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

Title of Requirement	Best Practice & Standards for using 'synthetic environments' to compliment experimental testing
Requisition No.	**1000169992**
SoR Version	**1.0**

1.	Statement of Requirements
1.1	**Summary and Background Information**
	Summary: Dstl are conducting a feasibility study on the use of "Synthetic Environments" to reduce reliance on conventional, experiment-based "test and evaluation" in the area of Defence. As part of this process Dstl needs to understand the current standards and accreditation needed to ensure best practice exploitation of synthetic environments. This contract will task an organisation, with specialist knowledge and experience in writing standards for engineering simulation, to develop and document a "roadmap" detailing what would be required for Dstl to develop and maintain "Synthetic Environments" for defence applications. **Background:** Dstl is currently running an initiative to determine whether numerical modelling capabilities can be used to generate "Synthetic Environments" for defence applications, with the intention of reducing reliance on conventional, experiment-based "test and evaluation". Dstl would like to consult with those with a proven track record for developing high pedigree, computational-based capabilities and "standards of operation" predicated on numerical analysis techniques such as FEA or CFD/Hydrocode analysis. The current requirement specifically relates to physics simulations, conducted by Dstl, of blast and ballistic threats impacting protective structures. The intention of this initiative is to increase understanding of the underpinning mechanisms and ultimately improve the design of defence systems, whilst concurrently saving money.
1.2	**Requirement**
	Intellectual Property Rights DEFCON 705 shall apply to all of the deliverables against this Contract. **Marking of Information & Deliverables:** Bidders should note that the deliverables associated with this task may be distributed to MOD and OGD stakeholders in the future, therefore Dstl seeks to secure Full User Rights in the deliverables. **Main requirement: Work Package One** The main requirements of this Contract are to: • Document the current Modelling and Simulations (M&S) approaches and standards used within industry to develop and maintain "Synthetic Environments"

- Assess Dstl's requirement for developing similar capabilities in the area of Defence
- Develop and document a generic "roadmap" detailing what would be required for Dstl to develop and maintain "Synthetic Environments" for defence applications

The Contractor should particularly focus on the following:

- Longstanding "Synthetic Environments" that have been successfully developed, maintained and exploited in other domains/sectors
- Current analytical approaches (including dealing with uncertainty)
- Implementation of standards, codification and best practices
- Philosophy concerning validation testing: Scope and breadth
- The state of Dstl's current general modelling capability (analytical techniques, levels of High Performance Computing, testing for model characterisation and validation)
- Assess Dstl's requirement to develop similar capabilities
- Score the maturity levels of Dstl's current capabilities, compared to other industries
- Roadmap of requirements for Dstl to reach certain levels of maturity
- Quantify enduring requirements for final physical testing (i.e. facility maintenance vs. number of requisite tests to keep the synthetic environment viable)

Work package One structure:

Milestones

The work shall be divided into the following sections and milestones:

- **Section One** – Initial background review of current approaches and standards used within industry to develop and maintain "Synthetic Environments"
    - o **Milestone One** – Short technical report or presentation of initial findings for discussion with Dstl
- **Section Two** – Understand and assess Dstl's requirement for developing similar capabilities for specific applications
    - o **Milestone Two** – Short technical report or presentation of findings for discussion with Dstl
- **Section Three** – Develop and document a generic "roadmap" detailing what would be required for Dstl to develop and maintain "Synthetic Environments" for defence applications (including estimates of costs and testing requirements)
    - o **Milestone Three** – Technical DRAFT report of findings for discussion with Dstl
    - o **Milestone Four** -The final technical report including, but not limited to the outputs of the initial three milestone of the project and a generic "roadmap" detailing what would be required for Dstl to develop and maintain "Synthetic Environments" for defence applications.

Delivery timescales

- The Contractor shall set up a meeting within 2 weeks of contract placement to enable the Authority to monitor progress and confirm that the proposed outputs will fall in line with expectation. A brief presentation is to be given by the Contractor to the Authority to provide an overview of the planned work.

	• Milestone progress updates are required from the Contractor to the Authority, via virtual/physical meetings (**T0 predicted to be 14/02/22**): o Milestone one: T0 +3 weeks o Milestone two: T0 +6 weeks o Milestone three: T0 +7 weeks (No Later Than 31/03/22) o Milestone four: The Contractor shall deliver a final technical report within 10 weeks of contract placement (No Later Than 30/04/22)	
1.3	**Options or follow on work** *(if none, write 'Not applicable')*	
	N/A	
1.4	**Contract Management Activities**	
	All successful bids, after contract award will be initiated by a Project Kick Off Meeting organised by the Authority. It is expected that kick off meetings will be scheduled in promptly after contract award. Submission of Research Worker Forms will be required only prior to contract award, where required. Proposals should state how many Research Workers Forms will be submitted for the proposed contract, or if SC clearance is already held, then how many workers will be presented for verification of SC or above status. Deliverables will be managed by the Authority and expected to the timescale as outlined in Table 1.6 At Contract Closure, a wash up meeting will be delivered to discuss next steps, recommendations and feedback which will be captured by the Dstl Project Team.	
1.5	**Health & Safety, Environmental, Social, Ethical, Regulatory or Legislative aspects of the requirement**	
	N/A	

