14TH CO-OPERATION FORUM

Co-operative Mechanism on Safety of Navigation and Environmental Protection in the Straits of Malacca and Singapore

31 JULY 2023 – 1 AUGUST 2023
PARADOX SINGAPORE MERCHANT COURT, SINGAPORE

REPORT OF THE FORUM

1 OPENING SESSION

1.1 The 14th Co-operation Forum ('the Forum') under the Co-operative Mechanism on Safety of Navigation and Environmental Protection in the Straits of Malacca and Singapore ('the Co-operative Mechanism') was officially opened by Mr Chee Hong Tat, Acting Minister for Transport, Singapore. Acting Minister Chee noted the good progress of the Co-operative Mechanism and encouraged Indonesia, Malaysia and Singapore ('the littoral States'), user States and industry to work closely together to preserve and enhance navigational safety and environmental protection in the Straits, to keep global supply chains resilient.

1.2 Professor Tommy Koh, Ambassador-at-large, Ministry of Foreign Affairs, Singapore, delivered the keynote address. Professor Koh said that the success of the Co-operative Mechanism was due in part to four founding principles, namely:

i. The littoral States' commitment to abide by international law, including the United Nations Convention on the Law of the Sea (UNCLOS);
ii. The three littoral States will work together and arrive at a consensus on the effective management of the Straits;
iii. The Co-operative Mechanism will be open and inclusive; and
iv. There is shared interest between the littoral States and the user States in enhancing the navigational safety and environmental protection of the Straits.

1.3 The Heads of Delegation of the littoral States reiterated the importance of the Co-operation Forum in bringing together all stakeholders to exchange views and ideas on navigational safety and environmental protection in the Straits.

1.4 The speeches delivered by Acting Minister Chee, Professor Tommy Koh and the Heads of Delegation of the littoral States can be found at **Annex I**.

1.5 The Forum was chaired by Mr Teo Eng Dih, Chief Executive of the Maritime and Port Authority of Singapore (MPA) and attended by close to 200 delegates from over 60 countries and organisations. Indonesia was represented by Dr Hartanto, Director of Marine Safety and Seafarers, Directorate General of Sea Transportation (DGST) while Malaysia was represented by Captain Mohamad Halim Ahmed, Director General, Malaysia Marine Department (MMD).

2 PLENARY SESSION: ADOPTION OF AGENDA

2.1 The provisional agenda of the Forum was adopted. The agenda can be found at **Annex II**. The list of participants to the Forum can be found at **Annex III**.

3 SAFETY OF NAVIGATION

3.1 Initiatives to enhance safety of navigation in SOMS

3.1.1 The Forum noted the following presentations:

CF 14/3/1/1 Ensuring Maritime Safety: Mitigating ship container accidents in critical area in SOMS through effective measures and preparedness (by Mr Mohd Hisham Bin Rubani, Senior Principal Assistant Director, Traffic Management & Aids to Navigation Division, MMD)

CF 14/3/1/2 Navigating the Future: Data-Driven Framework for Straits of Malacca and Singapore (SOMS) STRAITREP Extension (by Captain Nazri Bin Abu Hassan, Director, Safety of Navigation and Maritime Communication Division, MMD)

CF 14/3/1/3 TSS in Eastern approaches to Singapore Strait – possible measures for enhancing safe navigation (by Mr Elfian Harun, Regional Manager South East Asia & Environment Manager, INTERTANKO)

CF 14/3/1/4 Safety of Navigation in Straits of Malacca and Singapore (by Captain Vibhas Garg, Associate Fellow of The Nautical Institute; Captain Yves Vandenborn, Fellow of The Nautical Institute, Honorary President of NI Singapore branch)

3.1.2 The key areas of discussion and follow up are below:

3.1.2.1 The littoral States agreed that it was timely to review the existing routeing system and ship reporting system in the Straits of Malacca and Singapore (SOMS), and the proposals could be further discussed at the TTEG Meeting. Singapore added that it was important to take a holistic approach to assess the relevant proposals regarding navigational safety in the SOMS collectively as they could impact each other. Indonesia also invited related stakeholders to participate and assist the littoral States to review the existing routeing system and ship reporting system in the SOMS.

