Serapis Tasking Form

Tasking Form Part 1: *(to be completed by the Authority's Project Manager)*

To:	Lot 4 QinetiQ Plc	**From:**	Dstl

Any Task placed as a result of your quotation will be subject to the Terms and Conditions of Framework Agreement Number:

LOT 4 DSTL/AGR/SERAPIS/AII/01

VERSION CONTROL

Version 3 2021-07-29

REQUIREMENT

Proposal Required by:	31/08/2021	**Task ID Number:**	AII66
The Authority Project Manager:	[REDACTED UNDER FOIA EXEMPTION]	**The Authority Technical Point of Contact:**	[REDACTED UNDER FOIA EXEMPTION]
Task Title:	ARA WP5.1 Modular, Flexible Architecture – Phase 1		
Required Start Date:	30/09/2021	**Required End Date:**	31/03/2021
Requisition No:	1000167573	**Budget Range**	£180k (including Task Management Services)

TASK DESCRIPTION AND SPECIFICATION

Serapis Framework Lot	☐ Lot 1: Collect ☐ Lot 2: Space systems ☐ Lot 3: Decide ☒ Lot 4: Assured information infrastructure ☐ Lot 5: Synthetic environment and simulation ☐ Lot 6: Understand

Statement of Requirements (SOR)

Abstract

This requirement is to explore and identify improved approaches to understanding openness modularity and flexibility in CIS Architectures. It is an activity within the Autonomous Resilient Architectures (ARA) project which seeks to develop and demonstrate self-discovering, self-connecting, self-coordinating architectures across a multi-domain, multi-classification, multi-national enterprises to provide improved C2, including in Denied, Degraded, intermittent and Low bandwidth (DDIL) environments.

We seek to complete this activity by March 2022 to inform our future plans for this project over the following three years.

1.1. Strategic Review

The strategic framework document, "Global Britain in a competitive age; The Integrated Review of Security, Defence, Development and Foreign Policy", outlines the following four overarching and mutually supporting objectives which includes:

i. "Sustaining strategic advantage through science and technology: we will incorporate S&T (Science and Technology) as an integral element of our national security and international policy, fortifying the position of the UK as a global S&T and responsible cyber power

ii. Shaping the open international order of the future: we will use our convening power and work with partners to reinvigorate the international system

iii. Strengthening security and defence at home and overseas

iv. Building resilience at home and overseas: we will place greater emphasis on resilience".

A key S&T challenge is **Multi-domain Command & Control, Communications and Computers (C4)** [1] **–** to develop the capability for multi-domain integration with the ability to coordinate effects globally, enabling us to execute joint operations against adversaries with well-integrated and resilient capabilities.

C4 is a broad, complex, and technically challenging area characterised by rapid advances in technologies. However, it is the connective tissue that provides the information needed to make rapid decisions in a highly mobile and global environment, often with little infrastructure.

1.2. Future C4 challenges

The future challenges in a C4 environment include the need for:

- New techniques and technologies that mitigate against rapidly emerging communications threats
- Resilient and robust communications systems and architectures,
- Connectivity to all mobile/static platforms (underwater, land, sea, air and space),
- Global operations, often infrastructure less environment
- Conducting operations that range from disaster relief, peacekeeping, surveillance to military engagement
- Interoperability with national and international partners
- New architectures/protocols
- Systems that are application aware
- Satisfying convergence of systems and networks.

To meet the challenges of C4, and address the Strategic Review aims, research needs to be conducted into Autonomous Resilient Architectures (ARA) with an aim of demonstrating S&T technologies within the next two years.

The aim of the ARA programme is to exploit advances in S&T to develop self-discovering, self-connecting, self-coordinating architectures across a multi-domain, multi-classification, multi-national enterprises to provide improved C2, including in Denied, Degraded, Intermittent and Low bandwidth (DDIL) environments. To achieve this S&T activities may include:

- Research into Networks, Data & Information; to accelerate & bring together a variety of existing & emerging concepts & technologies. The aim would be to show how they can come together to deliver transformational architectural agility & flexibility. (This may include cross-stack agile resilience approaches)
- Contributing to future collaborations and demonstrations such as: FNC3; replacement to DIAS ITA initiative; other potential collaborations with a view to joint development & experimentation with international partners
- S&T to strengthen our intelligent customer capability in this growing area by development of SQEP.

