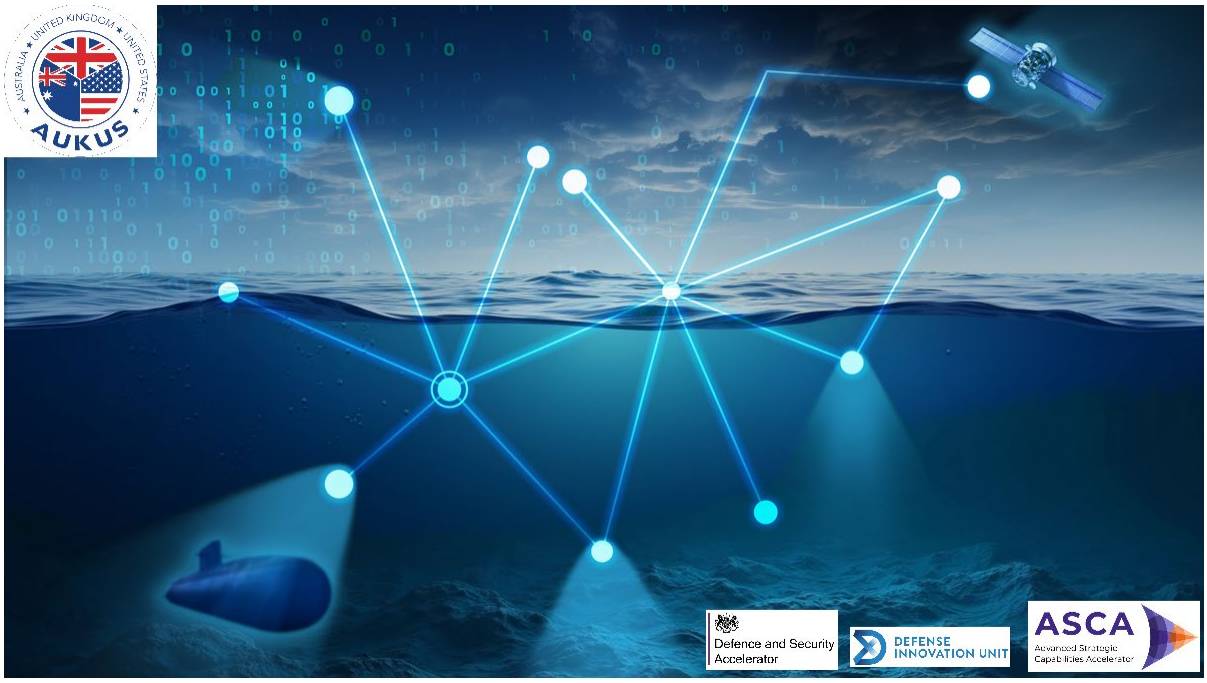
AUKUS Maritime Innovation Challenge 2025: Undersea Communications and Autonomy



Introduction:

On Friday 1 December 2023, Defence Ministers announced the launch of an innovation challenge series for AUKUS Pillar II. The first of these challenges was focused on Electronic Warfare (EW). The second is focused on undersea Command, Control and Communications.

This is a trilaterally agreed challenge and will utilise a harmonised competition process with individual submissions entered into one of the three AUKUS partners' individual submission portals (Australia, United Kingdom and United States). The challenge is being run as a two-stage competition across the Advanced Strategic Capabilities Accelerator (ASCA) in Australia, the Defence and Security Accelerator (DASA) in the United Kingdom and the Defence Innovation Unit (DIU) in the United States.

In Stage 1, submissions will be evaluated for their desirability and technical merits by evaluators from each of the three AUKUS partners. Successful submissions from Stage 1 may be invited by any of the AUKUS partners to submit a detailed proposal as part of Stage 2 of the competition, according to individual nations' tendering and contracting processes. Terms and conditions for the competition have been harmonised as far as possible across the three nations but it should be appreciated that individual AUKUS partners have separate national requirements for awards.

This competition is open to submissions from any nation in Stage 1. Successful respondents who have been offered and who have entered into a contract with an AUKUS partner following Stage 2 will be required to develop their technology to a prototype level and deliver a demonstration at an appropriate multinational maritime exercise. Final contract deliverables may be shared by all three AUKUS partners, to enable the three partners to

consider their suitability for any future use or possible exploitation by one or more AUKUS partners, however no such future use or exploitation is guaranteed to occur. Further details to be provided in due course.

