supplier;
- (b) receive and review reports from the Service Management Board and review reports on technology, service and other developments that offer potential for improving the benefit that either Party is receiving, in particular value for money;
- (c) determine business strategy and provide guidance on policy matters which may impact on the implementation of the Services or on any Optional Services; and
- (d) authorise the commissioning and initiation of, and assess opportunities for, Optional Services; and
- (e) provide guidance and authorisation to the Change Management Board on relevant Changes.

**6 ROLE OF THE CHANGE MANAGEMENT BOARD**

**6.1** The Change Management Board shall assess the impact and approve or reject all Change Requests. Changes which will have a significant impact on the Services shall be escalated to the Executive Board.

**6.2 The Change Management Board shall:**

- (a) analyse and record the impact of all Changes, specifically whether the proposed Change:
  - (i) has an impact on other areas or aspects of this Agreement and/or other documentation relating to the Services;
  - (ii) has an impact on the ability of the Authority to meet its agreed business needs within agreed time-scales;
  - (iii) will raise any risks or issues relating to the proposed Change; and
  - (iv) will provide value for money in consideration of any changes to the Financial Model, future Charges and/or Performance Indicators and Target Performance Levels;
- (b) provide recommendations, seek guidance and authorisation from the Executive Board as required; and

- (c) approve or reject (close) all proposed Changes.

## **7 ROLE OF THE TECHNICAL BOARD**

7.1 The Technical Board shall be accountable to the Executive Board for oversight of the technology used in the Supplier Solution and ensuring that technological choices are made to maximise the long term value of the Supplier Solution as a business asset of the Authority.

7.2 The Technical Board shall:

- (a) ensure compliance with the Standards;
- (b) grant dispensations for variations from such compliance where appropriate;
- (c) assure the coherence and consistency of the systems architecture for the Supplier Solution;
- (d) monitor developments in new technology and reporting on their potential benefit to the Services;
- (e) provide advice, guidance and information on technical issues; and
- (f) assure that the technical architecture of the Supplier Solution is aligned to the Service Requirements and has sufficient flexibility to cope with future requirements of the Authority.

## **8 ROLE OF THE RISK MANAGEMENT BOARD**

8.1 The Risk Management Board shall identify and manage risks relating to the performance of the Services.

8.2 The Risk Management Board shall:

- (a) provide assurance to the Executive Board that risks are being effectively managed across the Services, including reporting the 'top 5' risks to the Executive Board on a monthly basis;
- (b) identify the risks to be reported to the Executive Board via the regular risk reports;
- (c) subject to the Change Control Procedure, accept or reject new risks proposed for inclusion in the Risk Register;
- (d) ratify or refuse requests to close risks on the Risk Register; and
- (e) identify risks relating to or arising out of the performance of the Services and provisional owners of these risks.

## **9 CONTRACT MANAGEMENT MECHANISMS**

9.1 Both Parties shall pro-actively manage risks attributed to them under the terms of this Agreement.

9.2 The Supplier shall develop, operate, maintain and amend, as agreed with the Authority, processes for:

(a) the identification and management of risks; (b)

the identification and management of issues; and

(c) monitoring and controlling project plans.

9.3 The Risk Register shall be updated by the Supplier and submitted for review by the Risk Management Board.

## **10 ANNUAL REVIEW**

10.1 An annual review meeting shall be held throughout the Term on a date to be agreed between the Parties.

10.2 The meetings shall be attended by the Project Manager of the Supplier and the Project Manager of the Authority and any other persons considered by the Authority necessary for the review.

## ANNEX 1: REPRESENTATION AND STRUCTURE OF BOARDS

Any board member can be send a deputy in their place by mutual agreement of both parties.

### Service Management Board

|                                                  |                                              |
|--------------------------------------------------|----------------------------------------------|
| Authority Members of Service Management Board    | Selena Peters [Chairperson]                  |
| Supplier Members of Service Management Board     | REDACTED                                     |
| Start Date for Service Management Board meetings | One month after commencement of the contract |
| Frequency of Service Management Board meetings   | Monthly or as agreed by the board members    |
| Location of Service Management Board meetings    | By mutual agreement of the board members     |

### Executive Board

|                                         |                                               |
|-----------------------------------------|-----------------------------------------------|
| Authority members of Executive Board    | Steve Moore [Chairperson]                     |
| Supplier members of Executive Board     | REDACTED                                      |
| Start date for Executive Board meetings | Two months after commencement of the contract |
| Frequency of Executive Board meetings   | Bi-monthly or as agreed by the board members  |
| Location of Executive Board meetings    | By mutual agreement of the board members      |

### Change Management Board

|                                              |                           |
|----------------------------------------------|---------------------------|
| Authority Members of Change Management Board | Andrew Cook [Chairperson] |
|----------------------------------------------|---------------------------|

|                                                 |                                              |
|-------------------------------------------------|----------------------------------------------|
| Supplier Members of Change Management Board     | REDACTED                                     |
| Start Date for Change Management Board meetings | One month after commencement of the contract |
| Frequency of Change Management Board meetings   | Monthly or as agreed by the board members    |
| Location of Change Management Board meetings    | By mutual agreement of the board members     |

#### Technical Board

|                                         |                                              |
|-----------------------------------------|----------------------------------------------|
| Authority Members of Technical Board    | Jonathon Boyes [Chairperson]                 |
| Supplier Members of Technical Board     | Jon Wicks                                    |
| Start Date for Technical Board meetings | One month after commencement of the contract |
| Frequency of Technical Board meetings   | Monthly or as agreed by the board members    |
| Location of Technical Board meetings    | By mutual agreement of the board members     |

#### Risk Management Board

|                                               |                                              |
|-----------------------------------------------|----------------------------------------------|
| Authority Members for Risk Management Board   | Andrew Cook [Chairperson]                    |
| Supplier Members for Risk Management Board    | REDACTED                                     |
| Start Date for Risk Management Board meetings | One month after commencement of the contract |
| Frequency of Risk Management Board meetings   | Monthly or as agreed by the board members    |
| Location of Risk Management Board meetings    | By mutual agreement of the board members     |

**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 8.2**

**CHANGE CONTROL PROCEDURE**

## Change Control Procedure

### 1 DEFINITIONS

In this Schedule, the following definitions shall apply:

**“Authority Change Manager”** the person appointed to that position by the Authority from time to time and notified in writing to the Supplier or, if no person is notified, the Authority Representative;

**“Change Request”** a written request for a Contract Change which shall be substantially in the form of Annex 1;

**“Change Communication”** any Change Request, Impact Assessment, Change Authorisation Note or other communication sent or required to be sent pursuant to this Schedule;

**“Fast-track Change”** any Contract Change which the Parties agree to expedite in accordance with Paragraph 8;

**“Impact Assessment”** an assessment of a Change Request in accordance with Paragraph 5;

**“Impact Assessment Estimate”** has the meaning given in Paragraph 4.3;

**“Receiving Party”** the Party which receives a proposed Contract Change; and

**“Supplier Change Manager”** the person appointed to that position by the Supplier from time to time and notified in writing to the Authority or, if no person is notified, the Supplier Representative.

### 2 GENERAL PRINCIPLES OF CHANGE CONTROL PROCEDURE

2.1 This Schedule sets out the procedure for dealing with Changes.

2.2 Operational Changes shall be processed in accordance with Paragraph 9. If either Party is in doubt about whether a change falls within the definition of an Operational Change, then it must be processed as a Contract Change.

2.3 The Parties shall deal with Contract Change as follows:

- (a) either Party may request a Contract Change which they shall initiate by issuing a Change Request in accordance with Paragraph 4;
- (b) unless this Agreement otherwise requires, the Supplier shall assess and document the potential impact of a proposed Contract Change in accordance with Paragraph 5 before the Contract Change can be either approved or implemented;



- (c) the Authority shall have the right to request amendments to a Change Request, approve it or reject it in the manner set out in Paragraph 6;
- (d) the Supplier shall have the right to reject a Change Request solely in the manner set out in Paragraph 7;
- (e) save as otherwise provided in this Agreement, no proposed Contract Change shall be implemented by the Supplier until a Change Authorisation Note has been signed and issued by the Authority in accordance with Paragraph 6.2; and
- (f) a proposed Contract Change is a Fast-track Change, it shall be processed in accordance with Paragraph 8.

2.4 To the extent that any Contract Change requires testing and/or a programme for implementation, then the Parties shall follow the procedures set out in Schedule 6.2 (*Testing Procedures*), and, where appropriate, the Change Authorisation Note relating to such a Contract Change shall specify Milestones and/or a Key Milestone and Milestone Date(s) in respect of such Contract Change for the purposes of such procedures.

2.5 Until a Change Authorisation Note has been signed and issued by the Authority in accordance with Paragraph 6.2, then:

- (a) unless the Authority expressly agrees (or requires) otherwise in writing, the Supplier shall continue to supply the Services in accordance with the existing terms of this Agreement as if the proposed Contract Change did not apply; and
- (b) any discussions, negotiations or other communications which may take place between the Authority and the Supplier in connection with any proposed Contract Change, including the submission of any Change Communications, shall be without prejudice to each Party's other rights under this Agreement.

2.6 The Supplier shall:

- (a) within ten (10) Working Days of the Authority's signature and issue of a Change Authorisation Note, deliver to the Authority a copy of this Agreement updated to reflect all Contract Changes agreed in the relevant Change Authorisation Note and annotated with a reference to the Change Authorisation Note pursuant to which the relevant Contract Changes were agreed; and
- (b) thereafter provide to the Authority such further copies of the updated Agreement as the Authority may from time to time request.

### 3 COSTS

3.1 Subject to Paragraph 3.3:

- (a) the costs of preparing each Change Request shall be borne by the Party making the Change Request; and
  - (b) the costs incurred by the Supplier in undertaking an Impact Assessment shall be borne by the Party making the Change Request provided that the Authority shall not be required to pay any such costs if:
    - (i) such costs are below £15,000
    - (ii) the Supplier is able to undertake the Impact Assessment by using resources already solely deployed in the provision of the Services; or
    - (iii) such costs exceed those in the accepted Impact Assessment Estimate.
- 3.2 The cost of any Contract Change shall be calculated and charged in accordance with the principles and day rates or day costs (as applicable) set out in Schedule 7.1 (*Charges and Invoicing*). The Supplier shall be entitled to increase the Charges only if it can demonstrate in the Impact Assessment that the proposed Contract Change requires additional resources and, in any event, any change to the Charges resulting from a Contract Change (whether the change will cause an increase or a decrease in the Charges) will be strictly proportionate to the increase or decrease in the level of resources required for the provision of the Services as amended by the Contract Change.
- 3.3 Both Parties' costs incurred in respect of any use of this Change Control Procedure as a result of any error or Default by the Supplier shall be paid for by the Supplier.

#### 4 CHANGE REQUEST

- 4.1 Either Party may issue a Change Request to the other Party at any time during the Term. A Change Request shall be substantially in the form of Annex 1 and state whether the Party issuing the Change Request considers the proposed Contract Change to be a Fast-track Change.
- 4.2 If the Supplier issues the Change Request, then it shall also provide an Impact Assessment to the Authority as soon as is reasonably practicable but in any event within ten (10) Working Days of the date of issuing the Change Request.
- 4.3 If the Authority issues the Change Request, then the Supplier shall provide as soon as reasonably practical and in any event within ten (10) Working Days of the date of receiving the Change Request an estimate ("**Impact Assessment Estimate**") of the cost of preparing an Impact Assessment and the timetable for preparing it. The timetable shall provide for the completed Impact Assessment to be received by the Authority within ten (10) Working Days of acceptance of the Impact Assessment Estimate or within any longer time period agreed by the Authority.
- 4.4 If the Authority accepts an Impact Assessment Estimate then following receipt of notice of such acceptance the Supplier shall provide the completed Impact Assessment to the Authority as soon as is reasonably practicable and in any event within the period agreed in the Impact Assessment Estimate. If the Supplier requires any clarification in relation to the Change Request before it can deliver the Impact Assessment, then

it shall promptly make a request for clarification to the Authority and provided that sufficient information is received by the Authority to fully understand:

- (a) The nature of the request for clarification; and
- (b) The reasonable justification for the request;

the time period to complete the Impact Assessment shall be extended by the time taken by the Authority to provide that clarification. The Authority shall respond to the request for clarification as soon as is reasonably practicable.

## **5 IMPACT ASSESSMENT**

5.1 Each Impact Assessment shall be completed in good faith and shall include:

- (a) details of the proposed Contract Change including the reason for the Contract Change; and
- (b) details of the impact of the proposed Contract Change on the Services, the Optional Services (if any) and the Supplier's ability to meet its other obligations under this Agreement;
- (c) any variation to the terms of this Agreement that will be required as a result of that impact, including changes to:
  - (i) the Services Description, the Performance Indicators and/or the Target Performance Levels;
  - (ii) the format of Authority Data, as set out in the Services Description;
  - (iii) the Milestones, Implementation Plan and any other timetable previously agreed by the Parties;
  - (iv) other services provided by third party contractors to the Authority, including any changes required by the proposed Contract Change to the Authority's IT infrastructure;
- (d) details of the cost of implementing the proposed Contract Change;
- (e) details of the ongoing costs required by the proposed Contract Change when implemented, including any increase or decrease in the Charges, any alteration in the resources and/or expenditure required by either Party and any alteration to the working practices of either Party;
- (f) a timetable for the implementation, together with any proposals for the testing of the Contract Change;
- (g) details of how the proposed Contract Change will ensure compliance with any applicable Change in Law; and
- (h) such other information as the Authority may reasonably request in (or in response to) the Change Request.

- 5.2 If the Contract Change involves the processing or transfer of any Personal Data outside the European Economic Area, the preparation of the Impact Assessment shall also be subject to Clause 23 (*Protection of Personal Data*).
- 5.3 Subject to the provisions of Paragraph 5.4, the Authority shall review the Impact Assessment and respond to the Supplier in accordance with Paragraph 6 within fifteen (15) Working Days of receiving the Impact Assessment, it.
- 5.4 If the Authority is the Receiving Party and the Authority reasonably considers that it requires further information regarding the proposed Contract Change so that it may properly evaluate the Change Request and the Impact Assessment, then within five (5) Working Days of receiving the Impact Assessment, it shall notify the Supplier of this fact and detail the further information that it requires. The Supplier shall then re-issue the relevant Impact Assessment to the Authority within ten (10) Working Days of receiving such notification. At the Authority's discretion, the Parties may repeat the process described in this Paragraph 5.4 until the Authority is satisfied that it has sufficient information to properly evaluate the Change Request and Impact Assessment.
- 5.5 The calculation of costs for the purposes of Paragraphs 5.1(d) and (e) shall:
- (a) be based on the Financial Model;
  - (b) facilitate the Financial Transparency Objectives;
  - (c) include estimated volumes of each type of resource to be employed and the applicable rate card;
  - (d) include full disclosure of any assumptions underlying such Impact Assessment;
  - (e) include evidence of the cost of any assets required for the Change; and
  - (f) include details of any new Sub-contracts necessary to accomplish the Change.

