[dstl]   Serapis Framework

Serapis Tasking Form

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

To:	Lot 6 Fraser-Nash Consultancy Ltd and Lot 1 Roke Manor Research Ltd	From:	The Authority

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

As applicable

LOT 6 DSTL/AGR/SERAPIS/UND/01

or

LOT 1 DSTL/AGR/SERAPIS/COL/01

VERSION CONTROL

Version 1.0 22/02/22

REQUIREMENT

Proposal Required by:	[14/04/2022]	Task ID Number:	U88C59
The Authority Project Manager:	[REDACTED]	The Authority Technical Point of Contact:	[REDACTED]
Task Title:	Quantum Computing Application to Sensor Management		
Required Start Date:	[03/05/2022]	Required End Date:	[31/03/2023]
Requisition No:	RQ0000005674	Budget Range	£180-240k [redacted]

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)

Project Overview

This work forms part of the project "AI and Autonomy for the ISR Enterprise" which seeks to release capacity and maximise understanding in our ISR enterprise in order to maintain Information Advantage. Specifically it will demonstrate a:

- World leading ISR capability, closely coupling 'exploit' and 'collect' throughout the ISR hierarchy, enabling collection tasking to be created dynamically and opportunistically, and AI enhanced PED from the core to the edge; and a

- Data-led and AI-enabled Intelligence Analysis function constrained by the available data, algorithms and computational power, rather than capacity of human operators.

The overall project is addressing one of the five core capability challenges identified in the 2020 MOD Science and Technology Strategy. It supports the development of generation-after-next capabilities. This requires it to work with cutting edge and innovative suppliers in industry and academia at pace.

Intelligence, Surveillance and Reconnaissance (ISR) Sensor Management can involve a variety of repeated, complex, high dimensional, near real time optimisation calculations that are computationally very intensive. On current hardware, such calculations are not feasible for large numbers of sensors and/or significant, real-world scenario complexity. Quantum computing technology may potentially provide a means to overcome current processing limitations and deliver orders of magnitude improvement in speed for certain types of calculation, including optimisation calculations.

The main focus of the proposed project is the research and development of quantum computer algorithms that support the types of battlefield Sensor Management optimisation processes and scenario level data fusion processes of interest. The requirements that these processes need to meet are scenario dependent, time varying and non-linear. This means that the types and scope of application of quantum optimisation and machine learning algorithms will need to be carefully considered by Suppliers.

Stone Soup is an unclassified Python software package for conducting research into ISR tracking algorithms and sensor management. Stone Soup is available free to all on GitHub. It comes with a set of tutorials and examples that allow non-ISR experts to create models of sensors, targets, trackers, sensor management subsystems together with metrics which can then be used for experimentation. For the purposes of this project, quantum algorithm Suppliers will adapt, interface to and use existing Stone Soup based example models of multiple sensor detection, localisation and tracking operations. This will allow them to minimise the time and effort required to model and simulate the ISR elements of the problem domain and to focus on the quantum computing elements of the work.

Initial Stone Soup modelling simulation work using the existing examples can be considered as a simplified abstraction of the end position of the vignette, eg. a subset of static and/or mobile reconnaissance and surveillance sensors seeking land and/or air targets.

Requirements

The Quantum Computing Application to Sensor Management project has been divided into two phases.

The initial contract is for the conduct of Phase 1 work only. Phase 1 comprises two parts with a number of subtasks in each part.

Within their proposal, potential Supplier(s) shall provide a firm priced proposal for the conduct of Phase 1 Parts 1 and 2.

Requirements for Phase 1 Part 1 – Sensor Management Optimisation

Subtask 1/1: The Supplier(s) shall familiarise themselves with the Stone Soup software packages, tutorials and examples, including those within the GitHub Stone Soup branch concerning multiple sensor management.

Subtask 1/2: Based on the use of the Stone Soup software packages within a standard Python package management system and their preferred quantum computing development and demonstration frameworks, the Supplier(s) shall define how they are going to develop, integrate, test and demonstrate appropriate quantum optimisation algorithms on current quantum computer simulators, current quantum annealers and current quantum circuit computers.

Deliverable 1 – Working Paper – Definition of Phase 1 Part 1 development, integration and test/demonstration methodology - The Working Paper shall include, but not be limited to the definition of the methodology(ies) to be used to develop, integrate, test and demonstrate the quantum optimisation algorithms to be used for Sensor Management. This will include initial

technical descriptions of the system and software requirements, data inputs, processes and expected outputs. – Due: [REDACTED]

Subtask 1/3: The Supplier(s) shall research, design and implement an initial set of Sensor Management task focused quantum optimisation algorithms. These shall be designed and scaled to be compatible with implementation, testing and proof of principle demonstration on:

- Currently available cloud based quantum computer simulators, annealers and circuit computers.

or

- Other suitable quantum simulator or computer facilities available to the Supplier(s).

