PortForward

Towards a green and sustainable ecosystem for the EU
Port of the Future

Green Energy Ports Conference
Vigo, September 23

Olaf Poenicke, Fraunhofer IFF

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PortForward

H2020 Programme
“The Port of the Future”

Impact expected by EU

Reduction of port’s environmental impact

Reduction of port’s operational costs

Improvement of logistics efficiency

Better port integration in the local port community

PortForward

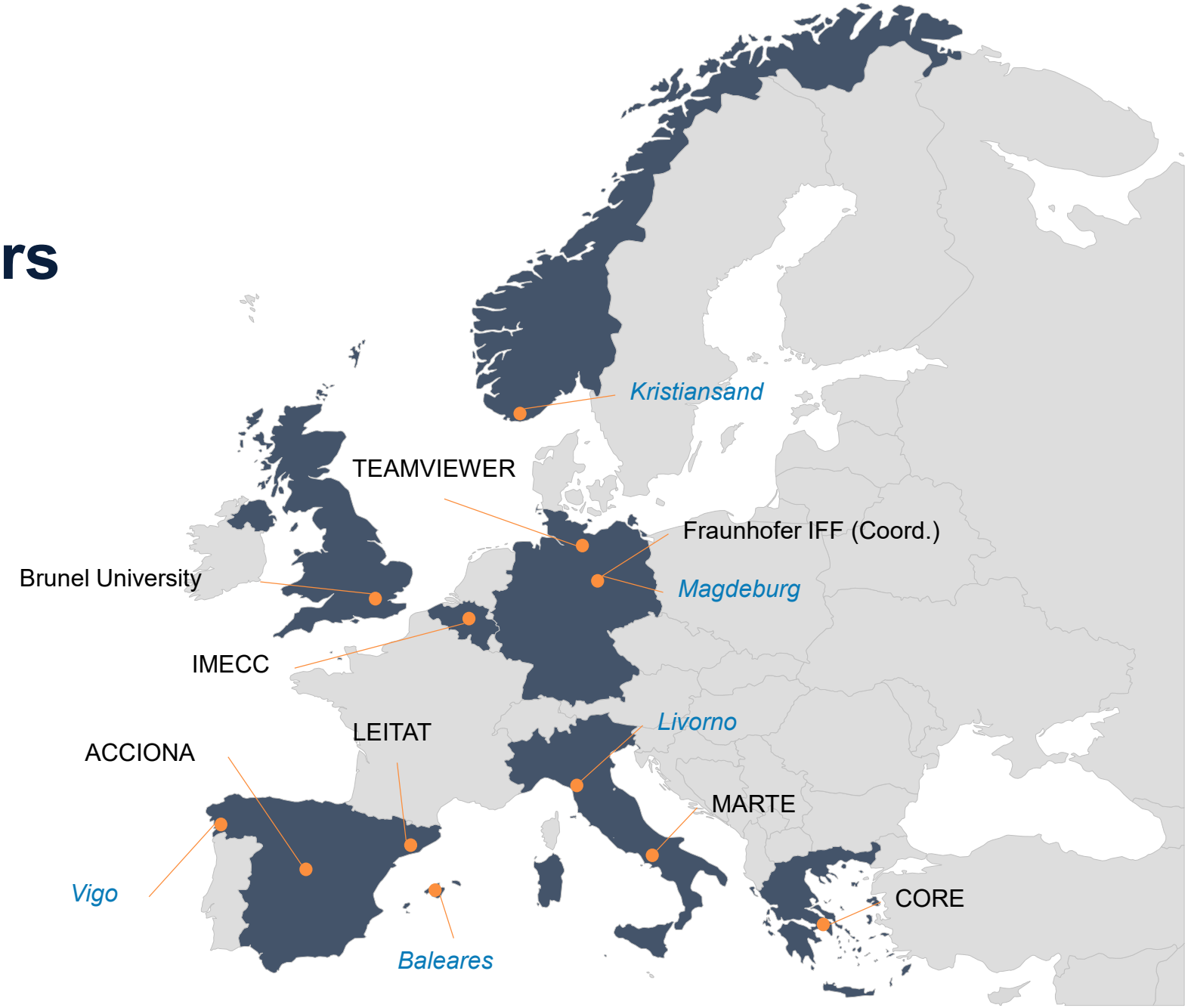
13
Partners

4.9M €
EU Funding

48
months

5
participant Ports

13 project partners



What's the challenge?