1.3. Current Approaches to Open Architectures

Currently, the MOD procurement cycle is based on capturing key requirements at the outset that are assumed to endure for the whole lifetime of the system. Often, these are compiled many years in advance of the introduction of the system into service due to long and complex procurement processes. This necessitates predictions around future operational context, threat environment and commercial advancements. In addition, a large and

[1] Defence and Security Industrial Strategy: A strategic approach to the UK's defence and security industrial sectors

well-articulated set of requirements is not necessarily going to capture everything: some will be missing, others will be unnecessary, and others will be inaccurate leading to change later on in the lifecycle.

This issue has been recognised within MOD, and there is a justified move to “openness” with an aim to enable more agility and flexibility in our CIS equipment. As a result, most future architectures are being developed with an emphasis on “open” standards and “open” interfaces, with extensive processes in place to try to assess proposed solutions from industry. However, there is a risk that open does not mean flexible, which is arguably an equally important characteristic. There is currently no standard mechanism by which architectures can be assessed for openness and flexibility, and it is hard to maintain consistency across multiple procurement activities for systems of systems. It also does not guarantee that the final solution will have these important characteristics where MOD actually needs it to be: an open and flexible interface in an unimportant place in the architecture provides no value to the user and adds cost to the implementer.

MOD has also spent a lot of time and energy on open architecture initiatives that have subsequently proved hard to implement and exploit. Indeed, by imposing a large number of open interfaces on the supply base, MOD is at risk of stifling innovation, and introducing inefficiencies into solutions that could have been avoided. The demands of the static, operational and tactical environments are very different, but the biggest gains for MOD are perceived to be in the tactical space.

2. Aims

The aim of the Modularity and Flexibility Assessment Model (MFAM) is to highlight where and how a system needs to evolve in response to future events, and identify which interfaces need to be defined to enable “plug and play” of new modular capability and flexibility to evolve to meet new requirements. During procurement, these key interfaces can be captured as required to be open integration points between industry suppliers, as well as describing the modes by which the interface may change over time. The intent is to assess how MOD would want the system to respond to these events in the short, medium and long term, and capture the implications of these responses on the proposed CIS architecture. The MFAM is intended to complement the current approaches to assessing openness, but to focus attention on future ‘evergreening’ in addition to short-term user requirements.

3. Requirements

The overarching requirement is to develop and test a Modularity and Flexibility Assessment Model against an agreed use case, such as Joint Fires, in the context of a representative MOD future architecture that reaches to the tactical environment, such as MORPHEUS.

R1 Agree a Working Definition of both Openness and Flexibility
A single definition of openness and flexibility needs to be agreed. This would ideally be based on existing criteria used by Defence, which may require a consultation with stakeholders. This should be accompanied by exemplars to demonstrate low and high levels of openness, and low and high levels of flexibility.

R2 Develop a Draft Assessment Model
A process needs to be defined for MFAM that can be conducted during the system definition phase to identify where openness and flexibility in functionality is required in a system. Analogous to an Operational Analysis (OA) process, the assessment should identify which parts of the system would need to evolve in response to a number of events of varying types. Example events that could be considered include:

- A new peer threat
- A change to theatre conditions
- New sensor types resulting in additional information exchange requirements (IERs)
- Changes to information types or metadata
- New cyber security risks.

R3 Identify and Describe Scenarios/Architecture
One or more scenarios/architectures need to be identified that can be used to exercise the MFAM across an agreed set of events.

R4 Run the Assessment Model Against the Scenarios

The draft MFAM should be rehearsed against the scenarios/architectures identified in R3. This will provide useful lessons for the future evolution of the MFAM.

R5 Develop an Innovation Benefits and Exploitation Plan (IBEP)
An IBEP is required, which will include:

1. Innovation – (i.e. what are we building on?)
    a. Network management know-how in a military/civil domain
    b. Previous architectures for system of systems solutions
    c. Previous commercial collaborations
    d. Application of AI and novel configuration management to the DDIL environment.

2. Benefits (i.e. what will the contracted academic stakeholders get from this?)
    a. Novel application of developing technologies for Defence
    b. Access to industrial Defence sector expertise
    c. Development of new capabilities
    d. Closer Defence-sector / commercial collaboration.