Subtask 1/4: The Supplier(s) shall integrate, test, analyse and report on the operation of their Sensor Management quantum optimisation algorithms.

Deliverable 2 – Technical Report – Quantum Optimisation for Sensor Management - A technical report covering descriptions and source code for all the developed quantum optimisation algorithms, all results from testing on quantum computer simulations, quantum annealers and quantum circuit computers and preliminary performance comparisons of conventional and quantum computer sensor management optimisation processing applications – Due: [REDACTED].

Requirements for Phase 1 Part 2 – Scenario level data fusion using Machine Learning

Subtask 1/5: Based on the use of the Stone Soup software packages within a standard Python package management system and their preferred quantum computing development and demonstration frameworks, the Supplier(s) shall define how they are going to develop, integrate, test and demonstrate initial quantum machine learning algorithms for scenario level data fusion.

Deliverable 3 – Working Paper – Definition of Phase 1 Part 2 development, integration and test/demonstration methodology – Due:[REDACTED].

Subtask 1/6: The Supplier(s) shall research, design and implement an initial quantum machine learning algorithm for application to Scenario Level Data Fusion. This shall be designed and scaled to be compatible with implementation, testing and proof of principle demonstration on:

- Currently available cloud based quantum computer simulators, annealers and circuit computers.

or

- Other suitable quantum simulator or computer facilities available to the Supplier(s).

Subtask 1/7: The Supplier(s) shall integrate, test, analyse and report on the operation of their quantum machine learning algorithm for Scenario Level Data Fusion.

Deliverable 4 – Technical Report – Quantum Machine Learning for Scenario Level Data Fusion - A technical report covering the description and source code for the developed quantum machine learning algorithm and testing results from all quantum computer simulations, quantum annealer and circuit computer testing results – Due: [REDACTED]

Subtask 1/8: The Supplier shall support Dstl at a Dstl/MoD Stakeholder Decision Conference to be held at the end of the Phase 1 R&D activities. The Supplier shall present key technical developments, results and conclusions arising from all the Phase 1 activities. The completion of this subtask leads to a potential contract breakpoint. The output from the Decision Conference shall be a decision on whether Dstl will take up any, some or all of the proposed Phase 2 contract activity options.

Deliverable 5 – Supplier(s) presentations from the Dstl/MoD Stakeholder Decision Conference – Due: [REDACTED]

To aid in the direction and management of the project, in addition to the deliverables identified above, the following project management deliverables are required:

Deliverable 0/1 – Minutes and presentations from the contract Start-up Meeting

Deliverable 0/2 – Project baseline WBS and Schedule.

Deliverable 0/3/x – Monthly progress reports.

Deliverable 0/4 – Minutes from the contract Completion Meeting.

The conduct of any options for Phase 2 activities in FY 23/24 will depend on the results of the Phase 1 work, affordability and the outcomes from the Phase 1 Decision Conference.

Within their proposal, Supplier(s) shall provide firm FY 23/24 manpower rates together with ROM costs for the conduct of each of the identified subtask options.

Requirements for Phase 2 – Sensor Data Processing

(Option) Subtask 2/1: In consultation with Dstl, the Supplier(s) shall define and conduct a set of further algorithm developments, testing and demonstrations to continue the experimentation with quantum computer enabled Sensor Management optimisation and Scenario Level Data Fusion related machine learning schemes using simulations, quantum annealers and quantum circuit computers.

(Option) Deliverable 6 – Technical Report – Technical Report on Further Quantum Computing Experiments for Sensor Management Optimisation and Scenario Level Data Fusion Machine Learning Applications – Due: [REDACTED]

(Option) Subtask 2/2: The Supplier(s) shall research the theoretical application of quantum computing to battlefield sensor adaptive processing and low level data fusion aspects of active and passive battlefield sensor operations.

(Option) Subtask 2/3: The Supplier(s) shall design and implement initial quantum machine learning algorithms for application to battlefield sensor adaptive processing and low level data fusion. These shall be designed and scaled to be compatible with implementation, testing and proof of principle demonstration on:

- Currently available cloud based quantum computer simulators, annealers and circuit computers.

or

- Other suitable quantum simulator or computer facilities available to the Supplier(s).

(Option) Subtask 2/4: The Supplier(s) shall integrate, test, analyse and report on the operation of their quantum machine learning algorithms for application to battlefield sensor adaptive processing and low level data fusion.

