

RCloud Tasking Form – Part B: Statement of Requirement (SoR)

Reference Number	R1000163897
Version Number	0.4
Date	04/05/2021

1.	Requirement
1.1	Title
	Acoustic Characterization of Novel Propulsion Systems
1.2	Summary
	This task is to measure the radiated noise characteristics of a flapping foil, novel propulsion system for an underwater vehicle. It involves the design of the experiments, measures the radiated acoustic pressure and analyses the measured data.
1.3	Background

	<p>The current propulsor design used on underwater vehicles is nearing its practical underwater radiated noise performance limit. It is necessary to investigate novel alternative propulsion systems to meet future threats. The universities worldwide have been investigating alternative propulsion systems, such as (but not limited to):</p> <ul style="list-style-type: none"> • flapping foils (like whales, dolphins or turtles), • morphing wings (like rays, cuttlefish and squid), • pulsing jets (like squid, octopus and nautilus). <p>The RN may exploit some of these novel propulsion systems for their future underwater platforms.</p> <p>There is limited knowledge on the acoustic characteristics of these alternative propulsion systems. The aim of this task is to understand the similarities and differences of these propulsion systems, in particular the use of flapping foils, compared with traditional propellers.</p>
1.4	Requirement

	<p><i>Aim</i></p> <p>To compare the radiated noise characteristics of a flapping foil propulsion system for a large underwater vehicle operating at a high Reynolds number with conventional propellers.</p> <p><i>Scope</i></p> <ol style="list-style-type: none"> 1. Design an experiment for radiated noise measurement of a flapping foil propulsion system. 2. Adapt the novel propulsor experimental set-up for radiated noise measurements of a model propeller, under same testing conditions as the flapping foil propulsor. 3. Perform acoustic noise measurements in an appropriate facility to characterize the flapping foil propulsor and the model propeller. 4. Analyse the measured data and compare the acoustic characteristics of the flapping foil propulsor with those from the propeller.
1.5	Options or follow on work
	NA

1.6	Deliverables & Intellectual Property Rights (IPR)						
Ref.	Title	Due by	Format	TRL*	Expected classification (subject to change)	What information is required in the deliverable	IPR DEFCON/ Condition
D - 1	Progress meeting	T0+3 months and repeat every 3 months	Presnetation	n/a	O	Presentation to include but not limited to: <ul style="list-style-type: none"> • Update on technical progress • Progress report against project schedule. • Review of risk management plan. • Commercial aspects. • Review of deliverables. • Risks/issues. • GFA and supplier performance 	Default RCloud Agreement Terms and Conditions shall apply
D - 2	Report on test rig design	T0+3 months	Letter report	n/a	O	Report on the design of the test rig.	Default RCloud Agreement Terms and Conditions shall apply
D - 3	Final report	T0+9 months	Final report	n/a	O	Report on the analyses of the measured acoustic data and their comparison, including a soft copy of the measured data.	Default RCloud Agreement Terms and Conditions shall apply

1.7	Standard Deliverable Acceptance Criteria
	<p>All Reports included as Deliverables under the Contract e.g. Progress and/or Final Reports etc. must comply with the Defence Research Reports Specification (DRRS) which defines the requirements for the presentation, format and production of scientific and technical reports prepared for MoD.</p> <ul style="list-style-type: none"> Interim or Progress Reports: The report should detail, document, and summarise the results of work done during the period covered and shall be in sufficient detail to comprehensively explain the results achieved; substantive performance; a description of current substantive performance and any problems encountered and/or which may exist along with proposed corrective action. An explanation of any difference between planned progress and actual progress, why the differences have occurred, and if behind planned progress what corrective steps are planned. Final Reports: shall describe the entire work performed under the Contract in sufficient detail to explain comprehensively the work undertaken and results achieved including all relevant technical details of any hardware, software, process or system developed there under. The technical detail shall be sufficient to permit independent reproduction of any such process or system. <p>All Reports shall be free from spelling and grammatical errors and shall be set out in accordance with the Statement Of Requirement (1) herein.</p> <p>Failure to comply with the above may result in the Authority rejecting the deliverables and requesting re-work before final acceptance</p>
1.8	Specific Deliverable Acceptance Criteria
	N/A

2.	Quality Control and Assurance
2.1	Quality Control and Quality Assurance processes and standards that must be met by the contractor

	<input checked="" type="checkbox"/> ISO9001 (Quality Management Systems) <input type="checkbox"/> ISO14001 (Environment Management Systems) <input type="checkbox"/> ISO12207 (Systems and software engineering — software life cycle) <input type="checkbox"/> TickITPlus (Integrated approach to software and IT development) <input type="checkbox"/> Other: (Please specify below)
2.2	Safety, Environmental, Social, Ethical, Regulatory or Legislative aspects of the requirement
	N/A

3.	Security	
3.1	Highest security classification	
	Of the work	O
	Of the Deliverables/ Output	O
3.2	Security Aspects Letter (SAL)	
	Not applicable	
3.3	Cyber Risk Level	
	Very low	
3.4	Cyber Risk Assessment (RA) Reference	
	<p>[REDACTED]</p> <p>If stated, this must be completed by the contractor before a contract can be awarded. In accordance with the Supplier Cyber Protection Risk Assessment (RA) Workflow please complete the Cyber Risk Assessment available at https://suppliercyberprotection.service.xgov.uk/</p>	

4. Evaluation Criteria

Evaluation Method

This requirement will be competed and awarded on the basis of the Value for Money Index (VFM Index) evaluating Technical and Price using a lowest price per technical point scored. This will be ascertained by dividing each bidder's quoted price by their own final moderated technical score.

