

SERAPIS TASKING FORM

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

To:	Lot 1 Roke Manor Research Ltd	From:	Dstl
REQUIREMENT			
Proposal Required by:	15/04/2021	Task ID Number:	C38
Project Manager:	[REDACTED UNDER FOIA EXEMPTION]	Technical Point of Contact:	[REDACTED UNDER FOIA EXEMPTION]
Task Title:	Novel Fusion Approaches to Mitigate Deception	New Task <input checked="" type="checkbox"/>	Change <input type="checkbox"/>
Required Start Date:	15/05/21	Required Date:	End 31/03/22
Requisition No:	1000164123	Budget Range	150,000
TASK DESCRIPTION AND SPECIFICATION			
Serapis Framework Lot	<input checked="" type="checkbox"/> Lot 1: Collect <input type="checkbox"/> Lot 2: Space systems <input type="checkbox"/> Lot 3: Decide <input type="checkbox"/> Lot 4: Assured information infrastructure <input type="checkbox"/> Lot 5: Synthetic environment and simulation <input type="checkbox"/> Lot 6: Understand		
Aim Provide development support for Stone Soup.			
Background Stone Soup ¹ is an open source tracking and state estimation framework that enables modular development and testing of tracking and state estimation algorithms. Stone Soup was created to provide the tracking community with a means to objectively evaluate tracking algorithms against in-built metrics. It allows the input of data (such as AIS, ELINT) through 'readers' that can provide simulations with ground truth. It is the aim of this work to continue to develop the Stone Soup framework based upon an evolving set of features. The Authority is looking to expand the sensor suite and set of metrics in Stone Soup to look at Situational Awareness and Deception. The Authority seeks proposals for an Agile software engineer at experienced practitioner or expert level to provide development support to Stone Soup. The Authority will provide awareness training and task support			

¹ <https://github.com/dstl/Stone-Soup>

via the Stone Soup user and developer forum, and in addition there is a weekly (Tuesdays) Stone Soup developers teleconference.

Note that details of tasks undertaken by the Supplier will be shared on a regular basis with the Stone Soup community.

Requirements:

- The work will start on contract award. The developer must be available to work consistently for the duration of the contract. The developer must only bill the Authority for work done in support of Stone Soup tasks.
- The software engineer will provide direct support to the Stone Soup framework development, working on a list of tasks provided by the Authority. This may be done on site, remotely or a mixture of both.
- The code shall be developed in Python, compatible with Stone Soup and shall adhere to the guidance for Stone Soup contribution (<https://stonesoup.readthedocs.io/en/latest/contributing.html>).
- The software shall be open source, i.e. MIT license or other suitable licensing as agreed with the Authority, and not use GPL licensing or other restrictive licensing that will incur dependencies. Delivered code may be released publicly in an open source repository. Guidance is provided in the Stone Soup contributions documentation (<https://stonesoup.readthedocs.io/en/latest/contributing.html>).
- The software engineer will work collaboratively with Dstl. The Supplier will participate in the Stone Soup user and developer forums; this will facilitate collaborative working and to maintain the Supplier's awareness of any changes to Stone Soup.
- The software engineer must be proficient in open source software, and able to use Agile software engineering at a practitioner-expert level (including sprints, hacks, scrum), i.e. a fully developed software engineer. Consideration will be given to experienced practitioners.
- Expected skills include:
 - Experience of systems integration challenges.
 - Experience in building and testing full production tools for deployment, including validation and verification.
 - Experience in utilising continuous integration environments, ensuring reproducibility of results, and software deployment.

- Considers through life support, including dependency management and platform compatibility.
- Working knowledge of high-level software design principles (such as SOLID).
- Can make high-level systems architecture decisions to best solve customer challenges and needs (e.g. distributed versus single-node trade-offs).
- Expert knowledge of API design.
- Familiar with different patterns in functional and asynchronous programming (e.g. Monad, EventLoop).
- Domain knowledge is highly desirable, for tracking, detection, recognition, identification and state estimation.

Proposal Assessment

The following aspects will be considered as part of the proposal assessment process:

- Domain knowledge and previous experience of Stone Soup are **highly desirable**.
- The proposal must provide evidence against each of the above skill criteria for the individual put forward by way of case studies and/or CV.
- The proposal must provide a firm price, within the overall budget, and associated number of hours that the developer will devote to this task.

Approach

The Supplier shall provide a developer for an agreed number of hours (which the Supplier will propose) to complete software development tasks as allocated by the Authority. For guidance, the Scope of tasks will include:

- Responding to community queries on Gitter, Issue tracker, etc.
- Resolving bugs reports
- Profiling and optimising code bottlenecks
- Reviewing and updating documentation
- Reviewing pull requests
- Support Dstl developers less experienced with Python/Software Development
- Submitting code developed by pull requests for peer review and acceptance as tasks completed (see list below).

