Digital Port Ecosystem

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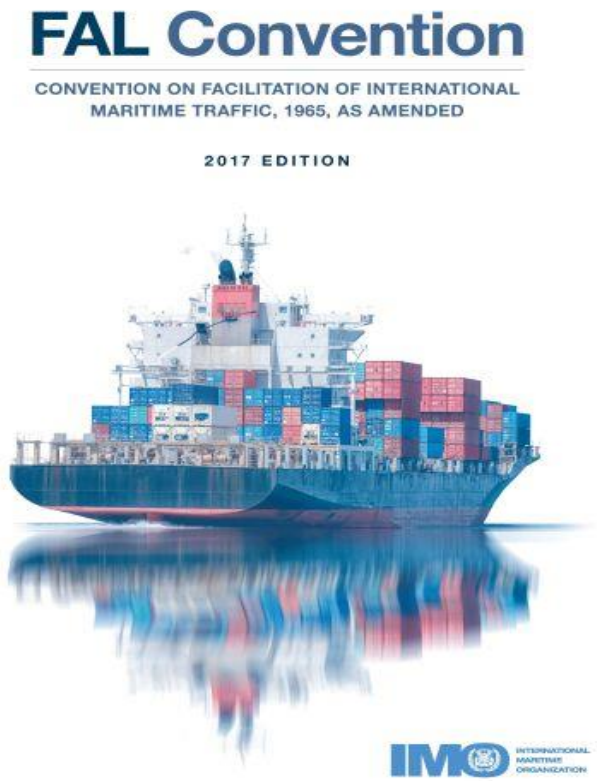
STAYING ALIGNED WITH INTERNATIONAL STANDARDS

International Efforts - IMO Facilitation Convention



Regulations in IMO FAL Convention require Public Authorities to establish systems for electronic exchange of information between ships and ports from 8 April 2019.

The use of the "single window" concept is also encouraged so as to enable all the information required by public authorities in connection with the arrival, stay and departure of ships, persons and cargo, to be submitted via a single portal to avoid duplication of effort.

In its Annex, the FAL convention contains standards and recommended practices and rules for simplifying formalities, documentary requirements and procedures on ships arrival, stay and departure.

IMPETUS FOR GLOBAL PORT CALLS TO BE EFFICIENT AND SUSTAINABLE

IMO requirements and developments of Maritime Single Windows (MSW) by international jurisdictions