Make the EU port of the future **smarter**, **greener** and more **interconnected**.

Main Objectives

- **Smart Port Solutions**
- **Green Port Solutions**
- **Interconnected Port Solutions**

Smart Port Solutions

Employing ICT solutions to improve information flows internally and **between ports and port communities**

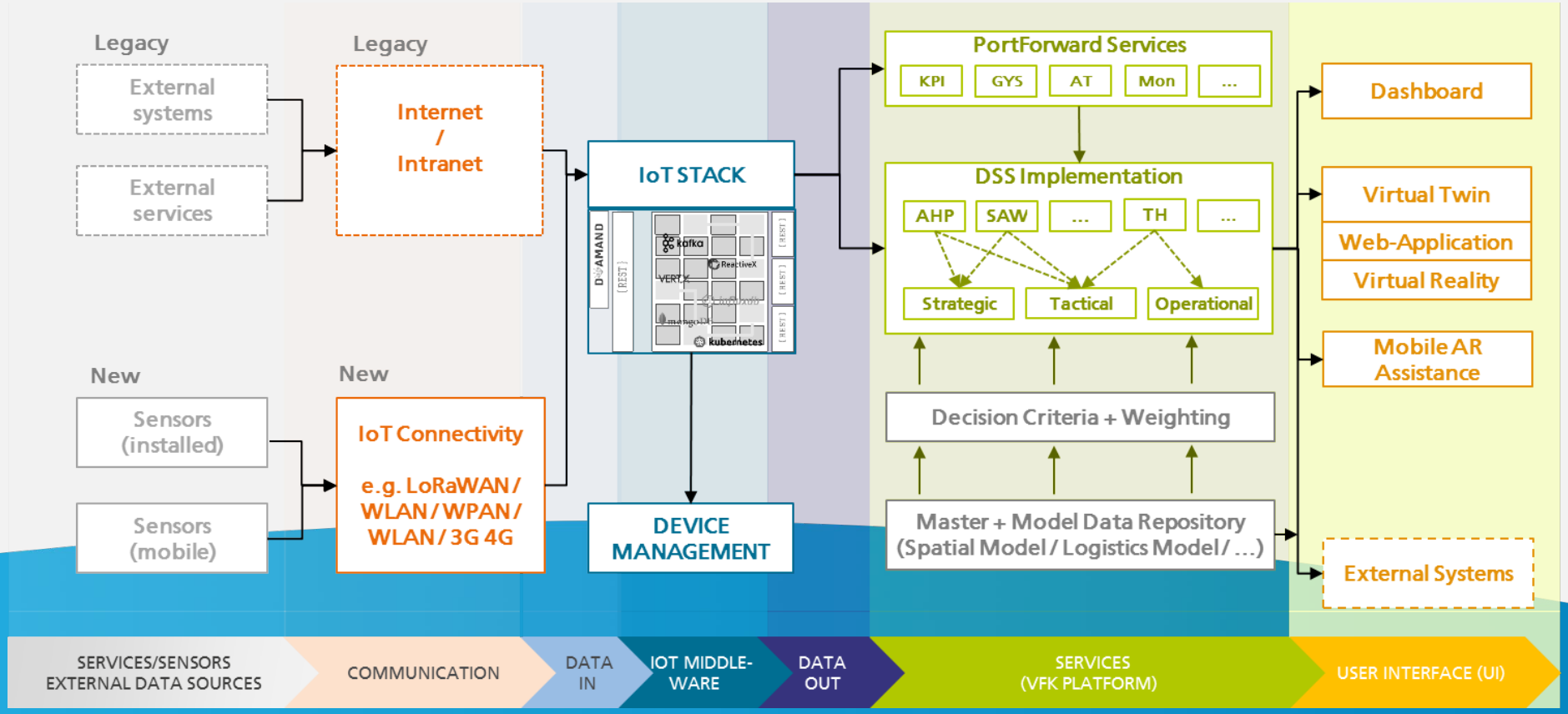
Green Port Solutions

Adopting green technologies to reduce the environmental impacts of port operations and save resources

Interconnected Port Solutions

Integrate different technologies **to better monitor and control freight flows** & integrate different services on one platform to generate added values

