



## **SEATRIUM-TCOMS OCEAN LAB ESTABLISHED TO ADVANCE DESIGN AND OPERATIONAL PERFORMANCE OF SMART OCEAN SYSTEMS AND INFRASTRUCTURE**

**SINGAPORE, 28 April 2023** – Seatrium Limited (Seatrium) and the Technology Centre for Offshore and Marine, Singapore (TCOMS) announced the establishment of the Seatrium-TCOMS Ocean Lab to advance the design and operational performance of smart ocean systems and infrastructure. A master research collaboration agreement was signed on 27 April 2023 by the Chief Executive Officers of Seatrium and TCOMS, Mr Chris Ong and Professor Chan Eng Soon respectively, and witnessed by Minister of State for Trade and Industry Ms Low Yen Ling, Mr Mark Gainsborough, Chairman of Seatrium, and Mr Frederick Chew, Chief Executive Officer of the Agency for Science, Technology and Research (A\*STAR).

With this agreement Seatrium and TCOMS will jointly pursue five main research thrusts centred on offshore renewable energy such as floating offshore wind systems; cleaner oil and gas solutions including smart floating production platforms; smart marine systems such as autonomous vessels and green ships; new energy solutions including ammonia (NH<sub>3</sub>), hydrogen (H<sub>2</sub>) and Carbon Capture, Utilisation and Storage (CCUS); as well as digitalisation & data analytics for enhanced predictability and reliability of ocean systems and its infrastructure.

The agreement builds on joint projects conducted over the past five years between TCOMS and Seatrium, ranging from the digital twinning of autonomous tugs and offshore energy systems to the design evolution and validation of future offshore wind platforms and marine infrastructure. Some of the projects made use of the TCOMS ocean basin facility which can recreate extreme ocean conditions that may be faced by ocean systems and infrastructure across their asset lifecycle. Information derived from numerical simulations and physical tests in the ocean basin enable the industry's designers and TCOMS' scientists to validate how the ocean systems will perform. They will also use this knowledge to enhance their system's field performance, through technologies such as digital twinning enabled by smart sensing, artificial intelligence and data analytics.

Mr Chris Ong, CEO of Seatrium, said, "We are glad to partner with a world class research centre like TCOMS to advance our capabilities in the area of offshore renewables, new energy and cleaner solutions for the offshore, marine and energy industries. This collaboration will allow us to accelerate our strategic growth into the renewable and clean energy segments and further diversify our business portfolio into new areas of offshore renewables, electrification, gas value chain as well as carbon capture and storage

solutions. Co-innovation by talents in both organisations will enable testing, simulations, digital twinning and analysis to be performed in this world class ocean basin facility. We look forward to push new boundaries of engineering excellence to create transformative and sustainable offshore, marine and energy solutions for a greener future.”

“Singapore is putting strong emphasis on the development and commercialisation of innovative sustainability solutions, to achieve our nation’s long-term climate goals and to capture global opportunities in the green economy. Open innovation and public-private partnerships will be key. We look forward to the strong partnership between TCOMS and Seatrium to co-innovate new solutions, particularly in the maritime domain, and to solve real-world challenges in the global transition to a low-carbon economy,” said Mr Frederick Chew, CEO of A\*STAR.

Professor Chan Eng Soon, Chief Executive Officer of TCOMS, said, “We are delighted to have the opportunity to support Seatrium in their transformative journey to develop innovative engineering solutions for the offshore, marine and new energy industries, especially in advancing the design and operational capabilities of ocean systems deployed in challenging marine environments. With advanced capabilities such as cyber-physical modelling and simulation, TCOMS researchers and scientists work closely with our industry partners to co-create solutions and stress-test solutions for performance, safety and sustainability. Together with Seatrium, we will also seek to nurture Singapore’s engineering talent, particularly our younger generation of engineers, to create and build future ocean systems and infrastructure.”

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Enclosed:

## **ANNEXES**

- A** Picture of signing ceremony for establishment of Seatrium-TCOMS Ocean Lab
- B** Facts and features of the TCOMS ocean basin facility

### **For media queries and clarifications, please contact:**

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## **About Seatrium Limited**

Seatrium Limited provides innovative engineering solutions to the global offshore, marine and energy industries. Headquartered in Singapore, the Group has 60 years of track record in the design and construction of rigs, floaters, offshore platforms and specialised vessels, as well as in the repair, upgrading and conversion of different ship types.

The Group's businesses are supported by five commercial units – Oil & Gas Newbuilds and Conversions; Renewables and New Energies; Specialised Shipbuilding, Repairs & Upgrades and Technology and New Product Development – which provide a diverse suite of products and services, with a growing focus on sustainable solutions to advance the global energy transition and maritime decarbonisation.

As a premier global player offering offshore renewables, new energy, and cleaner offshore & marine solutions, Seatrium is committed to delivering high standards of safety, quality, and performance to its customers who include major energy companies, owners of floating production units, shipping companies and cruise and ferry operators.

Seatrium operates shipyards and other facilities in Singapore, Brazil, China, Indonesia, Japan, the Philippines, Norway, the United Kingdom and the United States.

Discover more at [www.seatrium.com](http://www.seatrium.com).

## **About TCOMS**

The Technology Centre for Offshore and Marine, Singapore (TCOMS) is a national R&D centre dedicated to the Marine & Offshore Engineering, Maritime and other Ocean sectors. It integrates research and industry expertise to co-create, validate and stress test innovative concepts and solutions to address real world challenges. A core feature of TCOMS is the next-generation ocean basin facility which is equipped with advanced wave and current generation systems to simulate physical ocean environment and complex scenarios that offshore platforms, ships and underwater systems operate in. As part of a network of national platforms coordinated by the Agency for Science, Technology and Research (A\*STAR), TCOMS brings together researchers from the public sector, academia and industry, and fosters R&D capabilities to position Singapore as a global hub that creates, builds and manages future ocean systems and solutions.

TCOMS is a joint venture between A\*STAR and the National University of Singapore (NUS), supported by Singapore Economic Development Board (EDB) and Maritime and Port Authority of Singapore (MPA).

## ANNEX A

### **SIGNING CEREMONY FOR ESTABLISHMENT OF SEATRUM-TCOMS OCEAN LAB**



*Signing of Master Research Collaboration Agreement to establish Seatrium-TCOMS Ocean Lab by (front left to right) Mr Chris Ong, CEO of Seatrium, and Professor Chan Eng Soon, CEO of TCOMS. The signing was witnessed by Minister of State for Trade and Industry Ms Low Yen Ling (second row, centre), Mr Mark Gainsborough, Chairman of Seatrium (second row, left), and Mr Frederick Chew, CEO of A\*STAR (second row, right).*

## **ANNEX B**

### **FACTS AND FEATURES OF THE TCOMS OCEAN BASIN FACILITY:**

#### **1) Measurements:**

- The effective test area of the ocean basin measures 60 by 48 metres, with a variable depth of up to 12 metres.
- The length of the ocean basin, which is 60 metres, is as long as five 40-seater buses parked end to end.
- The depth of the ocean basin is as tall as a six-storey building.

#### **2) Technical features:**

- Capable of simulating operating environments in ultra-deepwater
- Capable of generating waves of up to one metre in height, using a 180 flap-type wave generation system
- Six layers of flow control to simulate even the most complex of water current flows
- A 2,500 kg capacity towing carriage capable of towing objects that weigh as much as two sedan cars at speeds of up to 15 kilometres per hour.