## **6 AUTHORITY'S RIGHT OF APPROVAL**

- 6.1 Within fifteen (15) Working Days of receiving the Impact Assessment from the Supplier or within ten (10) Working Days of receiving the further information that it may request pursuant to Paragraph 5.4, the Authority shall evaluate the Change Request and the Impact Assessment and shall do one of the following:
- (a) approve the proposed Contract Change, in which case the Parties shall follow the procedure set out in Paragraph 6.2;
  - (b) in its absolute discretion reject the Contract Change, in which case it shall notify the Supplier of the rejection. The Authority shall not reject any proposed Contract Change to the extent that the Contract Change is necessary for the Supplier or the Services to comply with any Changes in Law. If the Authority does reject a Contract Change, then it shall explain its reasons in writing to the Supplier as soon as is reasonably practicable following such rejection; or

- (c) in the event that it reasonably believes that a Change Request or Impact Assessment contains errors or omissions, require the Supplier to modify the relevant document accordingly, in which event the Supplier shall make such modifications within five (5) Working Days of such request. Subject to Paragraph 5.4, on receiving the modified Change Request and/or Impact Assessment, the Authority shall approve or reject the proposed Contract Change within 10 Working Days.
- 6.2 If the Authority approves the proposed Contract Change pursuant to Paragraph 6.1 and it has not been rejected by the Supplier in accordance with Paragraph 7, then it shall inform the Supplier and the Supplier shall prepare two copies of a Change Authorisation Note which it shall sign and deliver to the Authority for its signature. Following receipt by the Authority of the Change Authorisation Note, it shall sign both copies and return one copy to the Supplier. On the Authority's signature the Change Authorisation Note shall constitute (or, where the Authority has agreed to or required the implementation of a Change prior to signature of a Change Authorisation Note, shall constitute confirmation of) a binding variation to this Agreement.
- 6.3 If the Authority does not sign the Change Authorisation Note within ten (10) Working Days, then the Supplier shall have the right to notify the Authority and if the Authority does not sign the Change Authorisation Note within five (5) Working Days of such notification, then the Supplier may refer the matter to the Expedited Dispute Timetable pursuant to the Dispute Resolution Procedure.

## **7 SUPPLIER'S RIGHT OF APPROVAL**

Following an Impact Assessment, if:

- (a) the Supplier reasonably believes that any proposed Contract Change which is requested by the Authority would:
  - (i) materially and adversely affect the risks to the health and safety of any person; and/or
  - (ii) require the Services to be performed in a way that infringes any Law; and/or
- (b) the Supplier demonstrates to the Authority's reasonable satisfaction that the proposed Contract Change is technically impossible to implement and neither the Supplier Solution nor the Services Description state that the Supplier does have the technical capacity and flexibility required to implement the proposed Contract Change,

then the Supplier shall be entitled to reject the proposed Contract Change and shall notify the Authority of its reasons for doing so within five (5) Working Days after the date on which it is obliged to deliver the Impact Assessment pursuant to Paragraph 4.3.

## **8 FAST-TRACK CHANGES**

- 8.1 The Parties acknowledge that to ensure operational efficiency there may be circumstances where it is desirable to expedite the processes set out above.

8.2 If:

- (a) the total number of Contract Changes in relation to which this Fast-track Change procedure has been applied does not exceed four (4) in any twelve (12) month period; and
- (b) both Parties agree the value of the proposed Contract Change over the remaining Term and any period for which Termination Services may be required does not exceed £50,000 and the proposed Contract Change is not significant (as determined by the Authority acting reasonably),

then the Parties shall confirm to each other in writing that they shall use the process set out in Paragraphs 4, 5, 6 and 7 but with reduced timescales, such that any period of fifteen (15) Working Days is reduced to five (5) Working Days, any period of ten (10) Working Days is reduced to two (2) Working Days and any period of five (5) Working Days is reduced to one (1) Working Day.

8.3 The Parties may agree in writing to revise the parameters set out in Paragraph 8.2 from time to time or that the Fast-track Change procedure shall be used in relation to a particular Contract Change notwithstanding that the total number of Contract Changes to which such procedure is applied will then exceed four (4) in a twelve (12) month period.

## 9 OPERATIONAL CHANGE PROCEDURE

9.1 Any Operational Changes identified by the Supplier to improve operational efficiency of the Services may be implemented by the Supplier without following the Change Control Procedure for proposed Contract Changes provided they do not:

- (a) have an impact on the business of the Authority;
- (b) require a change to this Agreement;
- (c) have a direct impact on use of the Services; or
- (d) involve the Authority in paying any additional Charges or other costs.

9.2 The Authority may request an Operational Change by submitting a written Request for Operational Change ("RFOC") to the Supplier Representative.

9.3 The RFOC shall include the following details:

- (a) the proposed Operational Change; and
- (b) the time-scale for completion of the Operational Change.

9.4 The Supplier shall inform the Authority of any impact on the Services that may arise from the proposed Operational Change.

9.5 The Supplier shall complete the Operational Change by the timescale specified for completion of the Operational Change in the RFOC, and shall promptly notify the Authority when the Operational Change is completed.

## 10 COMMUNICATIONS

For any Change Communication to be valid under this Schedule, it must be sent to either the Authority Change Manager or the Supplier Change Manager, as applicable. The provisions of Clause 44 (*Notices*) shall apply to a Change Communication as if it were a notice.

**ANNEX 1: CHANGE REQUEST FORM**

|                                                                                                            |        |                   |
|------------------------------------------------------------------------------------------------------------|--------|-------------------|
| CR NO.:                                                                                                    | TITLE: | TYPE OF CHANGE:   |
| CONTRACT:                                                                                                  |        | REQUIRED BY DATE: |
| ACTION:                                                                                                    | NAME:  | DATE:             |
| RAISED BY:                                                                                                 |        |                   |
| AREA(S) IMPACTED ( <i>OPTIONAL FIELD</i> ):                                                                |        |                   |
| ASSIGNED FOR IMPACT ASSESSMENT BY:                                                                         |        |                   |
| ASSIGNED FOR IMPACT ASSESSMENT TO:                                                                         |        |                   |
| SUPPLIER REFERENCE NO.:                                                                                    |        |                   |
| FULL DESCRIPTION OF REQUESTED CONTRACT CHANGE (INCLUDING PROPOSED CHANGES TO THE WORDING OF THE CONTRACT): |        |                   |
| DETAILS OF ANY PROPOSED ALTERNATIVE SCENARIOS:                                                             |        |                   |
| REASONS FOR AND BENEFITS AND DISADVANTAGES OF REQUESTED CONTRACT CHANGE:                                   |        |                   |
| SIGNATURE OF REQUESTING CHANGE OWNER:                                                                      |        |                   |
| DATE OF REQUEST:                                                                                           |        |                   |

**ANNEX 2: CHANGE AUTHORISATION NOTE**

|           |                 |                   |
|-----------|-----------------|-------------------|
| CR NO.:   | TITLE:          | DATE RAISED:      |
| CONTRACT: | TYPE OF CHANGE: | REQUIRED BY DATE: |



|                                                                                                                                       |                                   |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| [KEY MILESTONE DATE: <i>[if any]</i> ]                                                                                                |                                   |
| DETAILED DESCRIPTION OF CONTRACT CHANGE FOR WHICH IMPACT ASSESSMENT IS BEING PREPARED AND WORDING OF RELATED CHANGES TO THE CONTRACT: |                                   |
| PROPOSED ADJUSTMENT TO THE CHARGES RESULTING FROM THE CONTRACT CHANGE:                                                                |                                   |
| DETAILS OF PROPOSED ONE-OFF ADDITIONAL CHARGES AND MEANS FOR DETERMINING THESE (E.G. FIXED PRICE BASIS):                              |                                   |
| SIGNED ON BEHALF OF THE AUTHORITY:                                                                                                    | SIGNED ON BEHALF OF THE SUPPLIER: |
| Signature:_____                                                                                                                       | Signature:_____                   |
| Name:_____                                                                                                                            | Name:_____                        |
| Position:_____                                                                                                                        | Position:_____                    |
| Date:_____                                                                                                                            | Date:_____                        |



**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 8.3**

**DISPUTE RESOLUTION PROCEDURE**

## Dispute Resolution Procedure

### 1 DEFINITIONS

In this Schedule, the following definitions shall apply:

|                                               |                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“CEDR”</b>                                 | the Centre for Effective Dispute Resolution of International Dispute Resolution Centre, 70 Fleet Street, London, EC4Y 1EU;                                                                                                                                                                  |
| <b>“Counter Notice”</b>                       | has the meaning given in Paragraph 7.2;                                                                                                                                                                                                                                                     |
| <b>“Expert”</b>                               | in relation to a Dispute, a person appointed in accordance with Paragraph 6.2 to act as an expert in relation to that Dispute;                                                                                                                                                              |
| <b>“Expert Determination”</b>                 | determination by an Expert in accordance with Paragraph 6;                                                                                                                                                                                                                                  |
| <b>“Mediation Notice”</b>                     | has the meaning given in Paragraph 4.2;                                                                                                                                                                                                                                                     |
| <b>“Mediator”</b>                             | the independent third party appointed in accordance with Paragraph 5.2 to mediate a Dispute;                                                                                                                                                                                                |
| <b>“Multi-Party Dispute”</b>                  | a Dispute which involves the Parties and one or more Related Third Parties;                                                                                                                                                                                                                 |
| <b>“Multi-Party Dispute Representatives”</b>  | has the meaning given in Paragraph 9.6;                                                                                                                                                                                                                                                     |
| <b>“Multi-Party Dispute Resolution Board”</b> | has the meaning given in Paragraph 9.6;                                                                                                                                                                                                                                                     |
| <b>“Related Third Party”</b>                  | <p>a party to:</p> <p>another contract with the Authority or the Supplier which is relevant to this Agreement; or</p> <p>(a)</p> <p>(b) a Sub--consultant; and</p>                                                                                                                          |
| <b>“Supplier Request”</b>                     | a notice served by the Supplier requesting that the Dispute be treated as a Multi-Party Dispute, setting out its grounds for that request and specifying each Related Third Party that it believes should be involved in the Multi-Dispute Resolution Procedure in respect of that Dispute. |

## 2 DISPUTE NOTICES

### 2.1 If a Dispute arises then:

- (a) the Authority Representative and the Supplier Representative shall attempt in good faith to resolve the Dispute; and
- (b) if such attempts are not successful within a reasonable period, not being longer than twenty (20) Working Days, either Party may issue to the other a Dispute Notice.

### 2.2 A Dispute Notice:

- (a) shall set out:
  - (i) the material particulars of the Dispute;
  - (ii) the reasons why the Party serving the Dispute Notice believes that the Dispute has arisen; and
  - (iii) if the Party serving the Dispute Notice believes that the Dispute should be dealt with under the Expedited Dispute Timetable, the reason why; and
- (b) may specify in accordance with the requirements of Paragraphs 9.2 and 9.3 that the Party issuing the Dispute Notice has determined (in the case of the Authority) or considers (in the case of the Supplier) that the Dispute is a MultiParty Dispute, in which case Paragraph 2.3 shall apply.

### 2.3 If a Dispute Notice specifies that the Dispute has been determined or is considered to be a Multi-Party Dispute pursuant to Paragraph 2.2(b), then:

- (a) if it is served by the Authority it shall be treated as a Multi-Party Procedure Initiation Notice; and
- (b) if it is served by the Supplier it shall be treated as a Supplier Request, and  
in each case the provisions of Paragraph 9 shall apply.

### 2.4 Subject to Paragraphs 2.5 and 3.2 and so long as the Authority has not served a MultiParty Procedure Initiation Notice in respect of the relevant Dispute, following the issue of a Dispute Notice the Parties shall seek to resolve the Dispute:

- (a) first by commercial negotiation (as prescribed in Paragraph 4);
- (b) then, if either Party serves a Mediation Notice, by mediation (as prescribed in Paragraph 5); and

- (c) lastly by recourse to arbitration (as prescribed in Paragraph 7) or litigation (in accordance with Clause 46 (*Governing Law and Jurisdiction*)).
- 2.5 Specific issues shall be referred to Expert Determination (as prescribed in Paragraph 6) where specified under the provisions of this Agreement and may also be referred to Expert Determination where otherwise appropriate as specified in Paragraph 6.1.
- 2.6 Unless agreed otherwise in writing, the Parties shall continue to comply with their respective obligations under this Agreement regardless of the nature of the Dispute and notwithstanding any issue of a Dispute Notice or a Multi-Party Procedure Initiation Notice or proceedings under Paragraph 8 (*Urgent Relief*).

### **3 EXPEDITED DISPUTE TIMETABLE**

- 3.1 In exceptional circumstances where the use of the times in this Schedule would be unreasonable, including (by way of example) where one Party would be materially disadvantaged by a delay in resolving the Dispute, the Parties may agree to use the Expedited Dispute Timetable. If the Parties are unable to reach agreement on whether to use the Expedited Dispute Timetable within five (5) Working Days of the issue of a Dispute Notice, the use of the Expedited Dispute Timetable shall be at the sole discretion of the Authority.
- 3.2 If the Expedited Dispute Timetable is to be used pursuant to the provisions of Paragraph 3.1 or is otherwise specified under the provisions of this Agreement, then the following periods of time shall apply in lieu of the time periods specified in the applicable Paragraphs:
  - (a) in Paragraph 4.2(c), ten (10) Working Days;
  - (b) in Paragraph 5.2, ten (10) Working Days;
  - (c) in Paragraph 6.2, five (5) Working Days; and
  - (d) in Paragraph 7.2, ten (10) Working Days.
- 3.3 If at any point it becomes clear that an applicable deadline cannot be met or has passed, the Parties may (but shall be under no obligation to) agree in writing to extend the deadline. If the Parties fail to agree within two (2) Working Days after the deadline has passed, the Authority may set a revised deadline provided that it is no less than five (5) Working Days before the end of the period of time specified in the applicable paragraphs (or two (2) Working Days in the case of Paragraph 6.2). Any agreed extension shall have the effect of delaying the start of the subsequent stages by the period agreed in the extension. If the Authority fails to set such a revised deadline then the use of the Expedited Dispute Timetable shall cease and the normal time periods shall apply from that point onwards.

### **4 COMMERCIAL NEGOTIATION**

- 4.1 Following the service of a Dispute Notice, then, so long as the Authority has not served a Multi-Party Procedure Initiation Notice in respect of the relevant Dispute, the Authority and the Supplier shall make reasonable endeavours to resolve the Dispute

as soon as possible by commercial negotiation between the Authority's *Steve Moore* and the Supplier's *Bruce Chalmers*.

4.2 If:

- (a) either Party is of the reasonable opinion that the resolution of a Dispute by commercial negotiation, or the continuance of commercial negotiation, will not result in an appropriate solution;
- (b) the Parties have already held discussions of a nature and intent (or otherwise were conducted in the spirit) that would equate to the conduct of commercial negotiation in accordance with this Paragraph 4; or
- (c) the Parties have not settled the Dispute in accordance with Paragraph 4.1 within thirty (30) Working Days of service of the Dispute Notice,

either Party may serve a written notice to proceed to mediation in accordance with Paragraph 5 (a "**Mediation Notice**").

## 5 **MEDIATION**

5.1 If a Mediation Notice is served, the Parties shall attempt to resolve the dispute in accordance with the version of CEDR's Model Mediation Procedure which is current at the time the Mediation Notice is served (or such other version as the Parties may agree).

5.2 If the Parties are unable to agree on the joint appointment of an independent person to mediate the Dispute within twenty (20) Working Days from (and including) the service of a Mediation Notice then either Party may apply to CEDR to nominate such a person.

5.3 If the Parties are unable to reach a settlement in the negotiations at the mediation, and only if both Parties so request and the Mediator agrees, the Mediator shall produce for the Parties a non-binding recommendation on terms of settlement. This shall not attempt to anticipate what a court might order but shall set out what the Mediator suggests are appropriate settlement terms in all of the circumstances.

5.4 Any settlement reached in the mediation shall not be legally binding until it has been reduced to writing and signed by, or on behalf of, the Parties (in accordance with the Change Control Procedure where appropriate). The Mediator shall assist the Parties in recording the outcome of the mediation.