Competition key information

Key Information	Competition Details
Stage 1 Submission deadline	Midday/12:00 on 28 April 2025 (Local Time)
Stage 1 Decision release date	26 May 2025
Stage 2 Submission portals open (by invitation only)	9 June 2025
Stage 2 Submission Deadline	7 July 2025
Stage 2 Decision release date	18 August 2025
Total funding available	Up to $8 million (US). Together, UK, AUS and US are expecting to fund 3-10 proposals
Technology Readiness Level (TRL)	Achieving minimum TRL6 (Technology model or prototype demonstration in a relevant environment)
Contract start month	Aim to start November 2025
Project duration	12 months. Final deliverable is to be a demonstration at an appropriate multinational maritime exercise.

Respondents should note that the above schedule is subject to change at any time and is not to be relied on by respondents as final and definitive.

Competition Scope

Background

Autonomous systems can provide operational advantage in all environments from seabed to space. The waters of a nation's exclusive economic zone (EEZ) stretch 200 nautical miles (NM) from the coastline; they include environmental features such as seaweed, incidental features such as drifting containers, and interception features such as fishing nets. There is also the presence of critical undersea infrastructure, which has strategic interest. Sensing, interpreting, and navigating the environment are fundamental to an autonomous platform's ability to operate safely, efficiently, and effectively.

Capability Challenges/Effects

AUKUS partners are seeking to research and develop innovations to enable the synchronisation and teaming of multiple undersea systems. We invite innovations that enable some or all of the following Desired Capability Effects:

1. Provide near real time communications between Undersea Vehicles (UVs)
2. Provide near real time communications from UVs to Command and Control (C2) Systems /Battle Management System (BMS)
3. Provide near real time communications between seabed systems to UVs and C2 System and BMS
4. Provide a system that can optimally allocate the right asset to the right task in a dynamic and complex environment
5. Provide optimal bandwidth utilisation and effective range, and perform in a contested/congested environment

Mission Requirements

Planning and Initiation

The central C2 node will plan a mission for the teamed network of Uncrewed Undersea Vehicles (UUVs) to complete. This mission will need to be communicated to individual UUVs with varied capabilities and payloads, over an appropriate range.

Adaption reporting

Over the course of the mission, the UUVs will need to communicate with each other and the central C2 node. This could be part of the original mission, or in response to a change in mission circumstances, such as the failure of an individual vehicle. The teamed network should reallocate these tasks appropriately and report the revised mission parameters back to the Central C2 node as soon as possible.

Security

Some UUVs operated by AUKUS navies are capable and complex platforms that can support a wide variety of Defence tasks. The data and systems on board must be secured, even if the UUV itself is lost due to failure or attrition. The encryption of communications and data at rest is highly desirable.

Navigation

UUV will need to maintain a dived status to maximise efficiency and safety; they need to maintain an accurate position and timing while dived. UUVs will need to autonomously recognise and counter a range of challenges, including: environmental features such as seaweed, incidental features such as drifting containers and interception features such as fishing nets

Large Data

There could be an unanticipated safety or engineering reason for one or more of the UUVs to have to transmit a significant amount of data back to the central C2 node and/or BMS from a long range with a minimal probability of that data being intercepted.

Considerations

Successful proposals to this competition should seek to tackle one or more of the above Desired Capability Effects (1-5).

Successful proposals to this competition should seek to tackle one or more of the above capability challenges (1-5). To help with onward exploitation we encourage novel C2 technologies to be interoperable by design. To this end, AUKUS – and NATO – allies are developing and applying a family of protocols based upon an evolution of Interoperability to

Interchangeability (I2I) and Collaborative Autonomy Tasking Layer (CATL). When fully developed, the NATO standard STANAG 4817 [link when published] will define how uncrewed platforms and existing C2 systems can integrate. The pursuit of interoperability is not intended to constrain the ambition or novelty of innovations. Aligning to the right standards early in the technological development will remove some of the barriers to exploitation and procurement.

AUKUS militaries are seeking systems that offer improved ability to communicate location, status and mission information for crewed and uncrewed UVs without significant attenuation of data, which reduces communications range and accuracy. A successful communications system would enhance the commander's ability to view and synchronise the efforts of undersea systems. Sharing more information using less data via innovative underwater data transmission methods could improve near real time synchronisation.

