Nikolaos Stavrou- FURUNO HELLAS S.A.
Stavroula Kofopoulou - Lloyd’s Register

Digital Ship - 2022

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Contents of the Presentation:

1. Safe Bridge & Connected Bridge
2. Remote Monitoring & Troubleshooting Platform
3. Digital Twin
4. Local Interface / Assistance On Board
5. Remote Services
6. Remote APT
7. Connection with 3rd Party Companies

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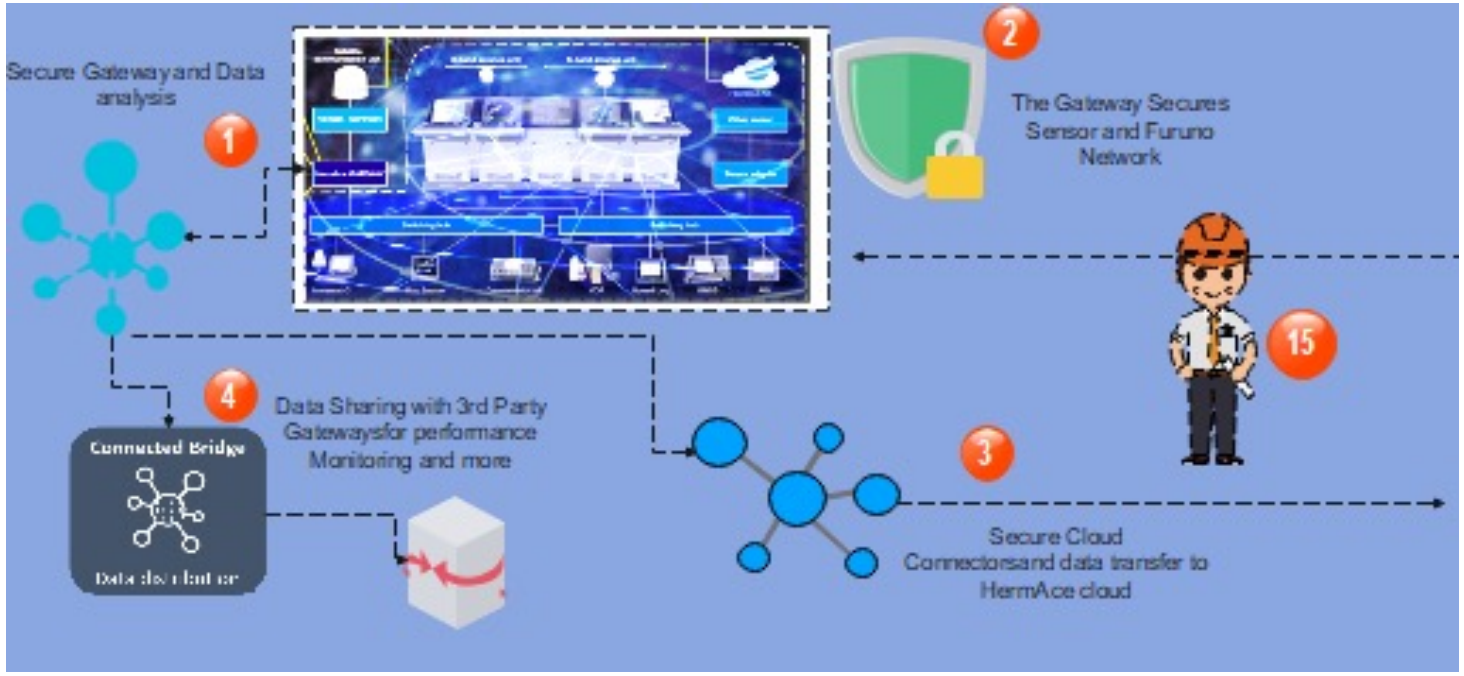
HermAce

Safe Bridge – Connected Bridge

Furuno Gateway is installed on the vessel. The benefits of using HermAce are profound

- HermAce gateway is an Authorized Furuno gateway
- Follows IMO guidelines for network Segregation on Maritime Risk Management (MSC-FAL.1/Circ.3/Rev.1 14 June 2021)



Statement no: PRJ11100330395-1
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Cyber Security Factual Statement

Office: Piraeus

Date: 12 August 2021

This Statement is issued to FURUNO HELLAS S.A. - 10 Thetidos Str, GR 16675 Glyfada, Greece.