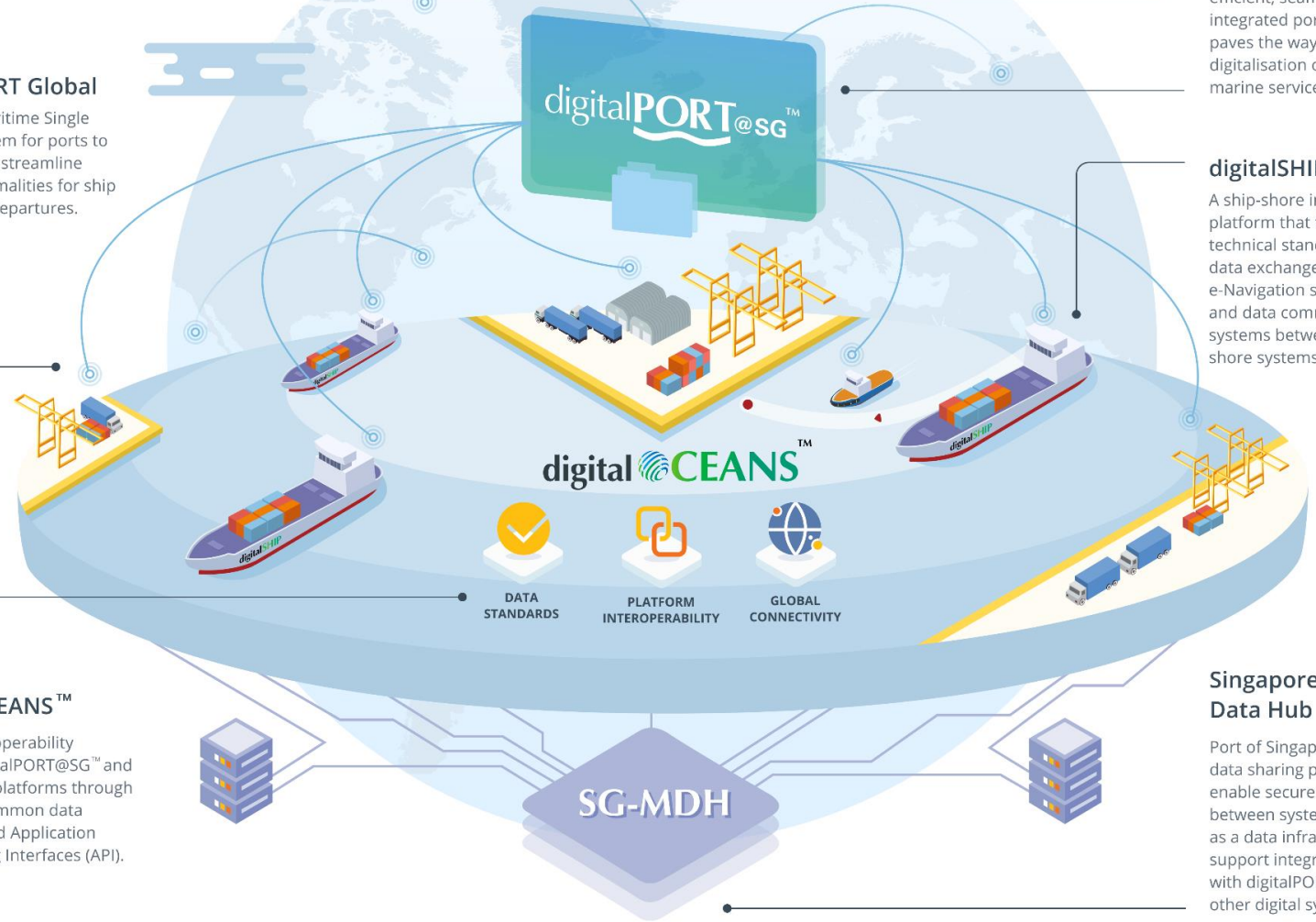
Cut down on repeated data entries ships have to undertake for port clearances across multiple international ports

Digitalise port clearance processes

- Clear benefits to the international maritime and port community to improve the efficiency and resilience of supply chains.
- Optimisation of port calls could also lead to lowering of carbon emission through reducing vessel turnaround time.

OVERLAYING PHYSICAL CONNECTIVITY WITH DIGITAL CONNECTIVITY

DIGITAL PORT ECOSYSTEM



digitalPORT Global

A generic Maritime Single Window System for ports to digitalise and streamline reporting formalities for ship arrivals and departures.

digitalPORT@SG™

Port of Singapore's maritime single window that serves as a key node to enable more efficient, seamless and integrated port services, and paves the way for further digitalisation of port and marine services.

digitalSHIP™

A ship-shore interoperability platform that focuses on technical standards for data exchange of e-Navigation services and data communication systems between ship and shore systems.