(Option) Deliverable 7 – Technical Report - Experiments on quantum enabled adaptive processing and low level data fusion for battlefield sensor applications – Due: [REDACTED]

(Option) Subtask 2/5: Final project reporting and presentation to Stakeholders.

(Option) Deliverable 8 – Presentation and Summary Report - Quantum Computing Applications for Sensor Management Phase 1 and Phase 2 Final Report – Due: [REDACTED]

All Supplier reports shall be written up in a Supplier Report Template for sharing with Dstl and key stakeholders.

A note on the Dstl Technical Partner. The role of the Dstl Technical Partner is to provide technical assurance to the Dstl Project Technical Authority and Project Manager. Given that the ISR Enterprise team is a 'rainbow' team consisting of members from Dstl and industry, it is possible that the Dstl Technical Partner role is fulfilled by an individual from a commercial organisation such as Frazer-Nash Consultancy. In either case, the Dstl Technical Partner has agency to act on behalf of Dstl in the role of Technical Partner. The Dstl Technical Partner reports to the Dstl Project Manager and Project Technical Authority, both of whom are civil servants employed by Dstl.

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 [REDACTED] 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	

DELIVERABLES

Ref	Title	Due by	Format	TRL	Expected classification (subject to change)	Information required in deliverable	IPR DEFCON
DEL 0/1	Minutes and presentations from contract start-up meeting	[REDACTED]	Minutes (MS Word file + pdf file); Presentations (MS Powerpoint file + pdf file)	N/A	[REDACTED]	Minutes arising from the meeting and slides from Supplier presentations	705 FULL RIGHTS

DEL 0/2	Project baseline WBS and Schedule	[REDACTED]	Baseline WBS (MS Word); Baseline Schedule (MS Project or MS Excel)	N/A	[REDACTED]	Copies of baseline project work breakdown structure and project schedule	705 FULL RIGHTS
DEL 0/3/x	Monthly progress reports	[REDACTED]	Monthly progress report template (MS Word)	N/A	[REDACTED]	Summary of monthly technical progress and updates on project schedule and spend.	705 FULL RIGHTS
DEL 0/4	Minutes from the contract Completion Meeting	[REDACTED]	Minutes (MS Word file + pdf file)	N/A	[REDACTED]	Minutes arising from the meeting and slides from Supplier presentations.	705 FULL RIGHTS
DEL 1	Working Paper – Definition of Phase 1 Part 1 development, integration and test/demonstration methodology	[REDACTED]	MS Word file + pdf file (+ MS Excel files if required)	N/A	[REDACTED]	The Working Paper shall include, but not be limited to: Definition of the methodology(ies) to be used to develop, integrate, test and demonstrate the quantum optimisation algorithms to be used for Sensor Management. This will include initial technical descriptions of the system and software requirements, data inputs, processes and expected outputs.	705 FULL RIGHTS
DEL 2	Technical Report – Quantum Optimisation for Sensor Management	[REDACTED]	MS Word file + pdf file (+ MS Excel files if required); soft copies of all programming source code and circuits used within the associated work activities.	[redacted]	[REDACTED]	The report shall include, but not be limited to: a. Descriptions and source code for all the developed Stone Soup software used in the work. b. Detailed technical descriptions and source code/circuits for all quantum optimisation algorithms (and their associated interfaces) developed during the work. c. Details of all experiments and the results obtained from algorithm tests conducted on quantum computer simulations, quantum annealers and quantum circuit computers, , including quantum algorithm performance,	705 FULL RIGHTS

						execution times, quantum annealer performance metrics, effectiveness of processes for data input and output and quantum hardware constraints. d. Preliminary performance comparisons between conventional and quantum computer enabled sensor management optimisation processing applications. e. Identification of the most promising avenues for further research. Conclusions and recommendations, including commentary on any shortcomings within the study and lessons learnt.	
DEL 3	Technical Report – Definition of Phase 1 Part 2 development, integration and test/demonstration methodology	[REDACTED]	MS Word file + pdf file (+ MS Excel files if required); soft copies of all programming source code and circuits used within the associated work activities.	[REDACTED]	[REDACTED]	The Working Paper shall include, but not be limited to: Definition of the methodology(ies) to be used to develop, integrate, test and demonstrate the quantum machine learning algorithms to be used for Scenario Level Data Fusion. This will include initial technical descriptions of the system and software requirements, data inputs, processes and expected outputs.	705 FULL RIGHTS
DEL 4	Technical Report – Quantum Machine Learning for Scenario Level Data Fusion	[REDACTED]	MS Word file + pdf file (+ MS Excel files if required); soft copies of all programming source code and circuits used within the associated work activities	[REDACTED]	[REDACTED]	The report shall include, but not be limited to: a. Descriptions and source code for all the developed Stone Soup software used in the work. b. Detailed technical descriptions and source code/circuits for all quantum machine learning algorithms (and	

