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## **Sea Transport Industry Transformation Map to Drive Singapore's Vision to be a Global Maritime Hub for Connectivity, Innovation and Talent**

*Grow sector's value-add by S\$4.5 billion and create over 5,000 good jobs by 2025*

Dr Lam Pin Min, Senior Minister of State (SMS) for Ministry of Transport and Ministry of Health, launched the Sea Transport Industry Transformation Map (ITM) at the annual Singapore Maritime Foundation New Year Cocktail Reception this evening.

2. Developed by the Maritime and Port Authority of Singapore (MPA) in partnership with the industry, unions and other government agencies, the Sea Transport ITM builds on MPA's strategic long term plans to develop Singapore's next-generation port and strengthen our international maritime centre (IMC). Specific initiatives have been laid out under the Sea Transport ITM to catalyse innovation, drive productivity improvements, as well as enhance the skills of the maritime workforce. **The aim is to grow the sector's value-add by S\$4.5 billion and create more than 5,000 good jobs by 2025.**

3. At the ITM launch, five Memorandums of Understanding (MOUs) were signed between MPA and various tripartite partners to underscore the collective commitment of stakeholders to drive innovation, productivity and human capital development in the transformation of Maritime Singapore. (Please refer to Annex A to E for more details).

## **Maritime Singapore – A Key Pillar of Singapore’s Economy**

4. The maritime industry contributes 7% of Singapore’s Gross Domestic Product (GDP) and employs over 170,000 people. In 2017, spurred by improvements in global trade growth and the repositioning of major shipping alliances, Singapore’s container throughput grew by 9% to 33.7 million TEUs, from 30.9 million TEUs in 2016. (Please refer to Annex F for Port of Singapore’s Performance in 2017.)

### **Promoting Connectivity, Innovation and Talent**

#### *Building up a Well-Connected and Vibrant IMC cluster*

5. Singapore will continue to strengthen its IMC to enhance its long-term competitiveness and value proposition to shipping companies and maritime service providers. We will also continue to build up our connectivity to maritime clusters overseas to harness the extensive network effects of such linkages. This will help us remain a leading and vital node in the global maritime network.

6. Companies like CMA-CGM, COSCO and the merged Ocean Network Express (ONE), have grown their corporate presence in Singapore. For instance, CMA-CGM has established its Asia regional office, its global Navigation and Port Operations Centre and, more recently, its Asian digital activity hub in Singapore. It has also entered into a container terminal joint venture with PSA. ONE has chosen Singapore as its global liner headquarters; COSCO has expanded its joint-venture with PSA for a third berth at Pasir Panjang Terminal. These activities in turn have drawn in other maritime services providers such as insurance, broking, financial services, classification societies, P&I Clubs, legal and arbitration.

7. To sustain Singapore’s competitive advantage and strengthen port connectivity, MPA is also working with the industry to develop the port eco-system in adjacent sectors, such as logistics and e-commerce.

#### *Enhancing Productivity and Innovation*

8. To forge ahead, Singapore is investing in new port capabilities that will capitalise on emerging technologies arising from Industry 4.0. Tuas Port will be an efficient and intelligent port that harnesses data analytics to optimise operations such as just-in-time vessel arrivals and the Maritime Single Window for quicker port clearance. Under the MPA-PSA Port Technology Research and Development Programme (PTRDP), MPA and PSA will jointly step up R&D and capability development in the areas of digitalisation, connected community systems as well as automation and robotics. A fleet of 30 automated guided vehicles (AGVs) have been deployed in a trial with automated yard cranes and quay cranes in the Pasir Panjang

Terminal. Deployment of such automated systems will be scaled up in the Tuas Port. MPA also renewed the MOU with Jurong Port on “Next Generation Multipurpose Port Programme” in 2017 to support efforts to digitalise multipurpose port operations. The Jurong Port Living Lab launched last October will provide opportunities for Jurong Port to experiment with innovative ideas and deploy leading edge technologies to enhance productivity.