The PortForward Platform



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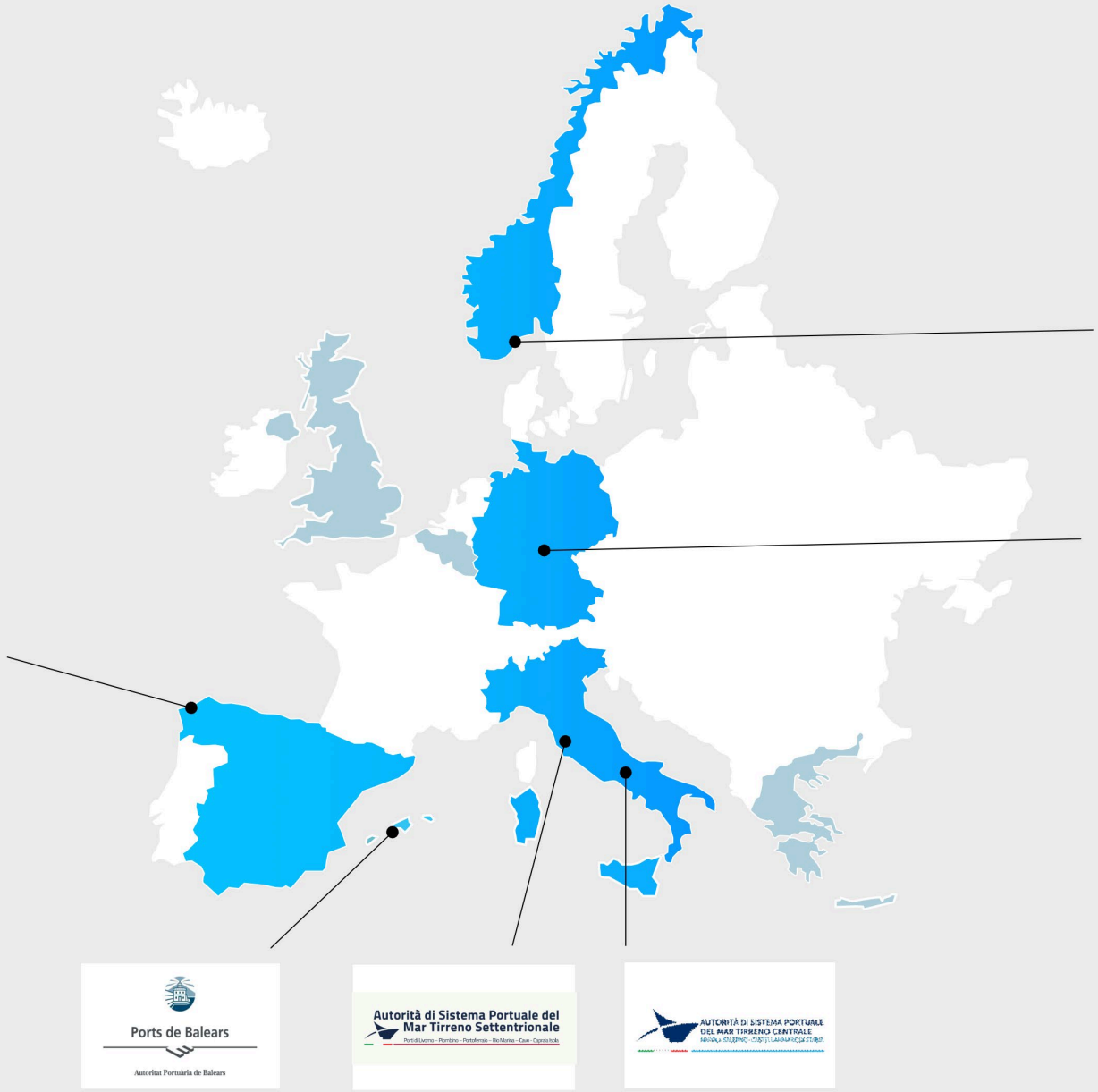
Use Cases & Services

We test and validate the PortForward Platform and Services in ten Use Cases **in 5 small and medium size EU ports.**

