Australian Institute of Marine Science Response to the Department of Infrastructure, Transport, Regional Development and Communications and the Arts Domestic Commercial Vessel Safety Legislation Review *Draft Interim Safety Report – Phase 1*

Introduction

The Australian Institute of Marine Science (AIMS) welcomes the opportunity to support the Department of Infrastructure, Transport, Regional Development and Communications and the Arts (DITRDCA) review of the Domestic Commercial Vessel (DCV) safety legislation. As Australia's tropical marine research agency, AIMS is committed to the safe and sustainable operation of our research fleet in tropical Australia.

AIMS is also championing the introduction of innovative technologies including uncrewed and autonomous systems to efficiently expand the scale and capability of our at-sea operations. We are the Challenge Agency for the 2022 Department of Industry, Science, Energy and Resources (DISER) Business Research Innovation Initiative (BRII) Challenge to employ technology to streamline the assurance of marine autonomous systems and are also home to ReefWorks – Australia's tropical marine technology test range at our headquarters in Cape Cleveland, North Queensland. We also fully support efforts by the Australian Association for Uncrewed Systems (AAUS), the Trusted Autonomous Systems Defence Cooperative Research Centre (TASDCRC) and with regulators to understand the risks of uncrewed systems and current regulatory requirements.

While we recommend that the DCV legislation be reviewed as a whole to refresh current risk management best practice from fatigue management through to crewing requirements, we will focus this submission on a critical gap in legislation: emerging technologies, especially uncrewed systems.

Response to Draft Interim Safety Report Recommendations

The approach for our response is to provide input on relevant recommendations in response to findings proposed in the Interim Safety Report.

Recommendation 1: *The law should be amended to better reflect a risk-based regulatory model that is flexible and able to adapt to innovation and emerging technologies by:*

- *retaining general safety duties on all parties that have a duty under the current law;*
- *removing the universal requirement for all DCV's to have Certificates of Survey and Operations;*
- *providing that vessels of a type or class specified in the regulations (or Marine Orders) be required to comply with NSCV Standards and/or hold a Certificate of Survey or Certificate of Operations; and*
- *requiring higher risk vessels to comply with the Navigation Act and associated international standards, including the International Dangerous Goods Code and the Standard of Training, Certification and Watchkeeping.*

In addition to the above, it is suggested the law be amended to enable the establishment of regulatory sandboxes, such as at ReefWorks. Regulatory sandboxes are designed to facilitate streamlined, yet safe testing (including accreditation testing) for emerging technology maturation (e.g. uncrewed marine vessels/vehicles), including facilitating new operation scenarios (e.g. multiple simultaneous uncrewed vessel missions), without requiring the full regulatory application overheads as the sandboxes/test ranges have agreed safety controls already in place.

The test and evaluation of new technologies is essential in understanding their risk profile, designing appropriate safety controls and establishing standards. By enabling regulatory sandboxes in Australia, regulators such as AMSA will have the ability to obtain evidence-based insights into the risk profile of emerging technologies without compromising safety. This is essential in facilitating a responsive, safe and evolving future regulatory framework. Regulatory sandboxes will also enable accreditation to be more streamlined, cost effective, and safe for innovators and the marine ecosystem.

This regulatory streamlining for uncrewed technologies is something countries worldwide are striving to achieve. If DITRDCA enables a pathway in Australia, then Australia will likely attract significant international industry to our shores, which in turn will boost our blue economy, sovereign skills and sovereign industry capability.

Recommendation 10: *The marine surveyor accreditation scheme should be reviewed to make it fit for purpose. As part of that review, consideration should be given to introducing (among other matters):*

- *a tiered accreditation scheme according to size and complexity of the vessel;*
- *a formal continuing professional development program;*
- *a regular random audit of surveyor approvals and subsequent standards applied;*
- *increasing the approval powers for accredited marine surveyors;*
- *greater flexibility in who can be accredited as a marine surveyor, and expanding categories of accreditation to adequately cater for the skills that will be required to assess the performance of new and emerging technologies; and*
- *a formal rulings program to provide certainty for surveyors and operators.*

In addition to the above, uncrewed systems will continue to require niche, interdisciplinary skillsets to establish comprehensive safety assessments. To efficiently conduct these assessments, it is suggested DITRDCA also examine broader collaborative options, potentially across air-land-sea domains, to access the specialist knowledge needed to assess and accredit the safe construction and operations of uncrewed systems. Digital technology simulation solutions may also form part of the picture.

Recommendation 12: AMSA should set up a taskforce to consider how to optimise and future proof the National Law framework to regulate new and emerging technologies.

- The taskforce should consider whether definitions in the National Law remain fit for purpose in the context of development, deployment and operation of new and emerging technologies.

While an AMSA taskforce will greatly assist in future proofing the National Law framework, it is suggested that DITRDCA also consider the following:

- Resourcing initiatives to share approaches and learnings between AMSA, other regulators (such as the Civil Aviation Safety Authority and the Great Barrier Reef Marine Park Authority) and community leaders with regards to the regulation of emerging technologies. There is a need for a multi-domain approach because uncrewed technology operations that cross air and sea domains are on the horizon. DITRDCA has the opportunity to align regulatory considerations and future national infrastructure where appropriate, which will enable a cost-effective and consistent national approach for introducing emerging technologies into operations.
- As mentioned in our response to Recommendation 1, it is recommended that DITRDCA amend the national law to facilitate the establishment of regulatory sandboxes in Australia.

Conclusion

The Interim Safety Report – Phase 1 captured the key issues AIMS has encountered with introducing emerging technologies under the DCV legislation framework. In parallel to establishing an emerging technology taskforce within AMSA, we encourage DITRDCA to make provisions in the DCV legislation to enable the establishment of regulatory sandboxes for safely testing emerging technologies. This will enable AMSA and DITRDCA to be informed of technology risks, required controls, and enable lessons learnt to be shared between innovators and regulators in a safe, controlled manner without excessive overheads on innovators or regulators.

We also encourage DITRDCA actively examine avenues to share emerging technology regulatory approaches and learnings across air-land-sea (and potentially space) domains, and link in specialist industry support in niche technology areas.

These additional considerations will place AMSA and DITRDCA in a position where they can be informed of evolving technology risks and industry adaptations to mitigate them and attract innovators worldwide to mature their technologies in Australia without compromising the safety of our oceans. It will also provide certainty around the path to market for new technologies and their application, which will encourage the development of Australia's uncrewed and autonomous systems industry.

AIMS welcomes the opportunity to work with DITRDCA to establish a regulatory approach that future proofs our nation for safely establishing a sustainable marine autonomous systems sector in Australia.