Engineering Delivery Partner

Schedule A - Requirements

The Authority reserves the right to make changes to the EDP Service Catalogue and Engineering Role Profiles & Technical Disciplines as required.

Such changes shall be subject to Clause 20 (Amendments to the Agreement).

SCHEDULE A: REQUIREMENTS

SCHEDULE A

THIS SCHEDULE A CONSISTS OF PART 1 – ENGINEERING DELIVERY PARTNER REQUIREMENTS, AND PART 2 – CONTRACTOR RESPONSE TO THE ENGINEERING DELIVERY PARTNER REQUIREMENTS WHICH DESCRIBES HOW THE SERVICES WILL BE CONTRACTED

PART 1 – ENGINEERING DELIVERY PARTNER REQUIREMENTS

1. INTRODUCTION

1.1 Defence Equipment and Support (DE&S) requires a partner to assist in the delivery of Engineering[1] Services comprising activities leading to defined products (such as System Requirements Documents (SRD), System Architectures and safety cases) as well as the temporary resourcing within the DE&S Engineering Function for specific assignments. The scope covers the full range of Engineering Services currently provided through existing routes and additional services that may be required in the future.

1.2 The purpose of this Schedule is to provide the background to the Authority's Requirements (the "Requirements").

1.3 The requirements for the Engineering Delivery Partner (EDP) are set out in 3 main elements of this Schedule:

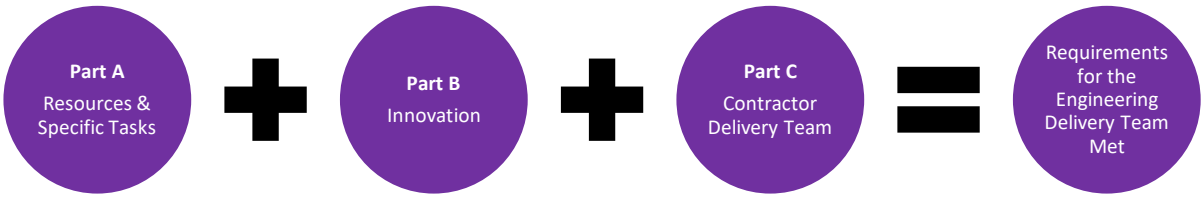

Figure 1 – Part A, B & C of the Engineering Delivery Partner Requirements

2. AIM

2.1 The aim of this schedule is to set out the requirements for an EDP and the key obligations.

3. BACKGROUND

3.1 DE&S is a Bespoke Trading Entity, an arm's length body of the Ministry of Defence (MOD). It performs a vital, bespoke and challenging role in support of national security, equipping and supporting the UK's Armed Forces for operations (and for other procurements) now and in the future. This is achieved through procuring new military equipment, commodities and services, supporting in-service equipment through-life and managing global logistics operations. DE&S is responsible for delivering some of the most complex products and services in the world.

[1] The term 'Engineering' is used to cover a number of **sub-functions**, disciplines and specialisms including **Engineering Manager/Technical Specialist Craftsman & Technician** for the disciplines: *Maritime Platforms, Mechanical, Electrical & Power Distribution, Aerosystems, Systems Engineering & Integration, Mission and Operational Support, Software Sensors and Electronic Systems, Nuclear, and Ordnance, Munitions and Explosives (OME)*; **Science**, **Acquisition Safety and Environment** and **Quality Assurance**

3.2 DE&S employs a mix of civil servants and military personnel, plus contractor staff to perform specialist roles. Its workforce is deployed at numerous locations in the UK and overseas. The majority of the workforce is located at the main acquisition hub at Abbey Wood, Bristol.

3.3 DE&S's activities range from the provision and support of complex equipment, such as nuclear submarines and combat aircraft, through to global logistics operations in hostile environments and high volume, low value items (such as clothing) and commodities (such as fuel and food). The DE&S currently spends circa £??? pa on behalf of its customer the Front Line Commands (FLCs) through 2,800 contractual arrangements with over 1000 suppliers. In fulfilling its role DE&S spends c.??? % of its annual Operating Expenditure (OPEX) budget on Private Sector Support (PSS).

3.4 In line with many specialist organisations, and in recognition of the depth and breadth of skills required across our business, DE&S, through its Transformation programme, is moving to a balanced matrix, which will improve operational efficiency and resource management by separating the delivery and function support elements. Delivery teams in the five Domains (see below) focus on delivery of our Customers' requirements against time and budget. The 11 Functions (including the DE&S Engineering Function) will ensure that the right people with the right skills can be provided at the right time. We call it a balanced matrix because it recognises that both our functions and delivery teams have an equal role in supporting delivery to our Customers.

3.5 We deliver our Programme of Work through our Domains (Ships, Land, Air and Joint Enablers), each of which is led by a Chief of Materiel; plus the new Submarine Delivery Agency (SDA) headed by a separate CEO. Our delivery activities are supported by our Function Management structure which allows the right people to be deployed to the right teams at the right time.

3.6 Function managers deploy our people according to their expertise and the tasks that need them most. This could mean working as part of a multi-disciplinary delivery team within a Domain, as part of Enabling Teams or directly for a Function. Team leaders are responsible for achieving successful outcomes agreed with our Customers, drawing on the expert resources from the Functions.

4. DE&S ENGINEERING FUNCTION

4.1 The Engineering Function is at the heart of acquiring (procuring and supporting) the equipment, systems and commodities needed to generate military capability. Delivering the equipment & support programme requires a strong in-house engineering capability. This is because by the time a contract is placed on industry many of the key engineering decisions have already been made - decisions in determining the equipment and capability solution, the procurement and support strategies, and how it will operate within a system of systems to deliver the required capability. The Engineering Function enables the DE&S vision by managing technical risks. We provide qualified, experienced and capable professionals, define requirements and translate them into contracts with suppliers, and ensure the equipment meets the requirements. We make certain the in-service equipment operates effectively and safely, and that it is disposed of in an appropriate manner where necessary. It is the largest function within DE&S (circa 3,400 out of a total 12,500) and the most complex in breadth of disciplines and specialisms (inc. aerosystems, software and nuclear engineering). Key aspects of the Function's responsibilities are:

- Managing technical risks
- Managing engineering resources and services
- Defining and assuring engineering good practice

4.2 The Engineering Function responsibilities are discharged through:

4.2.1 The Corporate Engineering Function Manager (CEFM) is responsible for the people, process and performance aspects of the entire engineering workforce, meeting current capability and capacity needs and planning for the future DE&S programme.