5 validating ports
1 replicating port



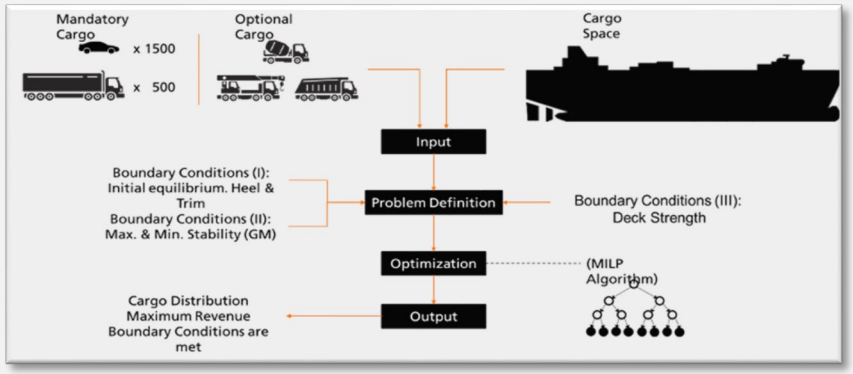
Port de Baleares

Port of Vigo

Port of Naples

Port of Livorno

Port of Magdeburg



For terminal operators

RoRo & Stowage Optimization

Aimed to achieve the **most efficient use of the storage capacity** of RoRo vessels to improve the operational efficiency of logistics processes within the port terminal.

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For shipping companies

Truck Platforms Tracking

Improves the logistics operations of shipping Ro-Ro companies and their decision-making processes by **tracking vehicles used for loading/unloading truck platforms without driver.**

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For port authorities

Prediction of Port-City Interactions

Aims to **tackle the impact of cruise arrivals on city visiting, and management of people flows,** by developing a software component to provide visiting advices and mobility among port-city

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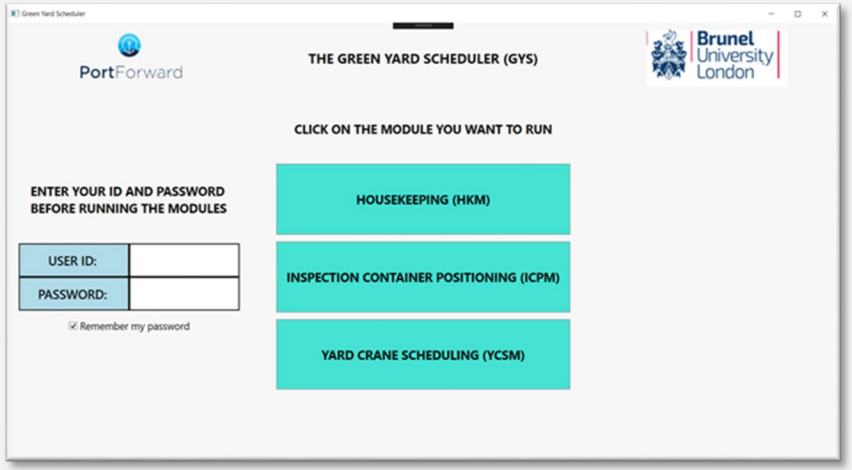

For terminal operators

Green Yard Scheduler

A decision support system for more efficient and sustainable container terminal operations by **prioritising environmental sustainability alongside terminal productivity**.

Brunel University London | Puerto de Vigo Autoridad Portuaria de Vigo | imec

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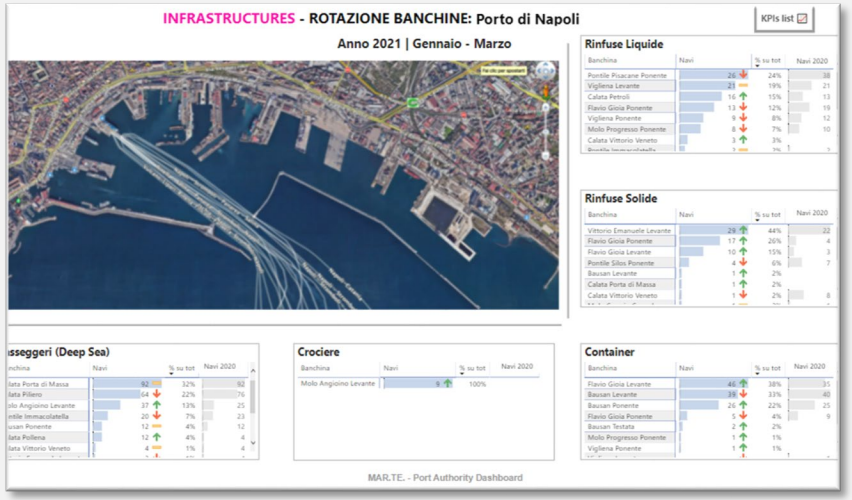

For port authorities

Port Authority Dashboard (PAD)

A **data driven management system** for monitoring port activities and evaluating port performance based on an automatic retrieval and aggregation system of data gathered from several sources.

