



Optimizing the Ship/Shore Interface to Mitigate Risk at Marine Terminals



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Risk Management

Brief explanation



To reduce risks, you must first understand them



Risk Definition

$$\text{Risk} = \text{Likelihood (Probability} \times \text{Exposure)} \times \text{Consequence}$$



From risk perspective, the **consequence** and **probability** are virtually **static** values.



However, the **exposure** level changes depending on the specific conditions



Vessel vetting gives you a better understanding of where each vessel call's risk lands in your terminal's risk profile.

RISK OUTCOME					
Low					
Moderate					
Significant					
High					
Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
	1	2	3	4	5
Almost Certain 5	5	10	15	20	25
Likely 4	4	8	12	16	20
Possible 3	3	6	9	12	15
Unlikely 2	2	4	6	8	10
Rare 1	1	2	3	4	5

Risk Exposure Definition

Hazard



Low Risk Exposure



Medium Risk Exposure



High Risk Exposure



If we assess the risk level of the ship-shore interface we will see that:

- If the vessel has a **high-risk level**
- and the terminal has a **low-risk level**

What's the Risk level of the interface?

- The ship-shore interface will still have **high-risk level**



Ship-shore interface

Definition



Ship-Shore Interface Definition

An aerial photograph of a large ship docked at a pier. A yellow dashed line runs diagonally across the ship's deck, from the upper left towards the lower right, indicating the ship-shore interface. A red circle is visible on the pier to the left, and another red circle is at the bottom center of the image.

