

# Serapis Tasking Form

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

|  |   |  |  |
|--|---|--|--|
| <b>To:</b>   | Lot 4 QinetiQ Plc   | <b>From:</b>                                     | Dstl                                       |
| Any Task placed as a result of your quotation will be subject to the Terms and Conditions of Framework Agreement Number:<br>LOT 4 DSTL/AGR/SERAPIS/AII/01  |   |  |  |
| <b>VERSION CONTROL</b>   |   |  |  |
| Version 3 2021-07-29   |   |  |  |
| <b>REQUIREMENT</b>   |   |  |  |
| <b>Proposal Required by:</b>   | 31/08/2021  | <b>Task ID Number:</b>                           | AII72                                      |
| <b>The Authority Project Manager:</b>  | [REDACTED UNDER FOIA EXEMPTION]   | <b>The Authority Technical Point of Contact:</b> | [REDACTED UNDER FOIA EXEMPTION]            |
| <b>Task Title:</b>   | ARA WP3.1 / 3.2 Resilient Information Services – Phase 1  |  |  |
| <b>Required Start Date:</b>  | 30/09/2021  | <b>Required End Date:</b>                        | 31/03/2021                                 |
| <b>Requisition No:</b>   | 1000167572  | <b>Budget Range</b>                              | £500k (including Task Management Services) |
| <b>TASK DESCRIPTION AND SPECIFICATION</b>  |   |  |  |
| <b>Serapis Framework Lot</b>   | <input type="checkbox"/> Lot 1: Collect<br><input type="checkbox"/> Lot 2: Space systems<br><input type="checkbox"/> Lot 3: Decide<br><input checked="" type="checkbox"/> Lot 4: Assured information infrastructure<br><input type="checkbox"/> Lot 5: Synthetic environment and simulation<br><input type="checkbox"/> Lot 6: Understand |  |  |
| <b>Statement of Requirements (SOR)</b>   |   |  |  |
| <b>Abstract</b>  |   |  |  |
| <p>This requirement is to explore approaches to Resilient Information Services within 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.</p> <p>We seek to complete this activity by March 2022 to inform our future plans for this project over the following three years.</p> |   |  |  |
| <b>1.1. Strategic Review</b>   |   |  |  |

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)**<sup>1</sup> – 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.

## 2. Current Approaches to Information and Data Architectures

Existing MOD systems vary in their approaches to, and formality of, information and data architectures as they move from the static to the operational and tactical environments. Moving out from the static environment one finds a variety of platforms and devices linked by a heterogeneous communications infrastructure which is at

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<sup>1</sup> Defence and Security Industrial Strategy: A strategic approach to the UK's defence and security industrial sectors

times congested and/or contested. A variety of information and data architectures, as well as corresponding services, have grown up to tackle the different technical circumstances that arise. The variety of data architectures is likely to continue to grow with, for example, increasing collection and processing capability 'at the edge'. This presents challenges for agility as there are many integration and use cases to consider that act as an impediment to making use of the valuable information and data that is available. This is especially the case in the face of changing operational goals and of changing operational environments particularly within degraded environments.

It is envisaged that one of the biggest areas of benefit to be gained is in the adaptation of information and data architectures to support information discovery and dissemination.

There have been a number of related research activities carried out in recent years, on which it is expected that this task will build, including:

- Information Broker (SIEI project and the linked PTF activity)
- DIAS ITA activity
- SIEI Corpus and Nebula
- Nebula
- ADAIR
- Machine Speed Command and Control (C2) SR project, especially on Data Architectures
- Other SIEI work.

### **3. Aims**

The aim of this task is two-fold:

- To enable robust and flexible approaches to information discovery
- To enable responsiveness and agility in the dissemination of information.

It will complete a review of relevant previous work under SIEI, ITA and elsewhere as appropriate in order to propose relevant focus of work in this area for future years aimed at future coalition demonstrations. It will demonstrate at least one approach to solving these issues for a credible use case which emphasises the improvement vs current performance.

### **4. Requirements**

There are a number of potential avenues of exploration to consider, which include, but not limited to:

- Information Discovery:
  - Establishing a mechanism to distribute/share metadata to allow local search to discover remote information and data
  - Understanding how these mechanisms perform within a communications infrastructure that may be subject to shocks or breaks
  - Identifying and defining new synchronisation mechanisms under the Coalition Shared Database (CSD) theme within NATO Joint ISR and FMN
  - Autonomous management of the data environment, potentially using the Information Broker concept.
- Information Dissemination:
  - Optimising the transmission of data in a more autonomous way than currently possible
  - Optimising or otherwise enhancing the efficiency of data transfer or delivery
  - Transformation of data into alternative lighter-weight forms based on remote optimisation or exploitation
  - Understanding how these mechanisms perform within a communications infrastructure that may be subject to shocks or breaks
  - Supporting agile and autonomous architectures including but not limited to Corpus/Nebula, ADAIR, and Information Broker.

It should also seek for coherence with the data architecture work under the Machine-Speed C2 and other work within the ARA projects.

Across this work the desire for an adaptable, open and modular architecture should be a key consideration.

