PSA Begins a New Chapter in Singapore with Tuas Port, Building an Ecosystem to Synergise Port Operations & Co-create Supply Chain Orchestration

PSA Corporation Limited (PSA) celebrated a significant milestone today with the Prime Minister of Singapore, Mr Lee Hsien Loong, placing a torch on the grounds of Tuas Port to symbolize the start of a new and exciting chapter in the nation’s rich maritime history.

Tuas Port represents the future of the Singapore Transhipment Hub. With 26 kilometres of deepwater berths (up to 23 metres chart datum), and capable of handling 65 million 20-foot equivalent units (TEUs) annually, Tuas Port is designed to meet and exceed the future demands of the world’s largest mega-vessels, mega-alliances, and mega-networks.

To deliver new heights of efficiency, productivity, and environmental sustainability, Tuas Port incorporates innovations such as intelligent data-driven operations management systems, wharf and yard automation, full-electric automated guided vehicles, as well as smart engineering and power management platforms (see Annex A for more details of these technologies).

To be progressively developed in four phases, Tuas Port’s first berths are scheduled to commence operations in 2021. When completed in 2040, Tuas Port is anticipated to be the world’s single largest fully automated terminal in the world.

Beyond container handling capabilities, Tuas Port will also be a key nucleus and multiplier of a wider Tuas Ecosystem. Comprising synergistic industries and supply chain nodes interlinked by a seamless mesh of physical and digital connections, the Tuas Ecosystem is poised to orchestrate creative supply chain solutions to further the connectivity of Singapore’s future economy.

Mr Peter Voser, Group Chairman of PSA International, said, “Tuas is an opportunity for us to reinvigorate and reimagine. By venturing beyond the physical port into complementary logistics capabilities and integrated digital systems, PSA will take the lead in transforming the industry to better deliver holistic cargo solutions for our customers and promote greater supply chain efficiency. The integrated Tuas Ecosystem sets the stage for Singapore to not only consolidate our position as the world’s largest transhipment hub, but also reinvent ourselves as a leading global supply chain and logistics centre.
I would like to extend my deepest gratitude to the Government, our customers and business partners for their unwavering support over the years. And to our dedicated team of staff, unions and management, my heartfelt thanks to each of you for being alongside PSA as we celebrate this significant milestone in our journey thus far.”

Earlier in the morning, PSA held a torch relay which started from its first container berth in Tanjong Pagar Terminal. Accompanied by a contingent of PSA staff, unions and management, the torch made its way through Keppel and Brani Terminals before being transported by prime mover to Pasir Panjang Terminals. From there, the torch was conveyed by a flotilla of PSA Marine tugs and harbour craft to Tuas Port. The relay route signifies the development and transformation of PSA over the years, and the passing of the torch by different PSA teams symbolizes unity and continuity as the organisation evolves from generation to generation.

PSA’s three city terminals at Tanjong Pagar, Keppel and Brani will move to Tuas Port by 2027. By 2040, Pasir Panjang Terminals will be consolidated at Tuas Port.

Enclosed:
Annex A: Fact Sheet on Future Tuas Port Technologies

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Issued by PSA Corporation Limited

About PSA Corporation Limited (PSA)

PSA Singapore operates the world’s largest container transhipment hub in Singapore, handling 36.31 million TEUs of containers in 2018. With connections to 600 ports globally, shippers have access to daily sailings to every major port in the world, operating 24/7 all year round. Beyond port operations, PSA also offers cargo solutions to customers operating in advanced manufacturing, cold chain, e-commerce, and energy & chemicals. This value adding service is enabled by CALISTA™, a digital platform that facilitates trade and helps shippers to better manage their physical movement of goods, trade financing and compliance.

