

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

Title of Requirement	Blast Analysis API Integration Support
Requisition No.	1000166301
SoR Version	0.1

1.	Statement of Requirements
1.1	Summary and Background Information
	<p>Technical support for Dstl staff engaged in integrating the BlastFOAM API into the Human Injury Predictor (HIP) software to provide a high-fidelity blast capability.</p> <p>Structural Dynamics have developed multiple fast running algorithms using simplified models to perform various types of predictions involving blast. The runtime for a blast analysis in HIP is usually ~seconds. Third Party tools have been evaluated with the usage of GPU's to perform these repetitive yet complex calculations with runtimes ~minutes (dependant on scenario/run configuration).</p> <p>The integration of a higher fidelity model such as these used for blast calculations within HIP was identified. The requirement was competed via R-Cloud and a contract awarded to Synthetik Applied Technologies (PO DSTLX-1000155999) to develop the necessary API for BlastFOAM, an open source library for single and multiphase compressible flow with application to high-explosive detonation, explosive safety and airblast, as well as general compressible flows, solely developed by Synthetik Applied Technologies.</p> <p>The API was delivered in April 2021. Subject to some further integration work to be conducted during FY2021/22, the API will enable HIP to load and run BlastFOAM to deliver a high fidelity blast capability within HIP.</p>
1.2	Requirement
	<p>Dstl will complete work to exploit the delivered API to enable HIP to engage, load and run BlastFOAM in order to deliver a high fidelity blast capability within HIP.</p> <p>A limited level of technical support will be required from Synthetik Applied Technologies Limited, as developers of the original API and developers of BlastFOAM, to ensure that this exploitation is successful.</p>

	<p>Synthetic Applied Technologies Limited, is the sole supplier to conduct this work as the sole developer of BlastFOAM and having previously developed and delivered the API.</p> <p>Technical support should be on a call-off basis</p>
1.3	Options or follow on work <i>(if none, write 'Not applicable')</i>
	Not Applicable
1.4	Contract Management Activities
	No applicable
1.5	Health & Safety, Environmental, Social, Ethical, Regulatory or Legislative aspects of the requirement
	No applicable

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
<i>D1</i>	<i>Technical support</i>	<i>T0+9 Months</i>	<i>Staff time (hours)</i>	OFFICIAL	<i>Technical support from suitably qualified and experienced personnel to assist Dstl staff integrating the BlastFOAM API to HIP. Support to be provided on an ad hoc basis as required</i>	DEFCON 705
<i>D - 2</i>	--+					
<i>D - 3</i>						
<i>D - 4</i>						
<i>D - 5</i>						

1.7	Deliverable Acceptance Criteria
	Technical support hours provided as necessary to support the integration process.

2	Evaluation Criteria
2.1	Method Explanation
	N/A
2.2	Technical Evaluation Criteria
	N/A
2.3	Commercial Evaluation Criteria
	Review of proposal and costings