System of concern: **HermAce Remote Monitoring Platform**

To confirm that their system has been assessed against the *LR ShipRight Procedure for the Assessment of Cyber Security for New Ships and Ships Systems, October 2020* and has been found compliant with the following Descriptive Note level, which could be entered in column 6 of the *Register Book* for a ship incorporating this system:

ShipRight Cyber SECURITY Capability (Level3: Accomplished)

Designed Capability is the measurement of the potential level at which a given vessel and/or system can be operated from a cyber security perspective. Maturity is the measurement of the operational state and ongoing processes and behaviors that the given vessel and/or system is being operated at.

The information provided in this statement is in accordance with LR Nettitude report dated 29. July. 2021 version 1.0

Date Assigned 12/08/2021
This Statement is valid until* 11/08/2026

* Unless extended after completion of 5-year assessment and is subject to and intermediate assessment on either the second and third anniversary, plus or minus 3 months, being satisfactorily completed.

Issued at Piraeus
On 12/08/2021

Application of this ShipRight procedure does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations for equipment to be installed onboard a Classed ship or craft. The results of examination against LR Rules are covered by the Classification Certificate.
If the specified design drawings are amended during the validity of this certificate, the product is to be re-approved prior to it being supplied to as evidence of achievement.
In case of applications other than Marine, the application of this Statement will be limited to the relevant scope of the Specified Standards and acceptance thereof by the local authorities.

Stamatis Agelopoulos
Lead Specialist to Hellenic Lloyd's S.A.

a member of the Lloyd's Register group.

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Form 1124 (2014.10)

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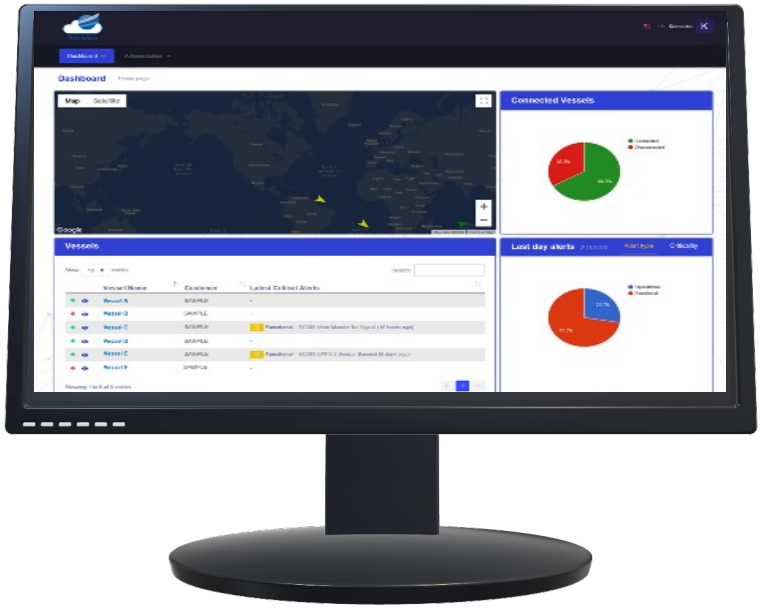
Remote Monitoring & Support System (RMS)

Furuno's HermAce RMS offers the first active service of Furuno device monitoring

- Critical Data of Furuno Products On-Board Become Available on your PC 24/7 – For Preventive & Proactive Maintenance
- Customer can control the equipment status and be supported by Furuno Technical Team
- Automatic Messages can be sent to the crew for further troubleshooting Instructions
- The crew can send the control diagnostics to Furuno Technical Team for device Health Status Control and Organize Remote troubleshooting and Remote Access.
- Easy Check prior to any attendance opportunity
- Selection of required Spare Parts