4.2.2 The **Domain Engineering Function Managers** (DEFM) are responsible for delivering the function's services and capabilities within DE&S Domains. The DEFM leads resourcing and deployment across their Domains.

4.2.3 **Engineering enabling teams** (e.g. Quality, Safety and Environmental Protection (QSEP), DE&S Airworthiness Team (DAT) and Naval Authority Group (NAG)) provide tools, advice and expertise to DE&S on behalf of the Engineering Function.

4.2.4 **Principal Engineers** within DE&S Operating Centres (OCs) lead in providing technical process assurance for the programmes and projects within their OC.

4.2.5 Twelve **Technical Discipline Leads** (TDLs) across the DE&S business provide professional leadership for their discipline on behalf of the Engineering Function.

5. ENGINEERING DELIVERY PARTNER – OVERVIEW

5.1 DE&S is developing the Commercial Model for the provision of an EDP and requires a partner to assist in the delivery of engineering tasks and temporary resourcing within the DE&S Engineering Function. This requirement will form part of DE&S's Transformation strategy towards a-best-in-class delivery organisation. The EDP will meet the future requirements of DE&S and wider MOD for Engineering Services. The requirement will be for a wide range of Engineering activities and products, varying in complexity and criticality and will cover the full scope of Engineering Services currently provided through existing routes and also additional services which may be required in the future. The Partner will need to be responsive to the requests of DE&S and work closely with the Engineering Function to provide continuous improvement to the way Engineering Services are delivered in order to achieve a number of benefits including but not limited to:

5.1.1 Reduced costs;

5.1.2 Enhanced quality;

5.1.3 Improving the way in which services are provided;

5.1.4 Enhancing the forward planning of Engineering Services to Delivery Teams**;**

5.1.5 Standardising the way in which services are requested and defined; and

5.1.6 Standardising the delivery of specific tasks and resource.

5.2 The requirements for the delivery of Engineering Services comprises 3 parts:

5.2.1 **Part A - Engineering Services.** Comprising:

I. **Resource** (team or individual) for a specific assignment

II. **Specific Task** - activity leading to a defined product(s)

5.2.2 **Part B - Innovation.** Provision of innovative approaches to enhance the services associated with the Engineering Function.

5.2.3 **Part C – EDP Contractor Delivery Team (CDT).** Provision of continuous key personnel to ensure EDP operates and is manged effectively; and forms part of the Joint Programme Management Office (JPMO)

6. KEY USER REQUIREMENTS

6.1 A range of engineering Key User Requirements (KURs) have been established to ensure that the EDP delivers the required outcomes. The KURs are:

6.1.1 KUR 1 - The delivery of Engineering Services that meet the expectations of the Authority (inc Value for Money (VFM)).

6.1.2 KUR 2 - The timely deployment of suitably Qualified and Experienced Personnel (SQEP) (inc Small and Medium-sized Enterprise (SME) Community) to meet the needs of the Authority.

6.1.3 KUR 3 - Demonstration of continuous improvement in the delivery of engineering services.

6.1.4 KUR 4 - The delivery of innovation through the delivery of Engineering Services.

7. DELIVERY OF REQUIREMENTS

7.1 The Contractor will be appointed to deliver Engineering Services to meet the DE&S requirements set out in this Schedule.

7.2 The Authority shall not be bound to accept or pay for any Contractor Deliverables other than those actually ordered and / or authorised under the terms of the Agreement. The Authority has the right to award contracts separate from this Agreement for any or all of the Contractor Deliverables in the Requirement during the period of the Agreement, noting the Authority Strategic Commitments and Strategic Waypoints detailed at Clause 5 to the Agreement.

7.3 **Security** - Some tasking orders under Part A & B (and managed under Part C) of the Contract may involve access to and handling & storage of, classified information at Official Sensitive and above. Personnel may also be required to be Developed Vetting (DV) Cleared for a small number of Tasking Orders. It is a requirement for the Contractor to have List X security clearance. Specific security requirements will be detailed in each Tasking Order.

8. QUALITY

8.1 The Contractor is to hold and maintain a certified quality management system to ISO/EN 9001 at no cost to the Authority.

8.2 The Contractor shall comply with the following quality standards:

8.2.1 AQAP 2110 Edition D Version 1 - NATO Quality Assurance Requirements for Design, Development and Production; and

8.2.2 AQAP 2105 Edition 2 - NATO Requirements For Deliverable Quality Plans;

The quality plan for the EDP arrangement shall be delivered to the Quality Assurance Representative within 3 months of contract award

8.2.3 Clause 34 to this Agreement

8.3 The EDP is responsible for ensuring that all contractual quality and / or regulatory requirements, as detailed within the Approved Task Order, are adhered to and flowed down to the appropriate level within their sub-contracting arrangements.

9. PART A - ENGINEERING SERVICES

9.1 The Contractor is required to provide services to the Authority in two main categories:

9.1.1 Resource - The Authority may request one or more individuals to undertake specific assignment(s) (principally for Delivery Teams) commissioned through

the DE&S Engineering Function; the cost of which will be payable monthly in accordance with the Approved Tasking Order.

> *A Resource example may be where the Engineering Function received a demand signal for an individual or individuals to fulfil an assignment in a Delivery Team perhaps as a result of a DE&S employee moving assignment. The contractor would be tasked to provide SQEP resource (from the range of specialisms e.g. Human Factors Integration (HFI)) for the duration of the assignment or until a permanent DE&S resource could be recruited.*

9.1.2 Further details of the Resource specifications (sub-functions, disciplines and specialisms) to deliver against the Engineering Services (Resource) requirements are at Appendix 1, with Role Profile descriptions at Appendix 4.

