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**
	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. 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). 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. 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.
1.2	**Requirement**

	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. 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.

	Synthetik 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. Technical support should be on a call-off basis
1.3	**Options or follow on work** *(if none, write 'Not applicable')*
	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**
D1	*Technical support*	*T0+9 Months*	*Staff time (hours)*	OFFICIAL	*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*	DEFCON 705
D - 2	-+					
D - 3						
D – 4						
D - 5						

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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