



Port Digitalization: Securely Handling Cargo and Its Data



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What is Port Digitalization?

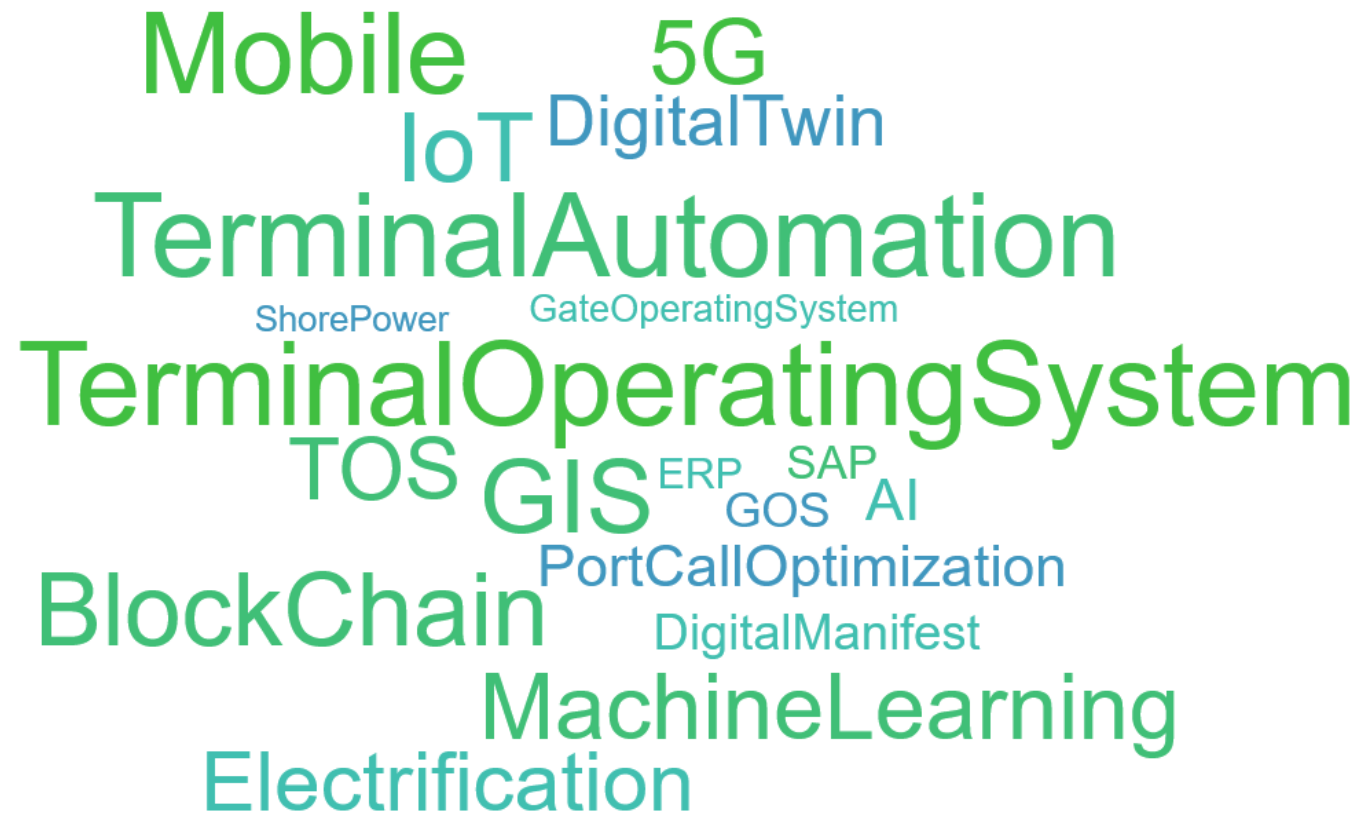


What is Port Digitalization?



- A [digital port] is a port that uses automation and innovative technologies including Artificial Intelligence (AI), Big Data, Internet of Things (IoT) and Blockchain to improve its performance.

Port Technology, April 14, 2021



Cargo Transfer



Port digitalization is the containerization of this generation.

Cargo Transfer Requires the Secure Transfer of Data



Every cargo transit requires information to be exchanged with up to 200 different entities.