1.6	Deliverables & Intellectual Property Rights (IPR)					
Ref.	Title	Due by	Format	Expected classification (subject to change)	What information is required in the deliverable	IPR Condition
M-1	Milestone 1 – Short technical report/presentation documenting progress	Within 3 weeks of contract placement	MS Word document (.docx) / MS PowerPoint document (.pptx)	OFFICIAL	The document shall include, but not limited to the initial background review of current approaches and standards used within industry to develop and maintain "Synthetic Environments"	*DEFCON 705*
M-2	Milestone 2 – Short technical report/presentation documenting progress	Within 6 weeks of contract placement	MS Word document (.docx) / MS PowerPoint document (.pptx)	OFFICIAL	The document shall include, but not limited to the initial findings assessing the Dstl requirement to developing "Synthetic Environments" capabilities for specific applications	*DEFCON 705*
M-3	Milestone 3 – Technical DRAFT report documenting findings	Within 7 weeks of contract placement. No Later Than 31/03/22	MS Word document (.docx) / MS PowerPoint document (.pptx)	OFFICIAL	The document shall include, but not limited to the progress in development and documentation of a generic "roadmap" detailing what would be required for Dstl to develop and maintain "Synthetic Environments" for defence applications	*DEFCON 705*

| M-4 | Final Report | Within 10 weeks of contract placement.

No Later Than 30/04/22 | MS Word document (.docx) | OFFICIAL | The final technical report shall include, but not limited to the outputs of the initial three milestone of the project and a generic "roadmap" detailing what would be required for Dstl to develop and maintain "Synthetic Environments" for defence applications | *DEFCON 705* |

1.7	**Deliverable Acceptance Criteria**

Standard deliverable acceptance criteria:

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.

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.

All Reports shall be free from spelling and grammatical errors and shall be set out in accordance with the Statement Of Requirement (1) above.

Failure to comply with the above may result in the Authority rejecting the deliverables and requesting re-work before final acceptance, in accordance with DEFCON 524 Rejection.

Specific deliverable acceptance criteria:

The final technical report shall include, but not limited to details of all work undertaken.

The report shall be provided by the Contractor in the form of a written document (MS Word) and be sent to the Technical POCs of the Contract (REDACTED UNDER FOI EXEMPTION)

The Authority/Dstl will be responsible for acceptance of the deliverable/s. The outputs will be checked by the Authority for consistency and quality before acceptance.

Acceptance will take place at Dstl Porton Down and will be determined by a formal review of the delivered document/reports by the Authority.

Acceptance will take place within 30 days of receipt of the deliverable by the Authority/upon completion of the Contract by the Contractor. The Contractor will be advised if and when the deliverable is acceptable. If any deliverables are not accepted, the Contractor shall be required to take remedial action to the satisfaction of the Authority, at no additional cost to the Authority.

2	**Evaluation Criteria**
2.1	Method Explanation

The Tender evaluation utilises an absolute method, whereby a Value For Money (VfM) Index is applied to identify the preferred bidder. This approach divides the total score of the non-cost (Technical) criteria by the tender cost. It ranks tenders on the quality (represented by the non-cost score) for each £ (or £k or £m) of cost.

An illustrative example is outlined below for reference purposes only:

Tender	Non-Cost Score	Cost (£)[Thousand]	VfM Index Score	Rank
A	62	20	3.10	3
B	85	24	3.54	1
C	100	29	3.44	2

2.2	Technical Evaluation Criteria

Proposals which pass the commercial evaluation, shall be assessed against the following technical questions.

The technical questions shall be assessed and marked using the following scoring definitions:

Excellent	The response addresses all elements of the Requirement and provides a comprehensive, unambiguous and thorough explanation of how the Requirement will be fulfilled.	10
Good	The response addresses all elements of the Requirement and provides sufficient detail and explanation of how the Requirement will be fulfilled.	7
Adequate	The response addresses the majority of elements of the Requirement but is weak in some areas and does not fully detail or explain how the Requirement will be fulfilled.	3
Inadequate	The response does not address or explain how the Requirement will be fulfilled and fails to demonstrate the ability to meet the Requirement.	0

The technical evaluation shall be scored on the following questions:

ID	Criteria	Score	Weighting
1	The bidder has provided details of their expertise in the development and the use of standards for Finite Element Analysis. Historical reports, papers or similar, demonstrating this, that have been generated by the supplier must be attached to their bid, for scrutiny by Dstl as part of this process.	0, 3, 7 or 10	40
2	The proposal provides strong evidence that the bidder has the expertise and deep technical knowledge in the relevant areas. Historical reports, papers or similar, demonstrating this, that have been generated by the supplier must be attached to their bid, for scrutiny by Dstl as part of this process.	0, 3, 7 or 10	30
3	The bidder has provided evidence that the suggested testing methodology and scientific principles will provide the required information. Historical reports, papers or similar, demonstrating this, that have been generated by the supplier must be attached to their bid, for scrutiny by Dstl as part of this process.	0, 3, 7 or 10	20
4	The bidder has provided a feasible and detailed work plan of activities, with risks and mitigations clearly identified. A project plan in the form of a Gantt chart or similar is expected.	0, 3, 7 or 10	10

	Under the Technical Evaluation the maximum available weighted score is 1,000. Under the VfM Index this score (Non-Cost) shall be divided by the cost of your proposal to generated the VfM Index Score.
2.3	**Commercial Evaluation Criteria**
	The commercial evaluation shall be assessed against the following Pass / Fail questions. Please note, a fail against any of the commercial questions will result in your proposal not being considered for Technical Evaluation.

Serial	Question	Marking
1	Has the proposal been submitted against a Firm Price	Pass / Fail
2	Is the Firm price of the proposal within (no more than) the maximum available stated budget (Maximum of £50,000 not including VAT - net)	Pass / Fail
3	Has the bidder provided 1 (One) full technical proposal for Work Package 1, excluding all price detail.	Pass / Fail
4	Has the bidder provided 1 (One) full technical proposal for Work Package, including all price detail.	Pass / Fail
5	Has a completed RCloud Part C Task Response Form been completed and submitted	Pass / Fail