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 control please ensure this is kept up to date

11-01-2023 Initail Draft coolated by Peter Relph (ATP) for Dstl

19/01/23 Draft with AII number included ready to submit

27/01/23 Cyber details added

REQUIREMENT

Proposal Required by:	Jan 2023	**Task ID Number:**	AII153
The Authority Project Manager:	[REDACTED]	**The Authority Technical Point of Contact:**	[REDACTED]
Task Title:	DCEAT WP 3.1 Advanced Waveforms Derisking Option		
Required Start Date:	Jan 2023	**Required End Date:**	15/03/2023
Requisition No:	RQ0000024972	**Budget Range**	~£94k

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)

Background

StratCom is engaged with numerous stakeholders within the Ministry of Defence (MOD), Other Government Departments (OGDs), NATO member states and Partner for Peace Nations to develop communications waveforms for future generations of tactical radio systems. These must meet both UK sovereign needs and also offer interoperability options with coalition partners. The NATO Narrowband Waveform (NBWF), released by the NATO Line Of Sight Capability Team (LOS CAT) under NATO C3 Board Capability Area 1 as STANAG 5360, offers a modern networked narrowband waveform with the potential to significantly increase the data capability of tactical communication

systems. DSTL leads the UK participation in the NATO LOS CAT supporting StratCom and these WPs are required to support the continued UK participation.

The STANAG-5630 NBWF Edition 1 (Ed1) defines a non-EPM Fixed Frequency (FF) interoperability waveform. It is intended to provide interoperability over the air between troops of different nations at the tactical battlefield using the military VHF and UHF band (30-500MHz). The aspiration for Edition 2 (Ed2) of the NBWF is to provide over the air interoperability with the addition of Electronic Protective Measures (EPM) [REDACTED]

Previous work carried out under CSIIS proposed an EPM scheme compatible with the NBWF higher protocol layers and performed an initial threat assessment against the NATO Communications and Information Agency (NCIA) defined threat. The proposed scheme was subsequently explored under the Serapis AII85 task and demonstrated performance improvement in simulated environments. The work under the AII85 task also generates a proposal for a demonstration of the technique using MOTS equipment which is planned to begin in the latter half of 2023.

The purpose of the this SoR is to define a task that proves the principle of the scheme explored in the AII85 task in a laboratory environment, thereby de-risking the proposed work in the forthcoming demonstrator phase.

The technical scope of the work is defined in the proposal authored by the Serapis AII85 technical team (QINETIQ/22/04635 ver 1.0) which is reproduced in the section below.

Proposal for AII85 WP1/WP3 Follow-on Lab Test Activity

Introduction and Purpose

The purpose of the proposed joint QinetiQ and [REDACTED] task is to conduct a short lab-based feasibility study to further investigate and de-risk [REDACTED]techniques that were investigated and modelled under WP1 and WP3 of the AII85 Robust Waveform Study. [REDACTED]

Scope

It is planned to evaluate up to three communications ESM sensors in this test activity:

- TIGERSHARK ESM system held at QinetiQ Malvern;
- [Redacted]

The task will use a number of laboratory-based agile RF signal generators (e.g. HP8645A, R&S SMU) to synthesise narrow-band V/UHF FH signals. A minimum of three agile RF signal generators sourced from both QinetiQ and [REDACTED] will be used to emulate a RF scenario where [REDACTED] nets operate simultaneously. These RF signals will be combined and interfaced to the RF front-ends of the ESM sensors and used to emulate threat / target emitters as illustrated below. The emulated RF source will then be split to feed all the ESM systems simultaneously, allowing the respective ESM responses to the same RF targets to be monitored, compared, analysed and logged concurrently by the QinetiQ and [REDACTED] teams.

The impact upon the [REDACTED] systems will also be investigated by additional splitting of the RF source to feed a [REDACTED] RTSA and/or SDR allowing the FH signals and corresponding EA responses to be monitored and logged. Different EA Timeplan configurations representing a range of ESM/EA switching configurations will also be explored.