All bids received by the closing date will be assessed against the tender evaluation process detailed below.

The supplier with a fully commercially compliant proposal, with the lowest price per technical point will be the winning tenderer. In the event of a tie between tenders having achieved exactly the same price per technical point, precedence shall be given to the tender that has achieved the highest overall technically weighted score.

The Authority will use an evaluation model consisting of three criteria as follows:

- Technical
- Commercial: PASS / FAIL
- Pricing

To enable your proposal to be assessed fairly, please submit two response versions. Version 1 being a technical response containing only technical information/responses (i.e. redacting any pricing information) Version 2 being commercial that must be a full response to the ITT including technical and price information.

The Authority reserves the right to reject any tender response that scores '0', or a 'Fail' for any Criteria.

* In pricing your proposal, please be aware that DSTL's undisclosed budget limit for this task is a figure between £65,000 and £100,000. DSTL reserves the right to fail a tender exceeding the unrevealed limit on grounds of unaffordability. A range has been provided to give you (the supplier) an indication on the expected level of effort required – the undisclosed limit lies within this to ensure the Authority is not bound to accept purposely inflated tenders and receives Best Value for Money (BVM) for the UK taxpayer.

Technical Evaluation Criteria

The technical evaluation will be carried out by a team of 3 assessors who will review the technical proposals independently and then bring their scores to a moderation meeting. The moderation meeting will be chaired by the Dstl Project Manager. The moderation meeting will discuss each Tenderers response in turn and attribute a moderated technical score to each of the technical criteria and a final score calculated.

Tenders will be technically evaluated using the weighted criteria supplied in the following table. Descriptions of the criteria and what constitutes an excellent to unacceptable response are provided.

The Technical criteria is provided below:

Ref	Criteria	Available Score	Weighting	Total Available Score
T1	The proposal clearly demonstrates that the Contractor understands the requirement.	0-5	4	20
T2	The proposal provides details of key risks, dependencies, assumptions and any relevant ethical issues the Contractor has identified.	0-5	1	5
T3	The proposal clearly demonstrates that the Contractor has the expertise and knowledge to successfully deliver the requirement.	0-5	4	20
T4	The proposal clearly demonstrates that the personnel the Contractor has nominated to work on the requirement have the relevant experience to successfully deliver it.	0-5	4	20
T5	The proposal clearly demonstrates that the Contractors proposed approach will fully address all the key research questions / mandatory requirements stated in the SoR. Proposal should include the following: a detailed work breakdown structure, schedule, roles and responsibilities.	0-5	7	35
				100

Mark	Criteria
0 – Unacceptable or no answer	Has demonstrated inadequate experience or provided inadequate supporting evidence which gives no confidence of the Potential Tenderer's competence and an unacceptably high level of risk to the project
1 – Poor response with Very High risk	Has demonstrated narrow experience or provided minimal supporting evidence which gives low confidence of the Potential Tenderer's competence and a very high level of risk to the project.
3 – Good with Low to Medium risk	Has demonstrated broad experience and provided adequate supporting evidence which gives confidence of the Potential Tenderer's competence and a low to medium level of risk to the project.
5 – Excellent with Very Low risk	Has demonstrated considerable and detailed experience and provided sound and relevant supporting evidence which gives high confidence of

	the Potential Tenderer's competence and a very low level of risk to the project.
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Commercial Evaluation Criteria

Evaluation of Commercial bids will be undertaken against responses to the sub-criteria detailed below and scored in accordance with the 'Commercial Scoring Definitions' underneath.

The Authority reserves the right to reject any Tender if a supplier scores a 'Fail' in any of the criteria below.

Ref	Sub-Criteria Description	Scoring Range	Sub-Criteria Weighting	Maximum Weighted Score
C1	Please submit your full firm price breakdown for all costs to be incurred, including: <ul style="list-style-type: none"> • What rates are being used for what Grade • Quantity of manpower hours per Grade • Travel & Subsistence costs • Journal publication fees • Any Materials costs • Any Facility costs • Any sub-contractor costs • Any other costs 	Pass/Fail	n/a	Pass/Fail
C2	Compliance with the Task specific terms and conditions as stated within the Statement of Requirement and Tasking Form.	Pass/Fail	n/a	Pass/Fail
	Subtotal Available Weighted Mark			Pass/Fail

The score (Pass/Fail) awarded to each of the Commercial Sub-criteria will be in accordance with the following definitions:

Score	Definition
Pass	Fully meets the Authority's requirement. Provision and acceptance of the sub-criteria information in the format requested, which is clear, unambiguous and transparent.

Fail	<p>Unacceptable/Nil Return. Tenderer did not respond to the question or the response wholly failed to demonstrate an ability to meet the sub-criteria requirement.</p> <p>Any proposal marked as a Fail will be excluded from the competition.</p>
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