## 6 **EXPERT DETERMINATION**

6.1 If a Dispute relates to any aspect of the technology underlying the provision of the Services or otherwise relates to a technical matter of an IT, accounting or financing nature and the Dispute has not been resolved by commercial negotiation in accordance with Paragraph 4 or, if applicable, mediation in accordance with Paragraph 5, then either Party may by written notice to the other request (agreement

to which request shall not be unreasonably withheld or delayed) that the Dispute be referred to an expert for determination.

6.2 The expert shall be appointed by agreement in writing between the Parties, but in the event of a failure to agree within ten (10) Working Days of the relevant request made pursuant to Paragraph 6.1, or if the person appointed is unable or unwilling to act, the expert shall be appointed:

- (a) if the Dispute relates to any aspect of the technology underlying the provision of the Services or a matter of an IT technical nature, on the instructions of the President of the British Computer Society (or any other association that has replaced the British Computer Society);
- (b) if the Dispute relates to a matter of a financial technical nature, on the instructions of the President of the Institute of Chartered Accountants of England and Wales; or
- (c) if the Dispute relates to a matter of a technical nature not falling within Paragraphs 6.2(a) or (b), on the instructions of the president (or equivalent) of:
  - (i) an appropriate body agreed between the Parties; or
  - (ii) if the Parties do not reach agreement on the relevant body within fifteen (15) Working Days of the relevant request made pursuant to Paragraph 6.1, such body as may be specified by the President of the Law Society on application by either Party.

6.3 The Expert shall act on the following basis:

- (a) he/she shall act as an expert and not as an arbitrator and shall act fairly and impartially;
- (b) the Expert's determination shall (in the absence of a material failure to follow the agreed procedures) be final and binding on the Parties;
- (c) the Expert shall decide the procedure to be followed in the determination and shall be requested to make his/her determination within thirty (30) Working Days of his appointment or as soon as reasonably practicable thereafter and the Parties shall assist and provide the documentation that the Expert requires for the purpose of the determination;
- (d) any amount payable by one Party to another as a result of the Expert's determination shall be due and payable within twenty (20) Working Days of the Expert's determination being notified to the Parties;
- (e) the process shall be conducted in private and shall be confidential; and
- (f) the Expert shall determine how and by whom the costs of the determination, including his/her fees and expenses, are to be paid.



## 7 ARBITRATION

7.1 Subject to compliance with its obligations under Paragraph 4.1 and to the provisions of Paragraph 6, the Authority may at any time before court proceedings are commenced refer the Dispute to arbitration in accordance with the provisions of Paragraph 7.5.

7.2 Before the Supplier commences court proceedings or arbitration, it shall serve written notice on the Authority of its intentions and the Authority shall have fifteen (15) Working Days following receipt of such notice to serve a reply (a “**Counter Notice**”) on the Supplier requiring the Dispute to be referred to and resolved by arbitration in accordance with Paragraph 7.5 or be subject to the exclusive jurisdiction of the courts of England and Wales. The Supplier shall not commence any court proceedings or arbitration until the expiry of such fifteen (15) Working Day period.

7.3 If the Authority serves a Counter Notice, then:

- (a) if the Counter Notice requires the Dispute to be referred to arbitration, the provisions of Paragraph 7.5 shall apply; or
- (b) if the Counter Notice requires the Dispute to be subject to the exclusive jurisdiction of the courts of England and Wales, the Dispute shall be so referred to those courts and the Supplier shall not commence arbitration proceedings.

7.4 If the Authority does not serve a Counter Notice within the fifteen (15) Working Day period referred to in Paragraph 7.2, the Supplier may either commence arbitration proceedings in accordance with Paragraph 7.5 or commence court proceedings in the Courts of England and Wales which shall (in those circumstances) have exclusive jurisdiction.

7.5 The Parties hereby confirm that if any arbitration proceedings are commenced pursuant to Paragraphs 7.1 to 7.4:

- (a) the Dispute shall be referred to and finally resolved by arbitration under the Rules of the London Court of International Arbitration (“**LCIA**”) (subject to Paragraphs 7.5(e), (f) and (g));
- (b) the arbitration shall be administered by the LCIA;
- (c) the LCIA procedural rules in force at the date that the Dispute was referred to arbitration shall be applied and are deemed to be incorporated by reference into this Agreement and the decision of the arbitrator shall be binding on the Parties in the absence of any material failure to comply with such rules;
- (d) if the Parties fail to agree the appointment of the arbitrator within ten (10) Working Days from the date on which arbitration proceedings are commenced or if the person appointed is unable or unwilling to act, the arbitrator shall be appointed by the LCIA;
- (e) the chair of the arbitral tribunal shall be British;

- (f) the arbitration proceedings shall take place in London and in the English language; and
- (g) the seat of the arbitration shall be London.

## **8 URGENT RELIEF**

Either Party may at any time take proceedings or seek remedies before any court or tribunal of competent jurisdiction:

- (a) for interim or interlocutory remedies in relation to this Agreement or infringement by the other Party of that Party's Intellectual Property Rights; and/or
- (b) where compliance with Paragraph 2.1 and/or referring the Dispute to mediation may leave insufficient time for that Party to commence proceedings before the expiry of the limitation period.

## **9 MULTI-PARTY DISPUTES**

9.1 All Multi-Party Disputes shall be resolved in accordance with the procedure set out in this Paragraph 9 (the **"Multi-Party Dispute Resolution Procedure"**).

9.2 If at any time following the issue of a Dispute Notice, the Authority reasonably considers that the matters giving rise to the Dispute involve one or more Related Third Parties, then the Authority shall be entitled to determine that the Dispute is a Multi-Party Dispute and to serve a notice on the Supplier which sets out the Authority's determination that the Dispute is a Multi-Party Dispute and specifies the Related Third Parties which are to be involved in the Multi-Party Dispute Resolution Procedure, such notice a **"Multi-Party Procedure Initiation Notice"**.

9.3 If following the issue of a Dispute Notice but before the Dispute has been referred to Expert Determination or to arbitration in accordance with Paragraph 7, the Supplier has reasonable grounds to believe that the matters giving rise to the Dispute have been contributed to by one or more Related Third Parties, the Supplier may serve a Supplier Request on the Authority.

9.4 The Authority shall (acting reasonably) consider each Supplier Request and shall determine within five (5) Working Days whether the Dispute is:

- (a) a Multi-Party Dispute, in which case the Authority shall serve a Multi-Party Procedure Initiation Notice on the Supplier; or
- (b) not a Multi-Party Dispute, in which case the Authority shall serve written notice of such determination upon the Supplier and the Dispute shall be treated in accordance with Paragraphs 3 to 8.

9.5 If the Authority has determined, following a Supplier Request, that a Dispute is not a Multi-Party Dispute, the Supplier may not serve another Supplier Request with reference to the same Dispute.

9.6 Following service of a Multi-Party Procedure Initiation Notice a Multi-Party Dispute shall be dealt with by a board (in relation to such Multi-Party Dispute, the “**MultiParty Dispute Resolution Board**”) comprising representatives from the following parties to the Multi-Party Dispute, each of whom shall be of a suitable level of seniority to finalise any agreement with the other parties to settle the Multi-Party Dispute:

- (a) the Authority;
- (b) the Supplier;
- (c) each Related Third Party involved in the Multi-Party Dispute; and
- (d) any other representatives of any of the Parties and/or any Related Third Parties whom the Authority considers necessary,

(together “**Multi-Party Dispute Representatives**”).

9.7 The Parties agree that the Multi-Party Dispute Resolution Board shall seek to resolve the relevant Multi-Party Dispute in accordance with the following principles and procedures:

- (a) the Parties shall procure that their Multi-Party Dispute Representatives attend, and shall use their best endeavours to procure that the Multi-Party Dispute Representatives of each Related Third Party attend, all meetings of the Multi-Party Dispute Resolution Board in respect of the Multi-Party Dispute;
- (b) the Multi-Party Dispute Resolution Board shall first meet within ten (10) Working Days of service of the relevant Multi-Party Procedure Initiation Notice at such time and place as the Parties may agree or, if the Parties do not reach agreement on the time and place within five (5) Working Days of service of the relevant Multi-Party Procedure Initiation Notice, at the time and place specified by the Authority, provided such place is at a neutral location within England and that the meeting is to take place between 9.00am and 5.00pm on a Working Day; and
- (c) in seeking to resolve or settle any Multi-Party Dispute, the members of the Multi-Party Dispute Resolution Board shall have regard to the principle that a Multi-Party Dispute should be determined based on the contractual rights and obligations between the Parties and the Related Third Parties and that any apportionment of costs should reflect the separate components of the MultiParty Dispute.

9.8 If a Multi-Party Dispute is not resolved between the Parties and all Related Third Parties within twenty five (25) Working Days of the issue of the Multi-Party Procedure Initiation Notice (or such longer period as the Parties may agree in writing), then:

- (a) either Party may serve a Mediation Notice in respect of the Multi-Party Dispute in which case Paragraph 5 shall apply;
- (b) either Party may request that the Multi-Party Dispute is referred to an expert in which case Paragraph 6 shall apply; and/or

(c) subject to Paragraph 9.9, Paragraph 7 shall apply to the Multi-Party Dispute, and in each case references to the “Supplier” or the “Parties” in such provisions shall include a reference to all Related Third Parties.

9.9 If a Multi-Party Dispute is referred to arbitration in accordance with Paragraph 7 or a Dispute becomes a Multi-Party Dispute during the course of arbitration proceedings and either Party is unable to compel a Related Third Party to submit to such arbitration proceedings, the Authority or the Supplier may discontinue such arbitration proceedings and instead initiate court proceedings. The costs of any such discontinued arbitration proceedings shall be borne by the Party which is in a direct contractual relationship with the Related Third Party or, where the Related Third Party is a Sub-Contractor, by the Supplier.

**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 8.4**

**REPORTS AND RECORDS PROVISIONS**

## Reports and Records Provisions

### 1 TRANSPARENCY REPORTS

- 1.1 Upon request from the Authority and no sooner than eight (8) weeks prior to the Operational Services Commencement Date, the Supplier shall provide to the Authority for its approval (such approval not to be unreasonably withheld or delayed) draft reports in accordance with Annex 1 (once approved, the “**Transparency Reports**”).
- 1.2 If the Authority rejects any draft Transparency Report, the Supplier shall submit a revised version of the relevant report for further approval by the Authority within five (5) days of receipt of any notice of rejection, taking account of any recommendations for revision and improvement to the report provided by the Authority.
- 1.3 The Supplier shall provide accurate and up-to-date versions of each Transparency Report to the Authority at the frequency referred to in Annex 1.
- 1.4 Any disagreement in connection with the preparation and/or approval of Transparency Reports, other than under Paragraph 1.2 above in relation to the contents of a Transparency Report, shall be treated as a Dispute.
- 1.5 The requirements for Transparency Reports are in addition to any other reporting requirements in this Agreement.

### 2 OTHER REPORTS

The Authority may require any or all of the following reports:

- (a) delay reports;
- (b) reports relating to Testing and tests carried out under Schedule 2.4 (*Security Management*) and Schedule 8.6 (*Service Continuity Plan and Corporate Resolution Planning*);
- (c) reports which the Supplier is required to supply as part of the Management Information;
- (d) security reports; and
- (e) Force Majeure Event reports.

### 3 RECORDS

- 3.1 The Supplier shall retain and maintain all the records (including superseded records) referred to in Paragraph 1 and Paragraph 2 (together “**Records**”):
  - (a) in accordance with the requirements Good Industry Practice;

- (b) in chronological order;
  - (c) in a form that is capable of audit; and
  - (d) at its own expense.
- 3.2 The Supplier shall make the Records available for inspection to the Authority on request, subject to the Authority giving reasonable notice.
- 3.3 Where Records are retained in electronic form, the original metadata shall be preserved together with all subsequent metadata in a format reasonably accessible to the Authority.
- 3.4 The Supplier shall, during the Term and a period of (7) years following the expiry or termination of this Agreement, maintain or cause to be maintained complete and accurate documents and records in relation to the provision of the Services including but not limited to all Records.
- 3.5 Records that contain financial information shall be retained and maintained in safe storage by the Supplier for a period of (7) years after the expiry or termination of this Agreement.
- 3.6 Without prejudice to the foregoing, the Supplier shall provide the Authority:
- (a) upon request a copy, certified as a true copy by an authorised representative of the Supplier, of its un-audited interim accounts and, if applicable, of consolidated un-audited interim accounts of the Supplier and its Affiliates which would (if the Supplier were listed on the London Stock Exchange (whether or not it is)) be required to be sent to shareholders as at the end of and for each such six (6) month period; and
  - (b) upon request, the Supplier's audited accounts and if applicable, of the consolidated audited accounts of the Supplier in respect of that period together with copies of all related directors' and auditors' reports and all other notices/circulars to shareholders.

#### **4 Virtual Library**

- 4.1 The Supplier shall, no later than 60 days from the Effective Date and without charge to the Authority, create a Virtual Library on which the Supplier shall (subject to any applicable legislation governing the use or processing of personal data) make information about this Agreement available in accordance with the requirements outlined in this Schedule.
- 4.2 The Supplier shall ensure that the Virtual Library is:
- (a) capable of holding and allowing access to the information described in Annex 3 of this Schedule and includes full and accurate file details of all uploaded items including date and time of upload, version number and the name of the uploader;

- (b) structured so that each document uploaded has a unique identifier;
  - (c) readily accessible by the Authority at all times in full via a user-friendly, password protected interface to such nominated users as are notified to the Supplier by the Authority from time to time;
  - (d) structured so as to allow nominated users to download either specific documents or the complete Virtual Library (to the extent it has Access Permission) in bulk and store and view the content offline (on a regular and automated basis);
  - (e) structured and maintained in accordance with the security requirements as set out in this Agreement including those set out in Schedule 2.4 (Security Management);
  - (f) created and based on open standards in Schedule 2.3 (Standards); and
  - (g) backed up on a secure off-site system.
- 4.3 Subject always to Clauses 16 (*Intellectual Property Rights*) and 17 (*Licences Granted by the Supplier*) of the Agreement, the Virtual Library (excluding any Software used to host it) shall form a database which constitute Project Specific IPR which shall be assigned to the Authority pursuant to Clause 17.1 (Project Specific IPR) of this Agreement.
- 4.4 The Supplier shall upload complete and accurate information specified in Annex 3 by the Initial Upload Date (except where prior to the launch of the Virtual Library in which case by the date at which the Virtual Library is made available in accordance with Paragraph 4.1) onto Virtual Library in the format specified.
- 4.5 Upon any document being uploaded to the Virtual Library, and where the Authority has been granted Access Permission to that document, if requested by the Authority, the Supplier shall email on the same date as the upload, a copy of the document to the nominated Authority email address at an email address to be provided by the Authority.
- 4.6 Except for notices under Clause 44.4 or items covered under Clause 44.6, where the Supplier is under an obligation to provide information to the Authority in a provision under this Agreement, then the Supplier's upload of that information onto the Virtual Library shall satisfy the Supplier's obligation to provide the Authority with that information provided that the Authority has access in accordance with this Paragraph 4 and the uploaded information meets the requirements more particularly specified in the relevant provision.
- 4.7 Except to the extent that the requirements provide for earlier and more regular Authority access to up-to-date information, Annex 3 shall not take precedence over any other obligation to provide information in this Agreement and the Supplier shall refer to the applicable clause for further details as to the requirement.