digitalOCEANS™

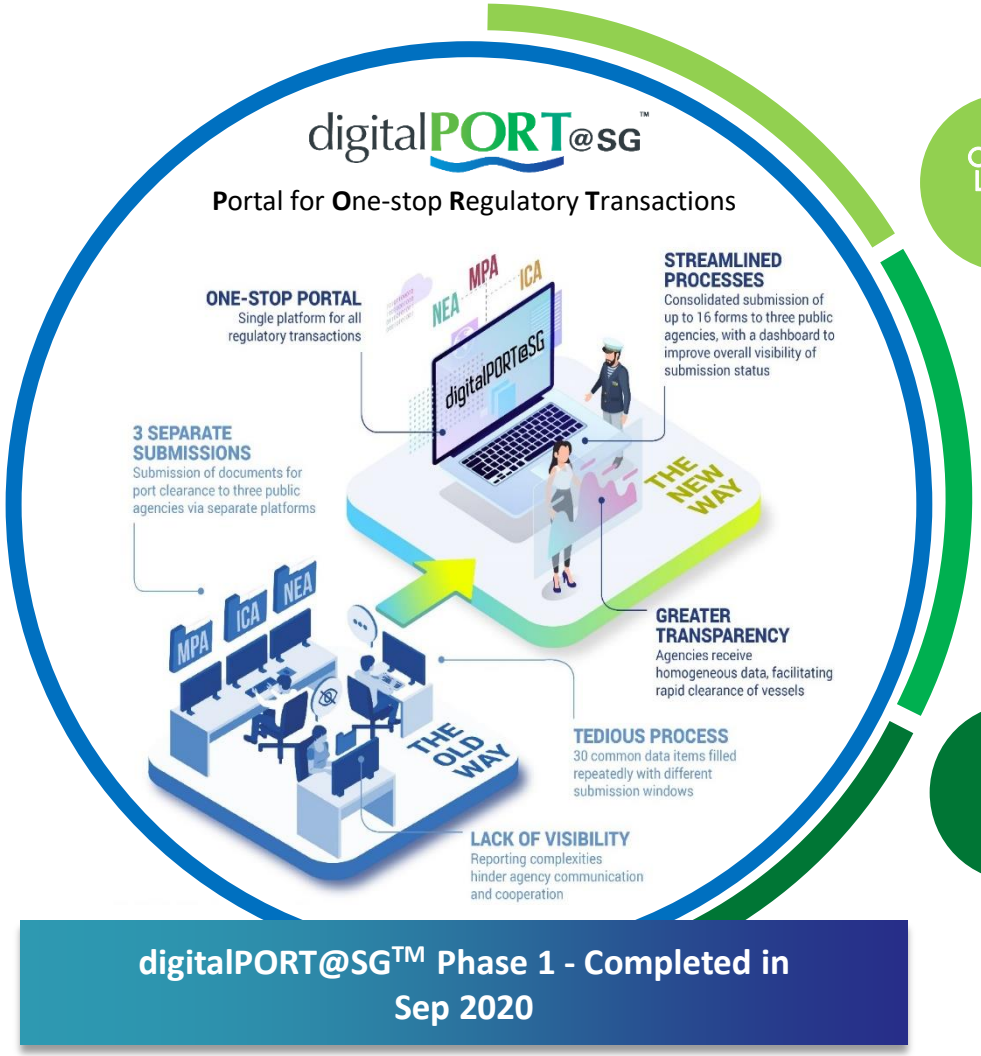
Fosters interoperability between digitalPORT@SG™ and other digital platforms through the use of common data standards and Application Programming Interfaces (API).

Singapore Maritime Data Hub (SG-MDH)

Port of Singapore's one-stop data sharing platform to enable secure data exchanges between systems and to serve as a data infrastructure to support integration of services with digitalPORT@SG™ and other digital systems.

digitalPORT@SG™ – A MARITIME SINGLE WINDOW AND MORE

PHASE 1 – Portal for One-stop Regulatory Transactions



digitalPORT@SG™ Phase 1 - Completed in Sep 2020

Process Streamlining

- **30** data fields synchronized
- **100,000** man-hours annual savings to the industry (estimated)

Platform Integration

- **3** regulatory agencies

Document Digitisation & Auto-filling

- **16** statutory documents

digitalPORT@SG™ – A MARITIME SINGLE WINDOW AND MORE

PHASE 2

digitalPORT@SG™
Phase 2 (2021 – 2023)

Features

Just-in-Time Services
Enable JIT arrivals, departures and marine services for all stakeholders along the maritime value chain

Sea and Anchorage Space Optimisation
Optimise sea space for competing needs to support future growth

Digital Shopfront for Marine Services
A digital shopfront to easily discover and connect with service providers

Benefits

Reduce Carbon Footprints
from shorter ship turnaround time

Optimise Resources
Optimise use of service providers' resources

Greater Visibility
Greater visibility of ship's and port's resources electronically, near real-time

digitalPORT@SG™ – JUST-IN-TIME

digitalPORT@SG™

Just In Time Planning and Coordination Platform

Adopting a **customer service journey** perspective to optimise the port stay for ships that call at the Port of Singapore.