PSA Singapore is a fully owned subsidiary of PSA International, a leading global port group and a trusted partner to cargo stakeholders around the world. With flagship operations in Singapore and Antwerp, PSA’s portfolio comprises a network of over 50 coastal, rail and inland terminals in 19 countries. Drawing on the deep expertise and experience from a diverse global team, PSA actively collaborates with its customers and partners to deliver world-class port services alongside, develop innovative cargo solutions and co-create an Internet of Logistics. As the partner of choice in the global supply chain, PSA is “The World's Port of Call”.

Visit us at www.singaporepsa.com

*Note to Editors: PSA ceased using the name of “Port of Singapore Authority” in 1997 when it became a corporatised entity. The company should be referred to as “PSA Corporation Ltd”, “PSA Singapore” or simply “PSA”.*
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Annex A: Fact Sheet on Future Tuas Port Technologies

1. Automated Wharf Operations

With an outreach of 25 container rows across and a lifting height of 55 metres, PSA’s automated double-trolley quay cranes are well-primed to serve the world’s largest mega-vessels calling at Tuas Port.

By automating both quay crane operations and wharf supervisory functions, PSA is leveraging technology to eliminate repetitive tasks and allow its staff to focus on higher order deliverables.

Concurrently, PSA is working on video analytics and robotics-based solutions to reduce the dependency on manual labour for coning and de-coning operations at the wharf side.

2. Automated Horizontal Transport

At Tuas Port, horizontal transport of containers between wharf and yard will be undertaken by a fleet of driverless Automated Guided Vehicles (AGVs) operating round the clock. Bi-directional and equipped with all-wheel steering, the AGVs’ versatility and manoeuvrability will be fully harnessed by an intelligent fleet management and optimization system to move containers efficiently around the port.

PSA’s AGVs are powered by a fully electric drivetrain with regenerative braking capabilities. Coupled with a network of fast-charging portals, PSA’s AGV platform delivers maximum environmental sustainability without compromising on operational availability.

3. Yard Automation

PSA’s next generation of automated Rail Mounted Gantry (aRMG) cranes rely on a network of advanced optical cameras, laser sensors and communications protocols to operate with precision, consistency and speed. Like the AGVs, PSA’s aRMGs are fully electric with zero direct emissions. They also feature regenerative drive systems that return power to the grid during container lowering movements.

From the comfort of a command centre, each crane specialist will be able to remotely supervise the operation of multiple aRMGs. He or she will also be aided by AI-based planning platforms to better forecast and optimise yard operations across the port.

4. Smart Engineering

Tuas Port will integrate both predictive and prescriptive maintenance capabilities to intelligently reduce equipment downtime and increase the productivity of the engineering team.
Predictive maintenance leverages sensors and data analysis to pre-empt and prevent failures on a specific asset before occurrence, while prescriptive maintenance applies Artificial Intelligence and Machine Learning to the same data sets to provide a deeper understanding of the root causes affecting reliability across the PSA fleet.

PSA will also be engaging specialist partners to co-develop autonomous aerial and underwater drone solutions to detect and rectify faults at hard-to-access parts of our port equipment and infrastructure.

5. Integrated Operations Orchestration

Tuas Port’s operations will be centrally orchestrated by the latest iteration of PSA’s proprietary Terminal Operating System (TOS). Scalable and secure, the platform features data analytics and Artificial Intelligence / Machine Learning capabilities to optimize automated operations and bring terminal efficiency to a new level.

Despite its sophistication, the new TOS is designed with the human user in mind. By delivering data-driven insights via intuitive interfaces and dashboards, the new TOS will empower managers to make even better-informed decisions in real time.

6. Smart Grid

Tuas Port’s network of energy efficient buildings and equipment will be powered via a smart grid designed with efficiency and resilience in mind. The smart grid will allow the port’s energy consumption to be better managed and recycled across peaks and troughs, and reduce the incidence of power-related disruptions. In combination with the use of renewable sources such as solar power, and cleaner fuels such as LNG, Tuas Port’s smart grid represents a significant step in realising the sustainability goals of the maritime supply chain.