- 4.8 The Supplier shall provide each specified person (as set out in column 6 of the table at Annex 3) access to view and download the specified information in the Virtual Library in Annex 3 subject upon the occurrence of the event specified in the column marked Access Permission in Annex 3 to this Schedule.
- 4.9 Where Access Permission is not listed (in column 6 of the table at Annex 3) as being subject to the occurrence of a certain event the Supplier shall grant access to the person and information specified (in column 6 of the table at Annex 3) from the Initial Upload Date.
- 4.10 Where Access Permission is specified as being granted to the Authority's Third Party Auditor (prior to the Authority being granted access) it shall:
- (a) be entitled to access, view and download information specified in Annex 3 subject to it entering into a confidentiality agreement with the Supplier to keep the contents confidential (except to the extent disclosure of the confidential information is required under paragraph 4.10(b) of this Schedule); and
  - (b) report to the Authority (at its request) as to the completeness and accuracy of the information but not the substance of the information.
- 4.11 The Supplier shall ensure that the Virtual Library retains in an accessible form all historic or superseded records of the information specified Annex 3. In order to maintain the integrity of the historic archive of the information and documentation and for the purposes of maintaining a clear audit trail, the Supplier shall not delete or overwrite any information that has been stored in the Virtual Library, except for the purposes of maintenance (provided no information is lost during maintenance) or to enable the Supplier to comply with Data Protection Legislation.
- 4.12 Where the Supplier becomes aware that any of the information provided on the Virtual Library is materially inaccurate, incomplete or out of date (other than in respect of historic versions of documents) the Supplier shall provide an update to the information within fourteen (14) days unless already due to be updated beforehand due to an Update Requirement specified in Annex 3.
- 4.13 In the event of a conflict between any requirement in this Agreement (excluding Annex 3) for the Supplier to provide information to the Authority and the requirements set out in this Schedule, the requirement elsewhere in this Agreement shall prevail.
- 4.14 The Supplier shall ensure that a log of all Virtual Library changes is maintained and uploaded as required; and will be subject to Service Delivery Board approval.
- 4.15 No later than one (1) Month prior to the Operational Services Commencement Date, the Supplier shall provide training manuals to the Authority relating to the use of the Virtual Library.

- 4.16 On request by the Authority the Supplier shall provide the Authority's nominated users with a reasonable level of training and ongoing support to enable them to make use of the Virtual Library.
- 4.17 For the avoidance of doubt, the cost of any redactions, access restrictions or compliance with the Data Protection Legislation in respect of the information hosted on the Virtual Library shall be at the Supplier's own cost and expense.

#### ANNEX 1: TRANSPARENCY REPORTS

| TITLE                           | CONTENT                                                                                                              | FORMAT | FREQUENCY |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------|--------|-----------|
| <i>(Performance)</i>            | Details to be agreed by both parties no later than 60 days before Operational Services Commencement Date if required |        |           |
| <i>(Charges)</i>                |                                                                                                                      |        |           |
| <i>(Major subcontractors)</i>   |                                                                                                                      |        |           |
| <i>(Technical)</i>              |                                                                                                                      |        |           |
| <i>(Performance management)</i> |                                                                                                                      |        |           |

## **ANNEX 2: RECORDS TO BE KEPT BY THE SUPPLIER**

The records to be kept by the Supplier are:

1. This Agreement, its Schedules and all amendments to such documents.
2. All other documents which this Agreement expressly requires to be prepared.
3. Records relating to the appointment and succession of the Supplier Representative and each member of the Key Personnel.
4. Notices, reports and other documentation submitted by any Expert.
5. All operation and maintenance manuals prepared by the Supplier for the purpose of maintaining the provision of the Services and the underlying IT Environment and Supplier Equipment.
6. Documents prepared by the Supplier or received by the Supplier from a third party relating to a Force Majeure Event.
7. All formal notices, reports or submissions made by the Supplier to the Authority Representative in connection with the provision of the Services.
8. All certificates, licences, registrations or warranties in each case obtained by the Supplier in relation to the provision of the Services.
9. Documents prepared by the Supplier in support of claims for the Charges.
10. Documents submitted by the Supplier pursuant to the Change Control Procedure.
11. Documents submitted by the Supplier pursuant to invocation by it or the Authority of the Dispute Resolution Procedure.
12. Documents evidencing any change in ownership or any interest in any or all of the shares in the Supplier and/or the Guarantor, where such change may cause a change of Control; and including documents detailing the identity of the persons changing such ownership or interest.
13. Invoices and records related to VAT sought to be recovered by the Supplier.
14. Financial records, including audited and un-audited accounts of the Guarantor and the Supplier.
15. Records required to be retained by the Supplier by Law, including in relation to health and safety matters and health and safety files and all consents.
16. All documents relating to the Supplier's insurances to be maintained under this Agreement and any claims made in respect of them.

17. All journals and audit trail data referred to in Schedule 2.4 (*Security Management Plan*).
18. All other records, notices or certificates required to be produced and/or maintained by the Supplier pursuant to this Agreement.

### ANNEX 3: RECORDS TO UPLOAD TO VIRTUAL LIBRARY

The provisions of the Agreement shall take precedence to the following table. Nothing in this table is intended to override the obligations contained in the Agreement.

| Applicable Clause/ Paragraph         | Required Data                                                   | Format of Data                             | Initial Upload Date                                                             | Update Requirement                                                          | Access Permission and Access Event (where applicable) | Reporting                                   |
|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------|
| Cl.5.5 (e), (f) 17.1(a), 17.2(a)(ii) | Documentation on the NaFRA2 System (see Schedule 1 Definitions) | As appropriate and agreed by the Authority | No later than 10 Working Days from Authority assuring the relevant Deliverable. | -                                                                           | Authority                                             | On Virtual Library                          |
| Cl 14.3                              | Key Personnel                                                   | Sch 9.2                                    | Effective Date                                                                  | On replacement of Key Personnel                                             | Authority                                             | On Virtual Library                          |
| Sch 2.2, Part B Para 2.3             | Performance Monitoring Report and the Balanced Scorecard Report | Sch 2.2, Part B                            | Operational Service Commencement Date                                           | No later than 10 Working Days after the end of each Service Period          | Authority                                             | Dashboard entrance point to Virtual Library |
| Sch 2.4, Para 4                      | Core Information Management System Diagram                      | Sch 2.4, Annex 2                           | Operational Services Commencement Date                                          | Any update, annually and after any of the events in para 6.13               | Authority                                             | Produce prior to ATP (Go Live)              |
| Sch 2.4, Para 6                      | (Security) Risk Management Documentation                        | Sch 2.4, Annex 3                           | Operational Services Commencement Date                                          | Any update, annually and after any of the events in Schedule 2.4, para 6.13 | Authority                                             | Produce prior to ATP (Go Live)              |
| Sch 2.5, Para 4                      | Evidence of Insurances                                          | Sch 2.5                                    | Effective Date                                                                  | No later than 15 days after policy renewal or replacement                   | Authority                                             | On Virtual Library                          |
| Cl 22                                | Commercially Sensitive Information                              | Sch 4.2                                    | Effective Date                                                                  | Upon Agreement by the Authority to vary the information                     | Authority and Auditor                                 | On Virtual Library                          |
| Cl 15.6, 15.7                        | Notified Key Subcontractors                                     | Sch 4.3                                    | Effective Date                                                                  | On replacement of key subcontractor                                         | Authority                                             | On Virtual Library                          |
| Cl 15.5                              | Third Party Contracts                                           | Sch 4.4                                    | Effective Date                                                                  | On appointment of subcontract                                               | Authority                                             | On Virtual Library                          |

| <b>Applicable Clause/<br/>Paragraph</b> | <b>Required Data</b>         | <b>Format of Data</b>                      | <b>Initial Upload Date</b>                                                                                                                                                  | <b>Update Requirement</b>                                          | <b>Access Permission and Access Event (where applicable)</b> | <b>Reporting</b>   |
|-----------------------------------------|------------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------|--------------------|
| CI 16,17                                | Software                     | Sch 5                                      | Operational Services Commencement Date                                                                                                                                      | Upon Agreement by the Authority to vary the information            | Authority                                                    | On Virtual Library |
| CI 6.4                                  | Detailed Implementation Plan | Sch 6.1                                    | No later than 10 Working Days after the Authority approving the draft DIP                                                                                                   | No later than 10 Working Days after a revised DIP has been agreed. | Authority                                                    | On Virtual Library |
| Sch 6.2, Para 4                         | Test Strategy                | As appropriate and agreed by the Authority | No later than 60 Working Days prior to commencement of Testing.                                                                                                             | Upon update to the test strategy                                   | Authority                                                    | On Virtual Library |
| Sch 6.2, Para 5                         | Test Plan                    | As appropriate and agreed by the Authority | No later than 20 Working Days prior to relevant test                                                                                                                        | Upon update to the test plan                                       | Authority                                                    | On Virtual Library |
| Sch 6.2, Para 7                         | Test Specification           | As appropriate and agreed by the Authority | No later than 10 Working Days prior to relevant test                                                                                                                        | Upon update to the test specification                              | Authority                                                    | On Virtual Library |
| Sch 6.2, Para 8                         | Test Report                  | As appropriate and agreed by the Authority | 2 Working Days prior to the date on which the test is planned to end for the Draft Test Report.<br>5 days for the Final Test Report following the relevant test completion. | Reissue with each retest                                           | Authority                                                    | On Virtual Library |
| Sch 7.1, Part E Para 1.1                | Template Invoice             | As appropriate and agreed by the Authority | No later than 10 Working Days after the Effective Date                                                                                                                      | Upon Agreement by the Authority to vary the template               | Authority                                                    | On Virtual Library |
| Sch 7.1, Annex 4                        | Risk Register                | Sch 7.1, Annex 4                           | No later than 10 Working Days after the risk register being agreed.                                                                                                         | Upon Agreement by the Risk Management Board                        | Authority                                                    | On Virtual Library |
| Sch 7.3, Para 5                         | Benchmarking Plan            | Sch 7.3                                    | Upon receipt from Benchmarking as and if required by exception                                                                                                              | Approval of Plan                                                   | Authority and Auditor                                        | On request         |

| <b>Applicable Clause/<br/>Paragraph</b> | <b>Required Data</b>                        | <b>Format of Data</b>                      | <b>Initial Upload Date</b>                                                            | <b>Update Requirement</b>                     | <b>Access Permission and Access Event (where applicable)</b> | <b>Reporting</b>   |
|-----------------------------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------|--------------------|
| Sch 7.3, Para 5                         | Benchmarking report                         | Sch 7.3                                    | Upon receipt from Benchmarkers as and if required by exception                        | Any update                                    | Authority and Auditor                                        | On request         |
| Sch 7.4                                 | Financial Indicator Reports                 | Sch 7.4                                    | As specified in Sch 7.4                                                               | As specified in Sch 7.4                       | Authority                                                    | On Virtual Library |
| Sch 7.4                                 | Financial Distress Remediation Plan         | Sch 7.4                                    | As agreed by both Parties.                                                            | As specified in Sch 7.4                       | Authority                                                    | On Virtual Library |
| Sch 7.5, Part B                         | Contract Amendment Report                   | Sch 7.5, Part B                            | No later than 1 month after a material change being agreed                            |                                               | Authority                                                    | On Virtual Library |
| Sch 7.5, Part B                         | Quarterly Contract Report                   | Sch 7.5, Part B                            | No later than 1 month after the end of each Quarter                                   |                                               | Authority                                                    | On Virtual Library |
| Sch 7.5, Part B                         | Annual Contract Report                      | Sch 7.5, Part B                            | No later than 1 month after the end of the Contract Year to which that report relates |                                               | Authority                                                    | On Virtual Library |
| Sch 7.5 Part B                          | Financial Reconciliation Report             | Sch 7.5, Part B                            | No later than 6 months after the end of the Term                                      |                                               | Authority                                                    | On Virtual Library |
| Sch 8.1, Para 3                         | Representation and Structure of boards      | Sch 8.1 Annex 1                            | No later than 10 days after the Effective Date                                        | No later than 10 days after any agreed change | Authority                                                    | On Virtual Library |
| Sch 8.1, Para 3.5(e)                    | Minutes of governance meetings (all boards) | As appropriate and agreed by the Authority | No later than 10 days following receipt from Chair                                    |                                               | Authority                                                    | On Virtual Library |
| Sch 8.2 Para 4.3                        | Impact Assessment Estimate                  | As appropriate and agreed by the Authority | No later than 10 Working Days after impact assessment estimate has been recorded.     |                                               | Authority                                                    | On Virtual Library |

|                |                   |                                            |                                                                          |  |           |                    |
|----------------|-------------------|--------------------------------------------|--------------------------------------------------------------------------|--|-----------|--------------------|
| Sch 8.2 Para 5 | Impact Assessment | As appropriate and agreed by the Authority | No later than 10 Working Days after impact assessment has been recorded. |  | Authority | On Virtual Library |
|----------------|-------------------|--------------------------------------------|--------------------------------------------------------------------------|--|-----------|--------------------|

| <b>Applicable Clause/ Paragraph</b> | <b>Required Data</b>                                                               | <b>Format of Data</b>                      | <b>Initial Upload Date</b>                                                   | <b>Update Requirement</b>                       | <b>Access Permission and Access Event (where applicable)</b> | <b>Reporting</b>   |
|-------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------|--------------------|
| Sch 8.2, Para 2.6                   | Updated change to the Agreement and copy of annotated version illustrating changes | PDF and MS Word (editable)                 | No later than 10 Working Days after the signature of Variation Date          | Any variation                                   | Authority                                                    | On Virtual Library |
| Sch 8.2, Para 4                     | Change Request                                                                     | Sch 8.2, Annex 1 and 2                     | No later than 10 Working Days after Authority issuing the Change Request     |                                                 | Authority                                                    | On Virtual Library |
| Sch 8.3, Para 2.1                   | Dispute Notice                                                                     | Sch 8.3 Para 2.2                           | No later than 20 Working Days after an unresolved dispute arising            | Any variation                                   | Authority                                                    | On Virtual Library |
| Sch 8.3, Para 2.4                   | Mediation Notice                                                                   | As appropriate                             | No later than 10 Working Days after first served                             | Any variation                                   | Authority                                                    | On Virtual Library |
| Sch 8.4, Para 1                     | Transparency Report                                                                | Sch 8.4, Annex 1                           | No later than 10 Working Days after the Transparency Report has been agreed. | No later than 10 Working Days after any change. | Authority                                                    | On Virtual Library |
| Sch 8.5, Para 2.1 (a)               | Register of All Assets, Sub-contracts and Other Relevant Agreements                | As appropriate and agreed by the Authority | By agreement with the Parties' Exit Managers                                 | By agreement with the Parties' Exit Managers    | Authority                                                    | On Virtual Library |
| Sch 8.5, Para 2.1 (b)               | Configuration Database of Technical Infrastructure and Operating Procedures        | As appropriate and agreed by the Authority | By agreement with the Parties' Exit Managers                                 | By agreement with the Parties' Exit Managers    | Authority                                                    | On Virtual Library |
| Sch 8.5, Para 3.1                   | Exit Information                                                                   | As appropriate and agreed by the Authority | By agreement with the Parties' Exit Managers                                 | By agreement with the Parties' Exit Managers    | Authority and its potential Replacement Suppliers            | On request         |



| Sch 8.5, Para 4.1                   | Exit Plan                                                                     | Sch 8.5, Para 4.3                          | No later than 10 Working Days after the Exit Plan has been agreed by both Parties.                                       | By agreement with the Parties' Exit Managers                                              | Authority                                                    | On request                     |
|-------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------|
| <b>Applicable Clause/ Paragraph</b> | <b>Required Data</b>                                                          | <b>Format of Data</b>                      | <b>Initial Upload Date</b>                                                                                               | <b>Update Requirement</b>                                                                 | <b>Access Permission and Access Event (where applicable)</b> | <b>Reporting</b>               |
| Sch 8.5, Annex 1                    | Termination Services supporting documentation and knowledge transfer material | As appropriate and agreed by the Authority | As specified in the Termination Assistance Notice and in any event prior to the end of the Termination Assistance Period | As specified in the Termination Assistance Notice or otherwise requested by the Authority |                                                              | On request                     |
| Sch 8.6 Service Continuity          | Service Continuity Plan                                                       | Sch 8.6, Para 2.2                          | No later than 50 Working Days prior to ATP                                                                               | As specified in Sch 8.6                                                                   | Authority                                                    | Produce prior to ATP (Go Live) |
| Sch 8.6, Para 6.2                   | Service Continuity Plan Review Report                                         | Sch 8.6, Para 6.2                          | No later than 20 Working Days after the conclusion of each review of the Service Continuity Plan.                        |                                                                                           |                                                              | On request                     |
| Sch 8.6, Part 2                     | Corporate Resolution Planning Information                                     | Sch 8.6, Part 2                            | By agreement of the Executive Board                                                                                      |                                                                                           | Authority                                                    | Produce prior to ATP (Go Live) |
| Sch 7.4 Para 5                      | Board Confirmation                                                            | As set out at Annex 5 of Sch 7.4           | No later than 10 Working Days after signed Annex 5 Board Confirmation.                                                   | No later than 10 Working Days after receipt of updated Annex 5 Board Confirmation.        | Authority                                                    | On Virtual Library             |