Berth Planning

Ship agents are required to **submit berth applications** to the terminals for **planning** and **clearance**. The terminals will provide the **Estimated Time of Berthing (ETB)** in advance through the JIT Platform.

Monitoring of Vessel Arrival

The JIT platform will inform ship agents if there are changes to the vessel arrival time. This is for the ship agents to **make changes** to the itinerary if necessary. If there are no changes to the arrival time, the ship agents will **confirm the itinerary**.

Itinerary Planning for Port Stay

The ETB information will be sent to all stakeholders attending to the vessel through the JIT platform.

Government authorities and marine service providers can use the ETB to **plan** and **deploy resources** accordingly.

Departure of Vessel

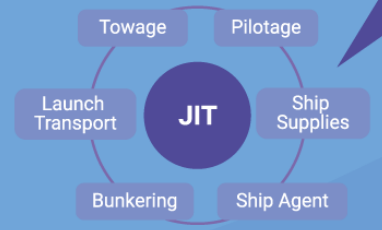
The **Estimated Time of Unberthing** will be shared with all stakeholders to ensure timely departure of vessel.

The **Estimated Time of Departure** will be captured upon disembarkation of the pilot from the vessel.

Planning & Coordination of Vessel Activities

The JIT platform facilitates direct berthing on arrivals and on-time departures to **enhance ship turnaround time** as well as to **reduce dwell time** at anchorages.

All vessel activities will be **captured in real time** on the JIT platform with the corresponding activity **timestamps**.



Examples of Interfacing Systems

- digitalPORT@SG™ (Single Window Port Clearance)
- digitalBunker@SG
- LT Connect
- Portnet
- JP-Online
- as well as any digital-ready platform of marine service providers through APIs!

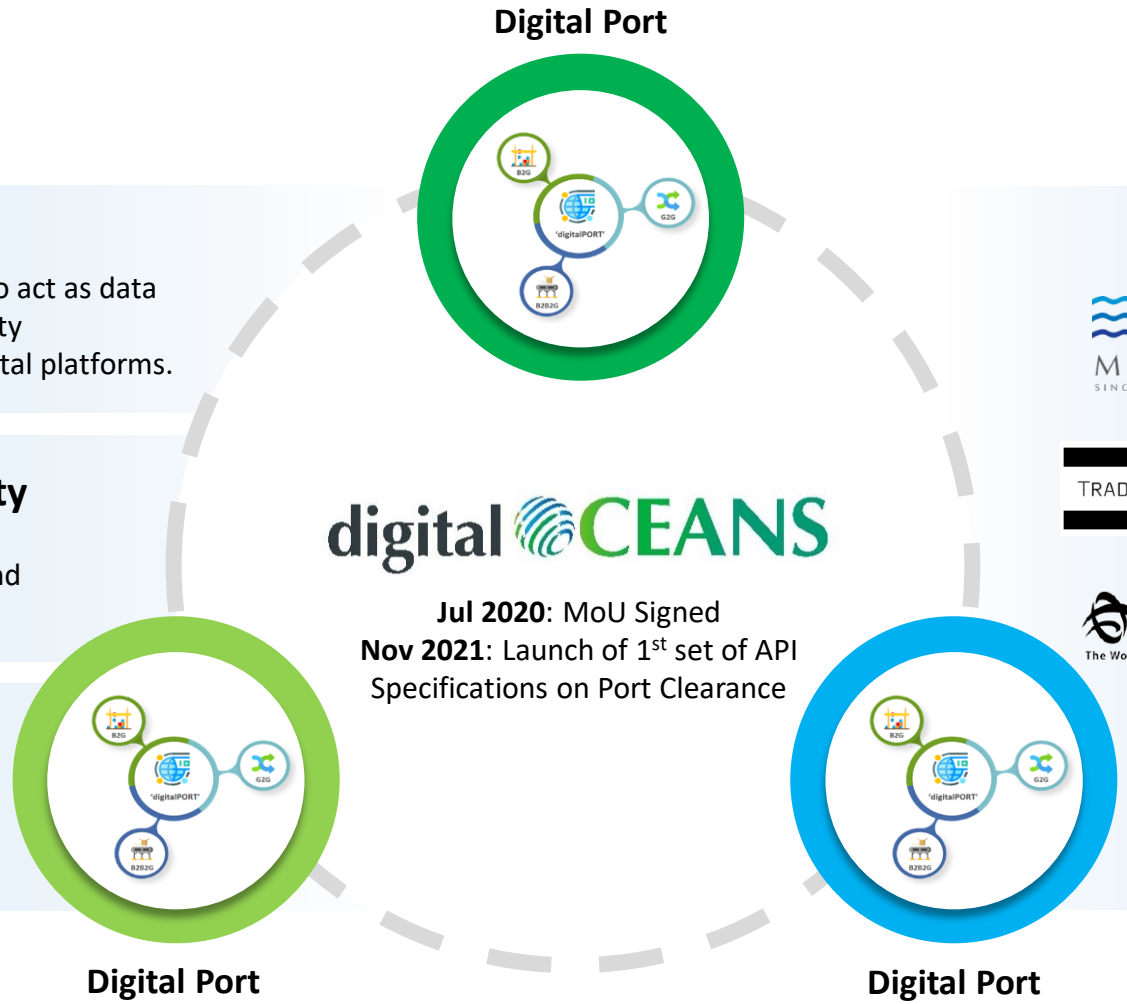
digitalOCEANS™ – FOSTERING GLOBAL INTEROPERABILITY