9.1.3 Specific Task - The Authority may require activity leading to a defined Product(s) or services to be completed that have agreed success criteria. For a Specific Task the Authority may set the specifications and require the Contractor to manage and complete the Specific Task, with the Contractor taking the risk of completion of such Specific Task. Specific Tasks will be paid based on a Firm Price agreed in the Approved Tasking Order, such Firm Price to comprise a cost build up using the Rate Cards. Completion of the Specific Task shall be assessed and paid against achievement of Milestones (where appropriate).

> An example of a specific task may be a safety study on an existing piece of equipment which is being proposed for use in a different configuration or environment. The contractor would be expected to work with the Authority through the JPMO to fully scope and cost the task. Assuming the scope and cost were acceptable (probably to the DE&S Delivery Team) the Contractor would proceed with the task and deliver a conclusive report for acceptance by the Authority on the equipment's safe use.

9.2 There shall be no delegated powers or authority granted in respect of any personnel supplied through the EDP.

9.3 For the provision of resource as set out in Paragraph 9.1.1 controls regarding the reporting of costs incurred against budget will be set out in the Approved Tasking Order and the Authority shall have no liability for any costs in excess of the agreed budget (including in respect of Travel and Subsistence (T&S) Costs).

10. SURGE

10.1 If the Authority seeks a surge in the provision of Engineering Services, due for example in meeting the needs of an Urgent Operational Requirement (UOR), the Authority shall complete a Tasking Order and mark it as "surge". Any surge requirement will be processed through the JPMO. The Contractor will not be under a minimum obligation to provide surge capacity.

11. EDP SELF-SUPPORT SYSTEM

11.1 The Contractor shall acknowledge that very limited DE&S resource exists to 'host' personnel brought in through the EDP. The Contractor shall ensure that the impact on the business is

minimised through the establishment of a "Self-Support System". The Self-Support System will ensure that support requested from the Authority's permanent employees is minimised.

11.2 Further details of the requirements of the "Self-Support System" is detailed at Appendix 3.

11.3 Contractor personnel undertaking Specific Tasks (who will not be working within the Authority), may not be subject to the 'Self Support System'.

12. MOBILISATION

12.1 At the Agreement Commencement Date, the Contractor shall detail the personnel to be deployed (or, if the Engineering Hub Service Tasking Order is not agreed, the personnel intended to be deployed) as part of the Engineering Hub Service and the period by which they will be brought in.

12.2 All pre-deployment activities, pursuant to Clause 12.1, including any matter detailed in Appendix 3 Paragraphs 1.1.3 to 1.1.5 (inclusive), shall be completed.

12.3 All Engaged Personnel fulfilling subsequent Approved Tasking Orders shall be available to be deployed within twenty five (25) Business Days of the date that the relevant Approved Tasking Order takes effect in accordance with Schedule D - Part A Tasking Process. During this period all on-boarding activities, including any matter detailed in Appendix 3 Paragraphs 1.1.3 to 1.1.5 (inclusive) shall be completed.

13. DEMOBILISATION

13.1 Prior to the end of each Approved Tasking Order, the Contractor shall ensure all cessation activities are completed by Personnel, including:

13.1.1 All filing and storing of information completed by personnel prior to departure;

13.1.2 Post placement review and debriefing, both with the personnel and the Task Order Lead (or their delegate notified by email);

13.1.3 All relevant knowledge captured and transferred to the Authority;

13.1.4 All activities detailed in Clause 3.2 of the Letter of Placement at Appendix 1 (Letter of Placement) to Schedule I (Engaged Personnel Arrangements); and

13.1.5 Any special conditions in the Approved Tasking Order.

SCHEDULE A: REQUIREMENTS

14. DATA & INFORMATION

14.1 The contractor will operate an information and knowledge management system which will include but not be limited to:

14.1.1 Task management (initiation / agreement / execution / completion)

14.1.2 Contract performance (inc Customer Satisfaction)

14.1.3 GFx management system

14.1.4 Library of Contractor Deliverables (and associated documents)

14.2 The information and knowledge management system will be compliant with the requisite data management legislation

15 MIGRATION

15.1 The Authority is seeking to significantly reduce the multiple routes to contract (i.e. existing commercial frameworks, support contracts and tasking routes) that exist across DE&S for the provision of Resources or undertaking Specific Tasks. An integral part of the EDP Requirement covers the migration of existing Engineering activities to the new arrangements where it is technically, contractually and cost effective to do so. The Authority is developing a comprehensive 'Migration Strategy' to address the numerous issues and challenges associated with this task and will engage in detail when the Preferred Bidder is confirmed. Migration activity has two elements:

15.1.1 Migration of Contractor Group Activities. The Contractor shall maintain, resource and exercise a jointly agreed plan with the Authority, to migrate all their extant Authority contracts and taskings that fall within the scope of EDP Part A Engineering Services into this contract; a detailed narrative must be maintained where they do not believe activities should be migrated, and

15.1.2 Migration of Non-Contractor Group Activities. Post Preferred Bidder stage, the EDP Contractor Delivery Team will work alongside the Authority Staffs to assess, plan and sequence the migration of all non-Contractor Group requirements that fall within the scope of EDP Part A Engineering Services into this Agreement.

15.2 In both instances, migration activities will be taken forward by the EDP CDT in partnership with Authority staffs ensuring minimal disruption to business delivery and comprehensive tracking and reporting of savings/benefits; the latter element being a key factor in demonstrating Value

For Money (VFM) for future Options periods. All agreed migration activities are to be scheduled within [6] months of Contract placement.

16 PART B - INNOVATION

16.1 The Contractor shall propose Contractor Generated Innovation Opportunities within the DE&S Engineering Function and wider MOD[2].

16.2 The Contractor acknowledges that, outside of the DE&S Engineering Function, delivery of Approved Innovation Projects will be subject to wider stakeholder buy-in and approval.

16.3 The Contractor acknowledges that opportunities to improve efficiency and effectiveness of the DE&S Engineering Function will arise throughout the Term. The Authority anticipates that such opportunities will stem from:

16.3.1 generating the conditions for the transfer of knowledge and skills, organisationally and individually;

16.3.2 insight and application of best practice, tailored to the most appropriate use for the Authority;

16.3.3 improving consistency and coherence across the business by reducing wasted effort through relearning or revising practices to suit individual areas; and

16.3.4 technology and data insight to improve management information, increase the speed and capability to make timely decisions, improve the Authority's understanding of suppliers and supply chains and target effort where it will have the greatest effect and benefit. This may include procuring data mining, data analytics and data applications software.