						their associated interfaces) developed during the work. c. Details of all experiments and the results obtained from algorithm tests conducted on quantum computer simulations, quantum annealers and quantum circuit computers, , including quantum algorithm performance, execution times, quantum annealer performance metrics, effectiveness of processes for data input and output and quantum hardware constraints. d. Identification of the most promising avenues for further research. Conclusions and recommendations, including commentary on any shortcomings within the study and lessons learnt.	
DEL 5	Supplier presentations from the Dstl/MoD Stakeholder Decision Conference	[REDACTED]	MS Powerpoint file + pdf file	[REDACTED]	[REDATED]	Soft copies of the Supplier presentations from the Dstl/MoD Stakeholder Decision Conference.	705 FULL RIGHTS
DEL 6 (Option)	**(Option)** Technical Report – Technical Report on Further Quantum Computing Experiments for Sensor Management Optimisation and Scenario Level Data Fusion Machine Learning Applications	[REDACTED]	MS Word file + pdf file (+ MS Excel files if required); soft copies of all programming source code and circuits used within the associated work activities	[REDACTED]	[REDACTED]	The report shall include, but not be limited to: a. Descriptions and source code for all the developed Stone Soup software used in the work. b. Detailed technical descriptions and source code/circuits for all quantum optimisation algorithms (and their associated interfaces) and all quantum machine learning algorithms	705 FULL RIGHTS

March 2021 (v9.0)   [REDACTED]

						developed during the work. c. Details of all experiments and the results obtained from algorithm tests conducted on quantum computer simulations, quantum annealers and quantum circuit computers, including quantum algorithm performance, execution times, quantum annealer performance metrics, effectiveness of processes for data input and output and quantum hardware constraints. d. Preliminary performance comparisons between conventional and quantum computer enabled sensor management optimisation processing applications. e. Identification of the most promising avenues for further research. Conclusions and recommendations, including commentary on any shortcomings within the study and lessons learnt.	
DEL 7 (Option)	(Option) Technical Report – Experiments on Quantum Enabled Adaptive Processing and Low Level Data Fusion for Battlefield Sensor Applications.	[REDACTED]	MS Word file + pdf file (+ MS Excel files if required); soft copies of all programming source code and circuits used within the associated work activities	[REDACTED]	[REDACTED]	The report shall include, but not be limited to: a. Descriptions and source code for all the developed Stone Soup software used in the work. b. Detailed technical descriptions and source code/circuits for all quantum adaptive processing algorithms (and	705 FULL RIGHTS

						their associated interfaces) and all quantum low level data fusion algorithms developed during the work. c. Details of all experiments and the results obtained from algorithm tests conducted on quantum computer simulations, quantum annealers and quantum circuit computers, including quantum algorithm performance, execution times, quantum annealer performance metrics, effectiveness of processes for data input and output and quantum hardware constraints. d. Preliminary performance comparisons between conventional and quantum computer enabled sensor management optimisation processing applications. e. Identification of the most promising avenues for further research. Conclusions and recommendations, including commentary on any shortcomings within the study and lessons learnt.	
DEL 8 (Option)	**(Option)** Presentation and Summary Report - Quantum Computing Applications for Sensor Management Phase 1 and Phase 2 Final Report	[REDACTED]	MS Powerpoint file + pdf file; MS Word file + pdf file (+ MS Excel files if required)	[REDACTED]	[REDACTED]	The presentation and summary report shall include, but not be limited to: a. A summary description of the scope of work achieved and the vignettes and models used within the work.	705 FULL RIGHTS

March 2021 (v9.0)   [REDACTED]

						b. A summary of the simulation and experimental methods used within the project. c. A summary of the key test results including quantum algorithm performance, execution times, quantum annealer performance metrics, quantum circuit computer metrics, effectiveness of processes for data input and output and quantum hardware constraints. d. A summary of the most promising avenues for further research. Key conclusions and recommendations including commentary on any shortcomings within the project and lessons learnt.	

