Schedule 16 (Security)

Part A: Short Form Security Requirements

1. Definitions
   1. In this Schedule, the following words shall have the following meanings and they shall supplement Schedule 1 (Definitions):

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| "Breach of Security" | the occurrence of:   * 1. any unauthorised access to or use of the Deliverables, the Sites and/or any Information and Communication Technology ("ICT"), information or data (including the Confidential Information and the Government Data) used by the Buyer and/or the Supplier in connection with this Contract; and/or   2. the loss and/or unauthorised disclosure of any information or data (including the Confidential Information and the Government Data), including any copies of such information or data, used by the Buyer and/or the Supplier in connection with this Contract,   in either case as more particularly set out in the Security Policy where the Buyer has required compliance therewith in accordance with Paragraph 2.1; |
| "Security Management Plan" | the Supplier's security management plan prepared pursuant to this Schedule, a draft of which has been provided by the Supplier to the Buyer and as updated from time to time. |

1. Complying with security requirements and updates to them
   1. The Supplier shall comply with the requirements in this Schedule in respect of the Security Management Plan. Where specified by a Buyer it shall also comply with the Security Policy and shall ensure that the Security Management Plan produced by the Supplier fully complies with the Security Policy.
   2. Where the Security Policy applies the Buyer shall notify the Supplier of any changes or proposed changes to the Security Policy.
   3. If the Supplier believes that a change or proposed change to the Security Policy will have a material and unavoidable cost implication to the provision of the Deliverables it may propose a Variation to the Buyer. In doing so, the Supplier must support its request by providing evidence of the cause of any increased costs and the steps that it has taken to mitigate those costs. Any change to the Charges shall be subject to the Variation Procedure.
   4. Until and/or unless a change to the Charges is agreed by the Buyer pursuant to the Variation Procedure the Supplier shall continue to provide the Deliverables in accordance with its existing obligations.
2. Security Standards
   1. The Supplier acknowledges that the Buyer places great emphasis on the reliability of the performance of the Deliverables, confidentiality, integrity and availability of information and consequently on security.
   2. The Supplier shall be responsible for the effective performance of its security obligations and shall at all times provide a level of security which:
      1. is in accordance with the Law and this Contract;
      2. as a minimum demonstrates Good Industry Practice;
      3. meets any specific security threats of immediate relevance to the Deliverables and/or the Government Data; and
      4. where specified by the Buyer in accordance with Paragraph 2.1 complies with the Security Policy and the ICT Policy.
   3. The references to standards, guidance and policies contained or set out in Paragraph 3.2 shall be deemed to be references to such items as developed and updated and to any successor to or replacement for such standards, guidance and policies, as notified to the Supplier from time to time.
   4. In the event of any inconsistency in the provisions of the above standards, guidance and policies, the Supplier should notify the Buyer's Representative of such inconsistency immediately upon becoming aware of the same, and the Buyer's Representative shall, as soon as practicable, advise the Supplier which provision the Supplier shall be required to comply with.
3. Security Management Plan
   1. **Introduction**
      1. The Supplier shall develop and maintain a Security Management Plan in accordance with this Schedule. The Supplier shall thereafter comply with its obligations set out in the Security Management Plan.
   2. **Content of the Security Management Plan**
      1. The Security Management Plan shall:
         1. comply with the principles of security set out in Paragraph 3 and any other provisions of this Contract relevant to security;
         2. identify the necessary delegated organisational roles for those responsible for ensuring it is complied with by the Supplier;
         3. detail the process for managing any security risks from Subcontractors and third parties authorised by the Buyer with access to the Deliverables, processes associated with the provision of the Deliverables, the Buyer Premises, the Sites and any ICT, Information and data (including the Buyer’s Confidential Information and the Government Data) and any system that could directly or indirectly have an impact on that Information, data and/or the Deliverables;
         4. be developed to protect all aspects of the Deliverables and all processes associated with the provision of the Deliverables, including the Buyer Premises, the Sites, and any ICT, Information and data (including the Buyer’s Confidential Information and the Government Data) to the extent used by the Buyer or the Supplier in connection with this Contract or in connection with any system that could directly or indirectly have an impact on that Information, data and/or the Deliverables;
         5. set out the security measures to be implemented and maintained by the Supplier in relation to all aspects of the Deliverables and all processes associated with the provision of the Goods and/or Services and shall at all times comply with and specify security measures and procedures which are sufficient to ensure that the Deliverables comply with the provisions of this Contract;