9. Innovation will remain key as Singapore develops future capabilities and solutions built on emerging technologies such as autonomous systems, robotics, data analytics and artificial intelligence. To drive this next phase of growth, MPA will support companies to embark on innovation and productivity-driven growth by putting in place an enabling environment and infrastructure. The MPA Living Lab will offer technology developers and industry partners a rich maritime data platform and a real operating environment at the port to co-develop and pilot innovative solutions. MPA will also work with stakeholders to promote greater sharing of data and information within the industry. In addition, new research centres of excellence at NTU and NUS will deepen Singapore’s maritime R&D capabilities and accelerate technology transfers and spin-offs to the industry.

10. Singapore can also leverage digital solutions to enhance operational efficiencies and provide greater value to its customers. For instance, the use of Electronic Certificates (E-Certs) onboard Singapore-flagged vessels since 2016 has helped reduce the administrative burden and costs associated with traditional paper certificates. MPA, Singapore Customs and the Singapore Shipping Association will therefore be jointly looking at the digitalisation of trade and maritime documentation in the industry to co-develop cross-sector solutions, such as the development and adoption of electronic bills of lading (e-BL), which would facilitate more efficient trade flows through Singapore and bring about benefits to the wider supply chain ecosystem. (Please refer to Annex B for more details).

### *Creating New Jobs, Developing a Future-Ready Workforce*

11. As the maritime industry transforms and grows, more than 5,000 good jobs will be created in the next decade. Those in more traditional job roles will undergo skill upgrading as jobs evolve with increasing automation and digitalisation.

12. To help our workers achieve their potential, new maritime programmes, such as the Earn and Learn Programmes for seafarers and port operations executives launched by MPA in 2016, will continue to be developed to meet the needs of the industry. Maritime companies can also tap on the Maritime Cluster Fund (MCF) to up-skill their employees not only in specialised areas, but also in more general areas like data analytics, cyber security, as well as in soft skills, like communication and executive leadership.

13. MPA will continue to help Singaporeans take advantage of the many opportunities in the maritime industry, and build a future-ready workforce with relevant skills and a global mindset.

### **Transformation Driven by Tripartite Partnership**

14. SMS Dr Lam said, “The strategies and targets set out by the ITM are undoubtedly ambitious. But with the strong partnership from the industry, the unions and government agencies such as SkillsFuture Singapore and Workforce Singapore, I am confident that we can achieve our vision for Singapore to be a Global Maritime Hub for Connectivity, Innovation and Talent.”

15. Mr Esben Poulsson, President of the Singapore Shipping Association (SSA), said, “It is heartening that in the evolving maritime landscape, the Singapore government is galvanising the industry to embrace emerging technologies and relook their systems and processes to achieve greater efficiencies and optimisation. The development of the Sea Transport transformation map is another testimony of the strong alignment between the government and industry in Singapore that has been and will continue to be the key to the success of Maritime Singapore.”

16. Ms Mary Liew, President of the National Trades Union Congress, said, “The maritime industry is a diverse and dynamic one that provides many opportunities for our working people to pursue meaningful careers. With the industry changing at such a rapid pace, it is critical that workers constantly re-skill and up-skill themselves to remain relevant and future-ready. The Labour Movement is committed to working closely with our tripartite partners to ensure our workers have the right skills to support growth in the maritime industry, as well as deliver concrete action plans to realise the benefits of the Industry Transformation Map for our working people.”

<End of release>

### **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.

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## **ANNEX A**

### **MPA-NUS ENTERPRISE MOU ON MARITIME TECHNOLOGY ACCELERATION PROGRAMME**

MPA and NUS Enterprise has signed an MOU for a period of three years to jointly execute the Maritime Technology Acceleration Programme (MTAP). It aims to encourage our maritime industry to accelerate innovation, experimentation and venture into adjacent/new growth areas through working with tech start-ups.