The RF signal generators will be configured to synthesise FH signals [REDACTED]. For consistency, FH sequences generated by the WP1 model will be used to configure the RF signal generators either via direct programming or use of arbitrary function generators, depending upon the model of

agile signal generator used. The impact of moving from fixed to variable FH timingon the signal detection and classification of these target waveforms by the communication [REDACTED]sensors will be observed and recorded.

A sequence of tests will investigate how varying the emulated FH signal parameters impacts the response of the ESM sensors encompassing:

- [REDACTED]

The tests may also explore different ESM sensor configurations as appropriate.

[REDACTED]

Logistical Aspects

The test rig would be located at QinetiQ Malvern with the [REDACTED] temporarily relocating their ESM/EA and RTSA/SDR equipment and any additional agile RF signal generators to QinetiQ with [REDACTED] staff operating their ESM equipment on the QinetiQ test rig. QinetiQ staff will secure any necessary GFx permissions relating to use of the TIGERSHARK ESM equipment prior to the work commencing. The TIGERSHARK ESM equipment held at QinetiQ has not been used for some time and so part of the task scopes for an initial activity to configure, commission and check the equipment

Outputs

The results from this test activity will be used to inform and scope both future waveform modelling and the Technical Demonstrator programme under AII85 WP4.

Deliverable

Following initial characterisation of [REDACTED], a short briefing will be prepared outlining the key findings and conclusions. The presentation material will include appendices documenting the experimental test plan, scope, equipment laydowns, methodology, tests and results) and this will form the sole deliverable for this task. The Dstl customer will be invited to attend the final two days of the planned test activity where a subset of tests will be re-run accompanied by the prepared briefing material so that the key findings from the work can be presented and demonstrated.

Innovation Benefits and Exploitation Plan (IBEP)

By conducting the work the following are anticipated.

1. Innovation – (i.e. what are we building on?)
    a. General know-how and previous knowledge of platform systems
    b. S&T trends

2. Benefits (i.e. what will the contracted stakeholders get from this?)
    a. Development of new capabilities
    b. Increased collaboration between industry, academia and government.
    c. Development of SQEP

3. Exploitation (what are the artifacts that Dstl will get that can be more widely exploited)

a. Reports and papers
b. Understanding of technical barriers
c. Know-how in the wider supply chain for design tools
d. International influence

4. Plan (what's the plan for exploitation)
    a. Development / input into a standard
    b. Exploitation and re-use of information for defence purposes
    c. TDP for wider industry exploitation

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

[REDACTED]

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:-

If there are any other specific acceptance/rejection criteria you would like to apply to any of the deliverables, please state them here.

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?
Serial no	*Description*	*Official-Sensitive*	*Equipment*	*00/00/0000*	*Issuer*	*00/00/0000*	*Include details here*

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]

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

[REDACTED]

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

Delivery of the requirement:

Please refer to "Proposal for AII153 WP1/WP3 Follow-on Lab Test Activity", QINETIQ/23/00364 ver 1.1

COMMERCIAL

[REDACTED].

PRICE BREAKDOWN

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

Total Proposal Price in £	93,680.95		(ex VAT)
Start Date:	06/02/2023	**End Date:**	31/03/2023

Lot Leads Representative	Name	[REDACTED]
	Tel	[REDACTED]
	Email	[REDACTED]
	Date	15th February 2023
Position in Company	[REDACTED]	
Signature	[REDACTED]	

Core Work – Breakdown

[REDACTED]

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.

[REDACTED]

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]
	Tel	[REDACTED]
	Email	[REDACTED]
	Date	16/02/2023
Requisition Number		RQ0000024972
Contractor's Proposal Number		"Proposal for AII153 WP1/WP3 Follow-on Lab Test Activity", QINETIQ/23/00364 ver 1.1
Purchase Order Number		[REDACTED]
Signature		[REDACTED]
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.		