Through Open/Common Exchange And Network Standardisation

Data Standardisation
Promote open data standards to act as data bridge among various community stakeholders, networks and digital platforms.

Platform Interoperability
To enable system-to-system interoperability that goes beyond form-based submissions.

Connectivity
To facilitate global flow of information and reduce inefficiencies via open data and API standards.



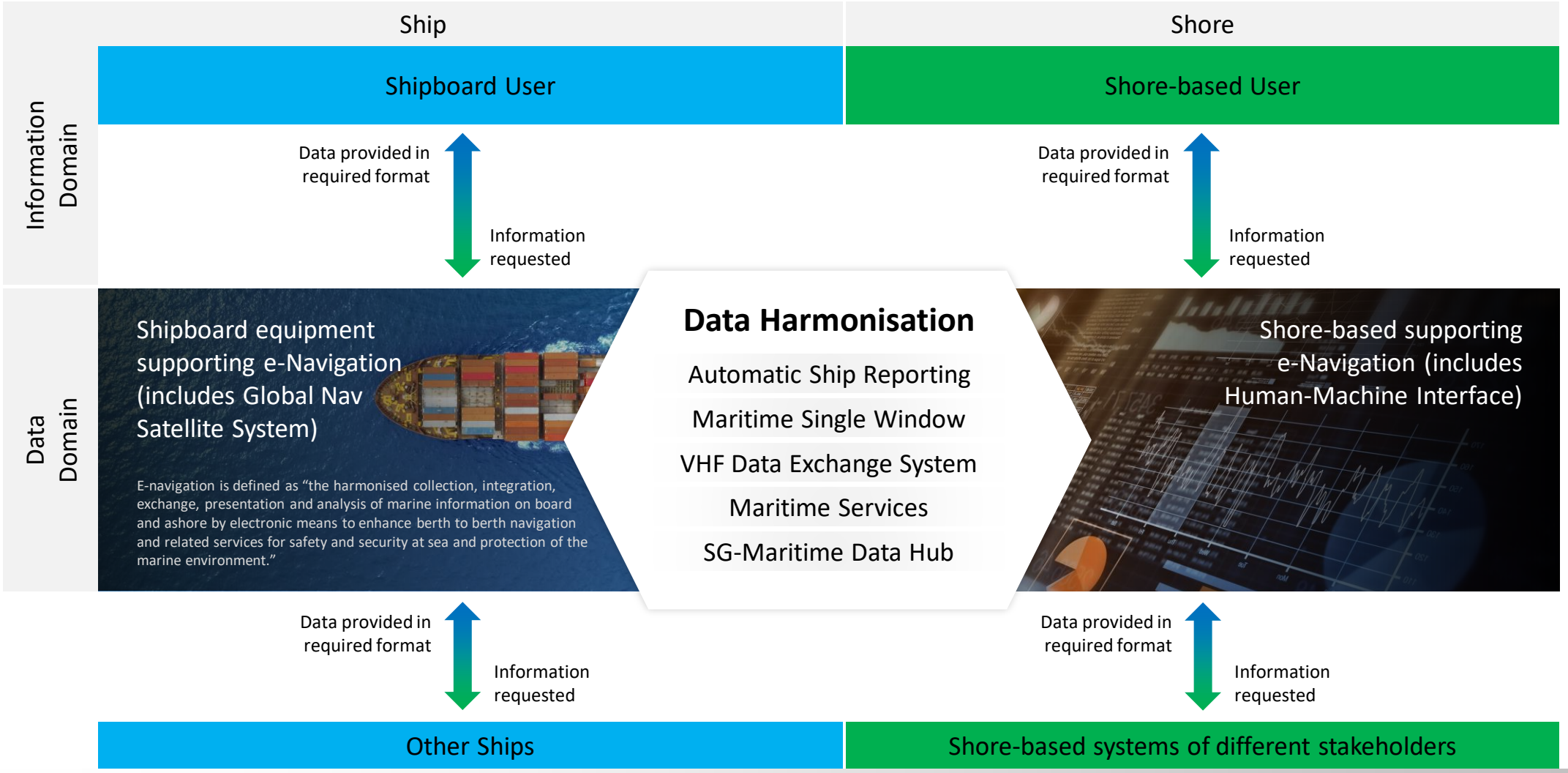
Industry MoU Partners

MPA Singapore · Port of Rotterdam · TRADELENS · GeTS · PSA The World's Port of Call · CargoSmart · dcsa

View API specifications here: https://digitaloceans.mpa.gov.sg/

digitalSHIP™ – ENABLING EVERY SHIP TO BE A SMARTER SHIP

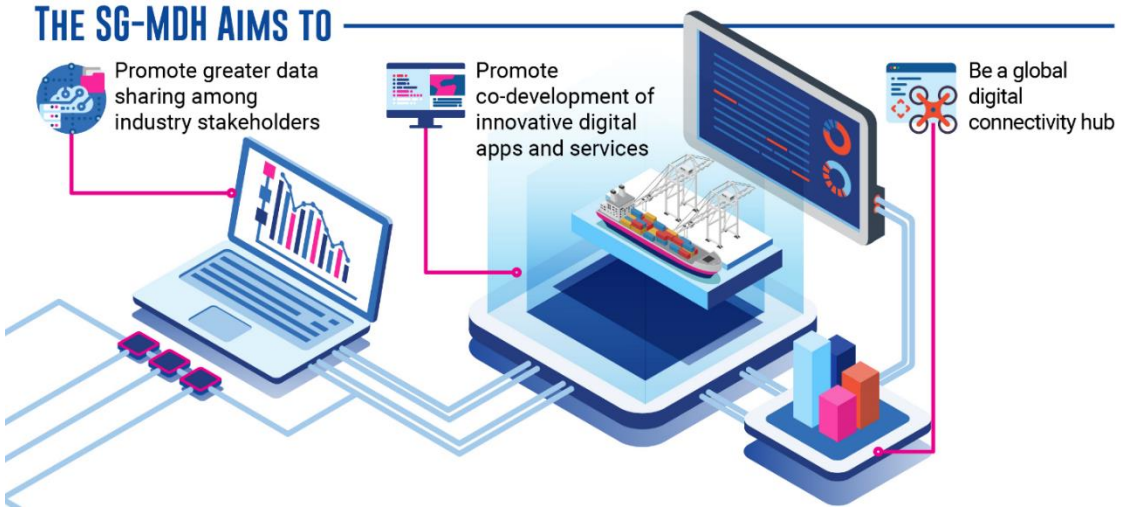
By supporting IMO's e-Navigation Strategy Implementation Plan through a Ship-shore Harmonisation and Interoperability Platform