**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 8.5**

**EXIT MANAGEMENT**

## Exit Management

### 1 DEFINITIONS

In this Schedule, the following definitions shall apply:

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Asset”</b>                                      | Means tangible property used in the performance of the Services.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>“Application Programming Interface” or “API”</b> | Means a piece of software that facilitates access to the Supplier’s application(s) to provide access to business functionality and/or Authority Data to support any relevant Termination Services which conforms to the Government Digital Service API technical and data standards set online at: <a href="https://www.gov.uk/guidance/gds-apitechnical-and-data-standards">https://www.gov.uk/guidance/gds-apitechnical-and-data-standards</a>                                                                                                                                           |
| <b>“Emergency Exit”</b>                             | <p>any termination of this Agreement which is a:</p> <ul style="list-style-type: none"><li>(a) termination of the whole or part of this Agreement in accordance with Clause 33 (Termination Rights), except where the period of notice given under that Clause is greater than or equal to 6 months;</li><li>(b) termination of the provision of the Services for any reason prior to the expiry of any period of notice of termination served pursuant to Clause 33 (Termination Rights); or</li><li>(c) wrongful termination or repudiation of this Agreement by either Party;</li></ul> |
| <b>“Exclusive Assets”</b>                           | those Assets used by the Supplier or a Key Sub-contractor which are used exclusively in the provision of the Services;                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>“Exit Information”</b>                           | has the meaning given in Paragraph 3.1;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>“Exit Manager”</b>                               | the person appointed by each Party pursuant to Paragraph 2.3 for managing the Parties’ respective obligations under this Schedule;                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

|                                 |                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Net Book Value”</b>         | the net book value of the relevant Asset(s) calculated in accordance with the depreciation policy of the Supplier set out in the letter in the agreed form from the Supplier to the Authority of the same date as this Agreement;                                                                                                                      |
| <b>“Non-Exclusive Assets”</b>   | those Assets (if any) which are used by the Supplier or a Key Sub-contractor in connection with the Services but which are also used by the Supplier or Key Sub-contractor for other purposes of material value;                                                                                                                                       |
| <b>“Ordinary Exit”</b>          | <p>any termination of the whole or part of this Agreement which occurs:</p> <p>pursuant to Clause 33 (Termination Rights) where the period of notice given by the Party serving notice to terminate pursuant to such Clause is greater than or equal to 6 months; or</p> <p>as a result of the expiry of the Initial Term or any Extension Period;</p> |
| <b>“Registers”</b>              | the register and configuration database referred to in Paragraphs 2.1(a) and 2.1(b);                                                                                                                                                                                                                                                                   |
| <b>“Transferable Assets”</b>    | those of the Exclusive Assets which are capable of legal transfer to the Authority;                                                                                                                                                                                                                                                                    |
| <b>“Transferable Contracts”</b> | the Sub-contracts, licences for Supplier's Software, licences for Third Party Software or other agreements which are necessary to enable the Authority or any Replacement Supplier to perform the Services or the Replacement Services, including in relation to licences all relevant Documentation; and                                              |
| <b>“Transferring Contracts”</b> | has the meaning given in Paragraph 6.2(c). 2                                                                                                                                                                                                                                                                                                           |

## **OBLIGATIONS DURING THE TERM TO FACILITATE EXIT**

2.1 During the Term, the Supplier shall:

- (a) create and maintain a register of all:

- (i) Sub-contracts and other relevant agreements (including relevant software licences, maintenance and support agreements and equipment rental and lease agreements) required for the performance of the Services;
- (b) create and maintain a configuration database detailing the technical infrastructure and operating procedures through which the Supplier provides the Services, which shall contain sufficient detail to permit the Authority and/or Replacement Supplier to understand how the Supplier provides the Services and to enable the smooth transition of the Services with the minimum of disruption;
- (c) agree the format of the Registers with the Authority as part of the process of agreeing the Exit Plan; and
- (d) at all times keep the Registers up to date, in particular in the event that Assets, Sub-contracts or other relevant agreements are added to or removed from the Services.

2.2 Each Party shall appoint a person for the purposes of managing the Parties' respective obligations under this Schedule and provide written notification of such appointment to the other Party within three (3) months of the Effective Date. The Supplier's Exit Manager shall be responsible for ensuring that the Supplier and its employees, agents and Sub-consultants comply with this Schedule. The Supplier shall ensure that its Exit Manager has the requisite authority to arrange and procure any resources of the Supplier as are reasonably necessary to enable the Supplier to comply with the requirements set out in this Schedule. The Parties' Exit Managers will liaise with one another in relation to all issues relevant to the termination of this Agreement and all matters connected with this Schedule and each Party's compliance with it.

### **3 OBLIGATIONS TO ASSIST ON RE-TENDERING OF SERVICES**

3.1 On reasonable notice at any point during the Term, the Supplier shall provide to the Authority and/or its potential Replacement Suppliers (subject to the potential Replacement Suppliers entering into reasonable written confidentiality undertakings), the following material and information in order to facilitate the preparation by the Authority of any invitation to tender and/or to facilitate any potential Replacement Suppliers undertaking due diligence:

- (a) details of the Service(s);
- (b) a copy of the Registers, updated by the Supplier up to the date of delivery of such Registers;
- (c) an inventory of Authority Data in the Supplier's possession or control;
- (d) details of any key terms of any third party contracts and licences, particularly as regards charges, termination, assignment and novation;

- (e) a list of on-going and/or threatened disputes in relation to the provision of the Services;
  - (f) to the extent permitted by applicable Law, all information relating to Transferring Supplier Employees required to be provided by the Supplier under this Agreement; and
  - (g) such other material and information as the Authority shall reasonably require,
- (together, the “Exit Information”).

3.2 The Supplier acknowledges that the Authority may disclose the Supplier's Confidential Information to an actual or prospective Replacement Supplier or any third party whom the Authority is considering engaging in accordance with Section F, Intellectual Property, Data and Confidentiality of the Agreement.

3.3 The Supplier shall:

- (a) notify the Authority within five (5) Working Days of any material change to the Exit Information which may adversely impact upon the potential transfer and/or continuance of any Services and shall consult with the Authority regarding such proposed material changes; and
- (b) provide complete updates of the Exit Information on an as-requested basis as soon as reasonably practicable and in any event within ten (10) Working Days of a request in writing from the Authority.

3.4 The Supplier may charge the Authority for its reasonable additional costs to the extent the Authority requests more than one (1) update in any six (6) month period.

3.5 The Exit Information shall be accurate and complete in all material respects and the level of detail to be provided by the Supplier shall be such as would be reasonably necessary to enable a third party to:

- (a) prepare an informed offer for those Services; and
- (b) not be disadvantaged in any subsequent procurement process compared to the Supplier (if the Supplier is invited to participate).

#### **4 EXIT PLAN**

4.1 Upon written request, the Supplier shall, within three (3) months after such request deliver to the Authority an Exit Plan which:

- (a) sets out the Supplier's proposed methodology for achieving an orderly transition of the relevant Services from the Supplier to the Authority and/or its Replacement Supplier on Partial Termination, expiry or termination of this Agreement;

- (b) complies with the requirements set out in Paragraph 4.2; and
  - (c) is otherwise reasonably satisfactory to the Authority.
- 4.2 The Parties shall use Good Industry Practise to agree the contents of the Exit Plan. If the Parties are unable to agree the contents of the Exit Plan within twenty (20) Working Days of its submission, then such Dispute shall be resolved in accordance with the Dispute Resolution Procedure.
- 4.3 The Exit Plan may set out, as a minimum:
  - (a) how the Exit Information is obtained;
  - (b) separate mechanisms for dealing with Ordinary Exit and Emergency Exit, the provisions relating to Emergency Exit being prepared on the assumption that the Supplier may be unable to provide the full level of assistance which is required by the provisions relating to Ordinary Exit, and in the case of Emergency Exit, provision for the supply by the Supplier of all such reasonable assistance as the Authority shall require to enable the Authority or its sub-contractors to provide the Services;
  - (c) a mechanism for dealing with Partial Termination on the assumption that the Supplier will continue to provide the remaining Services under this Agreement;
  - (d) the management structure to be employed during both transfer and cessation of the Services in an Ordinary Exit and an Emergency Exit;
  - (e) the management structure to be employed during the Termination Assistance Period;
  - (f) a detailed description of both the transfer and cessation processes, including a timetable, applicable in the case of an Ordinary Exit and an Emergency Exit;
  - (g) how the Services will transfer to the Replacement Supplier and/or the Authority, including details of the processes, documentation, data transfer, systems migration, security and the segregation of the Authority's technology components from any technology components operated by the Supplier or its Sub-contractors (where applicable);
  - (h) the scope of the Termination Services that may be required for the benefit of the Authority (including such of the services set out in Annex 1 as are applicable);
  - (i) a timetable and critical issues for providing the Termination Services;
  - (j) any charges that would be payable for the provision of the Termination Services (calculated in accordance with the methodology that would apply



if such Services were being treated as a Contract Change), together with a capped estimate of such charges;

- (k) how the Termination Services would be provided (if required) during the Termination Assistance Period;
  - (l) procedures to deal with requests made by the Authority and/or a Replacement Supplier for Staffing Information pursuant to Schedule 9.1 (*Staff Transfer*); and
  - (m) how each of the issues set out in this Schedule will be addressed to facilitate the transition of the Services from the Supplier to the Replacement Supplier and/or the Authority with the aim of ensuring that there is no disruption to or degradation of the Services during the Termination Assistance Period.
- 4.4 The Parties acknowledge that the migration of the Services from the Supplier to the Authority and/or its Replacement Supplier may be phased, such that certain of the Services are handed over before others.
- 4.5 The Supplier shall review and (if appropriate) update the Exit Plan on a basis consistent with the principles set out in this Schedule in the first month of each Contract Year (commencing with the second Contract Year) and if requested by the Authority following the occurrence of a Financial Distress Event, within fourteen (14) days of such request, to reflect any changes in the Services that have occurred since the Exit Plan was last agreed. Following such update the Supplier shall submit the revised Exit Plan to the Authority for review. Within twenty (20) Working Days following submission of the revised Exit Plan, the Parties shall meet and use standard industry practise to agree the contents of the revised Exit Plan. If the Parties are unable to agree the contents of the revised Exit Plan within that twenty (20) Working Day period, such dispute shall be resolved in accordance with the Dispute Resolution Procedure.

#### **Finalisation of the Exit Plan**

- 4.6 Within twenty (20) Working Days after service of a Termination Notice by either Party or six (6) months prior to the expiry of this Agreement, the Supplier will submit for the Authority's approval the Exit Plan in a final form that could be implemented immediately. The final form of the Exit Plan shall be prepared on a basis consistent with the principles set out in this Schedule and shall reflect any changes in the Services that have occurred since the Exit Plan was last agreed.
- 4.7 The Parties will meet and use Good Industry Practise to agree the contents of the final form of the Exit Plan. If the Parties are unable to agree the contents of the Exit Plan within twenty (20) Working Days following its delivery to the Authority then such Dispute shall be resolved in accordance with the Dispute Resolution Procedure. Until the agreement of the final form of the Exit Plan, the Supplier shall provide the Termination Services in accordance with the principles set out in this Schedule and the last approved version of the Exit Plan (insofar as relevant).

## 5 TERMINATION SERVICES

### Notification of Requirements for Termination Services

5.1 The Authority shall be entitled to require the provision of Termination Services at any time during the Term by giving written notice to the Supplier (a “**Termination Assistance Notice**”) at least four (4) months prior to the date of Partial Termination, termination or expiry of this Agreement or as soon as reasonably practicable (but in any event, not later than one (1) month) following the service by either Party of a Termination Notice. The Termination Assistance Notice shall specify:

- (a) the date from which Termination Services are required;
- (b) the nature of the Termination Services required; and
- (c) the period during which it is anticipated that Termination Services will be required, which shall continue no longer than twenty-four (24) months after the date that the Supplier ceases to provide the terminated Services.

5.2 The Authority shall have:

- (a) an option to extend the period of assistance beyond the period specified in the Termination Assistance Notice provided that such extension shall not extend for more than six (6) months after the date the Supplier ceases to provide the terminated Services or, if applicable, beyond the end of the Termination Assistance Period and provided that it shall notify the Supplier to such effect no later than sixty (60) Working Days prior to the date on which the provision of Termination Services is otherwise due to expire; and
- (b) the right to terminate its requirement for Termination Services by serving not less than forty five (45) Working Days' written notice upon the Supplier to such effect.

### Termination Assistance Period

5.3 Throughout the Termination Assistance Period, or such shorter period as the Authority may require, the Supplier shall at the Authority's cost (unless otherwise stated):

- (a) continue to provide the Services (as applicable) and, if required by the Authority pursuant to Paragraph 5.1, provide the Termination Services;
- (b) in addition to providing the Services and the Termination Services, provide to the Authority any reasonable assistance requested by the Authority to allow the Services to continue without interruption following the Partial Termination, termination or expiry of this Agreement and to facilitate the orderly transfer of responsibility for and conduct of the Services to the Authority and/or its Replacement Supplier;

- (c) use Good Industry Practice to reallocate resources to provide such assistance as is referred to in Paragraph 5.3(b) without additional costs to the Authority;
  - (d) provide the Services and the Termination Services at no detriment to the Target Performance Levels, save to the extent that the Parties agree otherwise in accordance with Paragraph 5.5; and
  - (e) at the Authority's request and on reasonable notice, deliver up-to-date Registers to the Authority.
- 5.4 Without prejudice to the Supplier's obligations under Paragraph 5.3(c), if it is not possible for the Supplier to reallocate resources to provide such assistance as is referred to in Paragraph 5.3(b) without additional costs to the Authority, any additional costs incurred by the Supplier in providing such reasonable assistance which is not already in the scope of the Termination Services or the Exit Plan shall be subject to the Change Control Procedure.
- 5.5 If the Supplier demonstrates to the Authority's reasonable satisfaction that transition of the Services and provision of the Termination Services during the Termination Assistance Period will have a material, unavoidable adverse effect on the Supplier's ability to meet one or more particular Target Performance Level(s), the Parties shall vary the relevant Target Performance Level(s) and/or the applicable Service Credits to take account of such adverse effect.

