



THOMAS KUMM, ABB PORTS, TECH TOC, JUNE 12 2024

Automating in the next era of terminal operations





kühz

27L

APM TERMINALS

27L

ABB

MAERSK

MAERSK

MAERSK

MAERSK
SEALAND

MAERSK SEALAND

MRKU 9322871

MAERSK

MAERSK

Prepping your terminal for the future

Optimize step by step

Address the needs

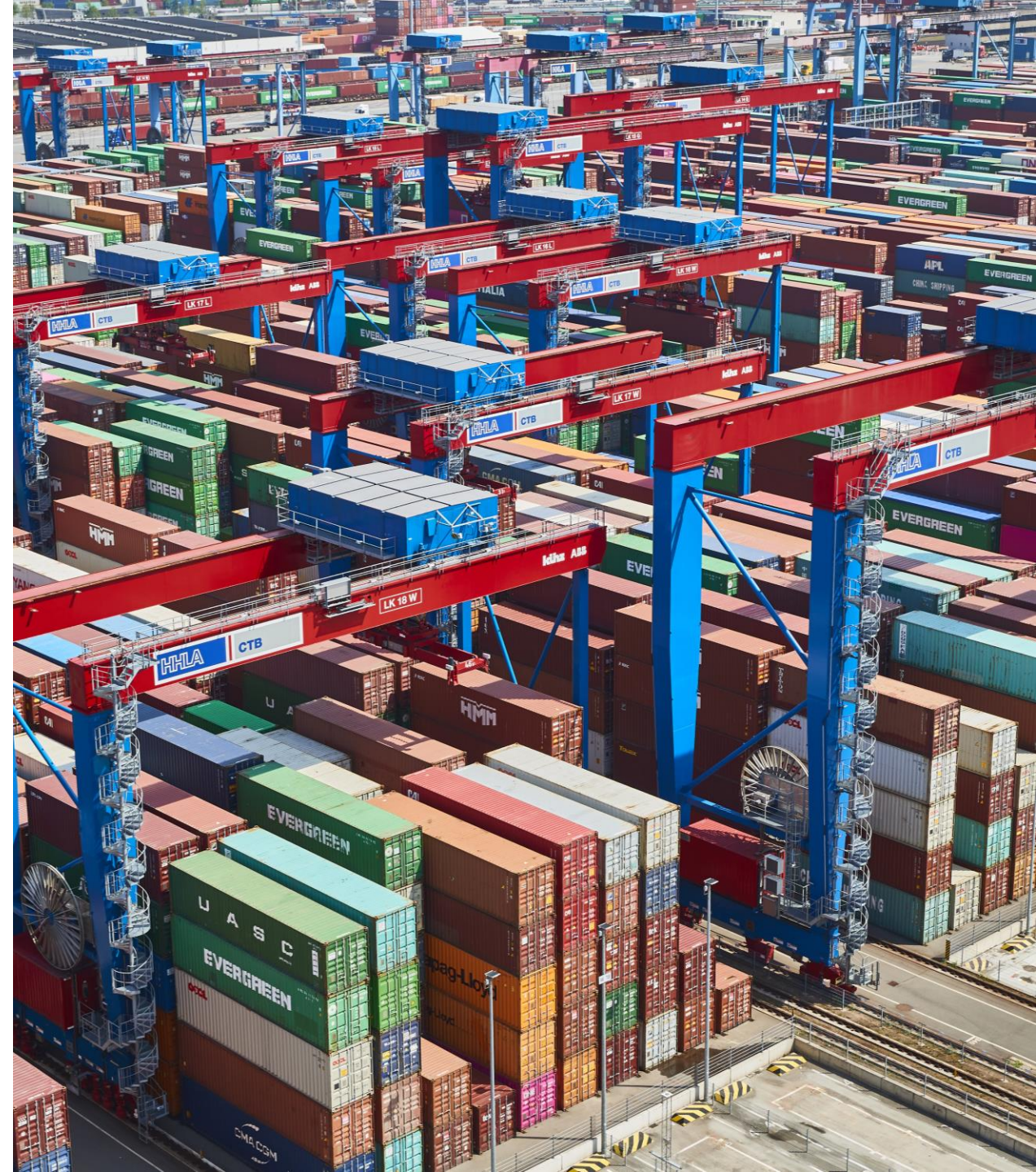
- Aim for the highest density and productivity
- Improve capacity when reequipping the terminal

Grab the opportunities

- Start the automation where it gives the highest return
- Extend equipment life and enhance performance by retrofits and functional upgrades