16.4 The Contractor acknowledges and agrees that the Authority has identified, and will continue to identify, Authority Directed Innovation Opportunities and may request the Contractor's assistance in scoping, maturing and implementing such opportunities, under an Approved Tasking Order.

16.5 The Contractor shall propose opportunities to build the capability of the Engineering Function, including but not limited to:

16.5.1 Transfer of knowledge

16.5.2 Job shadowing

16.5.3 Technical coaching / mentoring

16.5.4 Secondments

16.5.5 Collaborative training schemes (inc. master classes)

17 CONTINUOUS IMPROVEMENT

17.1 The Contractor will be expected to continuously improve the Services provided under Part A (Requirements) throughout the Term, through the implementation of more efficient and effective methods. Continuous improvement will have an effect on all aspects of the Agreement, but it will be evidenced and recorded through demonstrable changes in the Performance

[2] Method of operation to be referenced in the Contract Management Schedule and Tasking Schedule

Reporting Regime[3]. This improvement will have a positive effect on the quality and responsiveness of the Services.

18 SME INVOLVEMENT

18.1 The Contractor shall develop and maintain an SME Plan/Charter to ensure the fair, appropriate and transparent treatment of SMEs and provide VFM for the Authority.

18.2 The Contractor shall develop and maintain a fair and transparent process to apportion tasks to SMEs according to the skills and expertise of the SME.

19 PART C – EDP CONTRACTOR DELIVERY TEAM

19.1 The Contractor shall, as part of the Agreement, provide SQEP individuals to run the CDT within the JPMO. They are expected to work collaboratively with the Authority Delivery Team to ensure that the Services are delivered in accordance with the requirement, as detailed in the Contract Management Schedule C.

20 ENGINEERING DELIVERY PARTNER – ORGANISATIONAL CONSTRUCT, GOVERNANCE AND OPERATION

20.1 The Parties are to agree an effective structure and process for governing the EDP project, including but not limited to managing the Engineering Services under Part A, proposing and commissioning agreed Innovation under a Part B Approved Tasking Order, and effective oversight of Part C and the EDP contract operation in general. This will be in accordance with Contract Management Schedule C.

[3] Referenced in the Continuous Improvement Plan (Appendix 2) of the Contract Management Schedule C

SCHEDULE A: REQUIREMENTS
APPENDIX 1

PART A – ENGINEERING SERVICES (RESOURCE)

1. Introduction

1.1. In line with DE&S's implementation of Function Management, the Engineering Function uses Role Profiles (Levels and Sub-functions), Disciplines and Specialisms as its "currency" for delivery teams to define assignment requirements and resourcing plans. The Engineering Function also uses them to help define the requirements in external recruitment campaigns.

1.2. The Engineering Delivery Partner will be expected to map to the same Sub-functions, Disciplines, Specialisms and Levels in the provision of resources provided under Part A.

2. Resource

2.1. The figure below shows the framework of Engineering Function Role Profiles used by the business. Roles are broken down by sub-function and Level. Role profiles describe the type of activities, expected behaviours, skills, experience of staff at a specific level within the Organization. They are not project or task-specific. Within the Engineering Function the role profiles exist within each of the six sub-functions but not at all levels. This reflects the fact that certain sub-functions do not require either the upper or lower levels of accountability / responsibility covered by the balanced matrix. *The 21 Role Profiles typically contracted to augment DE&S internal capability are highlighted in YELLOW – these are provided in separate PDF Documents listed at Appendix 4.*

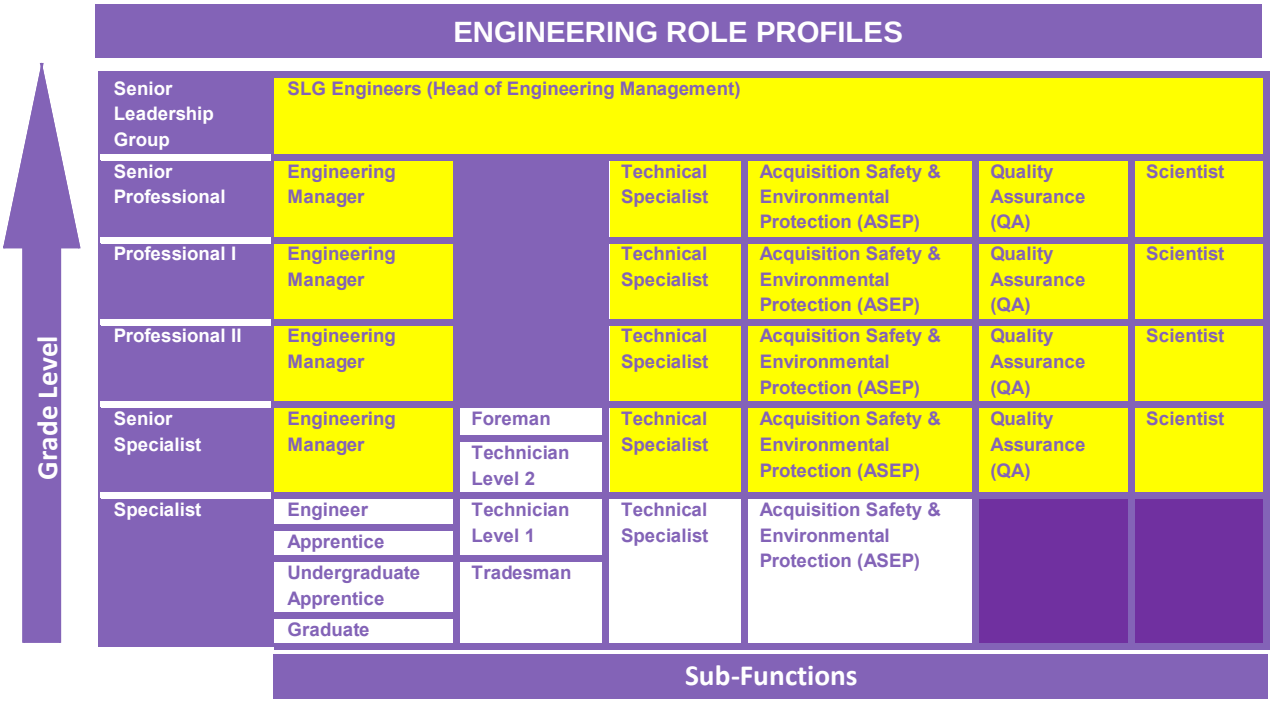

Figure 1-1 – Engineering Role Profiles

2.2 The Engineering sub-functions are further divided into disciplines and specialisms as shown in the table below. It is expected that we will require access to the complete range of specialisms listed.