MARTE sealand logistics

AUTORITÀ DI SISTEMA PORTUALE DEL MAR TIRRENO CENTRALE
NAPOLI · SALERNO · CASTELLAMMARE DI STABIA

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For port authorities

Container Inspection

Supports the terminal worker digitally with the use of **smart glasses for goods control and inspection** within port boundaries, ensuring the security in controls and inspection operations.

TeamViewer

Port Network Authority of the North Tyrrhenian Sea
Ports of Livorno – Piombino – Portoferraio – Rio Marina – Cavo - Capraia Island

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For terminal operators

Pilot Assistance

Supports pilots with AR information using **smart glasses for real time support display** – e.g. navigation in narrow port access channels, information about sea conditions or wind speed.

TeamViewer

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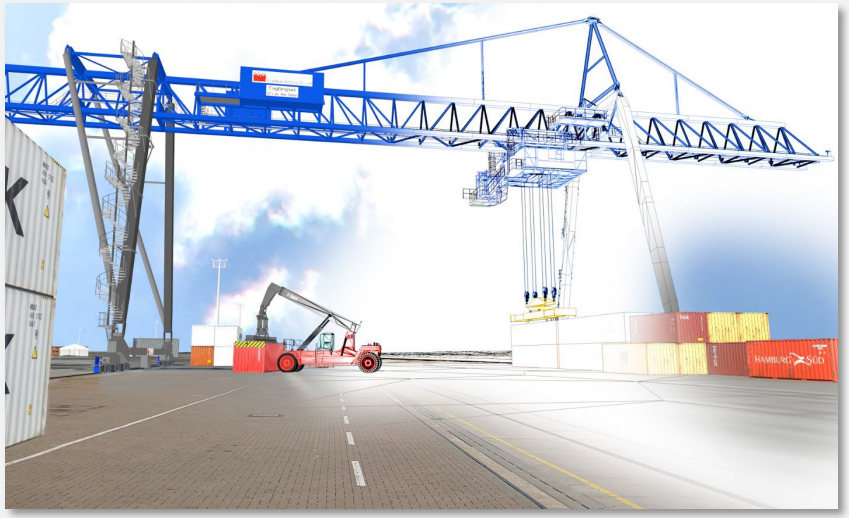

Virtual Twin as integrated User Interface

Use of a VR model of the complete Port of Magdeburg to visualise information in their spatial context.

Virtual Twin in used as intuitive user interface in all three Use Cases at the port.

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For terminal operators

Dynamic storage space monitoring

This real-time Decision Support System based on IoT and LiDAR data is developed as part of the Virtual Twin.
It enables the **optimization of storage area utilization and reduction of efforts for searching goods.**

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For terminal operators

Asset tracking

This smart logistics service, equips logistics assets with energy efficient IoT devices. Location and status of the assets are visualized within the Virtual Twin of the port. Thus, **movements and utilization of assets can be continuously monitored to enable an efficient asset management.**

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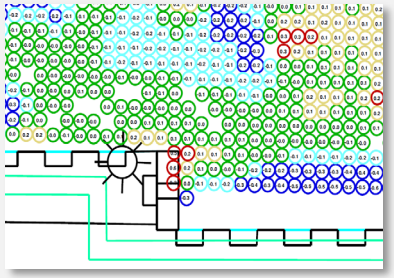

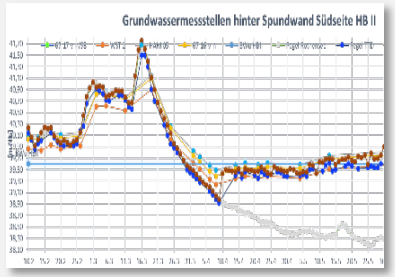

For port authorities

Sheet pile wall monitoring

Enables better planning of investments in central port infrastructure by providing a better overview on the current status and the status prediction of sheet pile walls. IoT based sensor devices provide data to the prediction model continuously.

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LEITAT managing technologies

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