



## **BRII Webinar Questions and Answers - AIMS**

### *Using technology for a streamlined path to marine autonomous systems assurance*

#### About this document

This document is used to capture online resources and questions raised during the Business Research and Innovation Initiative (BRII) Regulatory Technology webinar, 'Using technology for a streamlined path to marine autonomous systems assurance'. The webinar was jointly presented by the BRII Program and Challenge Agency – Australian Institute of Marine Science (AIMS) on 7 May, 2021. The webinar participants and potential BRII applicants may find the list of online resources and list of questions and answers useful, along with the webinar recording that can be found on the [business.gov.au/BRII](https://business.gov.au/BRII) webpage.

#### Online resources mentioned during the webinar

- [Grant opportunity guidelines – Feasibility study](#)
- [Fact sheet - Using technology for a streamlined path to marine autonomous systems assurance](#)

#### List of questions and answers from the Q&A box during the webinar

Those with “Live answered” were answered verbally during the webinar. For your reference, the information regarding what time during the recording that question was answered has been noted below.

Q1: Are start-ups eligible? We are a group of experts that have already delivered similar technology projects (intelligent unmanned/robotics) and intend to form a company. Would we be eligible?

A1: Live answered at 27:18

Q2: Does it have to be a company? Or are sole traders or partnership also eligible?

A2: Live answered at 28:16

Q3: With regards to the scope of T&E frameworks for autonomous systems, are we primarily considering small scale operational vessels (drones), or also larger scale marine autonomous systems such as personnel carry and/or operational vehicles?

A3: Live answered at 28:43

Q4: IEEE and ISO typically would come up with standards in this area, which is an ongoing process.

Why is this not enough?

A4: Live answered at 32:35

Q5: What are some of the most challenging regulations to assure RAS-AI systems against currently?

A5: Live answered at 35:45



Q6: Can we get a little more detail about the applicable regulations that need streamlining? How complex are the compliance requirements?

A6: It is the pathway to autonomous systems certification that needs streamlining rather than a specific regulation. However, that process means complying with regulations such as:

- [Convention on the International Regulations for Preventing Collisions at Sea, 1972 \(COLREGS\)](#)
- A variety of Australian maritime safety regulations that AMSA articulates here: [Maritime Safety Regulations](#). For autonomous systems, currently exemptions are sought against ones that are difficult to meet, such as Marine Order 504
- When operating within the Great Barrier Reef Marine Park, we comply with [GBRMPA Regulations](#) and that is through obtaining a Permit to operate. [Here](#) are some guidelines adopted for unmanned platforms (noting aerial drones are the primary consideration). The current process is we apply for a permit based on the platform and use case.
- CASA details their regulations and publishes specific guidance with respect to drones: [here](#).
- When operating close to shore, state safety regulators come into play such as [MSQ](#) in Queensland.
- For some autonomous systems designs, particularly ones with software defined radio implementations for comms, [spectrum management](#) approval is also a consideration:

The considerations for certification are often fundamentally consistent between regulators and it comes down to is the platform safe to operate, will it impact it's surrounding environment (spectrum, water, personnel/animals/plants, other users, objects, protected areas), is its decision making process "trusted" (is it predictable, can you determine its location, if it safe to other users within the vicinity and if not what controls are in place to manage it, and what happens if something goes wrong. A test and evaluation framework for marine assurance would gather the evidence needed to show that the autonomous platform/vessel meets the above points, and therefore creates a consistent compliance framework to streamline autonomous systems against. It provides the critical input to assessing the safety case for a platform which determines whether it can get a certificate of operation approved, or what exemptions it will have outstanding.

The complexity typically comes from retrofitting legislation for manned vessels & divers to autonomous vessels. We know legislation will adapt in time, but a consistent framework is needed before this can occur.

Q7: What is the main 'pain point' we can solve? Is it how long it takes to assure RAS-AI systems, or is the cost? Is it some other aspect?

A7: Live answered at 38:00

Q8: What are the current regulatory burdens and 'pain points' that exist for: (a) a vendor or operator to run an autonomous drone, and (b) for the regulators to their job? What is an example of regulators concerns?

A8: Live answered at 39:28

Q9: What policies and procedures exist today that the AIMS relies upon? Can these be made available? Are there public sources beyond IEEE and ISO?

A9: Live answered at 34:10



Q10: The driverless car industry seem to be tackling this problem from the standards and testing area, and are funded heavily. Underwater often driven by Oil and Gas. Aerial by multiple industries. How would this challenge fit into that context?

A10: Part of the challenge is the transfer of regulatory approval across domains and made more difficult by the desire to have multiple operating platforms in different domains, e.g. running an autonomous underwater vessel in partnership with an aerial drone. How do we integrate those approvals? Can approvals in different domains by different regulators be connected by Blockchain?

Q11: Is the set of requirements that the T&E environment addresses known? If so, can you provide a list of the standards?

A11: Live answered at 41:34

Q12: How can applicants engage with the challenge agency regarding understanding more about the challenge, before submitting the application?

A12: Live answered at 44:55

Q13: Trying to get an idea of the scope of regulation. Do the same regulations and assurance framework, need also to apply to autonomy on recreational vessels, e.g. If someone wanted to retrofit their current boat with some automatic position holding system?

A13: Typically, the same legislation governs all vessels at sea whether they are fully autonomous & unmanned or manned. That is because most legislation was written before the concept of autonomous systems existed. For this challenge we are focusing on unmanned, autonomous (or semi-autonomous) vessels. Recreational vessels fitted with a trolling motor for example are capable of autonomously fixing position, but they still have a licensed master/operator on board in charge of manoeuvring the vessel.

Q14: Will a video recording of these session be provided?

A14: Yes. These will be on the BRII website in a couple of days. <https://www.business.gov.au/grants-and-programs/business-research-and-innovation-initiative>

Q15: Could you provide (at a later stage) a set of these policies that you are aware of today?

A15: Yes

Q16: Are not-for-profit entities eligible for this grant?

A16: Yes, they are able to apply. They will also need to meet all of the other eligibility areas.

Q17: Are testing reports from the vessel owner or maker required currently in regulation process?

A17: Live answered at 46:25

Q18: Who do you envisage will pay for whatever regulatory solution/framework is developed here, and how? Or, is this within the scope of the activity also, i.e. presenting a business/revenue model for how this might be supported?

A18: Live answered at 54:52



Q19: For the new framework, does it need preliminary supporting validations from the platform?

A19: Live answered at 50:55

Q20: Do the operators need to have continuous reporting of the behaviour to prove that they are indeed operating as certified?

A20: Live answered at 53:31

Q21: Is there a general framework of testing reports, e.g. the compulsory items have to be performed?

A21: Live answered at 46:47

Q22: What sort of system do you currently have for operational acceptance testing of the existing systems?

A22: Live answered at 52:13

Q23: In the feasible study stage or later, could the agency coordinate acquiring the testing data from the vessels makers?

A23: Live answered at 56:27

For enquires regarding the BRII program, eligibility and the grant application process, please contact the BRII team at [brii@industry.gov.au](mailto:brii@industry.gov.au)

For any further queries regarding the challenge, please contact the Australian Institute of Marine Science at: [reefworks@aims.gov.au](mailto:reefworks@aims.gov.au)