

**RFI0063**

**REQUEST FOR INFORMATION**

**DCTO D4 Autonomous MASS systems and VTE Framework.**

**RFI Title**: DCTO D4 Autonomous MASS systems and VTE Framework.

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# Introduction

DCTO (Disruptive Capabilities and Technologies Office) are seeking information from the market regarding the development and provision of a framework for the testing and experimentation of Commercial-Off-The-Shelf (COTS) autonomous systems and Virtual Test Environments (VTE).

The objective is to assess the interest in joining the framework. The planned two lots are as follows:

1. Lot 1: A comprehensive framework for the testing and experimentation of, high-fidelity VTEs capable of simulating, testing, validating, and iterating MASS systems, including support systems prior to, and in conjunction with, live trials. This will also act as a pre-requisite testbed for compatible MASS systems to access LOT 2.
2. Lot 2: A comprehensive framework for the testing and experimentation of Commercial-Off-The-Shelf (COTS) autonomous systems onboard DCTO assets. The primary aim of this framework is to facilitate the evaluation of these systems across multiple dimensions, including performance, reliability, safety, scalability, interoperability, and adaptability to diverse operational environments. This lot will support structured, repeatable, and rigorous testing methodologies to validate the capabilities and limitations of COTS autonomous systems. It will also enable iterative experimentation, allowing for continuous improvement and innovation by incorporating lessons learned from testing outcomes.

This RFI is for “market engagement” only and does not constitute a commitment to procure.

1. Background

The DCTO accelerates the exploitation of the most promising disruptive technologies into the hands of Royal Navy and Royal Marines end-users, thus enabling technological advantage over our adversaries.

We aim to solve current operational problems through the rapid development, testing and fielding of prototype capabilities, providing the leadership, network, finance and innovation ‘know how’ to deliver a solution.

We make full use of XV PBKT (The Royal Navy’s test and experimentation vessel) and the specialist knowledge of its team to rapidly test, learn and iterate on the use of autonomous systems, providing a critical knowledge bridge to the future Navy.

We connect with key international allies to share knowledge, works in partnership with the UK's innovation ecosystem to understand and help inform the development of dual-use technologies.

In achieving all of this, the DCTO will take calculated risks, tolerably integrated capabilities in, both to deliver capability but also to learn, and will operate within a robust yet proportional safety environment.

Finally the DCTO seeks to learn for the benefit of others through a transparent approach to innovation; improving processes and helping the RN maintain Operational Advantage through innovation.

The DCTO is developing this framework to support the testing of various autonomous and simulation systems, in a collaborative and innovative space with industry partners.

The framework will:

1. Enable testing and evaluation of Degree 4 MASS systems.
2. Enable testing and evaluation of virtual test environments for experimentation and validation of models, Degree 4 MASS systems before live trials.
3. Support data acquisition and exchange between the provider, DCTO and framework members to enable joint analysis, model development, and performance benchmarking.
4. Ensure compliance with applicable safety, security, and regulatory standards for MASS.

DCTO estimate that there would be an indicative value of £1,000,000 per year across both lots.

Each lot will look to achieve or work towards the following:

**Lot 1 – Virtual Test Environment.**

1. High-fidelity physics-based simulation for hydrodynamics, weather, and maritime traffic.
2. Support integration of autonomy software for testing and validation in virtual conditions.
3. Enable hardware-in-the-loop (HIL) and software-in-the-loop (SIL) testing.
4. Allow real-time and accelerated-time simulation modes.
5. Have interfaces for importing/exporting data to/from live MASS trials.
6. Support joint data acquisition and analysis, between supplier and framework members.
7. Provide secure remote access for collaborative testing and evaluation.

**Lot 2 – Degree 4 Autonomous MASS Systems**

1. Achieve and sustain Degree 4 autonomy without remote operator input for mission execution.
2. Operate in complex maritime environments (including congested waters) with robust COLREGs compliance.
3. Integrate with common maritime communication, navigation, and situational awareness systems.
4. Feature open architecture for sensor, payload, and software integration.
5. Provide secure and high-integrity data logging for both the supplier and framework use.
6. Have safety, fail-safe, and recovery procedures for autonomous missions.
7. Support modular upgrades to autonomy algorithms, propulsion, and mission systems

**Benefits**

1. Access to a collaborative network.
2. Shared data.
3. Supplier capability that will be available to the Navy when requested through the DCTO.
4. RFI intended outcomes

This RFI aims to achieve the following outcomes:

1. Assess levels of industry interest in joining the framework of this type.

1. Understand any industry concerns or feedback.
2. Timeframes of lots.
3. How many testing lots per year would make it viable to join the framework.
4. Interest in collaboration and data sharing with framework members.
5. RFI Procedure

Responses to this RFI will be reviewed by subject matter experts from different functional areas within Navy Command Headquarters.