#### **Termination Obligations**

- 5.6 The Supplier shall comply with all of its obligations contained in the Exit Plan in respect of any Partial Termination or termination.
- 5.7 At the end of the Termination Assistance Period and
- 5.8 upon Partial Termination, termination or expiry the parties shall comply with Section I - Termination and Exit Management.

### **6 ASSETS, SUB-CONTRACTS AND SOFTWARE**

- 6.1 Following notice of termination or Partial Termination of this Agreement and during the Termination Assistance Period, the Supplier shall not, in respect of the terminated Services, without the Authority's prior written consent:
- (a) terminate, enter into or vary any Sub-contract except to the extent that such change does not or will not affect the provision of Services or the Charges;
  - (b) (subject to normal maintenance requirements) make material modifications to, or dispose of, any existing Assets or acquire any new Assets; or
  - (c) terminate, enter into or vary any licence for software in connection with the Services.

6.2 Within twenty (20) Working Days of receipt of the up-to-date Registers provided by the Supplier pursuant to Paragraph 5.3(e), the Authority shall provide written notice to the Supplier setting out:

(a) which, if any, of the Transferable Assets the Authority requires to be transferred to the Authority and/or the Replacement Supplier in respect of the terminated Services (“Transferring Assets”);

(i) which, if any, of:

- the Exclusive Assets that are not Transferable Assets; and •

the Non-Exclusive Assets,

the Authority and/or the Replacement Supplier requires the continued use of; and

(b) which, if any, of Transferable Contracts the Authority requires to be assigned or novated to the Authority and/or the Replacement Supplier (the “Transferring Contracts”),

in order for the Authority and/or its Replacement Supplier to provide the Services from the expiry of the Termination Assistance Period. Where requested by the Authority and/or its Replacement Supplier, the Supplier shall provide all reasonable assistance to the Authority and/or its Replacement Supplier to enable it to determine which Transferable Assets and Transferable Contracts the Authority and/or its Replacement Supplier requires to provide the Services or Replacement Services.

6.3 With effect from the expiry of the Termination Assistance Period, the Supplier shall sell at its sole discretion the Transferring Assets to the Authority and/or its nominated Replacement Supplier for a consideration equal to their Net Book Value, except where:

(a) a Termination Payment is payable by the Authority to the Supplier, in which case, payment for such Assets shall be included within the Termination Payment; or

(b) the cost of the Transferring Asset has been partially or fully paid for through the Charges at the time of expiry or termination of this Agreement, in which case the Authority shall pay the Supplier the Net Book Value of the Transferring Asset less the amount already paid through the Charges.

6.4 Risk in the Transferring Assets shall pass to the Authority or the Replacement Supplier (as appropriate) at the end of the Termination Assistance Period and title to the Transferring Assets shall pass to the Authority or the Replacement Supplier (as appropriate) on payment for the same.

6.5 Where the Supplier is notified in accordance with Paragraph 6.2(b) that the Authority and/or the Replacement Supplier requires continued use of any Exclusive

Assets that are not Transferable Assets or any Non-Exclusive Assets, the Supplier shall at its sole discretion:

- (a) procure a non-exclusive, perpetual, royalty-free licence (or licence on such other terms that have been agreed by the Authority) for the Authority and/or the Replacement Supplier to use such assets (with a right of sub-licence or assignment on the same terms); or failing which
- (b) procure a suitable alternative to such assets and the Authority or the Replacement Supplier shall bear the reasonable proven costs of procuring the same.

6.6 The Supplier shall as soon as reasonably practicable assign or procure the novation to the Authority and/or the Replacement Supplier of the Transferring Contracts. The Supplier shall execute such documents and provide such other assistance as the Authority reasonably requires to effect this novation or assignment.

6.7 The Authority shall:

- (a) accept assignments from the Supplier or join with the Supplier in procuring a novation of each Transferring Contract; and
- (b) once a Transferring Contract is novated or assigned to the Authority and/or the Replacement Supplier, carry out, perform and discharge all the obligations and liabilities created by or arising under that Transferring Contract and exercise its rights arising under that Transferring Contract, or as applicable, procure that the Replacement Supplier does the same.

6.8 The Supplier shall hold any Transferring Contracts on trust for the Authority until such time as the transfer of the relevant Transferring Contract to the Authority and/or the Replacement Supplier has been effected.

## **7 SUPPLIER PERSONNEL**

7.1 The Supplier shall not take any step (expressly or implicitly or directly or indirectly by itself or through any other person) to dissuade or discourage any employees engaged in the provision of the Services from transferring their employment to the Authority and/or the Replacement Supplier.

7.2 During the Termination Assistance Period, the Supplier shall give the Authority and/or the Replacement Supplier reasonable access to the Supplier's personnel to present the case for transferring their employment to the Authority and/or the Replacement Supplier.

7.3 The Supplier shall immediately notify the Authority or, at the direction of the Authority, the Replacement Supplier of any period of notice given by the Supplier or received from any person referred to in the Staffing Information, regardless of when such notice takes effect.

7.4 The Supplier shall not for a period of twelve (12) months from the date of transfer re-employ or re-engage or entice any employees, suppliers or Sub-contractors whose employment or engagement is transferred to the Authority and/or the Replacement Supplier, except that this paragraph shall not apply where the employee, supplier or Sub-contractor applies in response to a public advertisement of a vacancy.

## **8 CHARGES**

8.1 During the Termination Assistance Period (or for such shorter period as the Authority may require the Supplier to provide the Termination Services), the Authority shall pay the Charges to the Supplier in respect of the Termination Services in accordance with the rates set out in the Exit Plan (but shall not be required to pay costs in excess of the estimate set out in the Exit Plan). If the scope or timing of the Termination Services is changed and this results in a change to the costs of such Termination Services, the estimate may be varied in accordance with the Change Control Procedure.

8.2 Where the Authority requests an extension to the Termination Services beyond the Termination Assistance Period in accordance with Paragraph 5.2:

- (a) where more than six (6) months' notice is provided, the same rate as set out in the Exit Plan (or the Charges when not stated in the Exit Plan) shall be payable; and
- (b) where less than six (6) months' notice is provided, no more than 1.2 times the rate as set out in the Exit Plan (or the Charges when not stated in the Exit Plan) shall be payable.

8.3 For the purpose of calculating the costs of providing the Termination Services for inclusion in the Exit Plan or, if no Exit Plan has been agreed, the costs of providing Termination Services shall be determined in accordance with the Change Control Procedure.

## **9 APPORTIONMENTS**

9.1 All outgoings and expenses (including any remuneration due) and all rents, royalties and other periodical payments receivable in respect of the Transferring Assets and Transferring Contracts shall be apportioned between the Authority and the Supplier and/or the Replacement Supplier and the Supplier (as applicable) as follows:

- (a) the amounts shall be annualised and divided by 365 to reach a daily rate;
- (b) the Authority shall be responsible for (or shall procure that the Replacement Supplier shall be responsible for) or entitled to (as the case may be) that part of the value of the invoice pro rata to the number of complete days following the transfer, multiplied by the daily rate; and
- (c) the Supplier shall be responsible for or entitled to (as the case may be) the rest of the invoice.

9.2 Each Party shall pay (and/or the Authority shall procure that the Replacement Supplier shall pay) any monies due under Paragraph 9.1 within 30 days of receipt of a valid invoice.

## ANNEX 1: SCOPE OF THE TERMINATION SERVICES

- 1 The Termination Services to be provided by the Supplier shall include such of the following services as the Authority may specify:
- (a) ceasing all non-critical Software changes (except where agreed in writing with the Authority);
  - (b) notifying the Sub-consultants of procedures to be followed during the Termination Assistance Period and providing management to ensure these procedures are followed;
  - (c) providing assistance and expertise as necessary to examine all operational and business processes (including all supporting documentation) in place and re-writing and implementing processes and procedures such that they are appropriate for use by the Authority and/or the Replacement Supplier after the end of the Termination Assistance Period;
  - (d) delivering to the Authority the existing systems support profiles, monitoring or system logs, problem tracking/resolution documentation and status reports all relating to the twelve (12) month period immediately prior to the commencement of the Termination Services;
  - (e) providing details of work volumes and staffing requirements over the twelve (12) month period immediately prior to the commencement of the Termination Services;
  - (f) with respect to work in progress as at the end of the Termination Assistance Period, documenting the current status and stabilising for continuity during transition;
  - (g) providing the Authority with any problem logs which have not previously been provided to the Authority;
  - (h) providing assistance and expertise as necessary to examine all governance and reports in place for the provision of the Services and re-writing and implementing these during and for a period of twelve (12) months after the Termination Assistance Period;
  - (i) providing assistance and expertise as necessary to examine all relevant roles and responsibilities in place for the provision of the Services and re-writing and implementing these such that they are appropriate for the continuation of the Services after the Termination Assistance Period;
  - (j) reviewing all Software libraries used in connection with the Services and providing details of these to the Authority and/or the Replacement Supplier;
  - (k) providing assistance and expertise as necessary to support the Authority and/or the Replacement Supplier develop the migration plan for business operations and Authority Data to the Replacement Supplier, which may



include migration approach, testing of plans, contingency options, and handling of historic or archived Authority Data;

- (l) provide all necessary support, equipment, tools, and Software such as data migration services and/or Automated Programming Interfaces (APIs), in order to enable and support the execution of the migration plan by the Authority and/or Replacement Supplier;
- (m) making available to the Authority and/or the Replacement Supplier expertise to analyse training requirements and provide all necessary training for the use of tools by such staff as are nominated by the Authority (acting reasonably) at the time of termination or expiry;
- (n) assisting in establishing naming conventions for any new production site;
- (o) analysing and providing information about capacity and performance requirements, processor requirements and bandwidth requirements, and known planned requirements for capacity growth across these areas;
- (p) generating a computer listing of the Source Code of NaFRA2 Software System in a form and on media reasonably requested by the Authority;
- (q) agreeing with the Authority a handover plan for all of the Supplier's responsibilities as set out in the Security Management Plan;
- (r) delivering copies of the production databases (with content listings) to the Authority's and/or the Replacement Supplier's operations staff (on appropriate media) as reasonably requested by the Authority;
- (s) assisting with the loading, testing and implementation of the production databases;
- (t) assisting in the execution of a parallel operation until the effective date of expiry or termination of this Agreement;
- (u) in respect of the maintenance and support of the Supplier System, providing historical performance data for the previous one year;
- (v) assisting in the execution of a parallel operation of the maintenance and support of the Supplier System until the end of the Termination Assistance Period or as otherwise specified by the Authority (provided that these Services shall end on a date no later than the end of the Termination Assistance Period);
- (w) providing an information pack listing and describing the Services for use by the Authority in the procurement of the Replacement Services;
- (x) answering all reasonable questions from the Authority and/or the Replacement Supplier regarding the Services;

- (y) agreeing with the Authority and/or the Replacement Supplier a plan for the migration of the Authority Data to the Authority and/or the Replacement Supplier;
- (z) providing access to the Authority and/or the Replacement Supplier during the Termination Assistance Period and for a period not exceeding one (1) month afterwards for the purpose of the smooth transfer of the Services to the Authority and/or the Replacement Supplier:
  - (i) to relevant information and documentation relating to the Transferring Services that is in the possession or control of the Supplier or its Sub-contractors (and the Supplier agrees and shall procure that its Sub-contractors do not destroy or dispose of that information within this period) including the right to take reasonable copies of that material; and
  - (ii) following reasonable notice and during the Supplier's normal business hours, to members of the Supplier Personnel who have been involved in the provision or management of the Services and who are still employed or engaged by the Supplier or its Sub-contractors.

1.2 The Supplier shall:

- (a) provide reasonable assistance in the execution of the handover plan agreed pursuant to Paragraph 1.1(o), providing skills and expertise of a suitable standard; and
- (b) provide reasonable assistance in the execution of the Authority Database migration plan agreed pursuant to Paragraph 1.1(w).

1.3 The information which the Supplier may provide to the Authority and/or the Replacement Supplier pursuant to Paragraph 1.1(y) may include, provided it is within its reasonable possession and control:

- (a) copies of up-to-date procedures and operations manuals;
- (b) product information;
- (c) agreements with third party suppliers of goods and services which are to be transferred to the Authority and/or the Replacement Supplier;
- (d) key support contact details for third party supplier personnel under contracts which are to be assigned or novated to the Authority pursuant to this Schedule;
- (e) information regarding any unresolved faults in progress at the commencement of the Termination Assistance Period as well as those expected to be in progress at the end of the Termination Assistance Period;

- (f) details of physical and logical security processes and tools which will be available to the Authority; and
  - (g) any relevant interface information.
- 1.4 During the Termination Assistance Period the Supplier shall grant any agent or personnel (including employees, consultants and Suppliers) of the Replacement Supplier and/or the Authority access, during business hours and upon reasonable prior written notice, to any Sites for the purpose of effecting a prompt knowledge transfer provided that:
  - (a) any such agent or personnel (including employees, consultants and suppliers) having access to any Sites pursuant to this Paragraph 1.5 shall:
    - (i) sign a confidentiality undertaking in favour of the Supplier (in such form as the Supplier shall reasonably require); and
    - (ii) during each period of access comply with the security, systems and facilities operating procedures of the Supplier relevant to such Site and that the Authority deems reasonable; and
  - (b) the Authority and/or the Replacement Supplier shall pay the reasonable, costs of the Supplier incurred in facilitating such access.



**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 8.6**

**SERVICE CONTINUITY PLAN AND CORPORATE RESOLUTION PLANNING**

## PART 1: SERVICE CONTINUITY PLAN

### 1 DEFINITIONS

1.1 In this Schedule, the following definitions shall apply:

**“Business Continuity Plan”** has the meaning given in Paragraph 2.2(a)(ii);

**“Business Continuity Services”** has the meaning given in Paragraph 4.2(b);

**“Department”** a body listed in one of the following sub-categories of the Central Government classification of the Public Sector Classification Guide, as published and amended from time to time by the Office for National Statistics:

(a) Government Department; or (b)

Non-Ministerial Department.

**“Disaster”** the occurrence of one or more events which, either separately or cumulatively, mean that the Operational Services, or a material part of the Operational Services will be unavailable for a period of **4 working days** or which is reasonably anticipated will mean that the Services or a material part of the Services will be unavailable for that period;

**“Disaster Recovery Plan”** has the meaning given in Paragraph 2.2(a)(iii);

**“Disaster** the services embodied in the processes and **Recovery** procedures for restoring the Services following the **Services”** occurrence of a Disaster;

**“Disaster** the system identified by the Supplier in the Supplier **Recovery** Solution which shall be used for the purpose of **System”** delivering the Disaster Recovery Services;

**“Insolvency Continuity Plan”** has the meaning given in Paragraph 2.2(a)(iv).

**“Related Provider”** any person who provides services to the Authority in **Service** relation to this Agreement from time to time, which persons include as at the Effective Date ;

|                                  |                                                                                                                                                                              |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>“Review Report”</b>           | has the meaning given in Paragraphs 7.2(a) to 7.2(c);                                                                                                                        |
| <b>“Services”</b>                | shall mean the Operational Services;                                                                                                                                         |
| <b>“Service Continuity Plan”</b> | means the plan prepared pursuant to Paragraph 2 of this Schedule which incorporates the Business Continuity Plan, Disaster Recovery Plan and the Insolvency Continuity Plan; |

## 2 SERVICE CONTINUITY PLAN

2.1 Upon written request, and no later than sixty (60) Working Days before the Authority to Proceed, the Supplier shall prepare and deliver to the Authority for the Authority's written approval a plan, which shall detail the processes and arrangements that the Supplier may follow to:

(a) ensure continuity of the business processes and operations supported by the Services following any failure or disruption of any element of the Services (including where caused by an Insolvency Event of the Supplier, any Key Subcontractor and/or any Supplier Group member); and (b) the recovery of the Services in the event of a Disaster.

to the extent applicable to the Services and within the Supplier's reasonable possession and control (the "Service Continuity Plan").