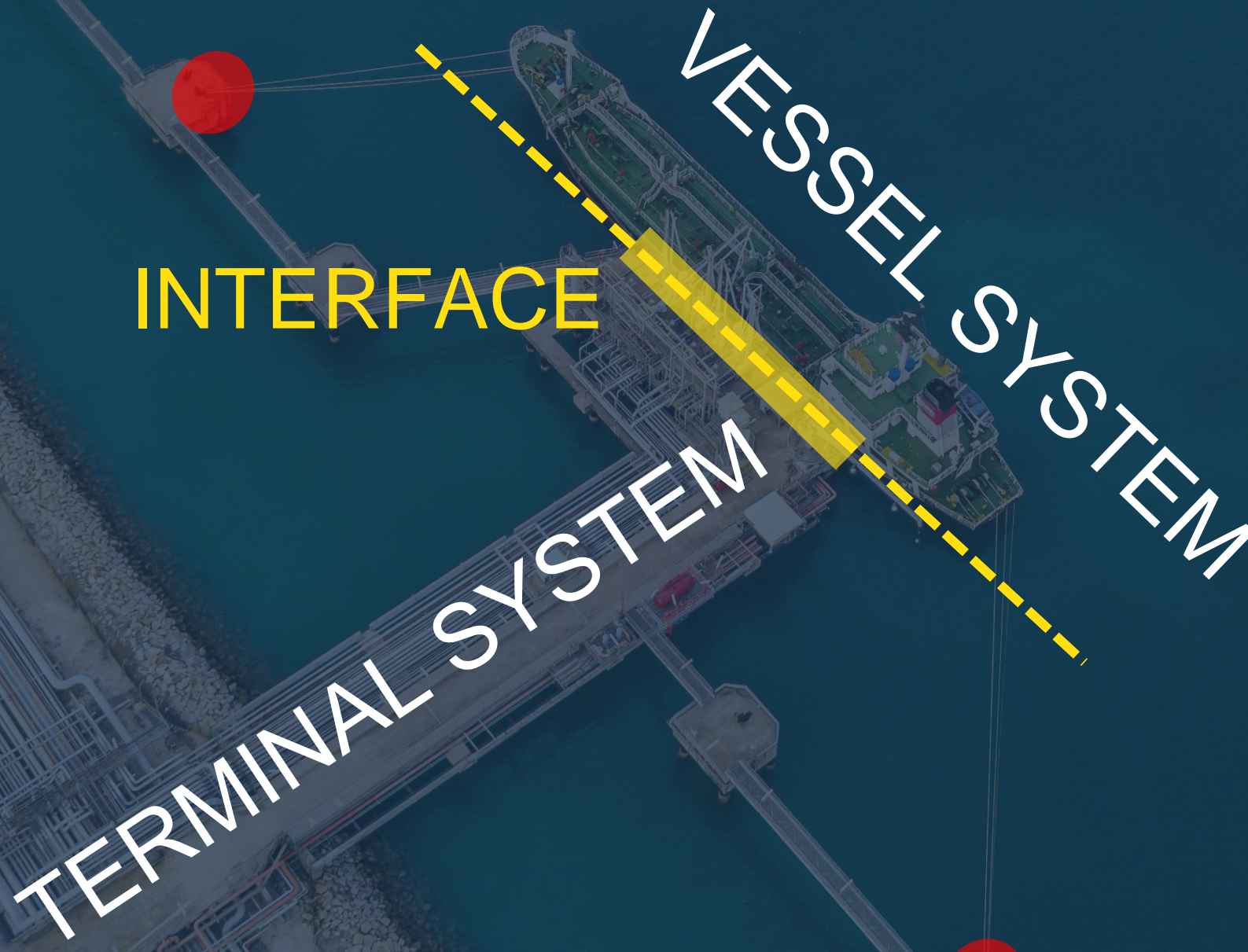
INTERFACE

Interface

“The point at which independent and often unrelated systems meet and act on or communicate with each other”.