If upon review of your submission any clarifications or additional information is required, you will be contacted using the details provided in your RFI response.

Any details provided in response to this RFI will be used for information purposes only and will not be used to determine the potential Suppliers who will be invited to bid, should the Authority proceed to tender.

The results and analysis of this RFI shall not constitute any form of pre-qualification exercise.

Any formal procurement process will be undertaken in accordance with the relevant Procurement Law.

Nothing in this RFI, or any other engagements with Industry prior to a formal procurement process, shall be construed as a representation as to the Authority’s ultimate decision in relation to the future requirement.

1. How to submit responses to this RFI

Respondents should provide responses in accordance with the format provided in **Annex A** quoting the RFI reference on all documentation and emails**.**

Please do not submit additional documents such as company overviews, the purpose of the RFI is to collect information related to the technical solution, any additional documents will not be included in the review process.

Any responses received after the deadline will be passed to the subject matter experts for information, however they may not be included in the RFI review meetings which are to be held immediately following the deadline.

Once completed, please return electronically to the e-mail address shown below in **section I (Contact),** no later than **16:00 on the 10th October 2025**.

Responses will be acknowledged electronically by return e-mail.

1. Confidentiality & Proprietary Information

No information included in your response, or in discussions connected to it, will be disclosed to any other third party.

Proprietary information, where included, should be kept to minimum and must be clearly marked.

**For the purposes of this RFI, any documentation submitted should be classification OFFICIAL**.

1. Costs of preparing your RFI response

Any costs relating to the preparation and submission of a response to this RFI are the sole responsibility of the respondent.

## Insurance

Not used

## Contact

Quoting the RFI reference, please submit

1. any requests for clarification
2. all responses to this RFI
3. any questions regarding Classification of document(s) intended for submission, to:

NAVYCOMRCL-RFI@mod.gov.uk

1. Annex A

**RFI0063 DCTO D4 Autonomous MASS systems and VTE Framework**

|  |  |
| --- | --- |
| **Question** | **Answer** |
| Company/Organisation Name |   |
| Company/Organisation Address |   |
| If the respondent is not a company, please specify the nature of the organisation (i.e. Academic institution, enterprise group, research group etc.) |  |
| Is the company a Small - Medium Enterprise (less than 250 employees)? |  |
|    |
| Name of Company/Organisation representative completing the RFI |   |
| Contact details (e-mail and telephone number) |   |
| Company/Organisation web site address |   |
|    |
| Which lots of the framework would you be interested in joining? | Both / Lot 1/ Lot 2/ None |
| If none, please give a brief reason why. | Max 100 words. |
| Would you consider that you have an established solution that is ready to test? | Yes / No / Potentially within the next 6-12 months |
| How many years would you be interested in joining a framework for? | 1/ 2-3/ 4-5 years/More than 5 years/ No preference |
| How many call-off tasking opportunities under each lot per year would make it viable for you to join the framework? | 1-2/ 3-4/ 5-6 / 7+ / No preference |
| Is indicative value of the framework given above sufficient for you to be interested in joining?  | Yes/No |
| If the answer to the above is no, please provide a brief explanation. | Max 500 words |
| Would you be willing to sign up to MOD Terms and Conditions in order to join the framework? | Yes/ No |
| If you would see any potential IPR issues associated with being on the framework and taskings, please provide a short explanation. | Max 500 words |
| Are there concerns around collecting data over performance levels of the solutions? | NMT 500 Words |
| Are there concerns around sharing the results of the testing lot with members of the framework?(Please see above: Lot 1, paragraph 6). | NMT 250 Words |
| If you were given a tasking under this framework, how long would you likely require in order to deliver it?  | 1-2 months/ 3-6 months/ 6 months +/ Unable to say without more detail. |
| On what basis would you be interested in joining this framework? | As a prime/ Through a consortium/ As a sub-contractor |
| Which of the following Social Value Themes do you feel would be most appropriate for the suggested framework? | Tick as many as you feel appropriate:1) Kick-Start Economic Growth2) Make Britain a clean energy superpower3) Take back our streets4) Break down barriers to opportunity5) Build an NHS fit for the future |
| Do you have any other thoughts or suggestions on the proposed framework outlined above. | Max 500 words. |