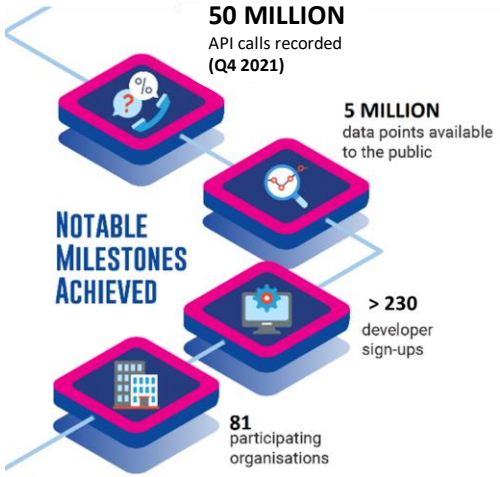


OTHER KEY ENABLERS – (1) FACILITATING DATA EXCHANGE

SG-MDH is a data platform to support Tech Start-ups, Businesses and Agencies to Co-develop and Test-bed Innovative Applications and Data-driven Services

Launched in April 2019, the SG-MDH is a data repository that supports data sharing and digital platform integration in the industry, and has the potential to enable seamless integration with the global trade ecosystem.





Data Sets

- Vessel Arrival
- Vessels Due To Arrive
- Vessel Departure
- Vessels Due To Depart
- Vessel Movements
- Vessel Positions
- Port Codes
- Country Codes
- Arrival Declarations
- Departure Declarations
- Vessel Types
- Vessel Particulars

OTHER KEY ENABLERS – (2) BUILDING STRONG PARTNERSHIPS

GREEN SHIPPING CORRIDORS

Accelerate decarbonisation of the Shipping industry by working with stakeholders to provide low or zero carbon fuels and bunkering infrastructure in Singapore and Rotterdam over the next years and deliver solutions at scale by 2030.

DIGITAL SHIPPING CORRIDORS

Jointly create seamless trade lanes where relevant information/data is made available to enable efficient port clearance, port call and flow of goods, and paperless handling through the Ports of Singapore and Rotterdam, and other likeminded partners.

MPA-POR Green and Digital Shipping Corridors MOU on 2 Aug 2022*

Bringing stakeholders together across the supply chain to:

- Realise the first sustainable vessels sailing on the route by 2027, by catalysing the demand, supply and enablers for alternative future fuel bunkering
- Optimise maritime efficiency, safety, and the transparent flow of goods by creating a digital trade lane

**with the support of 10 Industry partners including the Global Centre for Maritime Decarbonisation, the Mærsk Mc-Kinney Møller Center for Zero-Carbon Shipping, bp, CMA CGM, Digital Container Shipping Association, Maersk, MSC, Ocean Network Express, PSA International, and Shell*

OTHER KEY ENABLERS – (2) BUILDING STRONG PARTNERSHIPS

IMO SWiFT Project (Single Window for Facilitation of Trade)
A generic maritime single window to support digitalisation of shipping

A collaboration with the International Maritime Organisation (IMO) to develop a generic Maritime Single Window (MSW) system to help countries in their digital transformation of port reporting formalities