SCHEDULE A: REQUIREMENTS

ENGINEERING FUNCTION SUB_FUNCTIONS, DISCIPLINES AND SPECIALISMS

Sub-Function	Engineering Manager / Technical Specialist / Craftsman & Technician									Science	Acquisition Safety and Environment	Quality Assurance
Technical Discipline	**Maritime Platforms**	**Mechanical**	**Electrical Power and Distribution**	**Aerosystems**	**Systems Eng & Integration**	**Mission and Operational Support**	**Software, Sensors and Electronic Systems**	**Nuclear**	**Ordnance, Munitions & Explosives (OME)**			
Specialisms	Ship and Submarine Structures	Structures	Motors & rotating machines	Airframes	System of systems & capability engineering (incl SOSA)	Command and control	Tx & Rx Antenna & propagation	Core Design	Propulsion, actuation	Physics	Policy and Governance	Governance: Planning for Acquisition
	Hydrodynamics & Platform Dynamics	Prime Movers	HV and High Power Systems	Propulsion (incl APU)	Requirements engineering, management & systems architecture (incl MODAF)	Geo-Spatial Data and Information processing	Circuits and systems	Fuel Cycles & Nuclear Liabilities	Warheads, effects	Chemistry & Energetics	Systems Safety Management (POSMS)	Governance: Requirements Preparation
	Hydrostatics & Stability	Transmission	Switchboards and converters	Flight Dynamics	Modelling and simulation	Sensor fusion	Communications technology	Shielding	Pyrotechnic Devices	Human Factors	Systems Environmental Management (POEMS)	
	Ship and Submarine Design	Lifting & Handling equipment	Power Distribution and control	Aerosystem Design	Platform Systems Engineering - Aerospace	Data fusion	Signal generation and analysis	Nuclear Science	Storage & Transport	Mathematics	Assurance and Audit	
	Habitation and Husbandry	Fuels and Lub Systems	Insulation, Protection and integrity	Avionics	Platform systems engineering - Marine	IS related HMI	EMC/EMI	Nuclear Essential Systems	Fuzing & Initiation Systems	Biology & Medicine	ISA	
	Boats, ANVs, UUV/USV & Integration	Heating, Ventilation, Air Conditioning & Air Treatment	Energy storage	General Aircraft Systems	Platform systems engineering - Land	Targeting and Fire Control	Remote sensing & Imaging	Nuclear Warhead	OME/Platform Integration	Materials & coatings		Improvement: Acquisition Conclusion
	Construction and Repair	Firefighting	Power electronics	Aircrew Equipment & Escape Systems	Integration Engineering	Stealth Engineering Management	Instrumentation & measurement	Nuclear Safety Management Systems	Energetic Materials	Computer science		Configuration Management
	Escape and Evacuation and Rescue	Automotive	Lighting	Aircraft Certification	Test & Evaluation Engineering	Mission Support	Complex Electronic Hardware & Safety Critical Software	Nuclear Infrastructure	Electromagnetic Environmental Effects	Acoustics		
	Combat & Aviation System Integration incl Ship Magazines	Hydraulics & Pneumatics	Control and Instrumentation Systems	Continuing Airworthiness	Operational Assurance	Intelligence gathering and processing	Electronic Warfare		Life Assessment	Vibration		
	Anchoring; Mooring and Towing	Shock		Equipment not basic to aircraft	Standardization Management	Mission Data Reprogramming	Sonar Systems		Mathematical Modelling			
	Salvage	Fluid Systems			Reliability Analysis	On-platform & deployed systems Networks, Computers, Software, AI and Crypto			Vulnerability	Modelling		
	Platform Survivability incl CBRN defence											

Figure 1-2 – Engineering Sub-Functions, disciplines & Specialisms

SCHEDULE A: REQUIREMENTS
FURTHER DEFINITION OF THE ENGINEERING SUB-FUNTIONS AND DISCIPLINES APPLICABLE TO THE EDP RESOURCES REQUIREMENT

3. **Engineering Sub-Functions**

3.1. **Engineering Manager** - Engineering Managers are responsible for bringing together the technological problem-solving capability of engineering (including science and technology) and the Organisational, administrative, and planning abilities of management in order to oversee complex enterprises from conception to completion. They develop and deliver (or manage delivery of) plans to help the Customer[4] define their technical needs and meet their technical requirements for equipment procurement, support or disposal. They may also manage enabling of technical services to support projects or the Engineering Function. This includes pre-concept activity. At a fundamental level they apply engineering theories, concepts, practices, principles and approaches and resolve technical and performance issues for a platform, product or service growing to responsibility for management of delivery of an engineering science or technology project.

3.2. **Technical Specialist** - Technical Specialists are responsible for applying specialist technical expertise to solve real world application problems in a military environment. Based on a depth of experience, they provide expert advice, guidance, decision-making and 'specialism' leadership in their technical area to solve highly complex problems, support engineering strategies and solutions and exert 'specialism' influence within the business. They sponsor technology development and are involved in managing links with national and international industry, academic establishments, and research Organisations in order to exert influence on behalf of the business, other government departments and nations, keep abreast of developments & developing options, and opportunities for application within the business.

3.3. **Science** - Scientists are responsible for engaging in systematic examination and/ or experimentation with the purpose of proving or disproving a hypothesis – principally to gain a conclusion or knowledge to advance understanding/ technology or informing policy, guidance or standards. Scientists provide advice on the performance and behaviour of components and systems. Scientists may also directly conduct or sponsor research in pursuance of this, or with the aim of developing a new solution for specific situations.