3. Exploitation (what are the artefacts that Dstl will get that can be more widely exploited)
    a. Army HQ 6Works (formerly JimmyWorks)
    b. Know-how in the Defence Industrial base (papers, reports, presentations)
    c. Know-how in the Academic supply base
    d. Potential new recruits into the Defence supply chain if UK resources used
    e. Testing of proposed architectures through the ISS Design Pillar.

4. Plan (what's the plan for exploitation)
    a. Input into the wider WP2 ACS initiative
    b. Potential for accelerating know-how (facilities, hardware, configuration) through Industrial exploitation
    c. Briefings to MOD Stakeholders.

Procurement Strategy

☒ Lot Lead to recommend ☐Single Source / Direct Award

Pricing:

☒ Firm Pricing ☐ Ascertained Costs* ☐ Other*

Firm Pricing shall be in accordance with DEFCON 127 and DEFCON 643

Ascertained Costs shall be in accordance with DEFCON 653 or DEFCON 802.

*only at Authority's discretion

Task IP Conditions

Task IP Conditions (Follow the NIPPY guide to identify your information and IP requirements for each deliverable)	**Summary of the Authority's rights in foreground IP (IP generated by the supplier in performance of the contract)**
DEFCON 703 ☒	Vests ownership with the Authority
DEFCON 705 Full Rights ☐	Enables MOD to share in confidence as GFI or IRC under certain types of agreements. Can be shared in confidence within UK Government.
OTHER IP DEFCONS: 14* ☐, 15* ☐, 16* ☐, 90* ☐, 91* ☐, 126* ☐	Generally only suitable for deliverables at TRL 6 and above.

BESPOKE IP Clause ☐ *	Details to be added and agreed by IP Group
* Do not use without IPG advice and approval	
Please state in this text box if MOD or the customer has a requirement a) that one or more Other Government Departments is able to share confidentially with their own suppliers, b) to publish but you do not think there is a requirement to own or control the deliverable, or c) to share under a procurement Memorandum of Understanding (MOU).* *If any of these three issues applies, please contact IPG for advice before completing this form. *Listing research MOUs is not required, but can be a helpful courtesy to the supplier.*	

DELIVERABLES

Ref	Title	Due by	Format	TRL	Expected classification (subject to change)	Information required in deliverable	IPR DEFCON
D1	Draft Assessment Model	T0+3 Months	Electronic Document		[REDACTED UNDER FOIA EXEMPTION]		703
D2	Report	End of contract	Electronic Document		[REDACTED UNDER FOIA EXEMPTION]	To include the recommendations, conclusions and next steps	703

DELIVERABLE: ACCEPTANCE / REJECTION CRITERIA

Unless otherwise stated below, Standard Deliverable Acceptance / Rejection applies. This is 30 business days, in accordance with DEFCON 524 Rejection, and DEFCON 525 Acceptance.

Standard Deliverable Acceptance / Rejection:-

Yes ☐ (DEFCON 524 Rejection, and DEFCON 525 Acceptance)

No ☒ (if no, please state details of applicable criteria below)

Deliverable Acceptance / Rejection Criteria:-

To be agreed on a per-deliverable basis.

Government Furnished Assets (GFA)

ISSUE OF EQUIPMENT/RESOURCES/INFORMATION/FACILITIES (*if not applicable, delete table and insert "None" in this text box)*

Unique Identifier/ Serial No	Description	Classification	Type	Available Date	Issued by	Return or Disposal Date	Any restrictions?

QUALITY STANDARDS

☒ **ISO9001** (Quality Management Systems)

☐ **ISO14001** (Environment Management Systems)

☐ **ISO12207** (Systems and software engineering — software life cycle)

☐ **TickITPlus** (Integrated approach to software and IT development)

☐ **Other:** (Please specify in free text below)

SECURITY CLASSIFICATION OF THE WORK

[REDACTED UNDER FOIA EXEMPTION]

TASK CYBER RISK ASSESSMENT. *(In accordance with DEF STAN 05-138 and the* Risk Assessment Workflow)

Cyber Risk Level	[REDACTED UNDER FOIA EXEMPTION]
Risk Assessment Reference	[REDACTED UNDER FOIA EXEMPTION]

ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO THIS CONTRACT

Please ensure all completed forms are copied to DSTLSERAPIS@dstl.gov.uk when sending to the Lot Lead.