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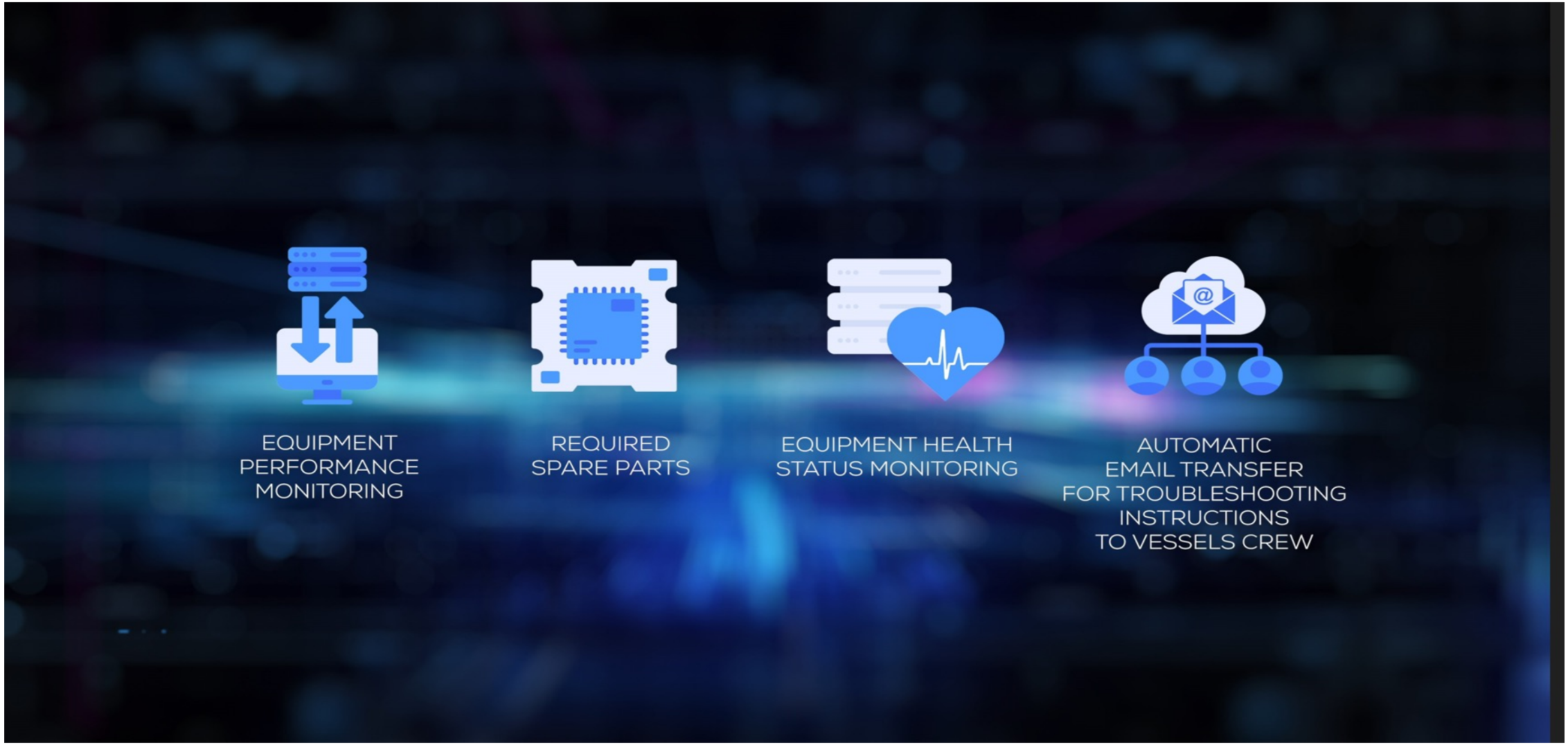

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Digital Twin - Characteristics

The digital twin is A “Virtual Replica” of Real Bridge Equipment, based on data streamed directly from the vessel.