The collaboration will include a residency partnership at Block 71 within the JTC Launchpad @ one-north, and both parties will jointly organise three core activities under the MTAP namely:

1. The Smart Port Challenge (SPC) to attract start-ups to tackle challenges in the maritime industry. The SPC is an annual competition that discovers and attracts global start-ups to tackle challenges in the port, shipping and maritime logistics domain put forward by maritime corporates. Start-ups will be connected to participating industry partners through a series of ideation workshops. The next SPC is expected to be launched in April 2018 during Singapore Maritime Week.
2. 10-week acceleration phase augmented with mentorship. Shortlisted start-ups from the SPC will develop their prototypes through a 10-week curriculum. They will spend this time contextualising, developing and enhancing their prototypes, augmented with mentorship and training. At the end of the 10 weeks, start-ups will pitch their solutions at a demo day to a judging panel and successful start-ups will be provided grants to carry out proof-of-concept or product development projects with industry partners.
3. Ecosystem building activities to increase awareness amongst the start-up communities on the opportunities in maritime and port industry, as well as increase interactions and collaborations between maritime corporates and start-ups. There will be a series of 'Kopi-chat' sessions and workshops, co-organised by MPA and NUS Enterprise throughout the year, to encourage corporate innovation adoption amongst maritime corporates.

The strategic partnership will enable both MPA and NUS Enterprise to leverage each other's strength in maritime domain and entrepreneurship respectively, working together to build a vibrant maritime innovation ecosystem.

"The Maritime industry has historically been of strategic importance to Singapore's growth. We are excited to help bridge start-ups with this flagship industry to generate entrepreneurial interest and accelerate start-up development; as well as provide a

platform for corporates in the industry to engage with start-ups,” said Dr Lily Chan, Chief Executive Officer, NUS Enterprise.

## **ANNEX B**

### **MPA-SINGAPORE CUSTOMS-SINGAPORE SHIPPING ASSOCIATION (SSA) MOU ON DIGITALISATION OF TRADE AND MARITIME DOCUMENTATION IN THE INDUSTRY**

Under the 3-way MOU between MPA, Singapore Customs and SSA, the parties will jointly look into the digitalisation of trade and maritime documentation in the industry. Through this collaboration, the parties aim to promote digitalisation, by showcasing the value gained through productivity, time and cost savings. The focus areas of this MOU will include:

1. Collaboration with multiple industry stakeholders to digitalise the documentation required across the maritime industry.
2. Leveraging suitable technologies such as distributed ledger technology to achieve greater assurance of trust and integrity of the shipping documentation passing through the supply chain players
3. Development of standards for the digitalisation of maritime-related documentation with industry partners.

MPA, Singapore Customs and SSA, together with the partners in the maritime industry will work closely together to identify and prioritise relevant maritime-related documentation for digitalisation and one such key document is the bill of lading (“-BL”).

Mr. Ho Chee Pong, Director-General, Singapore Customs, said, “The MOU signifies Singapore Customs’ commitment in working with the public and private sectors to enhance cross-border trade efficiency and facilitate more seamless data exchange. Implemented through the National Trade Platform, the initiative to digitalise the BL will leverage technology to bring about greater convenience to maritime industry players and productivity gains for businesses. Singapore Customs is excited to embark on the digital transformation journey with our maritime partners and to realise the vision of the Sea Transport Industry Transformation Map.”

“The shipping industry is currently very paper-intensive involving many sets of documents to be delivered to various agencies for approvals and clearance. The electronic bill of lading (e-BL) will be a boon to the shipping industry as it significantly reduces the amount of physical copies. More importantly efficiency and productivity improve as e-BL can be sent electronically, cutting down the need to print and time to deliver these documents. Also with the advent of new technology, e-BLs can also offer better protection against fraud than conventional hardcopy,” said Mr Esben Poulsson, President of SSA.