3.4. **Acquisition Safety and Environment (AS&E)** - AS&E is responsible for providing expert advice and guidance in supporting the delivery of Acquisition Safety / Acquisition Environment and/or Sustainable Procurement strategy, policy and solutions relevant to their specialist area. This will include regular interaction with both internal and external parties and advising customers on engineering design and development. It involves through life management of complex project safety and environment risk management delivery in support of safe and suitable equipment, systems, and services to Front Line Commands.

3.5. **Quality Assurance (QA)** - QA is responsible for assuring the Quality of Defence Equipment by deploying the Government Quality Assurance (GQA) framework within the Delivery Team and across the contractual boundary. Also for, informing risk management and contractor selection, identifying contractual QA requirements and verifying adequacy of contractor's quality planning, providing independent assurance of supplier and supply chain capability, performance and risk management, providing independent assurance to support acceptance, and promoting continual improvement within the supply chain.

4. **Technical Disciplines**

4.1. Nine main technical disciplines have been identified within the three sub-functions Engineering Manager, Technical Specialist and Technician / Tradesmen. The Science, AS&E and QA Sub-Functions don't have the same scale (staff numbers) and diversity of skill-sets, so for

[4] In this instance 'Customer' refers to the Equipment or Support End User

convenience, the Sub-Function and Discipline are regarded as one and the same and so bring the total number of disciplines to twelve. All twelve disciplines have associated Specialisms to illustrate the typical skills and activities covered and the types of platforms, systems and equipment that people typically work on. They will also help people identify the discipline that most closely matches their skills and experience.

4.2. Sub-functions and disciplines are used as the "currency" for delivery teams to define their staffing requirements in their staffing plans and to help define assignment requirements. The Engineering Function also uses them to help define the requirements in external recruitment campaigns.

4.3. The matrix at Fig 1-2 was developed using a set of broad design principles and through extensive consultation with subject matter experts across DE&S. The main design principles were that the sub-divisions should be:

4.3.1. Defined in ways that the business will recognise so that teams can specify the people resources they require and so that Function Managers can identify and assign suitably qualified and experienced people;

4.3.2. Sufficiently generic/flexible to enable the deployment of engineering function staff across all DE&S Domains;

4.3.3. Ideally chosen to align with professional institutes and competency frameworks to allow people to identify a professional home that best fits their qualifications, experience and chosen future career path;

4.3.4. Be of a "manageable" size - that is large enough to be "viable" as a distinct Sub-Function and where necessary sub-divided into specialisms to make leadership manageable and meaningful.

4.4. The table below provides more detail on each of the Technical Disciplines:

Technical Discipline	Summary
Maritime Platforms	A Fleet-centric Discipline that coves the specialisms related to Marine Platforms. In addition to covering the usual naval architect professional specialisms such as warship stability, this discipline also includes a range of what have traditionally been termed the "Constructive" specialism and a few Fleet Domain specific specialisms that do not have a natural home elsewhere such as Anchoring: Mooring & Towing.
Mechanical	A pan-Domain Discipline that covers the full range of mechanical engineering disciplines and specialisms that are applied across all Domains but particularly Fleet and Land (e.g. Automotive Engineering). It covers the majority of fluid systems, lifting and handling equipment and prime movers (except those used in aircraft). The aim is to maintain and maximise opportunities for engineers in this discipline to be assigned across all Domains.
Electrical Power and Distribution	A pan-Domain Discipline that covers the full range of electrical engineering disciplines and specialisms that are applied across all Domains. It covers the full range of electrical systems specialisms from HV propulsion systems used in warships through to low voltage control and instrumentation systems. The aim is to maintain and maximise opportunities for engineers in this discipline to be assigned across all Domains.
Aerosystems	A Discipline principally applicable to Air and JE (Helicopters). It covers all the specialisms applicable to the design, engineering and safety of air vehicles including Unmanned Air Vehicles (UAVs).

SCHEDULE A: REQUIREMENTS

Systems Engineering and Integration	A pan-Domain Discipline that covers the Systems Engineering professional specialisms such as requirements engineering but also systems integration activity across all Domains. The aim is to maintain opportunities for engineers in this discipline to be assigned across all Domains.
Mission and Operational support	The first of two electronic "Combat Systems" disciplines that is applicable across all Domains. This one is focussed on Command, Control, Communication and Intelligence (C4I) systems specialisms. It also includes stealth engineering management.
Software, Sensors and Electronic Systems	The second of the two electronic "Combat Systems" disciplines that is applicable across all Domains. This one is focussed on all specialisms related to sensors and Electronic Warfare (EW) (passive and active *as* well as their integration into C4I systems). The aim is to maintain and maximise opportunities for engineers in this discipline to be assigned across all Domains.
Nuclear	A Fleet-centric Discipline that covers the specialist nuclear science, technology and engineering specialisms applicable to nuclear propulsion systems, nuclear warheads and their safe handling and storage. Other engineering disciplines and specialisms that work on nuclear submarines and their weapon systems such as naval architects and strategic weapon system engineers (even if Nuclear SQEP) will be aligned to their relevant primary discipline rather than here.
Ordnance, Munitions and Explosives	Covers the specialisms related to design, maintenance, use, storage, disposal, transport and handling of energetic materials and systems.

5. Staff Alignment to Disciplines

5.1. All DE&S Engineering Staff have been aligned to an Engineering Sub-Function. Staff will also be aligned to a primary Discipline (and some may have a secondary discipline). Staff will be able to move between disciplines if they subsequently decide to take their career in a different direction.