- ✓ Static/Dynamic Data
- ✓ Alerts
- ✓ Health Status Data
- ✓ Power On/Off
- ✓ Remote Data Downloading
- ✓ Safe Bridge – Connected Bridge
- ✓ Remote Access to Device
- ✓ Remote APT

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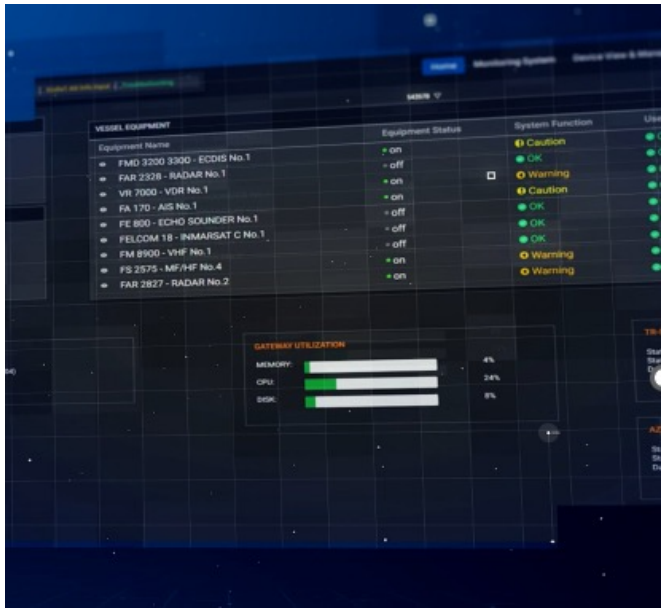
Local Interface / Assistance on Board- App

A Web Application that offers the vessel Crew a User-Friendly Environment

- Monitors Furuno devices, analyze and resolve eventual problems
- Facilitates immediate contact with different Furuno Service departments
- Easy Configuration by Furuno Engineers for the Gateway Billing Management
- Furuno Equipment Health Status Monitoring
- Remote APT Battery Test lookup
- Provides Direct Connection with equipment to Furuno Service Station through an on-off switch



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Remote Services from Shore

Allows the shore engineer to perform a virtual attendance on board the vessel and perform remote services on the bridge equipment

- Secure Remote Access to Furuno equipment through HermAce Portal Certification process and VPN technology
- SW Check
- Device Configuration and Calibration (VDR/ECDIS/RADARS)
- Pre-APT Check
- VDR APT Survey
- Software Updates
- Data download

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VDR Live Play and Data Download

Allows shore personnel to monitor VDR / bridge navigational information in real time. The data can be used for auditing or remote assistance.

- Provides the opportunity to download data stored in the VDR's
- Play back recorded media Over The Air (OTA) to the shore infrastructure.
- This data can be played back at the shore to audit the vessel's performance or navigational information.
- Online monitoring of ECDIS and RADAR screens.