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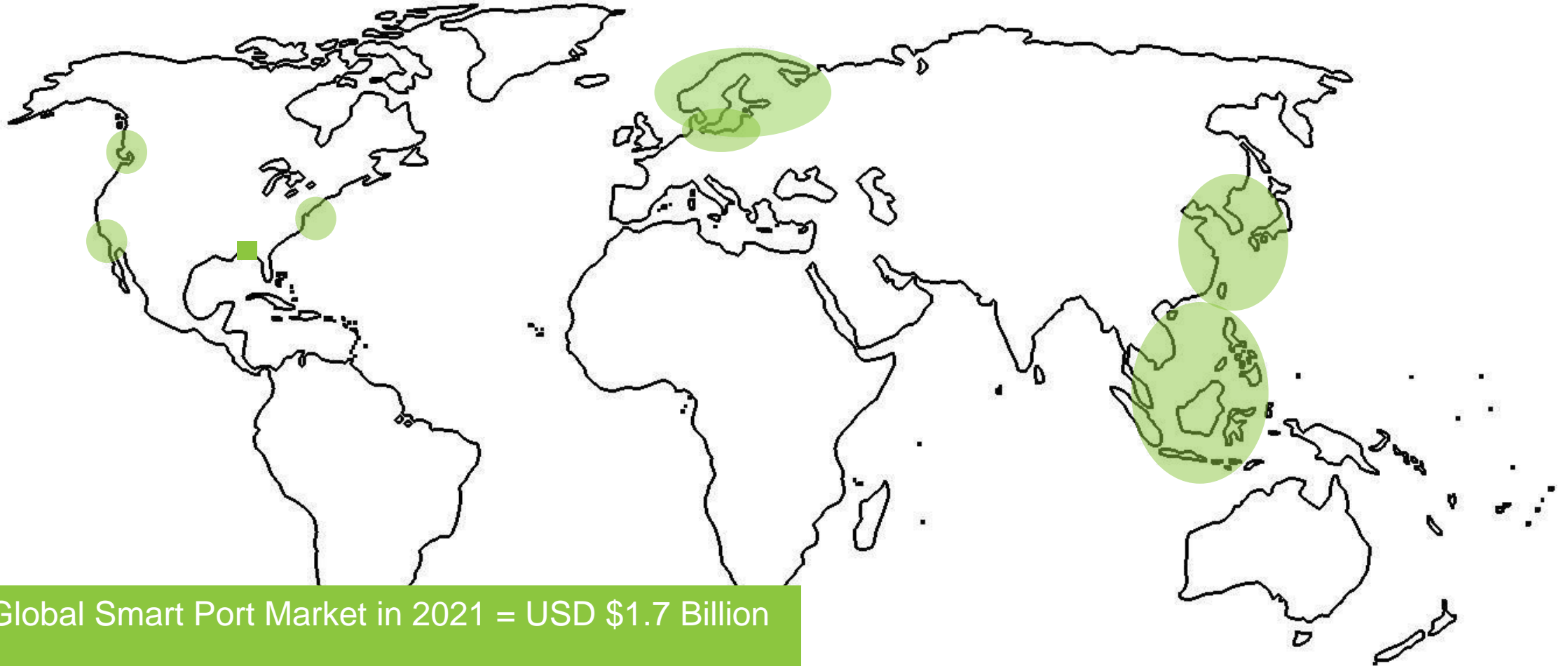


- Cyber security is critical to every industry
 - International shipping is no exception
- It is critical your digital solutions include proven cyber security frameworks



- COBIT
- NIST SP 800-53
- NIST SP 800-171
- NIST Cyber Security Framework
- NIST SP 1800 Series
- ISO 27000 Series
- CIS Controls
- HITRUST CCSF
- GDPR
- COSO