Working groups will be established to map out the details of the relevant processes and documents that have been identified for digitalisation. MPA and Singapore Customs, together with SSA will identify the corresponding industry standards of the

documents, as well as drive the development of a supporting legal and governance framework.

The outcome of the digitalisation efforts of the BL will be implemented through the National Trade Platform to leverage the efforts to reach out to the wider trade and supply chain community to promote the adoption of eBL.

## **ANNEX C**

### **MPA-SINGAPORE SHIPPING ASSOCIATION-GLEE TREES PTE LTD MOU ON THE APPLICATION OF ROBOTIC PROCESS AUTOMATION TECHNOLOGY IN THE SHIP AGENCY SECTOR**

Ship agencies are important to ship owners and operators in coordinating critical commercial functions and fulfilling a wide range of essential services such as port and crew clearances.

As part of the co-operative efforts to improve productivity in the ship agency sector and transform the roles of ship agents to take on higher-value jobs in future, MPA, the Singapore Shipping Association (SSA) and Glee Trees Pte Ltd have signed an MOU on a proof-of-concept (POC) for the development of a shipping agency tool.

The proposed shipping agency tool will be using Robotic Process Automation (RPA) technology to allow ship agencies to automate manual processes such as data entry and validation to reduce the time-intensive and repetitive nature of existing workflows. The POC will be initiated jointly with several ship agencies and upon successful conclusion, could be rolled out to other ship agencies subsequently in need of such a solution.

“SSA is pleased to be part of this national narrative which recommends that ship agencies in Singapore move towards an Excellence Model. Automated robotic intelligence that leverage on both structured and unstructured data to streamline job processes is a welcome initiative to transform the agency model. This transformation will facilitate more retention of talent, and also paves the way for existing employees to develop new skillsets in data analytics. At the same, it will enable the sector to attract more talent into the industry.” said Mr Esben Poulsson, President of SSA.

Ms Ada Lim, Co-Founder of Glee Trees Pte Ltd. Said, "We're thankful to MPA for this opportunity to take part in SPC to showcase our Gleematic solution to the maritime industry. SPC has shown that Singapore has good talents in technologies for the maritime industry too. SSA has also been very helpful in terms of connecting us with shipping agencies. The collaboration with MPA and SSA has opened up a new industry sector for us and plentiful opportunities to grow our organisation further. We are optimistic that home-grown firms like ours will be able to make significant contributions to our economy, and that deserving local start-ups will thrive with our government and local organisations embracing Singapore-grown technologies. "

## **ANNEX D**

### **MPA-JURONG PORT PTE LTD-NATIONAL TRANSPORT WORKERS' UNION MOU ON HUMAN CAPITAL DEVELOPMENT FOR NEXT GENERATION MULTIPURPOSE PORT**

Under the tripartite MOU between MPA, Jurong Port Pte Ltd (JP) and the National Transport Workers' Union (NTWU), the parties will collaborate to equip port employees with future-ready skills to enhance capabilities, increase workplace safety and productivity to support JP's transformation into a next generation multi-purpose port.

The MOU, which will last for five years, will see MPA, JP and NTWU work together to build competencies of port employees through practical and immersive experiences such as internship, work-study programmes and overseas training attachments. The parties will also leverage the Jurong Port Academy to deliver technical training to its workforce and groom future industry leaders in support of the next generation multi-purpose port.

Mr Melvin Yong, Executive Secretary of NTWU, said "A key pillar to support the transformation of Singapore's port sector is a well-equipped workforce with the right skills and knowledge to take on the future and higher value-added jobs. NTWU will be working closely with Jurong Port and the Maritime Port Authority of Singapore to ensure that the workforce remains relevant and is future-ready. I am certain that with our strong tripartite partnership, we can manage the transition together as we look forward to the successful transformation of our port sector."

MPA, JP and NTWU will also collaborate to promote a culture of workplace safety to enhance employee well-being, port efficiency and productivity in the workplace.