2.2 The Service Continuity Plan shall:

(a) be divided into four parts:

- (i) Part A which shall set out general principles applicable to the Service Continuity Plan;
- (ii) Part B which shall relate to business continuity (the "**Business Continuity Plan**");
- (iii) Part C which shall relate to disaster recovery (the "**Disaster Recovery Plan**");
- (iv) Part D which shall relate to an Insolvency Event of the Supplier, any Key Sub-contractors and/or any Supplier Group member (the "**Insolvency Continuity Plan**"); and

(b) unless otherwise required by the Authority in writing, be based upon and be consistent with the provisions of Paragraphs 3, 4, 5 and 6.

2.3 Following receipt of the draft Service Continuity Plan from the Supplier, the Authority shall:

- (a) review and comment on the draft Service Continuity Plan as soon as reasonably practicable; and
- (b) notify the Supplier in writing that it approves or rejects the draft Service Continuity Plan no later than twenty (20) Working Days after the date on which the draft Service Continuity Plan is first delivered to the Authority.

2.4 If the Authority rejects the draft Service Continuity Plan:

- (a) the Authority shall inform the Supplier in writing of its reasons for its rejection including details of the changes required; and



- (b) the Supplier shall then revise the draft Service Continuity Plan (taking reasonable account of the Authority's comments) and shall re-submit a revised draft Service Continuity Plan to the Authority for the Authority's approval within twenty (20) Working Days of the date of the Authority's notice of rejection. The provisions of Paragraph 2.3 and this Paragraph 2.4 shall apply again to any resubmitted draft Service Continuity Plan, provided that either Party may refer any disputed matters for resolution by the Dispute Resolution Procedure at any time.

### **3 SERVICE CONTINUITY PLAN: PART A - GENERAL PRINCIPLES AND REQUIREMENTS**

3.1. To the extent applicable to the Services and the information is within the Supplier's reasonable possession and control Part A of the Service Continuity Plan may:

- (a) set out how the business continuity, disaster recovery and insolvency continuity elements of the plan link to each other;
- (b) provide details of how the invocation of any element of the Service Continuity Plan may impact upon the operation of the Services and any services provided to the Authority by a Related Service Provider;
- (c) contain an obligation upon the Supplier to liaise with the Authority and (at the Authority's request) to the extent reasonably possible liaise with any Related Service Provider with respect to issues concerning business continuity, disaster recovery and insolvency continuity where applicable;
- (d) detail how the Service Continuity Plan links and interoperates with any overarching and/or connected disaster recovery, business continuity and/or insolvency continuity plan of the Authority and any of its other Related Service Providers in each case as notified to the Supplier by the Authority from time to time;
- (e) contain a communication strategy including details of an incident and problem management service and advice and help desk facility which can be accessed via multi-channels (including but without limitation a web-site (with FAQs), e-mail, phone
- (f) contain a risk analysis, including:
  - (i) failure or disruption scenarios and assessments and estimates of frequency of occurrence;
  - (ii) identification of any single points of failure within the Services and processes for managing the risks arising therefrom;
  - (iii) identification of risks arising from the interaction of the Services with the services provided by a Related Service Provider;
  - (iv) identification of risks arising from an Insolvency Event of the Supplier, any Key Sub-contractors and/or Supplier Group member; and

- (v) a business impact analysis (detailing the impact on business processes and operations) of different anticipated failures or disruptions;
- (g) provide for documentation of processes, including business processes, and procedures;
- (h) set out key contact details (including roles and responsibilities) for the Supplier (and any Sub-contractors) and for the Authority;
- (i) identify the procedures for reverting to “normal service”;
- (j) set out method(s) of recovering or updating data collected (or which ought to have been collected) during a failure or disruption to ensure that there is no more than the accepted amount of data loss and to preserve data integrity;
- (k) identify the responsibilities (if any) that the Authority has agreed it will assume in the event of the invocation of the Service Continuity Plan; and
- (l) provide for the provision of technical advice and assistance to key contacts at the Authority as notified by the Authority from time to time to inform decisions in support of the Authority’s business continuity plans.

The Service Continuity Plan shall be upgradeable and sufficiently flexible to support any changes to the Services, to the business processes facilitated by and the business operations supported by the Services, and/or changes to the Supplier Group structure.

## **4 SERVICE CONTINUITY PLAN: PART B - BUSINESS CONTINUITY**

### **PRINCIPLES AND CONTENTS**

4.1 To the extent applicable to the Services and the information is within the Supplier’s reasonable possession and control, the Business Continuity Plan shall set out the arrangements that may be invoked so that the business processes and operations facilitated by the Services remain supported and there is continuity of the business operations supported by the Services including, unless the Authority expressly states otherwise in writing:

- (a) the alternative processes (including business processes), options and responsibilities that may be adopted in the event of a failure in or disruption to the Services; and
- (b) the steps to be taken by the Supplier upon resumption of the Services in order to address any prevailing effect of the failure or disruption including a root cause analysis of the failure or disruption.

4.2 The Business Continuity Plan may:

- (a) address the various possible levels of failures of or disruptions to the Services;
- (b) set out the services to be provided and the steps to be taken to remedy the different levels of failures of and disruption to the Services (such services and steps, the “**Business Continuity Services**”);
- (c) specify any applicable Performance Indicators with respect to the provision of the Business Continuity Services and details of any agreed relaxation to the Performance Indicators in respect of other Services during any period of invocation of the Business Continuity Plan; and
- (d) clearly set out the conditions and/or circumstances under which the Business Continuity Plan is invoked.

## **5 SERVICE CONTINUITY PLAN: PART C - DISASTER RECOVERY**

### **PRINCIPLES AND CONTENTS**

- 5.1 The Disaster Recovery Plan shall be designed so that upon the occurrence of a Disaster the Supplier supports continuity of the business operations of the Authority supported by the Services following any Disaster or during any period of service failure or disruption with, as far as reasonably possible, minimal adverse impact.
- 5.2 The Disaster Recovery Plan shall be invoked only upon the occurrence of a Disaster.
- 5.3 The Disaster Recovery Plan may include the following:
  - (a) the technical design and build specification of the Disaster Recovery System;
  - (b) details of the procedures and processes to be put in place by the Supplier in relation to the Disaster Recovery System and the provision of the Disaster Recovery Services and any testing of the same including but not limited to the following:
    - (i) data centre and disaster recovery site audits;
    - (ii) backup methodology and details of the Supplier’s approach to data back-up and data verification;
    - (iii) identification of all potential disaster scenarios;
    - (iv) risk analysis;
    - (v) documentation of processes and procedures;
    - (vi) hardware configuration details;
    - (vii) network planning including details of all relevant data networks and communication links;

- (viii) invocation rules;
  - (ix) Service recovery procedures; and
  - (x) steps to be taken upon resumption of the Services to address any prevailing effect of the failure or disruption of the Services;
- (c) any applicable Performance Indicators with respect to the provision of the Disaster Recovery Services and details of any agreed relaxation to the Performance Indicators in respect of other Services during any period of invocation of the Disaster Recovery Plan;
  - (d) details of how the Supplier shall ensure compliance with security standards ensuring that compliance is maintained for any period during which the Disaster Recovery Plan is invoked;
  - (e) access controls to any disaster recovery sites used by the Supplier in relation to its obligations pursuant to this Schedule; and
  - (f) testing and management arrangements.

## **6 SERVICE CONTINUITY PLAN: PART D - INSOLVENCY CONTINUITY PLAN**

### **PRINCIPLES AND CONTENTS**

6.1 The Insolvency Continuity Plan shall be designed by the Supplier to support continuity of the business operations of the Authority supported by the Services through continued provision of the Services following an Insolvency Event of the Supplier, any Key Sub-contractor and/or any Supplier Group member with, as far as reasonably possible, minimal adverse impact.

6.2 The Insolvency Continuity Plan may include the following:

- (a) communication strategies which are designed to minimise the potential disruption to the provision of the Services, including key contact details in respect of the supply chain and key contact details for operational and contract Supplier Personnel, Key Sub-contractor personnel and Supplier Group member personnel;
- (b) identification, explanation, assessment and an impact analysis of risks in respect of dependencies between the Supplier, Key Sub-contractors and Supplier Group members where failure of those dependencies could reasonably have an adverse impact on the Services;
- (c) plans to manage and mitigate identified risks;
- (d) details of the roles and responsibilities of the Supplier, Key Sub-contractors and/or Supplier Group members to minimise and mitigate the effects of an Insolvency Event of such persons on the Services;

- (e) details of the recovery team to be put in place by the Supplier (which may include representatives of the Supplier, Key Sub-contractors and Supplier Group members); and
- (f) sufficient detail to enable an appointed insolvency practitioner to invoke the plan in the event of an Insolvency Event of the Supplier.

## 7 REVIEW AND AMENDMENT OF THE SERVICE CONTINUITY PLAN

7.1 The Supplier shall review and update the Service Continuity Plan (and the risk analysis on which it is based):

- (a) where the Authority requests any additional reviews by notifying the Supplier to such effect in writing, whereupon the Supplier shall conduct such reviews in accordance with the Authority's written requirements. Prior to starting its review, the Supplier shall provide an accurate written estimate of the total costs payable by the Authority for the Authority's approval. The costs of both Parties of any such additional reviews shall be met by the Authority except that the Supplier shall not be entitled to charge the Authority for any costs that it may incur above any estimate without the Authority's prior written approval.

7.2 Each review of the Service Continuity Plan pursuant to Paragraph 7.1 shall be a review of the procedures and methodologies set out in the Service Continuity Plan and shall assess their suitability having regard to any change to the Services or any underlying business processes and operations facilitated by or supported by the Services which have taken place since the later of the original approval of the Service Continuity Plan or the last review of the Service Continuity Plan and shall also have regard to any occurrence of any event since that date (or the likelihood of any such event taking place in the foreseeable future) which may increase the likelihood of the need to invoke the Service Continuity Plan. The review shall be completed by the Supplier within the period required by the Service Continuity Plan or, if no such period is required, within such period as the Authority shall reasonably require. The Supplier shall, within twenty (20) Working Days of the conclusion of each such review of the Service Continuity Plan, provide to the Authority a report (a "**Review Report**") setting out:

- (a) the findings of the review;
- (b) any changes in the risk profile associated with the Services; and
- (c) the Supplier's proposals (the "**Supplier's Proposals**") for addressing any changes in the risk profile and its proposals for amendments to the Service Continuity Plan following the review detailing the impact (if any and to the extent that the Supplier can reasonably be expected to be aware of the same) that the implementation of such proposals may have on any services or systems provided by a third party.

7.3 Following receipt of the Review Report and the Supplier's Proposals, the Authority shall:

- (a) review and comment on the Review Report and the Supplier's Proposals as soon as reasonably practicable; and
- (b) notify the Supplier in writing that it approves or rejects the Review Report and the Supplier's Proposals no later than twenty (20) Working Days after the date on which they are first delivered to the Authority.

**7.4 If the Authority rejects the Review Report and/or the Supplier's Proposals:**

- (a) the Authority shall inform the Supplier in writing of its reasons for its rejection including details of the changes required; and
- (b) the Supplier shall then revise the Review Report and/or the Supplier's Proposals as the case may be (taking reasonable account of the Authority's comments and carrying out any necessary actions in connection with the revision) and shall re-submit a revised Review Report and/or revised Supplier's Proposals to the Authority for the Authority's approval within twenty (20) Working Days of the date of the Authority's notice of rejection. The provisions of Paragraph 7.3 and this Paragraph 7.4 shall apply again to any resubmitted Review Report and Supplier's Proposals, provided that either Party may refer any disputed matters for resolution by the Dispute Resolution Procedure at any time.

**7.5** The Supplier shall as soon as is reasonably practicable after receiving the Authority's approval of the Supplier's Proposals (having regard to the significance of any risks highlighted in the Review Report) effect any change in its practices or procedures necessary so as to give effect to the Supplier's Proposals. Any such change shall be at the Supplier's expense unless it can be reasonably shown that the changes are required because of a material change to the risk profile of the Services.

## **8 TESTING OF THE SERVICE CONTINUITY PLAN**

**8.1** Subject to Paragraph 8.2, the Authority may require the Supplier to conduct additional tests of some or all aspects of the Service Continuity Plan at any time where the Authority considers it necessary, including where there has been any change to the Services or any underlying business processes, or on the occurrence of any event which may increase the likelihood of the need to implement the Service Continuity Plan.

**8.2** If the Authority requires an additional test of the Service Continuity Plan, it shall give the Supplier written notice and the Supplier shall conduct the test in accordance with the Authority's requirements and the relevant provisions of the Service Continuity Plan. The Supplier's costs of the additional test shall be borne by the Authority unless the Service Continuity Plan fails the additional test in which case the Supplier's costs of that failed test shall be borne by the Supplier.

**8.3** The Supplier shall undertake and manage testing of the Service Continuity Plan in full consultation with the Authority and shall liaise with the Authority in respect of the planning, performance, and review, of each test. If requested, each test shall be carried out under the supervision of the Authority or its nominee.

- 8.4 The Supplier shall ensure that any use by it or any Sub-contractor of “live” data in such testing is first approved with the Authority. Copies of live test data used in any such testing shall be (if so required by the Authority) destroyed or returned to the Authority on completion of the test.
- 8.5 The Supplier shall, within twenty (20) Working Days of the conclusion of each test, provide to the Authority a report setting out:
- (a) the outcome of the test;
  - (b) any failures in the Service Continuity Plan (including the Service Continuity Plan's procedures) revealed by the test; and
  - (c) the Supplier's proposals for remedying any such failures.
- 8.6 For the avoidance of doubt, the carrying out of a test of the Service Continuity Plan (including a test of the Service Continuity Plan's procedures) shall not relieve the Supplier of any of its obligations under this Agreement.
- 8.7 The Supplier shall also perform a test of the Service Continuity Plan in the event of any major reconfiguration of the Services or as otherwise reasonably requested by the Authority.

## **9 INVOCATION OF THE SERVICE CONTINUITY PLAN**

- 9.1 In the event of a loss of any critical part of the Service or a Disaster, the Supplier shall immediately invoke the business continuity and disaster recovery provisions in the Service Continuity Plan, including any linked elements in other parts of the Service Continuity Plan, and shall inform the Authority promptly of such invocation. In all other instances the Supplier shall invoke the business continuity and disaster recovery plan elements only with the prior consent of the Authority.
- 9.2 The Insolvency Continuity Plan element of the Service Continuity Plans, including any linked elements in other parts of the Service Continuity Plan, shall be invoked by the Supplier:
- (a) where an Insolvency Event of a Key Sub-contractor and/or Supplier Group member (other than the Supplier) could reasonably be expected to adversely affect delivery of the Services; and/or
  - (b) where there is an Insolvency Event of the Supplier and the insolvency arrangements enable the Supplier to invoke the plan;

## **PART 2: CORPORATE RESOLUTION PLANNING**

## **10 Service Status and Supplier Status**

**10.1** This Agreement is a Critical Service Contract.

**10.2** The Supplier shall notify the Authority in writing within five (5) Working Days of the Effective Date and throughout the Term within one hundred and twenty (120) days after each Accounting Reference Date as to whether or not it is a Public Sector Dependent Supplier.

## **11 Provision of Corporate Resolution Planning Information**

**11.1** Paragraphs 11 to 13 of this Part 2 shall apply if this Agreement has been specified as a Critical Service Contract under Paragraph 10.1 of this Part 2 or the Supplier is or becomes a Public Sector Dependent Supplier.