GLOSSARY

AI	Artificial Intelligence
ANV	Advanced Naval Vehicle
APU	Auxiliary Power Unit
ARM	Availability, Reliability & Maintainability
AS&E	Acquisition Safety & Environment
BPSS	Baseline Personnel Security Standard
CBRN	Chemical, Biological, Radiological & Nuclear
CEFM	Corporate Engineering Function Manager
COEIA	Combined Operational Effectiveness & Investment Appraisal
CONEMP	Concept of Employment
CONUSE	Concept of Use
DAT	DE&S Airworthiness Team
DE&S	Defence Equipment & Support
DEFM	Domain Engineering Function Manager
DRACAS	Data Reporting, Analysis & Corrective Action System
DV	Developed Vetting
EDP	Engineering Delivery Partner
EHFA	Early Human Factors Analysis
EMP	Engineering Management Plan
EW	Electronic Warfare

SCHEDULE A: REQUIREMENTS

FMECA	Failure Modes, Effects & Criticality Analysis
FLC	Front Line Command
GEAR	Guide to Engineering Activities & Review
GQA	Government Quality Assurance
HFI	Human Factors Integration
HMI/HCI	Human Machine Interaction / Human Computer Interaction
HR	Human Resources
ITEAP	Integrated Test, Evaluation & Acceptance Plan
IT/IS	Information Technology / Information Systems
JPMO	Joint Programme Management Office
KUR	Key User Requirement
LORA	Level of Repair Analysis
MDAL	Master Data and Assumptions List
MOD	Ministry of Defence
MODAF	Ministry of Defence Architecture Framework
NAG	Naval Authority Group
OME	Ordnance, Munitions & Explosives
OC	Operating Centre
OPEX	Operating Expenditure
POEMS	Project-Oriented Environmental Management System
POSMS	Project-Oriented Safety Management System
PSS	Private Sector Support
PUID	Personal User Identifier
PUMA	Pre-Upkeep Maintenance Assessment
QA	Quality Assurance
QSEP	Quality, Safety & Environmental Protection
RAMP	Requirements and Acceptance Management Plan
RCM	Reliability Centred Maintenance
R&M	Reliability & Maintainability
RMADS	Risk Management & Accreditation Documentation Set
SC	Security Cleared
SDA	Submarine Delivery Agency
SME	Small and Medium-sized Enterprises
SOR	Schedule of Requirement
SOSA	Systems of Systems Architecture
SQEP	Suitably Qualified & Experienced Personnel
SRD	System Requirements Document
SRL	System Readiness Level
T&S	Travel and Subsistence
TDL	Technical Discipline Lead
TRL	Technology Readiness Level
UAV	Unmanned Air Vehicle
UOR	Urgent Operational Requirement
USV	Unmanned Surface Vehicle
UUV	Unmanned Underwater Vehicle
VFM	Value For Money

SCHEDULE A: REQUIREMENTS
APPENDIX 2

PART A – ENGINEERING SERVICES (SPECIFIC TASK)

1. The EDP Service Catalogue, as defined in the Agreement,is a sub-set of the DE&S Engineering Function Service Catalogue and outlines the scope of activities leading to defined products that are expected through EDP at the Agreement Commencement Date. These requirements will be reviewed prior to contract award and during the duration of the Agreement to ensure they meet the developing needs of the Authority. **Further detail on the activities and descriptions contained in the EDP Service Catalogue are provided in the Guide to Engineering Activities & Review (GEAR).**

SCHEDULE A: REQUIREMENTS
APPENDIX 3

EDP SELF-SUPPORT SYSTEM

SCHEDULE A: REQUIREMENTS

1. The Contractor shall ensure that prior to providing resource for a specific assignment(s) each role fulfilled under a Mode 1 Approved Tasking Order has met the following specifications:

    a. the Role Profile / Level identified in the Approved Tasking Order;

    b. Security Cleared (SC) security status as a minimum (unless the Authority expressly states that Baseline Personnel Security Standard (BPSS) is permitted);

    c. successful completion of all Contractor-required mandatory training;

    d. successful completion of all Authority-required mandatory training as follows:

        i. basic fire awareness;

        ii. counter fraud, bribery and corruption;

        iii. display screen equipment (not workstation-specific);

        iv. equality and diversity essentials;

        v. unconscious bias;

        vi. defence information management passport;

        vii. health & safety;

        viii. business continuity;

        ix. office safety; and

        x. any additional training required by the Authority from time to time;

    e. successful completion of all DE&S Engineering Function specific pre-deployment training as follows:

        i. introduction to the Engineering Function (Engineering Function Welcome Pack);

        ii. any additional training required by the Authority from time to time, pursuant to the Tasking Order Form; and

    f. signed and returned to the Part A Leads an individual Letter of Placement, such letters to be returned by the Contractor and made available for audit by the Authority or an Authority Related Party from time to time on request by the Authority.

    g. The Authority shall ensure that the required training materials are available to the Contractor through the “Defence Learning Portal”, [or other previously agreed method], in order to enable the Contractor to comply with these Clauses 1.1.4 and 1.1.5.

2. The Contractor shall, following mobilisation of the resource pursuant to an Approved Tasking Order, that they have made reasonable endeavours to enable the resource to attend the following Authority training events:

    a. Authority corporate induction;

    b. Authority site induction; and

    c. general security threat brief.

SCHEDULE A: REQUIREMENTS

3. The Contractor shall ensure that prior to commencing a Task, each member of the Engaged Personnel under an Approved Tasking Order meets any additional standards where specified in the Tasking Order, including:

    a. Obtaining a higher level of security standard and in some circumstances ensuring that work is undertaken by UK nationals only; or

    b. Task-specific skills, competences, qualifications or functional training.

4. The Contractor shall ensure that, prior to commencing a Task, each Member of the Engaged Personnel is provided with:

    a. the details of their Task Order Line Manager or delegate and details of where/when to arrive; and

    b. access to the Self-Support System.

5. The Authority shall ensure that, prior to commencing a Task, each member of the Engaged Personnel is provided with:

    a. IT system access in accordance with the requirements of the Approved Tasking Order.

6. The Contractor shall ensure that, no later than five (5) Business Days prior to a member of the Engaged Personnel commencing a Task under an Approved Tasking Order, the Task Order Line Manager has been provided with the following information for that individual:

    a. full name;

    b. entity email address;

    c. mobile telephone number;

    d. ModNet user name (personal unique identifier ("PUID")) (if applicable);

    e. security clearance level and nationality; and

    f. the Contractor Delivery Team point of contact for the member of Engaged Personnel.