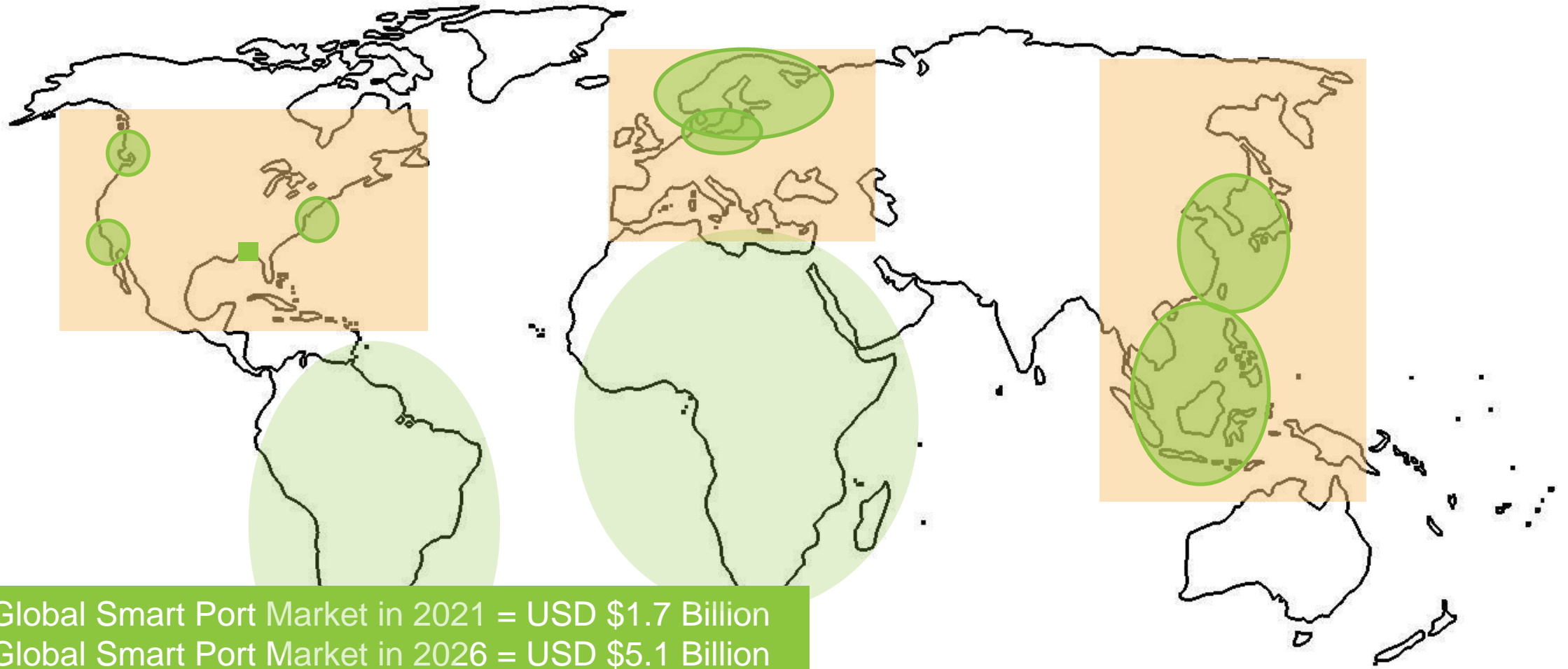
Global Overview – Current Port Digitalization Conditions 2022



Global Smart Port Market in 2021 = USD \$1.7 Billion

Markets and Markets, Top Market Reports 2021

Global Overview – Projected Port Digitalization Conditions 2026



Markets and Markets, Top Market Reports 2021

Global Port Digitalization Requires a Common Language

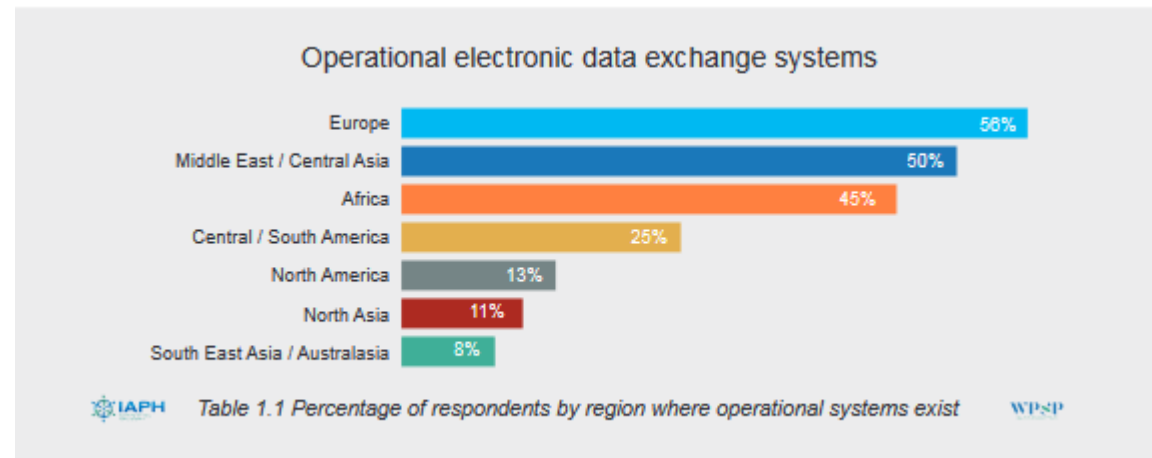


- IMO Convention of Facilitation of International Maritime Traffic (FAL)
 - On 8 April 2019, the mandatory requirement for national governments to introduce electronic information exchange between ships and ports in order to facilitate clearance processes, entered into force. The FAL Convention foresees a transitional period of no less than 12 months for the mandatory use of the electronic information exchange systems from the date of their introduction.