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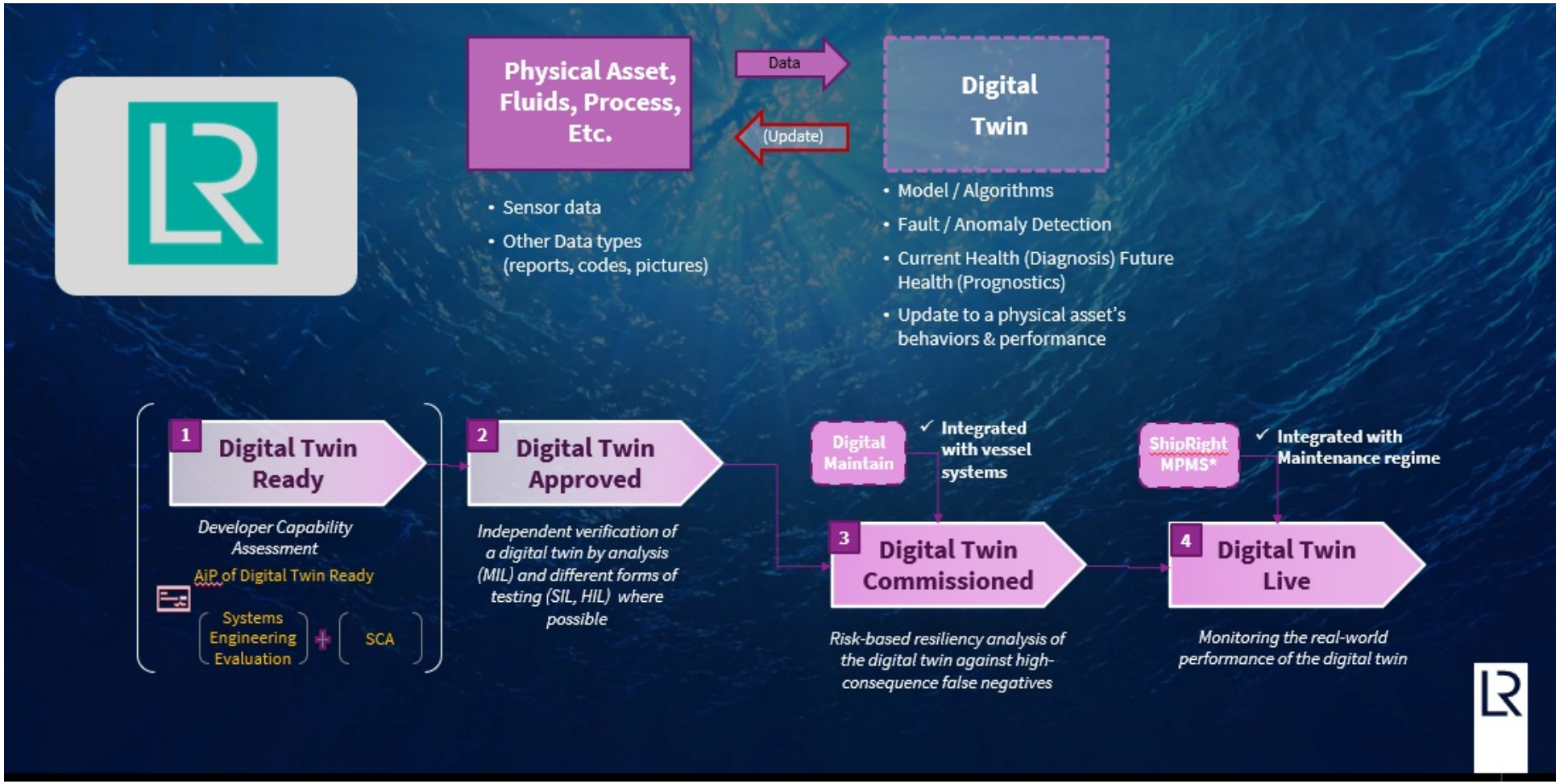
VDR Remote APT- LR's Assurance Framework for AI and Digital Twin Technology