We understand that different methods of communication come with trade-offs between range, bandwidth, bit rate, latency, security, and directionality, among other criteria. Proposals should clearly articulate how their innovative approach balances these competing factors and provides an overall step change in capability. Any proposal incorporating AI should describe how their solution uses AI at the point that gives greatest decision advantage.

We are looking for…

- Proposals that describe how their solution will perform at various depths and hydrographic conditions
- Solutions that exploit the right mode of communication at every point of the mission to optimise the chance of mission success
- Solutions that could be applied to attritable or survivable systems
- Technologies that are Secure By Design

We are not looking for…

- The development or redesign of new sensors
- Technologies related to the recovery of UUVs
- Novel power and energy technologies, such as batteries or fuel cells

How and where do I submit my proposal?

For this competition there will be a 2-stage submission and evaluation process.

Stage 1

The first stage of the process is a request for submissions that provide a brief overview of the respondent's solution. This will include a short description of the particular innovation, how it meets the competition scope, a rough order of magnitude cost (ROM) for any Stage 2 contract (i.e. to develop the solution to prototype level within a 12 month period) and a brief overview of the respondent's organisation. The ROM cost should not allow for any demonstration costs for the multinational maritime exercise.

Requirements for access to Government Furnished Assets (GFA), for example, information, equipment, materials and facilities, should be included in the submission at Stage 1. AUKUS cannot guarantee that GFA will be available. If GFA are requested, respondents should include an alternative plan in case they are not available.

No security classified information may be included in Stage 1 submissions.

Submissions should be submitted on the requested 'Stage 1 Submission Form' through one of the national submission portals set out below. The choice of portal does not affect evaluation of the submission, as all submissions will be evaluated by all of the AUKUS partners.

Submission Portals

National Organisation	Link to Submission Portal	Submission closing Deadline
DASA	DASA Submission Service	Midday/12:00 on April 28 2025 (BST)
ASCA	ASCA Submission Service	Midday/12:00 on April 28 2025 (AEST)
DIU	DIU Submission Service	Midday/12:00 on April 28 2025 (PST)

Following evaluation in accordance with the evaluation criteria and process set out below, successful submissions will receive an invitation on 26 May 2025 to submit a full proposal into Stage 2 of this competition. The portals to accept these proposals will not open until 2 June 2025.

Unsuccessful submissions will receive notification by the same time. Brief feedback may be provided to respondents.

Respondents should note that the above schedule is subject to change at any time and is not to be relied on by respondents as final and definitive.

Stage 2

Submissions that are successful from the trilateral evaluation for Stage 1 will be invited to participate in the second stage of the competition process and submit a more detailed proposal based on the submission in Stage 1. Each AUKUS partner will decide how many and which successful Stage 1 respondents are invited to participate in Stage 2 by that partner, based on the Stage 1 evaluation outcomes and the available funding. Each AUKUS partner will release their own Terms and Conditions for procurement and contracting to their proposed respondents, and proposals must be submitted into the relevant AUKUS partner's specified portal. Respondents cannot choose which AUKUS partner they will submit a response to, but can choose not to participate in Stage 2.

Information required at this stage will be specified at time of Stage 2 release. This may include:

- Full description of how the proposed innovation meets the challenge
- Full technical description of the technical aspects of the project
- Full breakdown of the project costs
- Clearly identified Deliverables/milestones
- A GANTT chart giving an indication of the project plan
- A full detailed project plan, with work packages and milestones
- A Risk register identifying major business and technical risks, with mitigating actions
- As far as possible details (nationalities, names, function) of key project Team members – please do not send full biographies

The planned closing date for proposals into Stage 2 is 7 July 2025

Respondents should note that the above schedule is subject to change at any time and is not to be relied on by respondents as final and definitive.

Unsolicited responses into Stage 2 will not be accepted.

Supporting activities

Competition Launch webinar

There will be a supporting launch Webinar run by each of the three AUKUS partners. This is scheduled for 3 April 2025. Please attend one of these events to obtain further information on the competition Challenge and process and for an opportunity to ask questions. A copy of the slides will be made available on this site shortly after the event.