An initial list of specific tasks is provided below:

- Development of a Run Manager, supporting local, HPC and cloud based execution; for Monte Carlo runs and parameter comparison/optimisation.
- Investigate introduction of multi-threaded/multi-processor components for data association.
- Support integration of UI elements being developed under existing EMR (analysis UI and run manager UI).

Each task will be addressed sequentially. However, the Authority will expect the Supplier to be flexible and to accept changes in tasks (within the Scope above) and task priorities as the contract progresses. At the commencement of undertaking a set of tasks, the Authority will agree performance metrics. The Authority shall monitor performance based on agreed metrics at review points (see Monitoring). The Authority shall not mandate the completion of a mutually agreed list in order to fulfil payment milestones provided evidence can be provided to justify any shortfall.

Acceptance

The Authority shall accept the delivery of each task on a submission basis compliant with the Stone Soup contribution guidelines (<https://stonesoup.readthedocs.io/en/latest/contributing.html>).

Monitoring

Performance shall be monitored at regular intervals, for example, at or around sprint retrospective or on the completion of a certain task(s). These will provide an opportunity to discuss progress and agree priorities for the next period to make best use of available time.

The Supplier shall arrange the following formal meetings to enable the PCO and the Authority to monitor the contract:

- The Supplier shall arrange a kick-off meeting (PCO supplied template) to take place within 2 weeks of Contract Award (CA) via teleconference. The purpose of this meeting is to confirm plans, risks, and issues. The Supplier shall confirm the dates and locations for all subsequent meetings. The Supplier shall send the PCO a completed kick-off presentation at least 2 working days prior to the kick-off meeting.
- The Supplier shall Quarterly Progress meetings. These shall be planned to be face-to-face (at DSTL Porton Down) but will be reviewed and agreed by all parties whether or not these can proceed in light of CoVID 19 restrictions. They may be held virtually if in-person is not possible. The Supplier shall send the PCO a completed QPR presentation at least 5 working days prior to the meeting.
- The Supplier shall arrange a close-down meeting (PCO supplied template) to take place no later than as indicated in Outputs. This shall be planned to be face-to-face (at DSTL Porton Down) but will be reviewed and agreed by all parties whether or not these can proceed in light of CoVID 19

restrictions. They may be held virtually if in-person is not possible. This shall include a review of technical achievements, lessons identified, future exploitation, and benefits. The Supplier shall send the PCO a completed close down presentation at least 5 working days prior to the meeting.

The Supplier shall supply minutes and materials presented at each formal meeting to the Lot 1 PMO within 1 week of each event.

The Supplier shall also arrange review meetings via teleconference. These meetings should be aligned with the completion of a sprint or tasks, but is expected to be roughly on a **monthly** basis. These will provide an opportunity to discuss progress and agree priorities for the next period to make best use of available time.

The Supplier shall provide input to the PCO and Authority (PCO supplied template) to be delivered an agreed period before the associated review meeting. The meetings shall be attended by the Authority and the PCO by exception and will review progress and performance against the agreed metrics.

Depending upon the proposed schedule (see Deliverables), a review meeting may not be required; for example, if near-coincident with other formal customer engagements. However, progress reporting will remain a requirement in this case.

Communications

- Formal communications shall be between the Supplier's Project Manager and the PCO Project Manager.
- Informal technical communications between the Supplier and the Authority's Technical Partner should copy in their respective Project Managers and the PCO if of a contractual nature.

Health and Safety

The PMO has a responsibility to ensure that all activities carried out by sub-contractors is done so safely and in compliance with all relevant HSE legislation and industry good practice. Any activity associated with this task falling outside of the sub-contractors normal working practices shall require a risk assessment.

All risk assessments shall be made available to the PMO for review and approval prior to any activity being carried out. It is the responsibility of the sub-contractor to provide a HSE point of contact to the PMO and to provide all documentation in good time.

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 <input checked="" type="checkbox"/>	Vests ownership with the Authority
DEFCON 705 <input type="checkbox"/>	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* <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	

DELIVERABLES

ID.	Delivery Title	Delivery Type	Delivery Description	Delivery Date
D1	QPR 1	Plan and minutes (ppt or doc)	QPR 1 agreed minutes and progress report. Overview of plans for next quarter.	23/07/2021
D2	QPR 2	Plan and minutes (ppt or doc)	QPR 2 agreed minutes and progress report. Overview of plans for next quarter.	01/10/2021
D3	QPR 3	Plan and minutes (ppt or doc)	QPR 3 agreed minutes and progress report. Overview of plans for next quarter.	11/01/2022
D4a	Close down meeting	PMO Template (ppt)	Close down meeting and presentation and minutes. Technical review of achievements.	18/03/2022
D4b	Stone Soup modifications	Software (Git Hub)	All modifications and improvements to Stone Soup framework compliant with the repository guidelines – source code and documentation as part of Stone Soup development records (note that pull requests should be submitted throughout project period as tasks are completed)	18/03/2022