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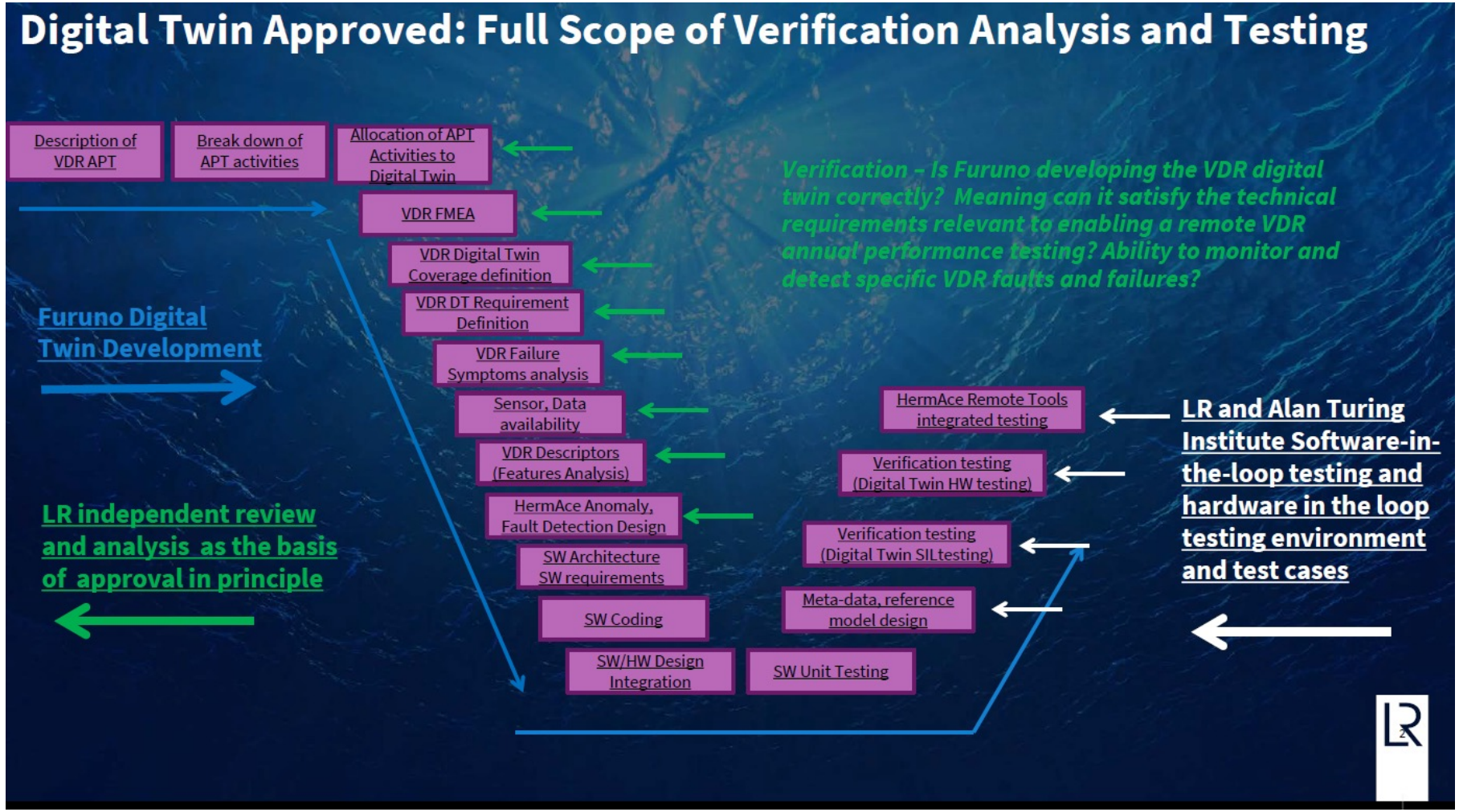

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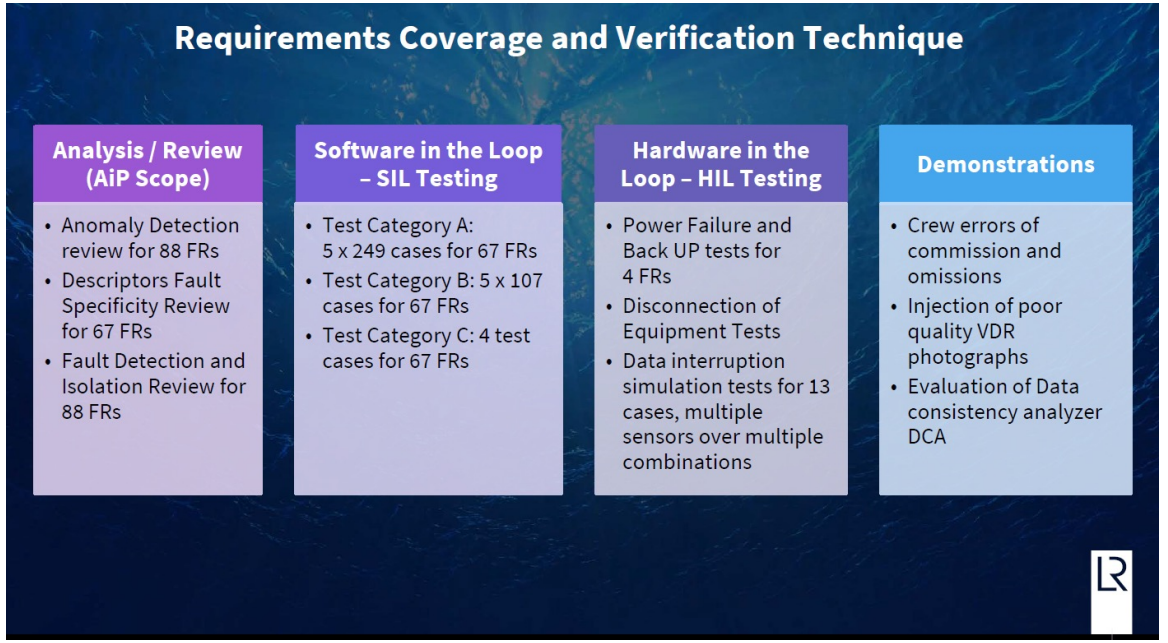
VDR Remote APT- LR's Assurance Framework for AI and Digital Twin Technology