         6. set out the plans for transitioning all security arrangements and responsibilities for the Supplier to meet the full obligations of the security requirements set out in this Contract and, where necessary in accordance with the Security Policy as set out in Paragraph 2.1; and
         7. be written in plain English in language which is readily comprehensible to the staff of the Supplier and the Buyer engaged in the provision of the Deliverables and shall only reference documents which are in the possession of the Parties or whose location is otherwise specified in this Schedule.
   3. **Development of the Security Management Plan**
      1. Within twenty (20)Working Days after the Start Date and in accordance with Paragraph 4.4, the Supplier shall prepare and deliver to the Buyer for Approval a fully complete and up to date Security Management Plan which will be based on the draft Security Management Plan.
      2. If the Security Management Plan submitted to the Buyer in accordance with Paragraph 4.3.1, or any subsequent revision to it in accordance with Paragraph 4.4, is Approved it will be adopted immediately and will replace the previous version of the Security Management Plan and thereafter operated and maintained in accordance with this Schedule. If the Security Management Plan is not Approved, the Supplier shall amend it within ten (10) Working Days of a notice of non-approval from the Buyer and re-submit to the Buyer for Approval. The Parties will 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 from the date of its first submission to the Buyer. If the Buyer does not approve the Security Management Plan following its resubmission, the matter will be resolved in accordance with the Dispute Resolution Procedure.
      3. The Buyer shall not unreasonably withhold or delay its decision to Approve or not the Security Management Plan pursuant to Paragraph 4.3.2. However a refusal by the Buyer to Approve the Security Management Plan on the grounds that it does not comply with the requirements set out in Paragraph 4.2 shall be deemed to be reasonable.
      4. Approval by the Buyer of the Security Management Plan pursuant to Paragraph 4.3.2 or of any change to the Security Management Plan in accordance with Paragraph 4.4 shall not relieve the Supplier of its obligations under this Schedule.
   4. **Amendment of the Security Management Plan**
      1. The Security Management Plan shall be fully reviewed and updated by the Supplier at least annually to reflect:
         1. emerging changes in Good Industry Practice;
         2. any change or proposed change to the Deliverables and/or associated processes;
         3. where necessary in accordance with Paragraph 2.2, any change to the Security Policy;
         4. any new perceived or changed security threats; and
         5. any reasonable change in requirements requested by the Buyer.
      2. The Supplier shall provide the Buyer with the results of such reviews as soon as reasonably practicable after their completion and amendment of the Security Management Plan at no additional cost to the Buyer. The results of the review shall include:
         1. suggested improvements to the effectiveness of the Security Management Plan;
         2. updates to the risk assessments; and
         3. suggested improvements in measuring the effectiveness of controls.
      3. Subject to Paragraph 4.4.4, any change or amendment which the Supplier proposes to make to the Security Management Plan (as a result of a review carried out in accordance with Paragraph 4.4.1, a request by the Buyer or otherwise) shall be subject to the Variation Procedure.
      4. The Buyer may, acting reasonably, Approve and require changes or amendments to the Security Management Plan to be implemented on timescales faster than set out in the Variation Procedure but, without prejudice to their effectiveness, all such changes and amendments shall thereafter be subject to the Variation Procedure for the purposes of formalising and documenting the relevant change or amendment.
4. Security breach
   1. Either Party shall notify the other in accordance with the agreed security incident management process (as detailed in the Security Management Plan) upon becoming aware of any Breach of Security or any potential or attempted Breach of Security.
   2. Without prejudice to the security incident management process, upon becoming aware of any of the circumstances referred to in Paragraph 5.1, the Supplier shall:
      1. immediately use all reasonable endeavours (which shall include any action or changes reasonably required by the Buyer) necessary to:
         1. minimise the extent of actual or potential harm caused by any Breach of Security;
         2. remedy such Breach of Security to the extent possible and protect the integrity of the Buyer and the provision of the Goods and/or Services to the extent within its control against any such Breach of Security or attempted Breach of Security;
         3. prevent an equivalent breach in the future exploiting the same cause failure; and
         4. as soon as reasonably practicable provide to the Buyer, where the Buyer so requests, full details (using the reporting mechanism defined by the Security Management Plan) of the Breach of Security or attempted Breach of Security, including a cause analysis where required by the Buyer.
   3. In the event that any action is taken in response to a Breach of Security or potential or attempted Breach of Security that demonstrates non-compliance of the Security Management Plan with the Security Policy (where relevant in accordance with Paragraph 2.1 ) or the requirements of this Schedule, then any required change to the Security Management Plan shall be at no cost to the Buyer.