OUTPUTS

ID	Delivery Title	Delivery Type	Delivery Description	Delivery Date
Mx	Monthly meeting	PCO template	Monthly progress meeting	Monthly except when coincident with QPR

O1	Kick-off	PCO template	Kick-off meeting, presentation, and minutes. Overview of plans for first quarter.	>T0+2 weeks.
Deliverable: Acceptance / Rejection Criteria (30 business days unless agreed otherwise) DEFCON 524 Rejection <input checked="" type="checkbox"/> period [30] days DEFCON 525 Acceptance <input checked="" type="checkbox"/> period [30] days				
ISSUE OF EQUIPMENT/MATERIAL/INFORMATION N/A				
QUALITY STANDARDS 1. The software development should be subject to a quality management system. Therefore the Supplier shall describe their approach to software quality management and the application of good practice, including configuration control, peer review, and software testing. 2. Deliverables in Word format must adhere to the standard set out in https://www.gov.uk/guidance/submit-a-report-to-athena . 3. Deliverables in PowerPoint format must contain IP conditions and Report Documentation Page (equivalent to a Word format document).				
SECURITY CLASSIFICATION OF THE WORK (A Security Aspects Letter (SAL) will be required for each Task above Official-Sensitive, Quotes are covered by the Framework SAL)				
The highest classification of this SOR OFFICIAL <input checked="" type="checkbox"/> OFFICIAL-SENSITIVE <input type="checkbox"/> SECRET <input type="checkbox"/> TOP SECRET <input type="checkbox"/> STRAP <input type="checkbox"/> SAP <input type="checkbox"/>				
The highest expected classification of the work carried out by the contractor OFFICIAL <input checked="" type="checkbox"/> OFFICIAL-SENSITIVE <input type="checkbox"/> SECRET <input type="checkbox"/> TOP SECRET <input type="checkbox"/> STRAP <input type="checkbox"/> SAP <input type="checkbox"/>				
The highest expected classification of Deliverables/Output OFFICIAL <input checked="" type="checkbox"/> OFFICIAL-SENSITIVE <input type="checkbox"/> SECRET <input type="checkbox"/> TOP SECRET <input type="checkbox"/> STRAP <input type="checkbox"/> SAP <input type="checkbox"/>				
SAL Attached <input type="checkbox"/>				
TASK CYBER RISK ASSESSMENT. (In accordance with DEF STAN 05-138 and the Risk Assessment Workflow)				
Cyber Risk Level	Very low	Risk Assessment Reference	RAR-BH5S2QZ6	
ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO THIS CONTRACT Not Applicable				

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

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

LOT 1 DSTL/AGR/SERAPIS/COL/01

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

To: The Authority FAO: Tel:	From: The Lot Lead
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Proposal Reference 210614_VEC_SERAPIS_C38_T
1_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 Deliverables and Interim Payments (Milestone/stage) due dates.
- A work breakdown structure/project plan with key dates and Deliverables identified including required delivery dates for Government Furnished Assets.
- 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.

Total Proposal Price in £	£151,326.79		(ex VAT)
Start Date:	25/06/2021	End Date:	31st March 2022
Lot Leads Representative	Name	[REDACTED UNDER FOIA EXEMPTION]	
	Tel	[REDACTED UNDER FOIA EXEMPTION]	
	Email	[REDACTED UNDER FOIA EXEMPTION]	
	Date	17/06/2021	
Position in Company	Commercial Manager		
Signature	[REDACTED UNDER FOIA EXEMPTION]		

Contractor's Price Breakdown

[REDACTED UNDER FOIA EXEMPTION]			

Lot Lead Rates for Self-Delivery		
Name & Role	Number of Hours	Total Cost in GBP

Work Delivered by Sub-Contractor(s)		
Name of Sub-Contractor	Service Provided	Total Cost in GBP
[REDACTED UNDER FOIA EXEMPTION]		

N.B. The Contractor should provide a more detailed breakdown of Sub-Contractor costs in its supporting proposal.

	Proposed Milestones Deliverables and Payments <i>(The final Milestone must reflect the actual cost of the deliverable and be greater than 20% of the total price unless otherwise agreed with your Commercial POC)</i>				
[REDACTED UNDER FOIA EXEMPTION]					
Total Cost			£151,326.79		

Tasking Form Part 3:

1. Offer of Contract: <i>(to be completed by the Authority's Commercial Officer or Contract Manager and copied to the Authority's Project Manager)</i>		
Authority's Commercial Officer	Name	[REDACTED UNDER FOIA EXEMPTION]
	Tel	[REDACTED UNDER FOIA EXEMPTION]
	Email	[REDACTED UNDER FOIA EXEMPTION]
	Date	19/07/2021
Requisition Number		1000164123
Contractor's Proposal Number		SERAPIS_C38_T1
Purchase Order Number		DSTLX-1000161154
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>		