Ship-Shore Interface Definition

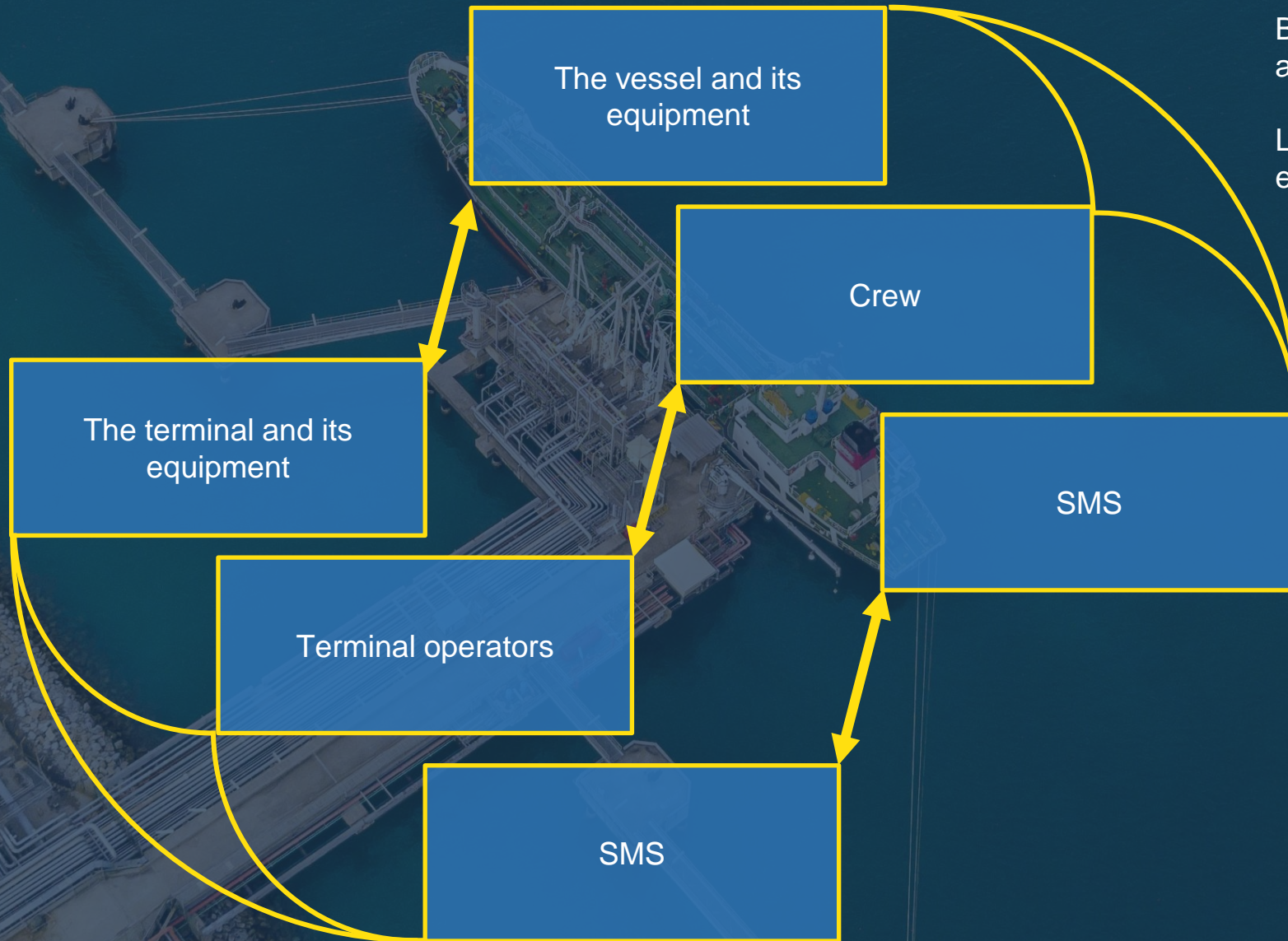


Interface

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Basic ship-shore interface scheme

