



JOINT NEWS RELEASE

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MPA and Partners Sign Agreements for 3D Printing Facility and Applications in Maritime Sector

The Maritime and Port Authority of Singapore (MPA) signed two Memoranda of Understanding (MoU) for Additive Manufacturing (AM), also known as 3D printing, at the 6th Global AM Summit held on 17 and 18 October 2018 at the Changi Exposition Centre. The signing ceremony was witnessed by Dr Lam Pin Min, Senior Minister of State, Ministry of Transport and Ministry of Health, and Ms Choy Sauw Kook, Assistant Chief Executive and Director-General, Quality and Excellence, Enterprise Singapore.

2 The two MoUs are:

- a) An MoU with PSA Corporation Limited (PSA), the National Additive Manufacturing Innovation Cluster (NAMIC) and 3D MetalForge Pte Ltd (3D MetalForge) to establish the world's first on-site AM production facility for port applications; and
- b) An MoU with NAMIC and the Singapore Shipping Association (SSA) to collaborate on an AM Joint Industry Programme (JIP) for marine parts.

Additive Manufacturing for Port Applications

3 The AM rapid production facility will be strategically located at Pasir Panjang Terminal, where PSA is testing port technologies for current and future terminals. It will feature state-of-the-art printers capable of producing AM parts for port equipment. The facility will also use a specialised maritime digital cloud supported by Blockchain technology for more secure file transfers.

4 The facility's location also leverages PSA's parts supplier base and facility operations to support just-in-time inventory. This move towards digitised inventories reduces the need to hold excess inventory, which lowers storage costs, while shortening turnaround time from weeks to days due to improved availability of spare

parts. In the long run, PSA will expand the scope of these services to the wider maritime industry, including ship owners, to help build its business adjacencies.

5 Mr Ong Kim Pong, Regional CEO Southeast Asia of PSA International, said, “In close collaboration with EDB, we have learnt that the era of Additive Manufacturing is showing pervasive importance in industry transformation. Within our maritime sector, we foresee widespread adoption within the immediate horizon. I am heartened that PSA, alongside MPA, NAMIC and 3D MetalForge can be pioneers in developing this technology for use in our industry. Co-creating new innovations including digitising inventories will create opportunities to raise maritime productivity to the next level.”

Additive Manufacturing for Marine Parts

6 The JIP is focused on establishing the commercial viability, technical feasibility and regulatory compliance behind the use of AM for marine parts, and will bring together a comprehensive ecosystem of partners from across the value chain. This collaboration will strengthen Singapore’s role as a hub for ship supplies, and provide the maritime industry with clarity on the challenges, opportunities and potential test cases for deploying AM for marine parts.

7 Mr Andrew Tan, MPA's Chief Executive, said, "As a leading maritime hub, Singapore firmly believes that the maritime industry should embrace new technologies such as additive manufacturing. The digitalisation of the maritime sector in all its aspects is not a matter of how but when.”

8 Mr Steen Brodsgaard Lund, Councillor and Chairman of Singapore Shipping Association (SSA) Technical Committee, said, “SSA is excited to work with MPA to provide a platform that connects ship owners and managers with the cutting-edge innovation cluster, NAMIC, to leverage digital technology in Additive Manufacturing of marine parts. This MoU represents SSA’s continuous efforts in embracing new technologies to enhance productivity and efficiency in the maritime industry.”

9 Dr Ho Chaw Sing, NAMIC Managing Director, said, “From a historical trading stop to a world-class global hub port and maritime centre, Singapore has not rested on its laurels. Digitalisation with on-demand manufacturing will continue to accelerate. Leveraging on Singapore’s innovation eco-system in 3D printing, robotics and blockchain technology, NAMIC is delighted to partner with MPA, PSA and SSA on the next wave of transformation to bring our world-leading global hub port to the next level.”

<End of release>

Jointly issued by MPA, NAMIC, PSA and SSA

About the Maritime and Port Authority of Singapore (MPA)

The Maritime and Port Authority of Singapore (MPA) was established on 2 February 1996, with the mission to develop Singapore as a premier global hub port and international maritime centre (IMC), and to advance and safeguard Singapore's strategic maritime interests. MPA is the driving force behind Singapore's port and maritime development, taking on the roles of Port Authority, Port Regulator, Port Planner, IMC Champion, and National Maritime Representative. MPA partners the industry and other agencies to enhance safety, security and environmental protection in our port waters, facilitate port operations and growth, expand the cluster of maritime ancillary services, and promote maritime R&D and manpower development.

About the National Additive Manufacturing Innovation Cluster (NAMIC)

The National Additive Manufacturing Innovation Cluster (NAMIC) is a national programme initiative led by NTUitive, the Innovation and Enterprise Company of Nanyang Technological University, to translate upstream 3D printing research in universities and Institute of Higher Learnings (IHLs) into downstream commercial applications, as well as lower barriers for companies to incorporate additive manufacturing technologies into their core businesses. It is supported by the National Research Foundation, Prime Minister's office, in partnership with SPRING Singapore and the Singapore Economic Development Board. Since its formation on 1 October 2015, we have reached out to over several hundred local and global private and public enterprises to enable additive manufacturing technology adoption as part of their business.

NTUitive is the innovation and enterprise company of Nanyang Technological University, Singapore.

<http://namic.sg>

About PSA Corporation Limited (PSA)

PSA Singapore operates the world's largest container transshipment hub in Singapore, linking shippers to an excellent network of major shipping lines with connections to 600 ports globally. Shippers have access to daily sailings to every major port in the world at this mega hub. Its excellence in port operations has consistently been recognised by the shipping community. In 2018, it won the "Ports and Terminals Award" at the Seatrade Maritime Awards Asia. PSA Singapore handled 33.35 million TEUs of containers in 2017. 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".

About the Singapore Shipping Association (SSA)

The Singapore Shipping Association (SSA) represents a wide spectrum of shipping companies and other businesses allied to the shipping industry. It is a national trade association formed in 1985 to serve and promote the interests of its members and to enhance the competitiveness of Singapore as an International Maritime Centre. To achieve its objectives, the SSA engages and collaborates with the shipping industry key stakeholders and is a trusted advisor and partner to related government agencies. SSA is also actively involved in promoting the interests of shipping in Singapore and internationally. Additionally, the SSA co-operates with other regional and international shipping organizations to protect the marine environment and promote freedom and safety at sea. Despite being a not-for-profit organization, SSA strives to give back generously on behalf of its members, to the community in Corporate Social Responsibilities activities.

Currently, the SSA represents over 460 member companies; comprising ship owners and operators, ship managers, ship agents and other ancillary companies such as shipbrokers, classification societies, marine insurers, bunker suppliers, maritime lawyers, and shipping bankers amongst others.

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