Hyperion Systems to Build First 3D Printed Uncrewed Surface Vessel in the Southern Hemisphere

Image caption: Hyperion CEO Joshua Wigley and Greenroom COO Harry Hubbert with ASTRA 3D printed vessel
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Hyperion Systems has unveiled the southern hemisphere's first 3D printed Uncrewed Surface Vessel (USV), marking a major milestone for advanced manufacturing and autonomous maritime capability in Western Australia (WA).

Designed by WA marine architect Versatile Marine and powered by Greenroom Robotics' AI and autonomy software, the ASTRA 460

will be manufactured in Henderson Western Australia by Hyperion Systems, demonstrating how next-generation vessels can be built faster, more affordably and with sovereign Australian capability.

The project was officially unveiled today at the Indian Ocean Defence and Security conference (IODS) by WA Defence Minister Paul Papalia alongside the first public viewing of Hyperion's deployable "factory in a box" TitanCell.

The 4.6m ASTRA hulls will be 3D printed using Large Format Additive Manufacturing (LFAM) and recycled polymer waste by a consortium led by Hyperion Systems with integration support from key Australian stakeholders.

The autonomous navigation and control system will be delivered by Greenroom Robotics' GAMA platform, providing a proven solution that is flexible and readily scalable to varying USV configurations.

Hyperion CEO Joshua Wigley said the vessel hull will be manufactured in approximately 40 hours using LFAM 3D printing, compared to at least 4-6 weeks using traditional boat-building methods.

"This dramatic reduction in production time highlights the transformative potential of additive manufacturing for rapid maritime capability and sovereign industrial resilience," Mr Wigley said.

Greenroom Robotics co-founder and COO, Harry Hubbert said that Greenroom's autonomy stack is ideally suited to Hyperion's rapidly reconfigurable 3D printed USV platforms.

"In contested environments, the ability to quickly adapt a vessel to meet evolving mission requirements delivers a significant asymmetric advantage," Mr Hubbert said. "Hyperion's 3D printed USVs can deliver almost real-

time customisation to suit the specific operating context.”

“In a matter of days, a vessel can be printed, autonomy enabled and on the water. This opens up endless possibilities for rapid, scalable and distributed maritime defence.”

The ASTRA 460 will be among the world’s first LFAM 3D-printed USVs and a larger 8m initial prototype is planned to be supplied to a European navy for use at a major naval exercise later in 2026.

Subject to successfully completing a series of rigorous sea trials which will start later this month, the fully autonomous vessel will feature:

· Top speed approximately 40 knots

· Cruising speed between 20-30 knots

· Range of up to 180-200 kilometres

· Multi-mission capability, including covert movement of small teams

· Operation across a range of sea states

· Modular payload flexibility for surveillance, security and defence roles.

Mr Wigley said combining Hyperion’s AI development toolkit with variable scale LFAM printing capacity will mean the ASTRA will be the first of a series of USVs which will be produced in many sizes and capability configurations that can be printed either in Henderson of deployed and printed using Hyperion’s “Titan Cell”.

“We are immediately provisioning to build 10 units a month and can scale to over 100 as needed,” he said.

Uncrewed Surface Vessels have rapidly become a critical component of modern defence capability

ASTRA Project Manager Jacob Kleinman said recent conflicts have demonstrated the effectiveness of USVs as cost-efficient, low-risk platforms that enhance maritime surveillance, reconnaissance and operational reach while reducing risk to personnel.

“USVs provide strong force-multiplication advantages. They are significantly cheaper to build and operate than traditional crewed vessels, enable persistent maritime presence, and act as force multipliers for manned fleets,” he said.

“We see the ASTRA playing a key role supporting missions including intelligence, surveillance and reconnaissance, border protection and security operations. Its modular payload capability also allows rapid reconfiguration for mission-specific roles.”

The ASTRA project brings together leading defence industry players to position Western Australia at the forefront of advanced maritime manufacturing, while strengthening Australia’s sovereign capability in autonomous maritime systems.

TitanCell also on display

Mr Wigley said the IODS conference also provided a unique opportunity to publicly show for the first time the deployable anywhere TitanCell which can be used to manufacture USVs and a range of other products.

Designed as a deployable “factory-in-a-box”, the TitanCell combines advanced robotics, 3D printing and in-house recycled polymer technology to manufacture products such as marine infrastructure, modular housing components, culverts, pontoons and autonomous vessel hulls.

By using difficult-to-recycle plastics, including material recovered from decommissioned resources industry infrastructure, the TitanCell supports sovereign manufacturing

capability, reduces waste and carbon emissions and allows advanced manufacturing to be deployed directly to remote, regional or disaster-affected areas where traditional supply chains are limited.

The commercialisation of the TitanCell was accelerated via a $385,000 matched funding grant provided under the Australian Government’s Industry Growth Program.