Tasking Form Part 2: *(To be completed by the Lot Lead)*

To: The Authority	From: The Lot Lead

Proposal Reference **All66 Modular Flexible Architecture - Phase 1 Proposal v1f** **(attached)**

Delivery of the requirement:

The proposal <u>shall</u> include, but not be limited to:

- A full technical proposal that meets the individual activities that are detailed in Statement of Requirements (Part 1 to Tasking Form).
- Breakdown of individual Deliverables, with corresponding Intellectual Property rights applied.
- Breakdown of Interim Milestone Payments, with corresponding due dates.
- A work breakdown structure/project plan with key dates and deliverables identified.
- A list of required Government Furnished Assets from the Authority, including required delivery dates.
- A clear identification of Dependencies, Assumptions, Risks and Exclusions which underpin your Technical Proposal.
- Sub-Contractors Personnel Particulars Research Worker Form and security clearances (if applicable)

Following correspondence with Dstl (email from [REDACTED UNDER FOIA EXEMPTION]**dated 14/12/21) the terminology and language in the Technical Proposal has been updated to reflect the requested changes, including the name of a referenced deliverable.**

COMMERCIAL

As per the Serapis Limitation of Liability Discussion Paper Agreement, this task will fall under the band of a cap on liabilities of £500,000.

PRICE BREAKDOWN

You are to use the costs detailed in Item 2 Table I in the Schedule of Requirement and at Annex E Table 2 of the Serapis Framework Agreement. Please also provide a price breakdown which should include, but is not limited to: Lot Lead Rates, Sub-contractors costs and rates, travel and subsistence. In support of your Proposal you are requested to provide clear details of all Dependencies, Assumptions, Risks and Exclusions that underpin your price.

It should be noted that the following effort associated with this task will be charged against AII102 DCEAT/ARA Management and Enablers:

- SOR development activities;
- Associate Technical Partner support.

Offer of Contract: *(to be completed and signed by the Contractor's Commercial or Contract Manager)*

Total Proposal Price in £	£197,980.06		(ex VAT)
Start Date:	07/01/22	**End Date:**	**31/03/2022**

Lot Leads Representative	Name	[REDACTED UNDER FOIA EXEMPTION]
	Tel	[REDACTED UNDER FOIA EXEMPTION]
	Email	[REDACTED UNDER FOIA EXEMPTION]
	Date	[REDACTED UNDER FOIA EXEMPTION]
Position in Company	Assistant Commercial Manager	

Signature	[REDACTED UNDER FOIA EXEMPTION]

Core Work – Breakdown

[PRICING TABLES REDACTED IN ENTIRETY UNDER FOIA EXEMPTION]

[PRICING TABLES REDACTED IN ENTIRETY UNDER FOIA EXEMPTION]

[PRICING TABLES REDACTED IN ENTIRETY UNDER FOIA EXEMPTION]

[PRICING TABLES REDACTED IN ENTIRETY UNDER FOIA EXEMPTION]

Core Work – Milestone breakdown costs

Proposed Milestones Payments

Your TMS bid costs shall be included in milestone 1.

The final Milestone must reflect the actual cost of the deliverable, and be greater than 20% of the Task value, unless otherwise agreed with your Commercial POC

Please duplicate the template per milestone table format below as necessary, and rename milestone number accordingly.

[PRICING TABLES REDACTED IN ENTIRETY UNDER FOIA EXEMPTION]

[PRICING TABLES REDACTED IN ENTIRETY UNDER FOIA EXEMPTION]

Proposed Milestones Deliverables and Payments

	Total Amount in GBP
TOTAL	**£197,980.16**

Tasking Form Part 3:

To be completed by the Authority's Commercial Officer and copied to the Authority's Project Manager.

1. **Acceptance of Contract:**		
Authority's Commercial Officer	Name	[REDACTED UNDER FOIA EXEMPTION]
	Tel	[REDACTED UNDER FOIA EXEMPTION]
	Email	[REDACTED UNDER FOIA EXEMPTION]
	Date	12/01/2022
Requisition Number		1000167573
Contractor's Proposal Number		TBC
Purchase Order Number		AII66 Modular Flexible Architecture - Phase 1 Proposal v1f
Signature		[REDACTED UNDER FOIA EXEMPTION]
Please Note: Task authorisation to be issued by the Authority's Commercial Officer or Contract Manager. Any work carried out prior to authorisation is at the Contractor's own risk.		