3.1.2.2 Industry representatives such as BIMCO, FASA, INTERTANKO and WSC were supportive of the initiatives to enhance navigational safety in the SOMS. They said that the three littoral States should collectively review the existing routeing system in the SOMS, and that this could be “future-proofed” to take into account new elements, such as alternative fuels and new vessel types such as Maritime Autonomous Surface Ships (MASS).

3.1.2.3 The IMO was also supportive of the review of the existing routeing system in the SOMS, and outlined the procedures for tabling amendments to the Maritime Safety Committee (MSC) and the Navigation, Communications, Search and Rescue (NCSR) Sub-Committee.

3.1.2.4 Noting the support from the industry stakeholders for the proposals, the Chair agreed that the three littoral States could further discuss the proposals at the upcoming 46th TTEG Meeting.

3.2 Technology to enhance navigational safety

3.2.1 The Forum noted the following presentations:

CF 14/3/2/1 Maritime Artificial Intelligence (AI) & Modelling for Traffic Safety & Port Operation Enhancement (by Dr Xiuju Fu, Senior Principal Scientist Maritime AI Research Programme Director, Institute of High Performance Computing)

CF 14/3/2/2 Safety 4.0 – AI Based Competency Assessment (by Mr Daniel Zhang, Centre Director, Centre of Excellence in Maritime Safety, Singapore Polytechnic)

CF 14/3/2/3 Update on Next Generation Vessel Traffic Management System (NGVTMS) (by Mr Tee Kim Chuan, Deputy Director, Port Systems Capability Development, Port Systems Division, MPA)

CF 14/3/2/4 digitalPORT@SG™ – Just-in-Time (JIT) Planning and Coordination Platform (by Ms Cindy Hoh, Deputy Director, Operations Special Project Office, MPA)

3.2.2 The key areas of discussion are as follows:

3.2.2.1 The Forum noted the importance of leveraging technology to enhance navigational safety in the SOMS, such as the application of Artificial Intelligence AI to predictive data modelling. Notably, such technology should be practical for domain users and experts by understanding system needs.

3.2.2.2 The Forum discussed the human element in the adoption of new technology. Indonesia said that AI could assist in not only managing the heavy workload for vessel traffic services (VTS) operators and other port operations, but also in minimising human errors. Indonesia also stated that the number and type of data which would be presented to operators needed to be carefully reviewed to ensure that the data was really needed and did not confuse the operators. In parallel, CEMS said that its AI simulators had been useful in identifying the causal factors of seafarers' stress and fatigue through scenario simulations, which could in turn be used to improve the curriculum for seafarer training.

3.2.2.3 Industry stakeholders such as INTERTANKO and BIMCO, welcomed the JIT concept noting the safety, cost and operational benefits in addition to reducing emissions from vessels. Singapore assured that the JIT initiative was intended to minimise congestion and enhance navigational safety in the SOMS, and this has contributed to emissions reduction as well, as shown by the various studies. INTERTANKO said that it was preparing a set of FAQ on JIT for the tanker community and would surface the FAQ when ready. INTERTANKO also noted their strong collaboration with the littoral States, including working with DGST and MMD to identify potential anchorages to anchor safely and in time.

3.2.2.4 While countries' port systems were unique and localised, the Forum noted that the maritime community could benefit from interoperable standards in the use of technology. This could be achieved by taking into consideration the different requirements of stakeholders such as port authorities and service providers, and adopting an open system architecture for third parties to incorporate their technology solutions in these systems. These in turn would enhance operations in the SOMS and enable littoral States to be future-ready.