Beneficiary Port

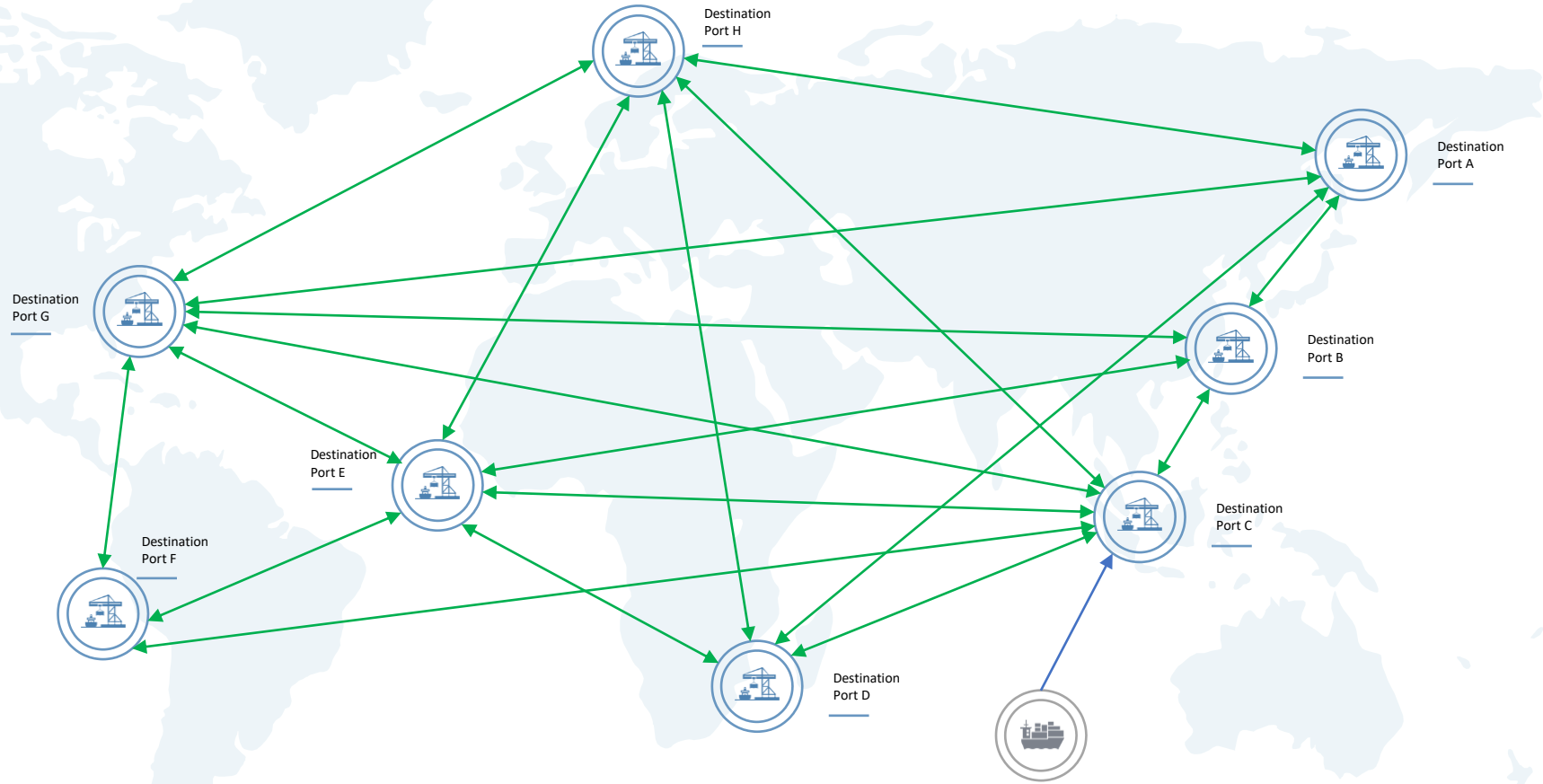
Port of Lobito, Angola

Single Window Access
Reduces the administrative burden of ship masters/agents by reducing the amount of duplicated information required by different port reporting processes

Compliant with IMO FAL Convention Standards
Globally recognised standards will enhance the efficiency of port-to-port exchange of data used for port clearance

OUR GOAL – GLOBAL INTEROPERABILITY

- Improve port clearance efficiency through system-to-system exchange of data
- Enable port call optimization and reduce port stay, thus saving costs and contributing to sustainability
- Reduce administrative burden on ship masters, agents and port call stakeholders by eliminating repeated document submissions



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THANK YOU