Part B – Annex 1:

Baseline security requirements

1. Handling Classified information
   1. The Supplier shall not handle Buyer information classified SECRET or TOP SECRET except if there is a specific requirement and in this case prior to receipt of such information the Supplier shall seek additional specific guidance from the Buyer.
2. End user devices
   1. When Government Data resides on a mobile, removable or physically uncontrolled device it must be stored encrypted using a product or system component which has been formally assured through a recognised certification process of the National Cyber Security Centre (“NCSC”) to at least Foundation Grade, for example, under the NCSC Commercial Product Assurance scheme ("CPA").
   2. Devices used to access or manage Government Data and services must be under the management authority of Buyer or Supplier and have a minimum set of security policy configuration enforced. These devices must be placed into a ‘known good’ state prior to being provisioned into the management authority of the Buyer. Unless otherwise agreed with the Buyer in writing, all Supplier devices are expected to meet the set of security requirements set out in the End User Devices Security Guidance (https://www.ncsc.gov.uk/guidance/end-user-device-security). Where the guidance highlights shortcomings in a particular platform the Supplier may wish to use, then these should be discussed with the Buyer and a joint decision shall be taken on whether the residual risks are acceptable. Where the Supplier wishes to deviate from the NCSC guidance, then this should be agreed in writing on a case by case basis with the Buyer.
3. Data Processing, Storage, Management and Destruction
   1. The Supplier and Buyer recognise the need for the Buyer’s information to be safeguarded under the UK Data Protection regime or a similar regime. To that end, the Supplier must be able to state to the Buyer the physical locations in which data may be stored, processed and managed from, and what legal and regulatory frameworks Government Data will be subject to at all times.
   2. The Supplier shall agree any change in location of data storage, processing and administration with the Buyer in accordance with Clause 18 (Data protection).
   3. The Supplier shall:
      1. provide the Buyer with all Government Data on demand in an agreed open format;
      2. have documented processes to guarantee availability of Government Data in the event of the Supplier ceasing to trade;
      3. securely destroy all media that has held Government Data at the end of life of that media in line with Good Industry Practice; and
      4. securely erase any or all Government Data held by the Supplier when requested to do so by the Buyer.
4. Ensuring secure communications
   1. The Buyer requires that any Government Data transmitted over any public network (including the Internet, mobile networks or un-protected enterprise network) or to a mobile device must be encrypted using a product or system component which has been formally assured through a certification process recognised by NCSC, to at least Foundation Grade, for example, under CPA.
   2. The Buyer requires that the configuration and use of all networking equipment to provide the Services, including those that are located in secure physical locations, are at least compliant with Good Industry Practice.
5. Security by design
   1. The Supplier shall apply the ‘principle of least privilege’ (the practice of limiting systems, processes and user access to the minimum possible level) to the design and configuration of IT systems which will process or store Government Data.
   2. When designing and configuring the ICT Environment (to the extent that the ICT Environment is within the control of the Supplier) the Supplier shall follow Good Industry Practice and seek guidance from recognised security professionals with the appropriate skills and/or a NCSC certification (<https://www.ncsc.gov.uk/section/products-services/ncsc-certification>) for all bespoke or complex components of the ICT Environment (to the extent that the ICT Environment is within the control of the Supplier).
6. Security of Supplier Staff
   1. Supplier Staff shall be subject to pre-employment checks that include, as a minimum: identity, unspent criminal convictions and right to work.
   2. The Supplier shall agree on a case by case basis Supplier Staff roles which require specific government clearances (such as ‘SC’) including system administrators with privileged access to IT systems which store or process Government Data.
   3. The Supplier shall prevent Supplier Staff who are unable to obtain the required security clearances from accessing systems which store, process, or are used to manage Government Data except where agreed with the Buyer in writing.
   4. All Supplier Staff that have the ability to access Government Data or systems holding Government Data shall undergo regular training on secure information management principles. Unless otherwise agreed with the Buyer in writing, this training must be undertaken annually.
   5. Where the Supplier or Subcontractors grants increased ICT privileges or access rights to Supplier Staff, those Supplier Staff shall be granted only those permissions necessary for them to carry out their duties. When staff no longer need elevated privileges or leave the organisation, their access rights shall be revoked within one (1) Working Day.
7. Restricting and monitoring access
   1. The Supplier shall operate an access control regime to ensure all users and administrators of the ICT Environment (to the extent that the ICT Environment is within the control of the Supplier) are uniquely identified and authenticated when accessing or administering the Services. Applying the ‘principle of least privilege’, users and administrators shall be allowed access only to those parts of the ICT Environment that they require. The Supplier shall retain an audit record of accesses.
8. Audit
   1. The Supplier shall collect audit records which relate to security events in the systems 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:
      1. Logs to facilitate the identification of the specific asset which makes every outbound request external to the ICT Environment (to the extent that the ICT Environment is within the control of the Supplier). To the extent the design of the Deliverables allows such logs shall include those from DHCP servers, HTTP/HTTPS proxy servers, firewalls and routers.
      2. Security events generated in the ICT Environment (to the extent that the ICT Environment is within the control of the Supplier) and shall include: privileged account log-on and log-off events, the start and termination of remote access sessions, security alerts from desktops and server operating systems and security alerts from third party security software.
   2. The Supplier and the Buyer shall work together to establish any additional audit and monitoring requirements for the ICT Environment.
   3. The Supplier shall retain audit records collected in compliance with this Paragraph 8 for a period of at least 6 Months.