3.3 Maritime Autonomous Surface Ships

3.3.1 The Forum noted the following presentations:

CF 14/3/3/1 1982 UNCLOS, MASS and IMO Instruments (by Dr Tara Davenport, Assistant Professor, Faculty of Law, Co-head, Oceans Law and Policy Program, Centre for International Law, National University of Singapore)

CF 14/3/3/2 Maritime Autonomy: Developments and Way Forward (by Mr Lui Chih Wei, Manager (Technology), American Bureau of Shipping (ABS))

CF 14/3/3/3 Japan's effort for practical use of Maritime Autonomous Surface Ships (by Mr Sashida Toru, Director, International Shipping Division, Maritime Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan)

CF 14/3/3/4 Entering Autonomous Shipping Era – Challenges and Opportunities (by Dr Hartanto, MH. M.Mar E, Director of Marine Safety and Seafarers, DGST, Indonesia)

3.3.2 The key areas of discussion are below:

3.3.2.1 The Forum noted that MASS and MASS technology were already under trial and being developed as an emerging technology, as well as the need for further collaboration to ensure safe and efficient navigation of MASS. In line with this, the Forum discussed the various building blocks that would be required for the successful deployment of MASS. One key building block was technology, where MASS vessels would be operating within a system of systems. Coastal States

would need to ensure that there was available and adequate infrastructure to safely deploy MASS. For example, this would entail incorporation of safe manning practices in the systems' concept of operations, especially in the event of a loss of communications between ship and shore.

3.3.2.2 Beyond technology, the Forum noted that a comprehensive legal framework was necessary to allocate responsibility, particularly in cases of pollution and accidents. A goal-based instrument for MASS is being developed under the ambit of the IMO MSC, with the interim deliverable of a non-mandatory MASS Code due in 2025 followed by a mandatory MASS code with a scheduled entry-into-force date of 1 January 2028.

3.3.2.3 The Forum highlighted the importance of ensuring that the maritime community was equipped and prepared for the onset of MASS. This included seafarers in their training, as well as the general public in terms of increasing social acceptance of autonomous vessels.

3.3.2.4 The Forum agreed that the three littoral States should work together to ensure navigational safety of MASS operating in the SOMS going forward. Singapore cited its co-chairing of the MASS Taskforce at the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) as an example of coordinated efforts across the various international platforms to develop guidelines for MASS and MASS-related technologies, so as to ensure safe and efficient navigation.

4 MARINE ENVIRONMENTAL PROTECTION

4.1 Maritime Decarbonisation

4.1.1 The Forum noted the following presentations:

CF 14/4/1/1 NextGEN and NextGEN Connect (by Mr Javier Yasnikouski, Head Operational Safety, IMO)

CF 14/4/1/2 Maritime Singapore Decarbonisation Initiatives (by Mr New Wei Siang, Director, Decarbonisation and Net Zero Pathways, MPA)

CF 14/4/1/3 Maritime Decarbonisation Effort by Malaysia: The Immersive CO_2 calculator for the shipping sector in SOMS (by Mr Mohd Tarmizi Bin Osman, Assistant Director, Safety Security and Environment Protection Division, MMD)

4.1.2 The key areas of discussion are below:

4.1.2.1 The Forum noted the importance for the maritime sector to accelerate decarbonisation efforts. This is especially in cognisance of the Revised Strategy on the Reduction of Greenhouse Gas (GHG) Emissions from Ships ("Revised Strategy") adopted by consensus at the recent 80th

Session of the IMO Marine Environment Protection Committee (MEPC) in July 2023.

4.1.2.2 Littoral States briefly outlined their domestic efforts to achieve the goals set out in the Revised Strategy. Indonesia highlighted their measures including the provision of B35 biofuels, availability of onshore power supply at ports and the necessary technological and regulatory frameworks to encourage uptake of low-carbon and other alternative fuels. Malaysia said that they were developing a national action plan (NAP) to drive the Revised Strategy and how its 'Immersive CO_2 Calculator' initiative had been useful to develop the baseline for their NAP. Singapore said that their national targets were aligned with the IMO's 2050 level of ambition and that initiatives such as green and digital shipping corridors would complement existing efforts at the IMO.

4.1.2.3 The IMO underscored the need to adopt an inclusive approach to maritime decarbonisation and affirmed that it would continue assisting all IMO Member States, in particular developing countries and least developed countries. The IMO said that it would identify specific needs of different regions to better facilitate technical assistance together with Member States. In this regard, Singapore and the IMO highlighted how its collaboration with the MPA through the NextGEN[1] and NextGEN Connect initiatives were useful to build capacity through information sharing and to develop expertise by bringing like-minded entities to pilot initiatives.

