

# **RFI for S&T Incubate Underwater Additive Manufacturing**

**Title: Market Research into Underwater Additive Manufacturing**

## **Section 3 Object of the Request for Information:**

**Short description of requirement:** The purpose of this Request for Information (RFI) is to provide Dstl with better understanding and indicate the feasibility of printing complex devices underwater.

We would like to hear from suppliers who either have experience of producing additively manufactured items underwater, or believe they could adapt or develop capabilities to do so. By underwater we mean either in water directly or in fully submerged contained environment.

Dstl is interested in companies of all sizes from Micro through to Large Enterprises to offer their ideas or products that may fulfil all or part of this need.

Time-limit:

**Friday 03/03/2023 by 17:00**

Information requested: **Description of Requirement**

### **Background.**

The MOD Science and Technology Strategy 2020 has a clear focus on Science and Technology that can lay the foundations for the generation-after-next of military capability. In its chapter on “Understanding the Future”, the Strategy sets a Defence ambition to search the entirety of the S&T landscape, judge the likely impact and implications, and respond appropriately. The Defence Science and Technology Futures programme (DSTF), is a key part of that ambition. This project comes from the INCUBATE function of the programme, where we rapidly seek out the under-pinning evidence, proof or otherwise that something *may* have an impact for the UKs future Defence and Security.

Exploring Underwater Additive Manufacturing (UAM) is one of the many tasks in INCUBATE. An important aspect of the task is understanding the challenges and failure points for this concept to aid in future exploration and possible alternative routes for testing. It is important to understand as many influences, drivers and assumptions as possible for developing defence policy through thorough analysis, challenge and preparation.

The main interest of this request is to increase knowledge and encourage innovation related to producing 3D printed components underwater, so general advancements in additive manufacturing techniques are not strictly in scope. However, it is anticipated that current technology and approaches could be adapted and so we are open to a wide range of capabilities to be considered.

### **RFI Responses**

Suppliers who believe they can offer full or partial solutions, or contribute to the collaborative development of such an Underwater 3D Printing Solution are invited to respond to this RFI by answering the questions below and returning it by e-mail to [jdavies6@dstl.gov.uk](mailto:jdavies6@dstl.gov.uk) by the 03/03/2023. You do not have to answer all the questions. We will be interested to see relevant case studies or background material regarding systems already in production or in concept phase that will allow us to develop our procurement strategy and requirements. Please do not send general sales materials. All information provided in response to the question set will not be shared outside of the UK Government.

**QUESTIONS:**

Describe at a high level what your product or proposed product is, what it does and how it works? Include the materials used and types of item produced.

Demonstrate how it has worked and the results/evidence obtained for other customers, looking at analogous problems?

Is the platform designed for this problem, making it ready for use as-is, or is it designed for analogous problems? What level of adaption will be required to deploy this system underwater?

Do you have experience in adapting or innovating your capabilities to provide solutions? Please provide an example that might be relevant to this topic.

Which country(ies) is the technology sourced from?

How automated is your solution, does it require much/little human input once started?

Are there any restrictions on access or use? Please provide details of any relevant government accreditation, and any design standards or MOD policies that the platform complies with.

Please provide any other information you deem relevant to the requirement stated in this RFI or that makes your product / offering stand out from competitors.

**Potential next steps**

Following receipt and review of the RFI responses as a next step you may be invited to provide a further presentation/demonstration between the time of your response until end of March 2023 to explain how your proposed solutions could meet or significantly contribute to the Authority's aims as set out in this RFI. At this stage you will need to provide, in confidence, your potential solution/s, identifying any key risks to developing and implementing them if not already available. A very Rough Order of Magnitude of costs for any additional development proposed should be provided, and details of any licencing models and costs. Please state your assumptions on costs to guide the Dstl team. As part of the presentation, you will also need to provide a short brief on your company's background, existing customers, and insight into your technology. This will then help shape the scope and direction of the next stage in the engagement process. Time bounded trials of existing platforms after the presentations/demonstrations are desirable for applicable platforms. These activities will inform Dstl's procurement strategy and requirements. Dstl makes no commitment to procurement of any type, this request is for information purposes only. Any subsequent activity is Subject to Contract.

**Market Engagement Timescales**

Market engagement through release of RFI from Feb 6. Supplier presentations/demos/trials to Authority by March 31. Authority strategy to inform any next phases planned by April 1.