- LR is embracing remote solutions and looking at new ways data can be extracted from vessels. Your ships and assets can now be remotely surveyed efficiently and securely wherever you are in the world, maximizing your profitability and minimizing operational downtime
- During 2020 we have grown our remote survey offering to support our customers, and now, 1 in 3 of the 30,000 surveys we perform each year is completed without attendance.



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VDR Remote APT

- Certification of HermAce VDR digital twin relevant to the remote annual performance test of the VDR

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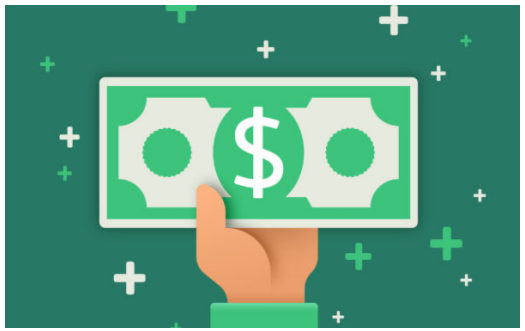
Benefits of HermAce Remote APT and Remote Services

- Monitors Furuno devices, analyze and resolve eventually issues, without physical attendance.
- Automated 24/7 replies for troubleshooting. Minimizing response time resolving issues.
- Reducing risk of unnoticed VDR problems leading to failed APTs. 7% of the cases is statistically leading to multiple attendances, due to issues that were not reported by the vessel's crew.
- Remote APT reduces the overall cost of the APT survey. Significant reduction in labor time on board leading to reduced risk of unexpected delays and expenses.
- Remote APT can be performed almost anywhere. Reducing technician's travelling cost.
- Reducing the time of APTs. The vessel's schedule continues uninterrupted. Especially on tankers/containers where port stays are short, onboard labor time is critical
- Reducing survey requirements and attendance onboard
- Saving lots of costs for operators
- An environmentally friendly service due to reduced traveling required



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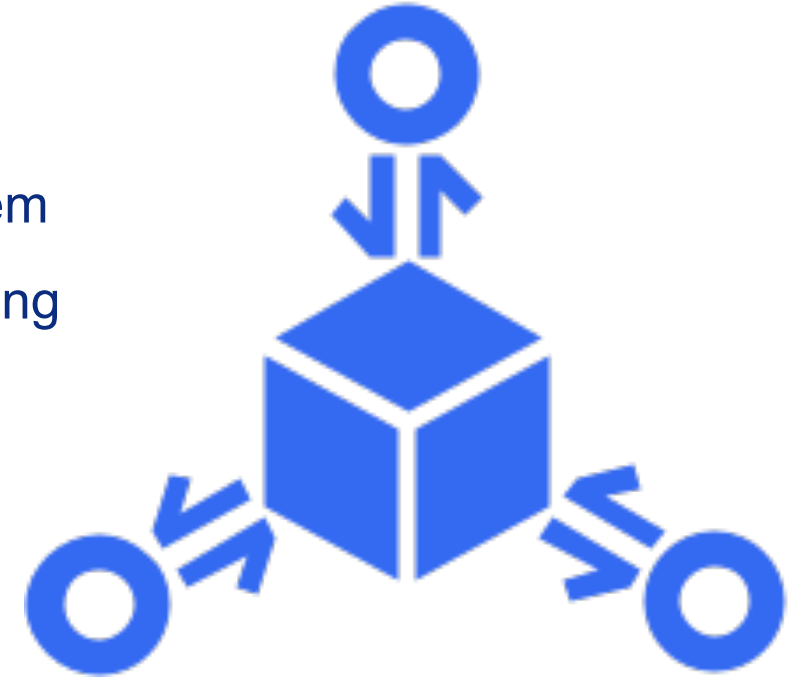
3rd Party Interfaces – Orchestrator

Furuno Hellas Implemented a Web Of Things Platform for cloud data visualization and delivery to Customers