4.1.2.4 The Forum discussed the development of capabilities, notably for seafarers, along the supply chain towards a multi-fuel transition. Indonesia said that it was important for seafarers be equipped with competencies to handle alternative fuels and green technologies. Singapore concurred with the need to train seafarers and said that this was likely to support an improvement in wages for the seafarers as well with higher competencies. On the future role of seafarers, ASA noted the urgency to address the issue of safety when handling alternative fuels, as well as their ability to adapt to the new associated technologies. The IMO added that the IMO MSC was currently looking at safety aspects, including for seafarers, with reference to the handling of new fuels. Singapore added that they would be highlighting their experiences with the new maritime fuels and work with international partners to submit these to the IMO.

4.1.2.5 Industry representatives such as ASA and INTERTANKO expressed strong support for international regulations to reduce GHG emissions from international shipping to be adopted at the IMO. Responding to INTERTANKO on the development of biofuels, Singapore said that while market would decide on the uptake, Singapore was working on the provisional marine biofuel standards which has helped to raise its uptake. Singapore was also working closely with industry partners to

[1] GEN in NextGEN is short for "Green and Efficient Navigation".

raise the current biofuel standards from B50 to B100, taking into consideration developments to determine its emissions factors at the IMO. For other fuels such as Liquefied Natural Gas and ammonia, there were also provisions under the recently adopted Revised Strategy for proposals to be submitted to address potential slippages when using these fuels for propulsion.

4.1.2.6 Singapore updated the Forum that post-adoption of the Revised Strategy at MEPC 80, Member States would be working on the Comprehensive Impact Assessment of the basket of candidate mid-term measures at MEPC 82 in 2024, prior to the review of measures to be adopted in 2025.

4.2 Ballast Water Management

4.2.1 The Forum noted the following presentations:

CF 14/4/2/1 Implementation of Ballast Water Management Convention - Singapore's Experience (by Mr Aidan Ho Sin Gian, Deputy Director, Flag State Control, Shipping Division, MPA)

CF 14/4/2/2 Challenges, Possible Solutions in the Implementation of the Ballast Water Management Convention and the Latest Roadmap (by Mr Fan Yun Zhi, Senior Surveyor, China Classification Society)

CF 14/4/2/3 Global Green Strategic Solutions Provider & Integrator (by Alvin Tan, Manager, Seatrium Eco Technology)

4.2.2 The key areas of discussion are below:

4.2.2.1 The Forum noted the potential challenges, solutions and available technologies in implementing the guidelines and standards under the Ballast Water Management (BWM) Convention. One such challenge would be operating in conditions with challenging water quality, such as muddy waters. In such an event, ships could apply contingency measures within their BWM plan, work with equipment manufacturers on the selection of filters and suitable pressure settings for their ballast water management systems (BWMS), and consult port States on the procedures for proper exchange or discharge of ballast water.

4.2.2.2 Industry representatives such as INTERTANKO and FASA agreed with the presenters that some of the most pertinent challenges faced included the lack of crew training, short voyages where it was not possible to carry out ballast water exchange or ballast water treatment, as well as the complications associated with the maintenance of the BWMS onboard ships. In this regard, they urged the littoral States to work together and prioritise the establishment of the Same Risk Area (SRA) in the SOMS, in view of the impending deadline of 8 September 2024, by which vessels were required to have in place BWMS to meet the IMO's D-2 standard.

4.2.2.3 The Forum noted that the three littoral States had been discussing the establishment of an SRA in the SOMS through an informal Working Group, and agreed on the need to expedite the establishment of the SRA in the SOMS. Indonesia shared with the Forum that they had developed a list of targeted species and said that this could be compared among the three littoral States as part of the establishment of the SRA.

4.3 Oil Spill Management

4.3.1 The Forum noted the following presentations:

CF 14/4/3/1 Singapore's Strategy for Oil Spill Response (by Captain Charles Alexander De Souza, Deputy Port Master, Operations Division, MPA)

CF 14/4/3/2 Latest Solutions/Techniques Available to Manage Oil Spills – An Insight into Herders (by Mr Darren Waterman, Engagement Director, Oil Spill Response Limited (OSRL))

4.3.2 The key areas of discussion are below:

4.3.2.1 The Forum noted the close cooperation between the littoral States and stakeholders to prevent and manage oil spill incidents, including through platforms such as the ASEAN Regional Oil Spill Contingency Plan and the Revolving Fund Committee (RFC). Through these platforms, the littoral States had jointly developed best practices for effective oil spill prevention, as well as oil spill response and contingency measures. Further, these platforms facilitate capacity-building for the littoral States to shore up and support each other's prevention and response capabilities.

