



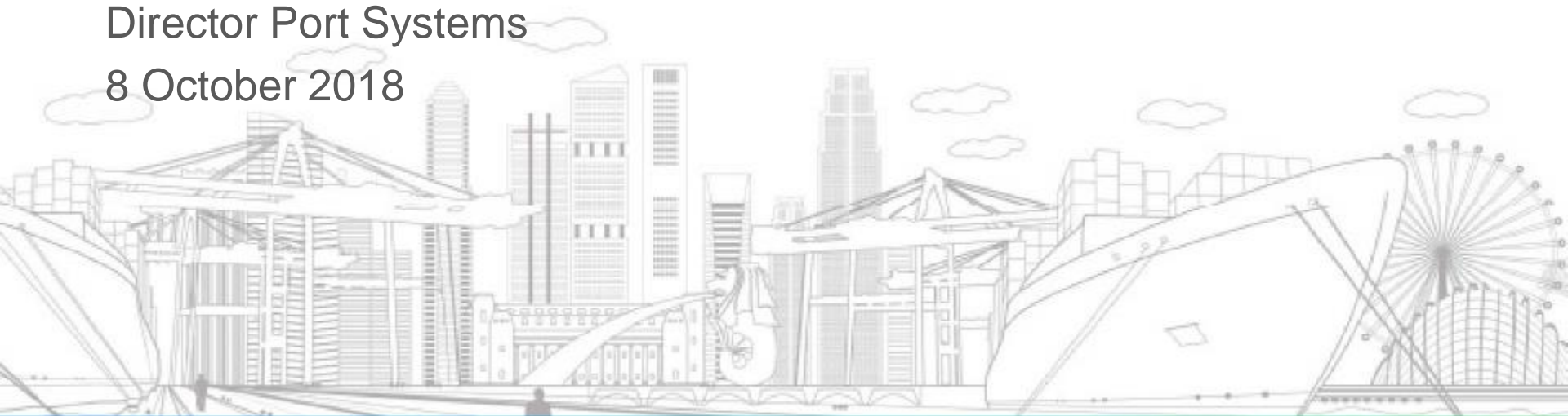
MPA
SINGAPORE

Maritime Singapore


Mr David Foo

Director Port Systems

8 October 2018



Scope

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- A wide-angle photograph of the Singapore skyline at night, taken from across the water. The Marina Bay Sands hotel is prominent on the left, with its three towers and the SkyPark on top. The Singapore Flyer is on the right. The city's skyscrapers are illuminated with various lights, and the water in the foreground reflects the city lights.
- Introduction to Maritime Singapore
 - MPA's Next Generation Capabilities
 - ENAV23 and IALA-MPA e-Navigation Workshop

Singapore Skyline by Kenny Teo (<https://www.flickr.com/photos/cheishichiyo/6639878229>)

Maritime Singapore



CONTRIBUTES **7%** TO OUR NATION'S GDP



OVER **170,000** EMPLOYEES



MORE THAN **5,000** MARITIME ESTABLISHMENTS



WORLD'S BUSIEST **CONTAINER** TRANSHIPMENT HUB



IN 2017, VESSEL ARRIVAL TONNAGE REACHED **2.8 BILLION GT**



33.7 MILLION TEUS OF CONTAINER THROUGHPUT IN 2017



APPROXIMATELY **1,000 SHIPS** IN THE PORT OF SINGAPORE AT ANY ONE TIME



SUPPLIED **50.6 MILLION TONNES** OF BUNKER IN 2017



THE SINGAPORE REGISTRY OF SHIPS (SRS) IS AMONGST THE WORLD'S **TOP 5 LARGEST** SHIP REGISTRIES

Next Generation Port 2030



New Capabilities And Innovative Solutions



Data-Driven Decision Support

- Intelligent algorithm to detect potential collision
- Traffic Hotspot Prediction / Data Analytic
- Support “Just-In-Time” Resource Planning

Management of Traffic and Port Resources



E-Navigation

- Digital Maritime Services based on harmonization and standardisation of data format
- Automatic reporting and capturing of ship movement information
- Automated Workflow System for vessel movements and operations
- VHF Data Exchange System (VDES)

Processes & Data Management



Digital Workflows

- Re-organisation of VTIS operations
- Enhancement of ergonomics and human machine interface

Human Element

New Systems

E-Navigation

Maritime Cloud Service/ VDES / AIS (ASM) / VHF / Satellite/ 5G Mobile Networks

Single format for ship- shore information exchange (Maritime Service Portfolio)

Pre-arrival Notification
/ Passage Plan

Vessel
Clearance Info

Automated
Reporting

Traffic Hotspot /
Resources Info

Anchorage
/ Berth Info

Traffic Info /
Collision Warning

Prior to Vessel Arrival

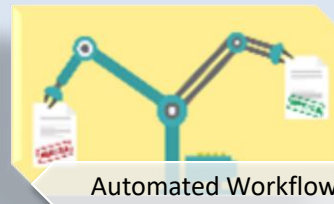
Vessel Approaching Port Waters and in Singapore Strait

Vessel Traffic Management System (VTMS)

Advance VTMS features

Automatic Vessel Reporting
Intelligent Collision Detection
Traffic Hotspot Prediction/Data Analytic
Automated Workflow

Human centric workspace and console design
Enhanced Human Machine Interface
New VTIS Organisation Structure



Maritime Single Window

-Pre-arrival Notification
-Immigration/ Clearance
Information

Clearance
Information

Agent

**Just-in-Time (JIT)
Module**

Marine Resource
Requirements

**Marine Resource
Service Providers**

Tug/ Pilot/
Berth
Information

MPA Living Lab

- Research, innovate and test-bed operational concepts and emerging technologies in e-navigation and vessel traffic management



ENAV23 and IALA-MPA ENAV Workshop

- Singapore proposes hosting ENAV23 Meeting (1 to 5 April 2019) and a follow-on IALA-MPA ENAV workshop (8 to 10 April 2019)
- IALA-MPA ENAV Workshop
 - Objective : Develop capabilities and capacities in support of IALA's e-Navigation work programme
 - Coincide with Singapore Maritime Week 2019 from 6 to 12 April 2019
 - SMW Opening Ceremony on 7 April
 - Singapore Maritime Lecture on 8 April
 - Firm a work programme to achieve initial operating capability
 - Site visit to MPA Living Lab and/or Port Operations Command Centre



Singapore Maritime Week

6th - 12th April 2019

See you in 2019!



PEOPLE



IDEAS



OPPORTUNITIES

KEY HIGHLIGHTS

- >20,000 participants
- >20 country representatives and port administrators
- >30 events

Broad Timelines

- Today: Seek ENAV22's endorsement for our proposal
 - Conduct 1st Steering Committee Meeting
 - Commence work on the meeting and workshop agendas
- Dec 2018: Seek IALA Council's agreement
 - Conduct 2nd Steering Committee Meeting
- Jan 2019: Send invitations for the IALA-MPA Workshop
- **Apr 2019: ENAV 23 meeting and IALA-MPA ENAV workshop**

We look forward to hosting you in 2019!





Thank You