Benefits for Customer:

- Collect data via centralized API manage and process them
- A Customer API where we expose Insights to help shipping companies gain from our data
- Web of Things Platform for Customer who wants White Label Portals



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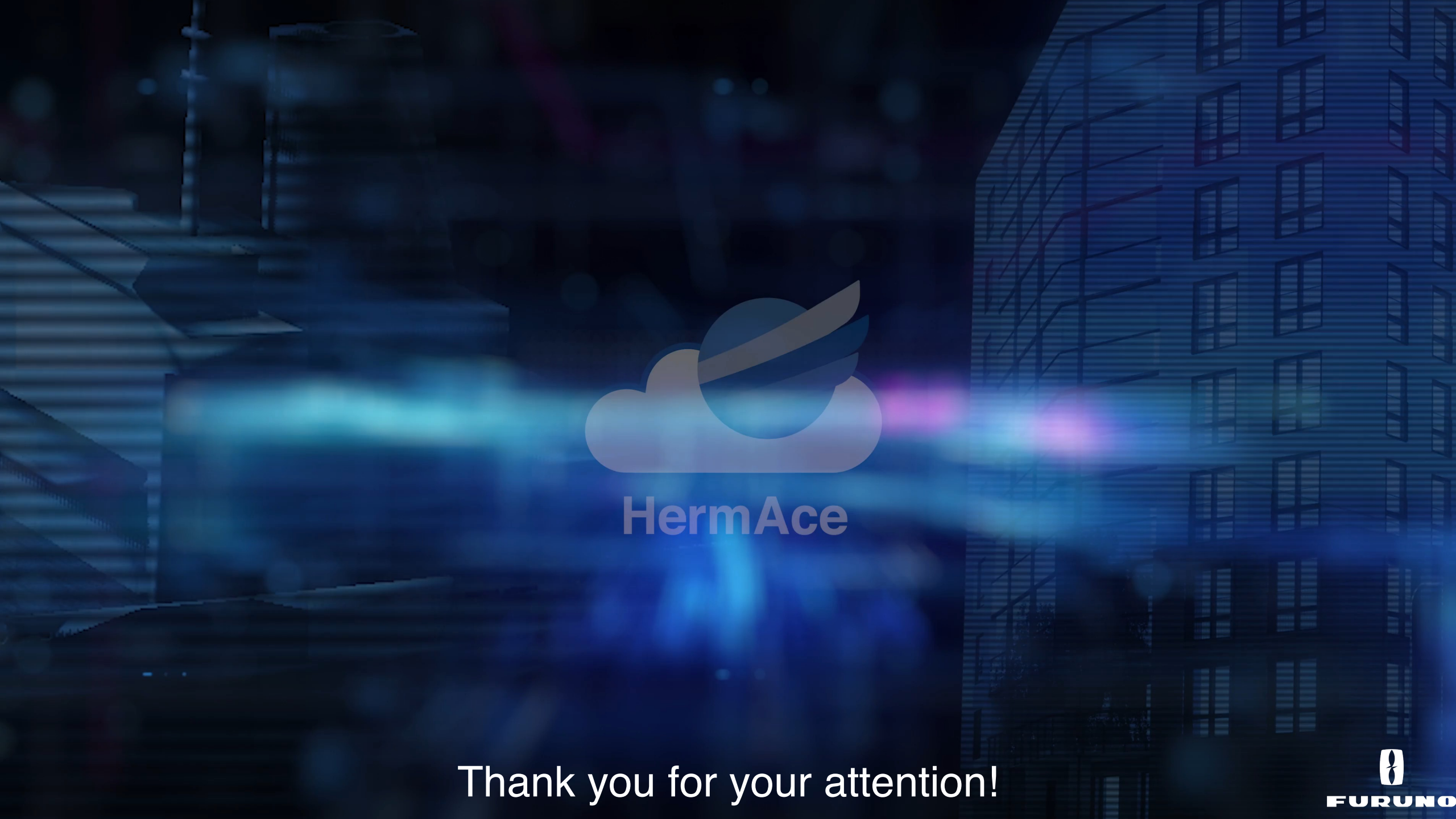

Thank you for your attention!

FURUNO