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RINA&IMarEST Technical Presentation

Autonomous Surface Vessel Design Considerations

Presenter	Torsten Lau, Eliah Cameron and Michael Reilly Gibbs & Cox Australia
Date	Wednesday 2 October 2024
Time	6:00 pm AEST refreshments 6:30 pm AEST presentation
Venue in person	Henry Carmichael Theatre Level 1, Sydney Mechanics School of Arts 280 Pitt St, Sydney
online	URL and password will be advised prior to the presentation Registration for the presentation is required (see below)

The Environmentally-powered Modular Autonomous Platform System (EMAPS) was designed around a set of fixed parameters. The design was limited by road safety limits associated with trailer width, length and maximum weight, and the ability to move two EMAPS stacked in a 20 ft high-cube ISO container. These design constraints and the need for stability, payload capacity and modularity, power regeneration, autonomous operation and the need to operate in shallow waters and inshore currents led to a number of design decisions which are reflected in the EMAPS prototype.

This presentation will discuss the lessons learned during design, build and set-to-work of the EMAPS Uncrewed Surface Vessel (USV). In particular, we will discuss the design constraints, the lessons we learned and applied in our first and second builds; design impacts recognised due to the nature of the EMAPS autonomous USV, such as trading off habitation space for payload, and power and control systems required for remote and autonomous operation. We will also discuss the systems required to implement an autonomous system in a marine environment and the challenges involved.

The presentation will unfold as follows:

Torsten Lau	EMAPS lessons identified as related to design constraints
Eliah Cameron	Weight allocations and differences from crewed vessels
Michael Reilly	Autonomous mechanisms and control systems

Registration Registration for this presentation may be completed at

<https://forms.gle/sa2RMC5gUGgXD43B9>

Registrations close at 6:00 pm AEST on Tuesday 1 October. Registration for in-person attendance is required to gauge numbers for catering. Those registered for online participation will be emailed the Zoom meeting ID and passcode on the evening of 1 October.

Register and put this date in your diary now, and we look forward to you joining the presentation.