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)

None

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]

The highest classification of this SOR
OFFICIAL   ☐   OFFICIAL-SENSITIVE   ☐   SECRET   ☐   TOP SECRET   ☐   STRAP   ☐   SAP   ☐

The highest expected classification of the work carried out by the contractor
OFFICIAL   ☐   OFFICIAL-SENSITIVE   ☐   SECRET   ☐   TOP SECRET   ☐   STRAP   ☐   SAP   ☐

The highest expected classification of Deliverables/Output
OFFICIAL   ☐   OFFICIAL-SENSITIVE   ☐   SECRET   ☐   TOP SECRET   ☐   STRAP   ☐   SAP   ☐

Is a Security Aspects Letter (SAL) required? *(A Security Aspects Letter (SAL) will be required for each Task above Official-Sensitive and above)*

Yes ☐   No ☐

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

Cyber Risk Level	[REDACTED]
Risk Assessment Reference	[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

Proposal Reference	**016196-97138L U88 Quantum Computing Application to Sensor Management - Frazer-Nash Proposal** (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)

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.

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

Total Proposal Price in £	£239,946.87		(ex VAT)
Start Date:	18/05/2022	**End Date:**	31/03/2023
Lot Leads Representative	Name	[REDACTED]	
	Tel	[REDACTED]	
	Email	[REDACTED]	
	Date	05/05/2022	
Position in Company	[REDACTED]		
Signature	[REDACTED]		

Core Work – Breakdown [REDACTED]

Lot Lead Rates for Task Management Services (TMS)							
Team Member Name	Role	Activity Type	Rate (£)	Total Hours	LMS recovery per role per hour ('d' element)	Total LMS recovery due (£) ('d' x total hours)	Total TMS Cost (£) (Rate x total hours)

Work Delivered By Sub-Contractor(s)						
Name of Sub-Contractor	Supplier Type	Activity Description	Team Member Role	Rate (£)	Total Hours	Total Cost (£)
[REDACTED]						

Travel, Subsistence, Materials & Equipment

Travel & Subsistence

Supplier Name	Spend Type	Description / Rationale	Unit Cost (£)	Quantity	Total Cost (£)
[REDACTED]					
			Travel & Subsistence Total		

Materials & Equipment

Supplier Name	Spend Type	Description / Rationale	Unit Cost (£)	Quantity	Total Cost (£)
			Materials & Equipment Total		
			Travel, Subsistence, Materials & Equipment Total		

Core Work – Milestone breakdown costs [REDACTED]

Proposed Milestones Payments

Milestone M1

Description	TMS cost (£)	Self-Delivery cost (£)	Sub-contractor cost (£)	Total milestone cost (£)	Milestone due date	DEFCON
[REDACTED]						
Milestone LMS recovery (£)			Total cost			

Milestone M2

Description	TMS cost (£)	Self-Delivery cost (£)	Sub-contractor cost (£)	Total milestone cost (£)	Milestone due date	DEFCON
[REDACTED]						

Milestone M3

Description	TMS cost (£)	Self-Delivery cost (£)	Sub-contractor cost (£)	Total milestone cost (£)	Milestone due date	DEFCON
[REDACTED]						

Milestone M4

Description	TMS cost (£)	Self-Delivery cost (£)	Sub-contractor cost (£)	Total milestone cost (£)	Milestone due date	DEFCON
[REDACTED]						
Milestone LMS recovery (£)						

Milestone M5

Description	TMS cost (£)	Self-Delivery cost (£)	Sub-contractor cost (£)	Total milestone cost (£)	Milestone due date	DEFCON
[REDACTED]						

Milestone M6

Description	TMS cost (£)	Self-Delivery cost (£)	Sub-contractor cost (£)	Total milestone cost (£)	Milestone due date	DEFCON
[REDACTED]						

Milestone M7

Description	TMS cost (£)	Self-Delivery cost (£)	Sub-contractor cost (£)	Total milestone cost (£)	Milestone due date	DEFCON
[REDACTED]						

			£0.00		705
Materials/Equipment					
Total LMS (All Milestones)		**Total Cost (All Milestones)**			

Options – Summary

Options Breakdown

Full breakdowns will be requested upon invoking through the Serapis Contract Amendment Form. (If you do not currently know the full options breakdown, please include what you do know and rough order of magnitude costs.)

Only complete if applicable – otherwise delete table.

Ref No.	Description	TMS cost (£)	Self-Delivery cost (£)	Sub-contractor cost (£)	T&S, Material & Equip Cost (£)	Pricing	Start date	End date
	[REDACTED]							

Please Note: Task Option authorisation is to be issued by the Authority's Commercial Officer through a completed Contract Amendment Form and approved purchase order. No work is to be carried out prior to both of these being issued.

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	18/5/22
Requisition Number		RQ0000005674
Contractor's Proposal Number		016196-97138L
Purchase Order Number		DSTL0000003728
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.		

TASKING FORM ANNEX A REDACTED

March 2021 (v9.0)   [REDACTED]