Driving Forces Behind Global Port Digitalization



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 - The IAPH and WPSP published a global ports survey to gauge implementation in January 2020



Accelerating Port Digitalization

- Critical Actions to Strengthen the Resilience of the Maritime Supply Chain



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 1. Immediate and Short-Term Recommendations
 - Electronic Data Exchange and the FAL Convention
 - Port Call Optimization
 - Port Community Systems
 - Maritime Single Window



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 2. Medium-Term Recommendations
 - Maritime Single Window
 - Port Management Information Systems (PMIS)
 - Continue the Evolution Towards a Smart Port



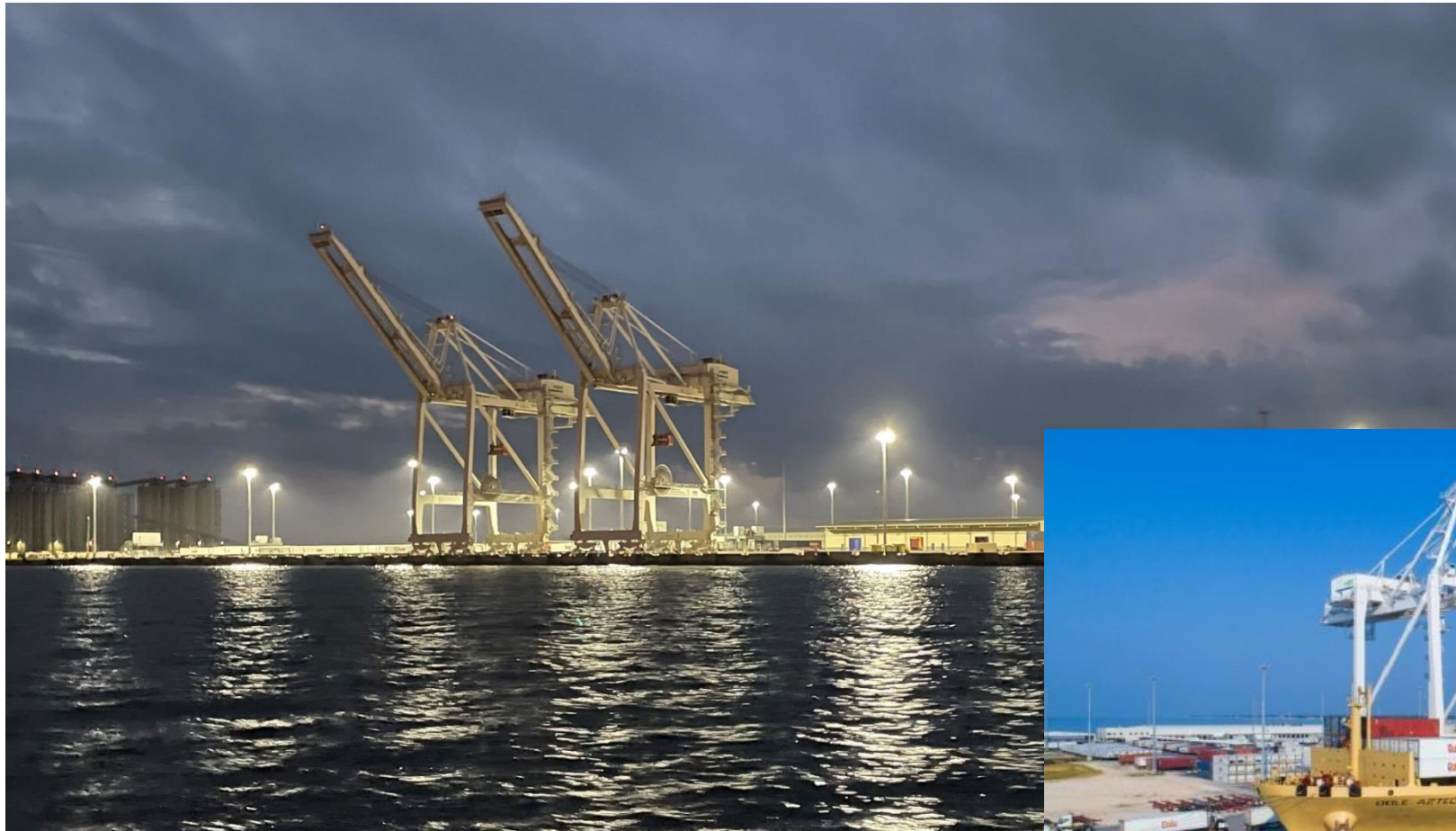
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All of this is dependent upon adopting and continually improving proven cyber security protocols

So What Does a Digital Port Look Like?



In Summary...

- Transferring cargo requires transferring data
- Port digitalization is this generation's containerization
 - And may have an even greater impact on international shipping
- Continued digitalization requires an aggressive cyber security framework
- International port digitalization is still in its early stages
 - And North America is lagging much of the world
 - There is a clear path forward with emerging solutions
- Digitalization is a valuable investment for ports across a wide spectrum of sizes and cargoes





Powering data-driven decisions