4.3.2.2 Indonesia suggested that joint exercises at the RFC could include other stakeholders and be held annually. Singapore proposed that the RFC Working Group could discuss Indonesia's suggestion.

4.3.2.3 OSRL said that oil spill prevention and management should be augmented by new tools and technologies, such as herders and autonomous vessels, and highlighted the importance for neighbouring States to communicate and cooperate effectively. To accommodate the multi-fuel transition, OSRL and its members were developing capabilities and conducting trials to respond to a wider variety of incidents and provide crisis support, including involvement in ammonia bunkering-related studies from the environmental response angle.

4.3.2.4 The Global Initiative for Southeast Asia (GISEA) agreed with Singapore that navigational safety was fundamental to oil spill prevention and environmental protection, and encouraged strengthened regional cooperation on oil spill prevention and management through existing ASEAN platforms.

4.3.2.5 The Chair noted that in view of the multi-fuel transition, there was a shift from addressing challenges surrounding oil/chemical spills, to incidents involving plume clouds. A significant takeaway from the recent methanol bunkering exercise at the Port of Singapore was the need for vapour suppression techniques to reduce the potential spread of associated plume clouds. It was important for discussions between the littoral States and user States on these emergency responses to continue to take place at this Forum and other relevant platforms.

5 DEVELOPMENTS IN THE CO-OPERATIVE MECHANISM AND THE STRAITS OF MALACCA AND SINGAPORE (SOMS)

5.1 The Forum noted the following presentations:

CF 14/5/1 Contribution to the Straits of Malacca and Singapore by MSC (by Mr Kenji Nagamatsu, Executive Director, Malacca Strait Council of Japan)

CF 14/5/2 Report of the 27th and 28th Aids to Navigation Fund Committee Meeting (by Mr Yudhonur Setyaji Paridjo, Deputy Director, Aids to Navigation, Directorate General of Sea Transportation)

CF 14/5/3/1 Straits Project 5: Maintenance and Replacement of Aids to Navigation (by Mr Yudhonur Setyaji Paridjo, Deputy Director, Aids to Navigation, Directorate General of Sea Transportation)

CF 14/5/3/2 Straits Project 11: Guidelines Development on Places of Refuge for Ships in Need of Assistance in the SOMS (by Dr Yasmin Mohd Hasni, Principal Assistant Director, Malaysia Marine Department)

CF 14/5/4 Joint Hydrographic Survey of the Straits of Malacca and Singapore – Project Overview Phase 2 (by Mr Muhammad Zuhdi bin Yakof, Marine Officer, Maritime Operations Division, Malaysia Marine Department)

5.2 The Chair thanked the littoral States, user States, industry and stakeholders of the SOMS for the continued close cooperation in safeguarding navigational safety, environmental protection and keeping the global supply chain resilient. In addition, he also expressed appreciation to Japan and Malacca Strait Council for their strong and steadfast contributions to the Co-operative Mechanism.

6 CLOSING SESSION

6.1 The consideration and adoption of the 14th Co-operation Forum report was chaired by Mr Teo Eng Dih, Chief Executive of MPA.

6.2 The meeting considered and adopted the 14th Co-operation Forum report.

6.3 The Chair thanked all participants for their support and contribution in making the 14th Co-operation Forum a success.

6.4 The 15th Co-operation Forum would be held in Indonesia in 2024, with the details on the date and venue to be communicated at a later date.

List of Annexes:

Annex I – Speeches by Acting Minister Chee Hong Tat, Professor Tommy Koh, Mr Teo Eng Dih (Singapore), Dr Hartanto (Indonesia), Captain Mohamad Halim Ahmed (Malaysia)

Annex II – 14th Co-operation Forum Agenda

Annex III – List of Participants