**11.2** Subject to Paragraphs 11.6, 11.10 and 11.11 of this Part 2:

- (a) where this Agreement is a Critical Service Contract, the Supplier shall provide the Relevant Authority with the CRP Information within sixty (60) days of the Effective Date; and
- (b) except where it has already been provided in accordance with Paragraph 11.2(a) of this Part 2, where the Supplier is a Public Sector Dependent Supplier, it shall provide the Relevant Authority with the CRP Information within sixty (60) days of the date of the Relevant Authority's request.

**11.3** The Supplier shall ensure that the CRP Information: (a)

is full, comprehensive, accurate and up to date;

(b) is split into two parts:

- (i) Group Structure Information and Resolution Commentary;
- (ii) UK Public Service / Critical National Infrastructure Contract Information

and is structured and presented in accordance with the requirements and explanatory notes set out at Annex I of the latest published version of the Resolution Planning Guidance published by the Cabinet Office Government Commercial Function and available at <https://www.gov.uk/government/publications/the-outsourcing-playbook> and contains the level of detail required (adapted as necessary to the Supplier's circumstances);

- (c) incorporates any additional commentary, supporting documents and evidence which would reasonably be required by the Relevant Authority to understand and consider the information for approval;
- (d) provides a clear description and explanation of the Supplier Group members that have agreements for goods, services or works provision in respect of UK



Public Sector Business and/or Critical National Infrastructure and the nature of those agreements; and

- (e) complies with the requirements set out at Appendix I (Group Structure Information and Resolution Commentary) and Appendix II (UK Public Sector / CNI Contract Information) respectively.

11.4 Following receipt by the Relevant Authority of the CRP Information pursuant to Paragraphs 11.2, 11.8 and 11.9 of this Part 2, the Supplier and the Relevant Authority shall discuss in good faith the contents of the CRP Information and:

- (a) where the Authority is the Relevant Authority, the Authority shall; and
- (b) where the Cabinet Office Markets and Suppliers Team is the Relevant Authority, the Authority shall use reasonable endeavours to procure that the Cabinet Office Markets and Suppliers Team shall,

no later than sixty (60) days after the date on which the CRP Information was delivered by the Supplier either provide an Assurance to the Supplier that it approves the CRP Information or that it rejects it.

11.5 If the Relevant Authority rejects the CRP Information:

- (a) the Authority shall (and shall procure that the Cabinet Office Markets and Suppliers Team shall) inform the Supplier in writing of its reasons for its rejection; and
- (b) the Supplier shall revise the CRP Information, taking reasonable account of the Relevant Authority's comments, and shall re-submit the CRP Information to the Relevant Authority for approval within thirty (30) days of the date of the Relevant Authority's rejection. The provisions of paragraph 11.3 to 11.5 of this Part 2 shall apply again to any resubmitted CRP Information provided that either Party may refer any disputed matters for resolution by the Dispute Resolution Procedure at any time.

11.6 Where the Supplier has already provided CRP Information to a Department(or, in the case of a Strategic Supplier, to the Cabinet Office Markets and Suppliers Team) and has received an Assurance of its CRP Information from that Department (or, in the case of a Strategic Supplier, from the Cabinet Office Markets and Suppliers Team), then provided that the Assurance remains Valid, the Supplier shall not be required to provide the CRP Information or updated CRP Information under Paragraphs 11.2 and 11.8(a) to 11.8(c) of this Part 2 if it provides a copy of the Valid Assurance to the Authority on or before the date on which the CRP Information would otherwise have been required.

11.7 An Assurance shall be deemed Valid for the purposes of Paragraph 11.6 of this Part 2 if:

- (a) in respect of the Supplier's obligations under Paragraph 11.2:

- (i) the CRP Information on which the Assurance was based was provided to the Department providing the Assurance (or, in the case of Strategic Suppliers, to the Cabinet Office Markets and Suppliers Team) within the twelve (12) months prior to the deadline by which the CRP Information would otherwise have been required under Paragraph 11.2; and
  - (ii) no Corporate Change Events or Financial Distress Events (or events which would be deemed to be Corporate Change Events or Financial Distress Events if this Agreement had then been in force) have occurred since the date on which the CRP Information was provided; and
- (b) in respect of the Supplier's obligations under Paragraphs 11.8(a) to 11.8(c), the CRP Information on which the Assurance was based was provided to the Department providing the Assurance (or, in the case of Strategic Suppliers, to the Cabinet Office Markets and Suppliers Team) after the date of the event triggering the obligation to provide the CRP Information under Paragraphs 11.8(a) to 11.8(c).

11.8 Subject to Paragraph 11.6, if this Agreement is a Critical Service Contract, the Supplier shall provide an updated version of the CRP Information (or, in the case of Paragraph 11.8(c) of this Part 2 its initial CRP Information) to the Relevant Authority:

- (a) within fourteen (14) days of the occurrence of a Financial Distress Event (along with any additional highly confidential information no longer exempted from disclosure under Paragraph 11.11 of this Part 2) unless the Supplier is relieved of the consequences of the Financial Distress Event under Paragraph 7.1 of Schedule 7.4 (Financial Distress)
- (b) within thirty (30) days of a Corporate Change Event unless not required pursuant to Paragraph 11.10;
- (c) in any event, within six (6) months after each Accounting Reference Date or within fifteen (15) months of the date of the previous Assurance received from the Relevant Authority (whichever is the earlier), unless:
  - (i) updated CRP Information has been provided under any of Paragraphs 11.8(a) 11.8(b) or 11.8(c) since the most recent Accounting Reference Date (being no more than twelve (12) months previously) within the timescales that would ordinarily be required for the provision of that information under this Paragraph 11.8(d); or
  - (ii) unless not required pursuant to Paragraph 11.10

11.9 Where the Supplier is a Public Sector Dependent Supplier and this Agreement is not a Critical Service Contract, then on the occurrence of any of the events specified in Paragraphs 11.8(a) to (d) of this Part 2, the Supplier shall provide at the request of the Relevant Authority and within the applicable timescales for each event as set out in Paragraph 11.8 (or such longer timescales as may be notified to the Supplier by the Authority), the CRP Information to the Relevant Authority.

11.10 Subject to Paragraph 13, where the Supplier demonstrates to the reasonable satisfaction of the Relevant Authority that a particular item of CRP Information is highly confidential, the Supplier may, having orally disclosed and discussed that information with the Relevant Authority, redact or omit that information from the CRP Information provided that if a Financial Distress Event occurs, this exemption shall no longer apply and the Supplier shall promptly provide the relevant information to the Relevant Authority to the extent required under Paragraph 11.8.

## **12 Termination Rights**

12.1 The Authority shall be entitled to terminate this Agreement in accordance with Clause 33.1 (Termination by the Authority) of the Agreement.

## **13 Confidentiality and usage of CRP Information**

13.1 The Authority agrees to keep the CRP Information confidential and use it only to understand the implications of an Insolvency Event of the Supplier and/or Supplier Group members on its UK Public Sector Business and/or services in respect of CNI and to enable contingency planning to maintain service continuity for end users and protect CNI in such eventuality.

13.2 Where the Relevant Authority is the Cabinet Office Markets and Suppliers Team, the Authority shall procure that the Cabinet Office enters into a confidentiality and usage agreement with the Supplier containing terms no less stringent than those placed on the Authority under paragraph 13.1 of this Part 2 and Clause 21.

13.3 The Supplier shall use reasonable endeavours to obtain consent from any third party which has restricted the disclosure of the CRP Information to enable disclosure of that information to the Relevant Authority pursuant to Paragraph 11 of this Part 2 subject, where necessary, to the Relevant Authority entering into an appropriate confidentiality agreement in the form required by the third party.

13.4 Where the Supplier is unable to procure consent pursuant to Paragraph 13.3 of this Part 2, the Supplier shall use all reasonable endeavours to disclose the CRP Information to the fullest extent possible by limiting the amount of information it withholds including by:

- a) redacting only those parts of the information which are subject to such obligations of confidentiality
- b) providing the information in a form that does not breach its obligations of confidentiality including (where possible) by:
  - i) summarising the information; ii) grouping the information; iii) anonymising the information; and iv) presenting the information in general terms

13.5 The Supplier shall provide the Relevant Authority with contact details of any third party which has not provided consent to disclose CRP Information where that third

party is also a public sector body and where the Supplier is legally permitted to do so.

## **APPENDIX I**

### **Group Structure Information and Resolution Commentary**

**1. The Supplier shall:**

- 1.1 provide sufficient information to allow the Relevant Authority to understand the implications on the Supplier Group's UK Public Sector Business and CNI contracts listed pursuant to Appendix II if the Supplier or another member of the Supplier Group is subject to an Insolvency Event.
- 1.2 ensure that the information is presented so as to provide a simple, effective and easily understood overview of the Supplier Group; and
- 1.3 provide full details of the importance of each member of the Supplier Group to the Supplier Group's UK Public Sector Business and CNI contracts listed pursuant to Appendix II and the dependencies between each.

## **APPENDIX II**

### **UK Public Sector / CNI contract Information**

**NOT USED**

## **MODEL AGREEMENT FOR SERVICES SCHEDULES**

### **SCHEDULE 8.7**

#### **CONDUCT OF CLAIMS**

## 1 INDEMNITIES

- 1.1 This Schedule shall apply to the conduct, by a Party from whom an indemnity is sought under this Agreement (the “Indemnifier”), of claims made by a third person against a party having (or claiming to have) the benefit of the indemnity (the “Beneficiary”).
- 1.2 If the Beneficiary receives any notice of any claim for which it appears that the Beneficiary is, or may become, entitled to indemnification under this Agreement (a “Claim”), the Beneficiary shall give notice in writing to the Indemnifier as soon as reasonably practicable and in any event within ten (10) Working Days of receipt of the same.
- 1.3 Subject to Paragraph 2, on the giving of a notice by the Beneficiary, where it appears that the Beneficiary is or may be entitled to indemnification from the Indemnifier in respect of all (but not part only) of the liability arising out of the Claim, the Indemnifier shall (subject to providing the Beneficiary with a secured indemnity to its reasonable satisfaction against all costs and expenses that it may incur by reason of such action) be entitled to dispute the Claim in the name of the Beneficiary at the Indemnifier’s own expense and take conduct of any defence, dispute, compromise or appeal of the Claim and of any incidental negotiations relating to the Claim. If the Indemnifier does elect to conduct the Claim, the Beneficiary shall give the Indemnifier all reasonable cooperation, access and assistance for the purposes of such Claim and, subject to Paragraph 2.2, the Beneficiary shall not make any admission which could be prejudicial to the defence or settlement of the Claim without the prior written consent of the Indemnifier.
- 1.4 With respect to any Claim conducted by the Indemnifier pursuant to Paragraph 1.3:
- (a) the Indemnifier shall keep the Beneficiary fully informed and consult with it about material elements of the conduct of the Claim;
  - (b) the Indemnifier shall not bring the name of the Beneficiary into disrepute;
  - (c) the Indemnifier shall not pay or settle such Claim without the prior written consent of the Beneficiary, such consent not to be unreasonably withheld or delayed; and
  - (d) the Indemnifier shall conduct the Claim with all due diligence.
- 1.5 The Beneficiary shall be entitled to have conduct of the Claim and shall be free to pay or settle any Claim on such terms as it thinks fit and without prejudice to its rights and remedies under this Agreement if:
- (a) the Indemnifier fails to properly defend the Claim.

## 2 SENSITIVE CLAIMS

2.1 With respect to any Claim which the Beneficiary, acting reasonably, considers is likely to have an adverse impact on the general public's perception of the Beneficiary (a "**Sensitive Claim**"), the Indemnifier shall be entitled to take conduct of any defence, dispute, compromise or appeal of the Sensitive Claim only with the Beneficiary's prior written consent (which shall not be unreasonably withheld). If the Beneficiary withholds such consent and elects to conduct the defence, dispute, compromise or appeal of the Sensitive Claim itself, it shall conduct the Sensitive Claim with all due diligence and if it fails to do so, the Indemnifier shall only be liable to indemnify the Beneficiary in respect of that amount which would have been recoverable by the Beneficiary had it conducted the Sensitive Claim with all due diligence.

2.2 With respect to any Sensitive Claim conducted by the Beneficiary pursuant to Paragraph 2.1:

- (a) the Beneficiary shall keep the Indemnifier fully informed and consult with it about material elements of the conduct of the Sensitive Claim;
- (b) the Beneficiary shall not bring the name of the Indemnifier into disrepute;
- (c) the Beneficiary shall not pay or settle such Sensitive Claim without the prior written consent of the Indemnifier, such consent not to be unreasonably withheld or delayed; and
- (d) the Beneficiary shall conduct the Sensitive Claim with all due diligence.

2.3 The Beneficiary shall be free at any time to give written notice to the Indemnifier that it is retaining or taking over (as the case may be) the conduct of any Claim, to which Paragraph 1.3 applies if, in the reasonable opinion of the Beneficiary, the Claim is, or has become, a Sensitive Claim.

## 3 RECOVERY OF SUMS

3.1 If the Indemnifier pays to the Beneficiary an amount in respect of an indemnity and the Beneficiary subsequently recovers (whether by payment, discount, credit, saving, relief or other benefit or otherwise) a sum which is directly referable to the fact, matter, event or circumstances giving rise to the Claim, the Beneficiary shall forthwith repay to the Indemnifier whichever is the lesser of:

- (a) an amount equal to the sum recovered (or the value of the discount, credit, saving, relief, other benefit or amount otherwise obtained) less any out-of-pocket costs and expenses properly incurred by the Beneficiary in recovering or obtaining the same; and

- (b) the amount paid to the Beneficiary by the Indemnifier in respect of the Claim under the relevant indemnity.

#### **4 MITIGATION**

- 4.1 Each of the Authority and the Supplier shall at all times take all reasonable steps to minimise and mitigate any loss for which the relevant Party is entitled to bring a claim against the other Party pursuant to the indemnities in this Schedule.



## **MODEL AGREEMENT SERVICES SCHEDULES**

### **SCHEDULE 9.1**

**Not used**

## **MODEL AGREEMENT FOR SERVICES SCHEDULES**

### **SCHEDULE 9.2**

#### **KEY PERSONNEL**

### Key Personnel

| KEY ROLE                                    | Name of KEY Personnel | Responsibilities/ Authorities | Phase of the project during which they will be a MEMBER OF Key Personnel | MINIMUM PERIOD in Key Role |
|---------------------------------------------|-----------------------|-------------------------------|--------------------------------------------------------------------------|----------------------------|
| Supplier project executive                  | REDACTED              | Executive and commercial      | All                                                                      | n/a                        |
| Supplier Project Manager                    | REDACTED              | Project management            | All                                                                      | n/a                        |
| Supplier technical lead                     | REDACTED              | Technical                     | All                                                                      | n/a                        |
| Supplier subconsultant (JBA) technical lead | REDACTED              | Technical                     | All                                                                      | n/a                        |
| Authority Project Executive                 | Selena Peters         | Executive                     | All                                                                      | n/a                        |
| Authority Project Manager                   | Andrew Cook           | Technical                     | All                                                                      | n/a                        |
| Authority commercial                        | Matt Hammond          | Defra commercial              | All                                                                      | n/a                        |
| Authority technical lead                    | Jonathan Boyes        | Technical                     | All                                                                      | n/a                        |

**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 10**

**Not used**

**MODEL AGREEMENT FOR SERVICES SCHEDULES**

**SCHEDULE 11**

**PROCESSING PERSONAL DATA**

**Not Used**