To register interest in joining the webinar please use the links below

ASCA AUKUS Launch Webinar

DASA AUKUS Launch Webinar

Booking site for USA event available via email if requested

Link to slides and video recording to be added here after 3 April 2025

Further Help

Please use the following links for any questions relating to the competition.

DASA – accelerator@dstl.gov.uk

ASCA - asca.innovationchallenges@defence.gov.au

In accordance with Australian procurement rules, any formal complaint regarding this procurement is to be directed in writing to: procurement.complaints@defence.gov.au. On

the request, respondents must cooperate in the resolution of any complaint regarding this procurement

DIU - https://www.diu.mil/general-inquiry

Submission of questions

Enquiries received by 10 April will receive a reply before the Stage 1 submission deadline. Enquiries received at a later date may not be able to be answered before the deadline. Where possible, information provided in response to enquiries will be published in the following clarifications document.

See AUKUS Maritime Challenge Clarifications document for reference.

Evaluation criteria and evaluation process

Stage 1

All submissions received by the Stage 1 deadline will be evaluated by representatives from all three AUKUS partners and a joint decision made regarding the suitability of the innovation described. Evaluation criteria will be:

Desirability - The extent to which the proposed solution addresses the Desired Capability Effects, including:

- The degree to which the proposed solution is unique and provides benefit over existing technology; and
- The ability of the proposed solution to provide operational benefit and be introduced into service;

and

Feasibility - The extent to which the proposed solution can be developed, including:

- The soundness, technical merit, and ability of the solution to be developed to the declared state of maturity within the 12-month timeframe of the challenge (from contract commencement); and
- The high-level organisational capability of the innovator to execute the proposed development approach.

After each submission is evaluated against the above criteria, it will then be evaluated on the degree to which it provides value for money.

Stage 2

Stage 2 proposals will be evaluated by representatives from each of the three AUKUS partners against the evaluation criteria specified in the Stage 2 terms and conditions issued by each AUKUS partner.

Specific details regarding the Stage 2 evaluation process will only be released to Stage 1 respondents who have been invited to participate in Stage 2.

How will information be used

Information supplied for evaluation

All information submitted under both Stage 1 and Stage 2 will be shared between AUKUS partners and their service providers for the purposes of undertaking evaluation and administering the Challenge. By submitting a submission or proposal, respondents agree to the transmission, storage and use of their information, including personal information, in and between Australia, the United Kingdom and the United States of America. Respondents should be aware that the laws regarding the protection, use and disclosure of information vary between countries and the information will not necessarily be protected in the same manner or to the same standard as under the law of the country in which a submission is submitted.

Any documents, paper or electronic, will be marked with the necessary security classification and exchanged through approved government channels.

Intellectual Property (IP) rights

The AUKUS partners will treat all submissions in confidence and have no rights to use the IP contained within the submissions except for the purpose of evaluation and administering the Challenge.

IP rights in solutions and work produced by successful respondents under contracts will be retained by respondents. All three AUKUS partners will be granted rights of use for Government/Defence Purposes in the final contract deliverables of successful respondents.

Contracting

Respondents who are successful in Stage 2 will be expected to engage with the relevant AUKUS partner's commercial team in a timely manner to ensure all processes are complete prior to contract execution. The award of a contract is subject to the respondent satisfying that partner's assurance/clarification requirements.

The AUKUS partners have taken steps to harmonise the individual Terms and Conditions (T&Cs) as far as possible. However, each AUKUS partner has certain specific obligations, and these will be reflected in the individual T&Cs.

Terms and Conditions

Terms and conditions for the Stage 1 process can be found at the attached Terms and Conditions document published on AusTender for this Challenge.

Future Exploitation

The Challenge is being conducted to find and fund the research and development of prototypes of, and demonstrate, innovative technologies that address the Desired Capability Effects. The aim is to bring some or all of these innovations into service in one or more AUKUS navies.

The development and demonstration will provide the AUKUS navies with evidence on how an innovation satisfies the mission requirements and an indication of the feasibility and cost of adopting that innovation. The navies will participate throughout the contract period. After the demonstration they may be in a position to determine which innovations may be brought into service and how. However, there is no guarantee that any of the AUKUS partners will seek to bring any of the technologies developed under this Challenge into service. Any such activity would be subject to separate processes, approvals and contracts, and is outside the scope of this Challenge.