

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

Title of Requirement	Rollable Non-thermal Plasma Microbubble Chamber for Degrading CBW Agents
Requisition No.	As stated in the RCloud Portal
SoR Version	1

1.	Statement of Requirements
1.1	Summary and Background Information
	<p>Summary. This project aims to develop a simple, easy-to-use method to destroy both chemical and biological warfare agents in austere environments.</p> <p>Background. This project aims to investigate the feasibility of using plasma-activated air microbubbles to disable and eliminate a broad spectrum of CBW agents in a tactical environment. [REDACTED]</p>
1.2	Requirement
	<p>Work Package 1 – Feasibility study of plasma - liquid contacting methods</p> <ul style="list-style-type: none"> • Task 1.1.1 [REDACTED] • Task 1.1.2 [REDACTED] <p>The contract will run for 4 months, with the option to conduct follow-on work for 6 months</p>
1.3	Options or follow on work
	<p>The Authority may at its sole discretion, exercise its right to activate the consecutive and irrevocable contract option period detailed in the Schedule of Requirements. It is agreed that the Authority has no obligation to exercise such options</p> <p>Any work carried out by the Contractor on these options without the prior written approval of the Authority's Commercial Services Department will be at the Contractor's own risk.</p> <p>A fully costed proposal for the Options is required.</p> <p>Option 1. Reactor Design</p> <ul style="list-style-type: none"> • Design and fabricate a rollable plasma reactor <ul style="list-style-type: none"> ○ Task 1.2 [REDACTED] ○ Task 1.3 [REDACTED] ○ Task 1.4 [REDACTED] ○ Task 1.5 [REDACTED] <p>The decision to invoke Option 1 if the Base Period feasibility study demonstrates that plasma microbubbles are able to penetrate a liquid layer. It would need to provide sufficient evidence that the plasma microbubbles are able to penetrate the air-liquid interface and also into the liquid layer. The output of the feasibility study will be reviewed by Dstl subject matter experts (SMEs) who will decide if the technology provides sufficient promise to pursue further.</p>

	<p>Option 2</p> <ul style="list-style-type: none"> • Work Package 2: Quantify the chemical decomposition rate of chemical warfare agent simulants due to plasma treatment <ul style="list-style-type: none"> ○ Task 2.1 [REDACTED] ○ Task 2.2 [REDACTED] ○ Task 2.3 [REDACTED] ○ Task 2.4 [REDACTED] ○ Task 2.5 [REDACTED] <p>Option 3</p> <ul style="list-style-type: none"> • Work Package 3: Demonstrate the capability of plasma generated by a rollable plasma reactor to inactivate biological warfare agent using simulants such as robust [REDACTED] <ul style="list-style-type: none"> ○ Task 3.1 [REDACTED] ○ Task 3.2 [REDACTED] ○ Task 3.3 [REDACTED] ○ Task 3.4 [REDACTED] ○ Task 3.5 [REDACTED] <p>The decision to invoke Option 2 and/or 3 will be made once Option 1 is successfully executed: Assembly of rollable plasma reactor is completed and results show that it functions as expected</p>
1.4	<p>Health & Safety, Environmental, Social, Ethical, Regulatory or Legislative aspects of the requirement</p>
	<p>The Contractor's work location must have the appropriate licences to handle the [REDACTED] options they propose to work with. The contractor must provide evidence of these licences. In addition, the contractor must provide evidence of competence for all involved, to carry out what is outlined in their proposal. The supplier must provide evidence of a robust safety culture and examples of the processes undertaken to ensure H&S of staff. An example risk assessment could be provided to support this.</p>

1.5	Deliverables & Intellectual Property Rights (IPR)				
Ref.	Title	Due by	Format	Expected classification (subject to change)	What information is required in the deliverable
Base Period - D1	Feasibility Study Review (FSR)	T0 + 4 months	Written report on customer template	Official	Report on findings including recommendation on feasibility of non-thermal plasma in liquid
Base Period – D2	Monthly-project progress review	T0 + 1-4 months	MS Teams teleconference or site visit	Official	Review to include but not limited to: <ul style="list-style-type: none"> • Update on technical progress • Risks/issues
Option Period – D3	Monthly-project progress review	T0 + 5-10 months	MS Teams teleconference or site visit	Official	Review to include but not limited to: <ul style="list-style-type: none"> • Update on technical progress • Risks/issues
Option Period – D4	Report on plasma reactor design	T0 + 6 months	Written report on customer template	Official	Report on findings
Option Period – D5	Report on chemical simulant testing	T0 + 10 months	Written report on customer template	Official	Report on test results

Option Period – D6	Report on biological simulant testing	T0 + 10 months	Written report on customer template	Official	Report on test results
Option Period – D7	Practical demonstration	T0 + 10 months	Physical demonstration at contractor site	Official	

1.7	Deliverable Acceptance Criteria
	<p>The report must cover all the areas outlined in ‘requirements’ in section 1.4 above, and also meet the following requirements:</p> <ul style="list-style-type: none"> • The review will be written in a user defined template, acceptable to the authority, to a standard of a peer-reviewed article e.g. publication of a peer reviewed technical journal, or as detailed in the Defence Research Reports Specification (DRRS) which defines the requirements for the presentation, format and production of scientific and technical reports prepared for MoD (https://www.gov.uk/guidance/submit-a-report-to-athena#defence-research-report-specification) • All reports shall be free from spelling and grammatical errors, containing a full bibliography of all the sources used.