### **R1 Propose a Research, Analysis and Experimentation Plan**

Fortunately, this work is not starting with a blank sheet of paper. There are a number of aforementioned tasks whose outputs need to be reviewed. Other related research or new commercially available technologies may also be relevant. These need to be assessed in the context of the overall aims of this task with the aim to:

1. Inform the plans and goals of the proposed work under this tasking (e.g. inform plans under R2 & R3)
2. Develop a plan for research, analysis and experimentation for FY22 and onwards.

### **R2 Identify and Describe Characteristics and a Scenario**

In order to evaluate any improvement in performance, there is a need to elaborate a scenario, the whole or part of which can be used as part of a demonstration developed under R3. This scenario must be credible to a set of stakeholders and identify and capture performance characteristics, which can be objectively and/or subjectively measured.

Ideally this scenario will be one which could be used to test multiple different solutions e.g. could be re-used in future work associated with varied adaption of services in response to a disruptive event.

### **R3 Develop a Demonstrator**

Using the scenario developed under R2, a demonstration is needed to show how one or more approaches may alter the performance characteristics to provide a more favourable outcome. The results of this demonstration may be used to inform the future plan aspects of R1.

### **R4 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 IR2E (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

| <b>Task IP Conditions</b> (Follow the <a href="#">NIPPY</a> guide to identify your information and IP requirements for each deliverable)   | <b>Summary of the Authority's rights in foreground IP (IP generated by the supplier in performance of the contract)</b>                  |
|--|--|
| DEFCON 703 <input checked="" type="checkbox"/>   | Vests ownership with the Authority   |
| DEFCON 705 Full Rights <input type="checkbox"/>  | Enables MOD to share in confidence as GFI or IRC under certain types of agreements.<br>Can be shared in confidence within UK Government. |
| OTHER IP DEFCONS: 14* <input type="checkbox"/> , 15* <input type="checkbox"/> , 16* <input type="checkbox"/> , 90* <input type="checkbox"/> , 91* <input type="checkbox"/> , 126* <input type="checkbox"/> | Generally only suitable for deliverables at TRL 6 and above.   |
| BESPOKE IP Clause <input type="checkbox"/> *   | 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**

| <u>Ref</u> | <u>Title</u>                                | <u>Due by</u>   | <u>Format</u>       | <u>TRL</u> | <u>Expected classification (subject to change)</u> | <u>Information required in deliverable</u>          | <u>IPR DEFCON</u> |
|------------|---|-----------------|---------------------|------------|--|---|-------------------|
| D1         | Research, Analysis and Experimentation Plan | T0+3 Months     | Electronic Document |            | [REDACTED UNDER FOIA EXEMPTION]                    |   | 703               |
| D2         | Report                                      | End of contract | Electronic Document |            | [REDACTED UNDER FOIA EXEMPTION]                    | To include the scenario, conclusions and next steps | 703               |
| D3         | Demonstration Materials                     | End of contract | Various             | 3          | [REDACTED UNDER FOIA EXEMPTION]                    |   | 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)

| <u>Unique Identifier/ Serial No</u> | <u>Description</u> | <u>Classification</u> | <u>Type</u> | <u>Available Date</u> | <u>Issued by</u> | <u>Return or Disposal Date</u> | <u>Any restrictions?</u> |
|-------------------------------------|--------------------|-----------------------|-------------|-----------------------|------------------|--------------------------------|--------------------------|
|                                     |                    |                       |             |                       |                  |                                |                          |
|                                     |                    |                       |             |                       |                  |                                |                          |

**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](mailto: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** \_\_\_\_\_ **(attached)**

**Delivery of the requirement:**

**The proposal shall 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)

**COMMERCIAL**

As per the Serapis Limitation of Liability Discussion Paper Agreement, this task will fall under the band of a cap on liabilities of £1 Million.

**PRICE BREAKDOWN**

*A Firm Price Quotation of **£457,214** (four hundred and fifty seven thousand and two hundred and fourteen pounds) (ex VAT) is submitted for the Task AII72 and broken down as shown in the tables below.*

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

- Associate Technical Partner support.

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

|                                  |                                 |                                 |
|----------------------------------|---------------------------------|---------------------------------|
| <b>Total Proposal Price in £</b> | £457,214.25                     | (ex VAT)                        |
| <b>Start Date:</b>               | 11/01/2022                      | <b>End Date:</b> 30/04/2022     |
| <b>Lot Leads Representative</b>  | Name                            | [REDACTED UNDER FOIA EXEMPTION] |
|                                  | Tel                             | [REDACTED UNDER FOIA EXEMPTION] |
|                                  | Email                           | [REDACTED UNDER FOIA EXEMPTION] |
|                                  | Date                            | 14 <sup>th</sup> January 2022   |
| <b>Position in Company</b>       | Assistant Commercial Manager    |                                 |
| <b>Signature</b>                 | [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]

## 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]

## 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  | 19/01/2022   |
| Requisition Number  |       | 1000167572   |
| Contractor's Proposal Number  |       | All72 ARA WP3.1 / 3.2 Resilient Information Services – Phase 1 |
| Purchase Order Number   |       | TBC  |
| Signature   |       | [REDACTED UNDER FOIA EXEMPTION]                                |
| <i>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.</i> |       |  |