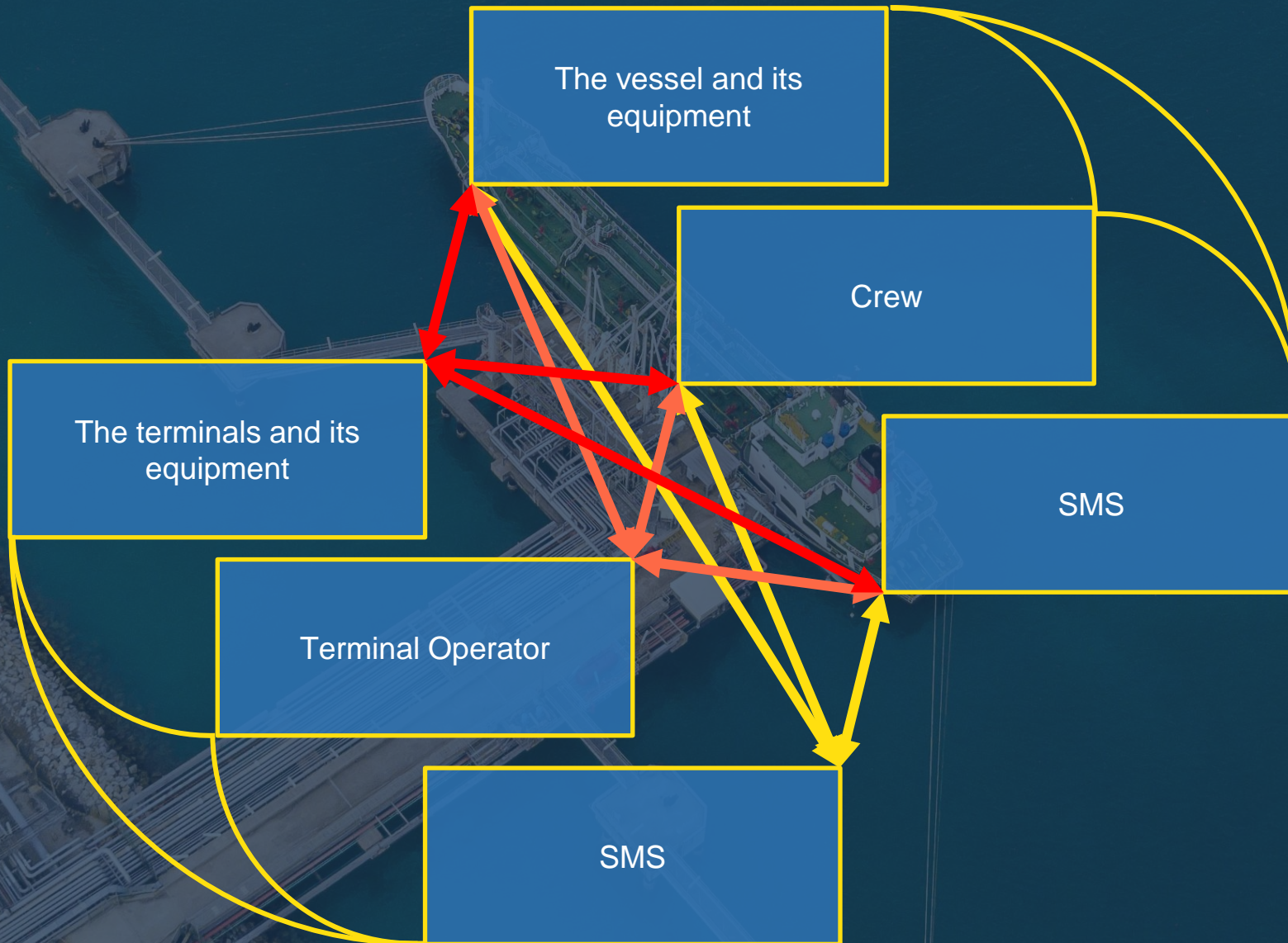


Basic ship-shore compatibility assessment:

Length, breadth, DWT, displacement, etc.

Basic communications between the terminal operators and the crew.

Pre-arrival, SSSCL, etc.



Vetting processes for a comprehensive modern ship-shore interface

Implementing a comprehensive vetting process improves our understanding of each system's elements and their connections.

This helps us anticipate issues and develop a more effective and efficient interface.

Vetting and Marine Assurance

Addressing the maritime risks at your terminal



What is Marine Assurance?

Vetting – Identify and Understand Risk

- ✓ Safeguard life, environment, and assets in maritime operations.
- ✓ Prevent incidents and their impacts.
- ✓ Avoid supply chain disruptions.
- ✓ Ensure industry sustainability.
- ✓ Reduce costs.

Risk Management – Mitigate Risk

- ✓ Mitigate identified risks.
- ✓ Avoid unnecessary risks (ALARP).
- ✓ Align barriers with response capabilities.
- ✓ Balance risk and objectives for efficient operations.



Why Are Digital Tools Needed for Port Safety?

1. Complexity in Port Operations

Ports are handling ever-increasing volumes of cargo and vessel traffic. This demand for efficiency, combined with heightened security and compliance expectations, introduces operational complexities that can strain traditional safety protocols.

Digital solutions support growing complexities in port operations by streamlining safety processes, enhancing real-time monitoring, and ensuring consistent regulatory compliance.



Why Are Digital Tools Needed for Port Safety?

2. Need for Risk Reduction

Ports must manage risks proactively to ensure **business continuity** and **compliance** with global safety and environmental standards, such as ISPS (International Ship and Port Facility Security) and IMO guidelines.

Digital tools help reduce risks by enabling consistent safety assessments, real-time monitoring, and rapid response to incidents.



Why Are Digital Tools Needed for Port Safety?



3. Current Gaps in Safety Compliance

Manual processes and irregular safety checks can create vulnerabilities, exposing ports to safety and compliance risks. Lack of standardised data exchange and disparate safety protocols across terminals lead to inconsistent enforcement, leaving potential for oversight.

Digital solutions address these gaps by automating compliance checks, improving data accuracy, and ensuring adherence to safety regulations, ultimately strengthening the port's overall safety infrastructure.



Conclusion: Key Takeaways



Digital tools are essential for addressing the challenges of safety, efficiency, and sustainability at ports.



Ports adopting digital safety tools benefit from enhanced risk management, operational efficiency, and cost savings.



Continued digitalisation will be critical as ports and the maritime industry face new challenges and opportunities.



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Thank you for listening
Questions?