Part B – Annex 2 - Security Management Plan

**Security Plan**

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| **To:** | **HMRC** |
| **From:** | **McKinsey & Company, Inc. United Kingdom** |
| **Date:** | **22 May 2023** |
| **Tender reference:** | **SR977701801** |
| **Tender title:** | **VAT Split Demonstrator- Proof of Concept** |
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**Security Plan**

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| **Background** |
| This Security Questionnaire covers the principles of protective security to be applied in delivering the services in accordance with HMRC's Security Policy and Standards  The Contractor’s response to this questionnaire, with any subsequent amendments as may be agreed as part of a clarification process, will be included in the signed version of any resulting agreement, as confirmation that the content of the Security Plan has been agreed with HMRC. |
| **1 IT Security** (For requirements please see Appendix B – IT Security) |
| **1a** Please confirm how you will ensure that HMRC staff have access to the test/development environment through browser user interfaces that are easy to use and are compliant with HTML 5 User Interface (UI) standards  We will develop HTML 5 UI standards complaint code, use consistent design elements and follow accessible design for ensuring the standards |
| **1b** In order to access test/development environments, please confirm how you will ensure that HMRC users are provided with user accounts that are protected with a username and password  Yes, we confirm we can onboard users into test environments within Platform McKinsey by setting up OKTA accounts with appropriate level of role-based access with strong security measures like strong password complexity requirements, default multi factor authentication, password encryption and user activity monitoring |
| **1c** Please confirm that the UI is compatible with all standard HMRC browsers (Chrome/Edge/Firefox) and will not require the installation of plugins  Yes, we confirm. |
| **1d** Please confirm how you will ensure that all data is encrypted at rest (when held in a data store) using unbroken algorithms: currently this will be to AES256 or equivalent  We will implement data encryption at rest when held in database using strong encryption algorithms (AES 256 or better) and strong encryption key management to protect the data at rest using in-built capabilities of the services from Azure/AWS(e.g, Azure CosmosDB has in-built AES 256 implementation) |
| **1e** Please confirm how you will ensure that all data is encrypted in transit using unbroken algorithms: currently this will be to at least TLS 1.2 for web traffic  We will implement data encryption in transit using TLS 1.2 or higher for enabling secured communication over the network along with certification management and network traffic monitoring |
| **1f** Please confirm how you will ensure that the solution supports a mechanism for mass export of data via an industry standard format (JSON, CSV, XML or equivalents etc.)  We will support exporting data to structured data file format(e.g, JSON/CSV/XML) through views in the database (RDBMS/NoSQL) |
| **1g** Please confirm how you will ensure that the service has appropriate protections against external attacks (DDoS, SQL Injection, or equivalents etc.);  We will use best practices like WAF(Web Application Firewall) to protect web app from common attacks like DDoS, SQL Injection..etc in addition to strong access management for database and network. We will use appropriate services from Azure/AWS for implementation. |
| **1h** Please confirm how you will ensure that audit logs are searchable, actionable and exportable to external systems  We would leverage Azure monitor or AWS Cloudwatch or equivalent within Platform McKinsey to ensure that audit logs are searchable, actionable and exportable to external systems |
| **1i** Please confirm (for Lot 1. Only) demonstrations, how you will ensure that any component developed takes into consideration future compliance with PCI-DSS (Payment Card Industry data security standards) [standards](https://www.pcisecuritystandards.org/standards/)  One of our core design philosophies is to build secure code components as per PCI-DSS standards from the beginning to implementing strong security coding practices to ensure right level of encryption. Also, we will test against security vulnerabilities before deploying into test environments and monitor the service against vulnerabilities too. We will also implement platform level policies to comply with PCI-DSS requirements. |