SCHEDULE A: REQUIREMENTS
APPENDIX 4

ENGINEERING FUNCTION – ROLE PROFILE DESCRIPTIONS

The following role profile descriptions, as may be amended from time-to-time to bring up to date with extant standards, shall be made available to the Contractor:

Senior Leadership Group – Head of Engineering Management

Senior Professional – Engineering Manager
Professional I – Engineering Manager
Professional II – Engineering Manager
Senior Specialist – Engineering Manager

Senior Professional – Technical Specialist
Professional I – Technical Specialist
Professional II – Technical Specialist
Senior Specialist – Technical Specialist

Senior Professional – Acquisition Safety & Environmental Protection
Professional I – Acquisition Safety & Environmental Protection
Professional II – Acquisition Safety & Environmental Protection
Senior Specialist – Acquisition Safety & Environmental Protection

Senior Professional – Quality Assurance
Professional I – Quality Assurance
Professional II – Quality Assurance
Senior Specialist – Quality Assurance

Senior Professional – Scientist
Professional I – Scientist
Professional II – Scientist
Senior Specialist – Scientist

SCHEDULE A: REQUIREMENTS

PART 2 – CONTRACTOR RESPONSE TO THE ENGINEERING DELIVERY PARTNER REQUIREMENTS

This Part 2 of Schedule A provides additional obligations on the Parties and is not intended to replace the obligations within Part 1 of Schedule A.

The Contractor responds to the Authority requirement articulated in Part 1 of Schedule A, through the response articulated at this Part 2 of Schedule A.

PART A – ENGINEERING SERVICES

Modes of Operation

The Modes of Operation described herein are further detailed in the Operating Manual: Annex A.

In its response to the EDP Invitation to Negotiate – Schedule A – Requirement, the Contractor shall meet the Authority's needs specified in Part A through the following four 'modes' of operation. Approved Tasking Orders for Part A delivered under the Engineering Delivery Partner Agreement shall be contracted using these Modes of Operation:

Mode 1 - Critical Resource Augmentation

1. Critical Resource Augmentation is the deployment by the Contractor of specialist personnel to fulfil specific engineering roles within the Authority.

2. The Contractor shall maintain Mode 1 capability to provide critical resource augmentation which cannot be specified as a discrete output from the Engineering Output Directory, and where this may be the most appropriate way to satisfy a short term priority need within the Authority specifically:

    2.1 the provision of specialist SQEP engineers to fulfil specific roles required by the Authority;

    2.2 deployments to cover gapped, Authority engineering roles where no critical engineering outputs can be specified as a discrete output from the Engineering Output Directory, in advancement of Authority equipment and support programmes.

3. Mode 1 resources shall be located in the Authority's facilities, or as detailed in the Approved Tasking Order..

Mode 2 - Critical Output Delivery

4. Critical Output Delivery is the delivery of specific singular, or groups, of outputs. This means the provision of a single Critical Output or limited collections of outputs,. Mode 2 will be delivered for an agreed firm price. Wherever possible, this is specified by the Authority, in the Approved Tasking Order Form, from the Engineering Output Directory (EOD).

5. Where there are opportunities for optimisation, the Mode 2 SOW shall be assessed on case by case basis for progression to a Programme of Critical Outputs (Mode 3).

6. Mode 2 shall typically be delivered from the Contractor's facilities or those of its Sub Contractor's.

Mode 3 - Programmes of Critical Outputs

7. Mode 3 Programmes of Critical Outputs are a portfolio of specified outputs to support an outcome, for a specific Authority Delivery Team/platform/system delivered typically through a multi-year agreement. Mode 3 requirements are typically built around CSDPs. The Programme of Work (POW) specifies the collaboratively assembled Critical Outputs required by the Authority for an agreed firm price. The specifications for the Critical Outputs, and underpinning outputs, are specified from the EOD.

8. Mode 3 shall typically be delivered from the Contractor's facilities or those of its Sub Contractor's and the Provider Network

Mode 4 - Engineering Service Delivery

9. Engineering Service Delivery is the provision of engineering services to deliver a successful outcome; the provision of a coherent engineering service for a specific Authority Delivery Team or Operating Centre delivered through a multi-year programme of work that specifies the outcomes required by the Authority, drawn from key Command Acquisition Support Plan (CASP) or Authority delivery programme milestones. The process and methodology for the operation of Mode 4 Tasking shall be agreed between the Authority and the Contractor within the timescales for the declaration of Initial Operating Capability.

10. Mode 4 shall typically be delivered from the Contractor's facilities or those of its Sub Contractor's and the Provider Network.

11. The process and terms to cover the delivery of Mode 4 shall be defined during the IOC, SR and FOC phases of the Agreement, pursuant to Clause 5.

Surge:

12. In the delivery of Engineering Services, the Contractor shall accommodate, wherever possible, the Authority's Surge requirements, due for example to meeting urgent, short notice operational needs. Surge requirements and the impact on programmed engineering services, will be managed through the Contract Tasking mechanism - Schedule D, Tasking and the Operating Manual.

Engineering Service Catalogue and Engineering Output Directory:

13. The following Clauses define how the Authority and the Contractor will specify requirements for Modes 2-4, and manage the interoperability of the ESC and the EOD.

14. The Engineering Services Catalogue (ESC) is the document that defines the Authority's scope of engineering activities.

15. The Engineering Output Directory (EOD) is the Contractor's document that defines the scope of Engineering Services and how requirements will be fulfilled.

16. The Parties commit to maintain alignment of the EOD and ESC.
    16.2 This will be effected through notification, to the other Party, and agreement of changes to the documents, where these are required.

17. The Authority will specify the requirement in the Tasking Form against;

    17.2 ESC Outputs;

    17.3 EOD Critical Outputs and Enabling Outputs.

18. The Contractor Deliverables will be provided to the Authority against the EOD.

19. The Authority is responsible for ESC and keeping it up to date

20. The Contractor is responsible for the EOD and keeping it up to date

PART B – INNOVATION

The Contractor will deliver Innovation tasks through agreement of Approved Innovation Projects. The requirements and terms of the Innovation tasks will be agreed on a case-by-case basis and described in the relevant Approved Tasking Orders.

PART C – EDP CONTRACTOR DELIVERY TEAM

The Contractor provides the Part C requirement through fulfilment of an Approved Tasking Order to deliver the Engineering Hub Service.

The requirement and terms of the Engineering Hub Service shall be described in the Approved Tasking Order.