Mr Ooi Boon Hoe, Chief Executive Officer of Jurong Port, said: "The signing of this MOU signifies the commitment of MPA, Jurong Port and NTWU in the strengthening of human capital development. We are confident that this collaboration will bring Jurong Port's competency development and talent management to a new level especially in driving the redesigning of jobs towards higher value-added activities and a focus on skills deepening."

## **ANNEX E**

### **MPA-PSA-SINGAPORE PORT WORKERS UNION-PORT OFFICERS' UNION MOU ON HUMAN CAPITAL DEVELOPMENT FOR NEXT GENERATION CONTAINER PORT**

Under the 4-party MOU between MPA, PSA Corporation Limited, Singapore Port Workers Union (SPWU) and Port Officers' Union (POU), the parties will work on a host of human capital development initiatives to support the transformation towards the next generation container port.

The MOU, which will last for 5 years, will cover training and development of port employees, enhancement of capabilities, and outreach efforts to elevate the profile of maritime careers. These initiatives will help equip port employees with vital new competencies, and attract youth and mid-careerists into the port sector, thus ensuring the continued competitiveness of Singapore as a premier global hub port.

Mr Ong Kim Pong, Regional CEO Southeast Asia, PSA International said, "As PSA continues to transform and automate our operations, people remain our most valuable asset. We are happy to be able to work with MPA, as well as SPWU and POU, on initiatives to enhance port employees' competencies and ensure a robust talent pipeline for the port industry."

Mr Danny Phua, President, SPWU said, "SPWU strongly supports this MOU, as it will help our port workers to remain relevant in the midst of industry disruptions."

Mr Benjamin Tang, President, POU, said "The next generation port will require new, multi-disciplinary competencies, and POU looks forward to the new training programs which will prepare our Professionals, Managers and Executives for the future.

## **ANNEX F**

### **PORT OF SINGAPORE'S PERFORMANCE IN 2017**

## **ANNEX F**

### **2017 ADVANCED ESTIMATES**

#### **Vessel Arrival Tonnage**

Annual vessel arrival tonnage increased by 5.1 per cent in 2017 compared to 2016, reaching 2.8 billion gross tonnes (GT).

#### **Container and Cargo Throughput**

2 Container throughput in Singapore grew by 8.9 per cent to 33.7 million twenty-foot equivalent units (TEUs) in 2017 from 30.9 million TEUs in 2016. The increase in throughput was spurred by improvements in global trade growth and the repositioning of major shipping alliances.

3 The total cargo tonnage handled last year increased by 5.5 per cent over 2016 to reach 626.2 million tonnes.

#### **The Singapore Registry of Ships**

4 The Singapore Registry of Ships maintained its growth momentum. In 2017, the total tonnage of ships under the Singapore flag climbed 0.9 per cent to 88.8 million GT, from 88.0 million GT in 2016, consolidating Singapore's position as one of the top 10 ship registries in the world.

#### **Bunker sales**

5 Singapore remained the world's top bunkering port in 2017, with annual bunker sales crossing the 50 million-tonne mark for the first time. The total volume of bunkers sold in the Port of Singapore grew 4.2 per cent to 50.6 million tonnes, compared to 48.6 million tonnes in 2016.

6 Details of Singapore's maritime performance from 2013 to 2017 are listed below:

<b>Year</b>	<b>Vessel Arrival Tonnage (billion GT)</b>	<b>Container Throughput (million TEUs)</b>	<b>Cargo Throughput (million tonnes)</b>	<b>Bunker Sale Volume (million tonnes)</b>	<b>Tonnage Under Singapore Registry of Ships (million GT)</b>
2013	2.33	32.6	560.9	42.7	73.6
2014	2.37	33.9	581.3	42.4	82.2
2015	2.50	30.9	575.8	45.2	86.3
2016	2.66	30.9	593.3	48.6	88.0
2017	2.80	33.7	626.2	50.6	88.8