Long-term system performance

- Find concept that fits and can later be expanded



Set your targets right

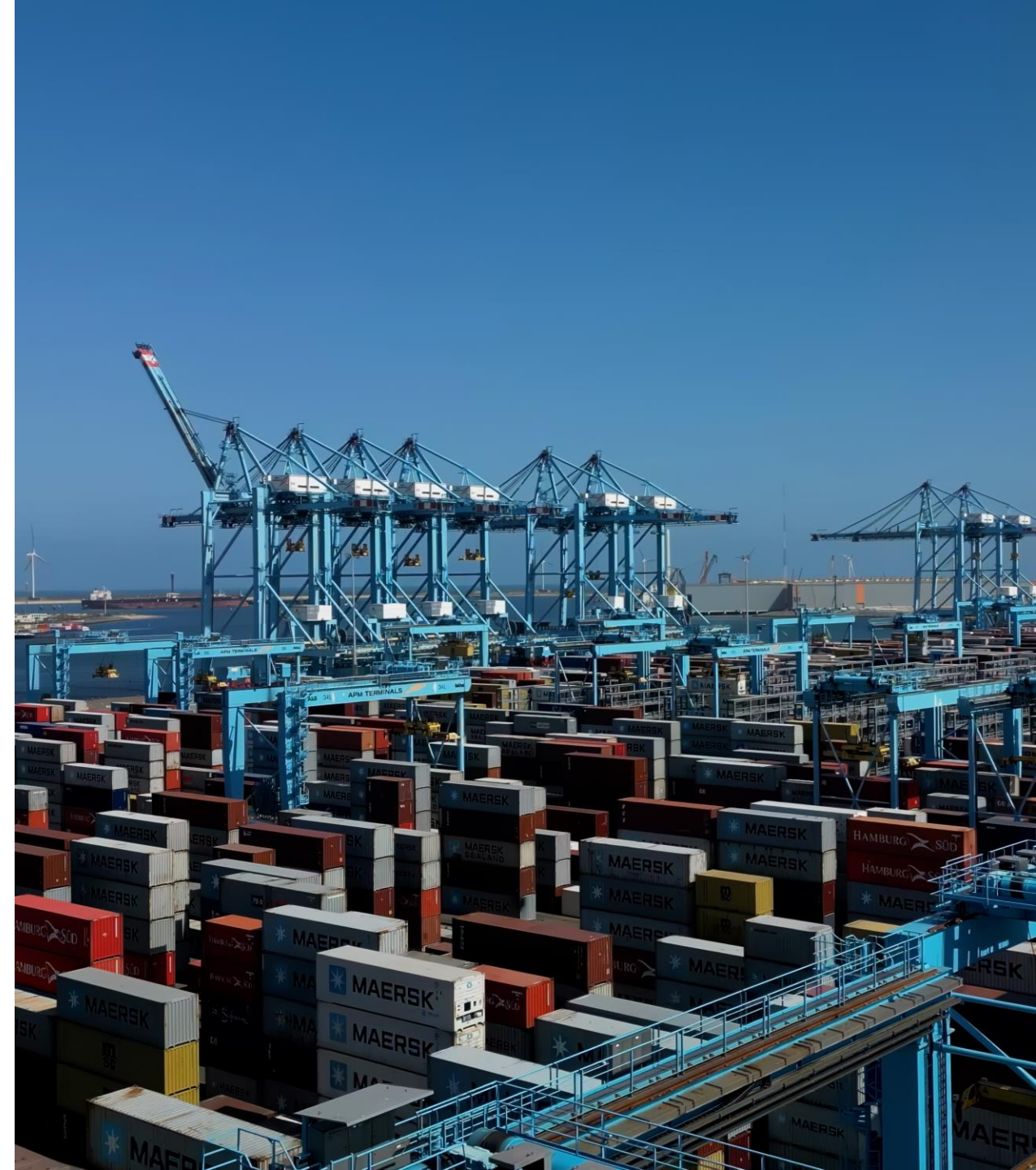
Productivity and consistency

System performance ASC

- High level of automation
- Few manual interventions
- High reliability

System performance STS

- Consistent automation system
- Great potential for increased automation
- Process optimization
- Remote operation
 - Flexibility and productivity
 - Enable pooling





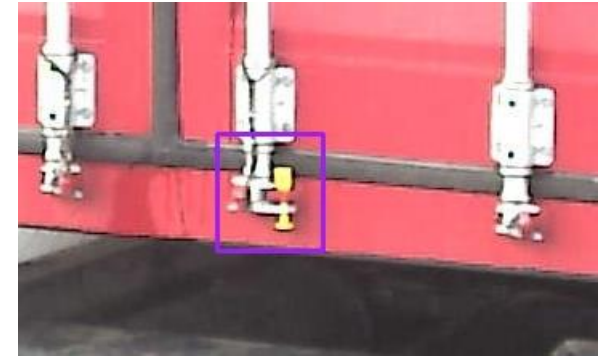
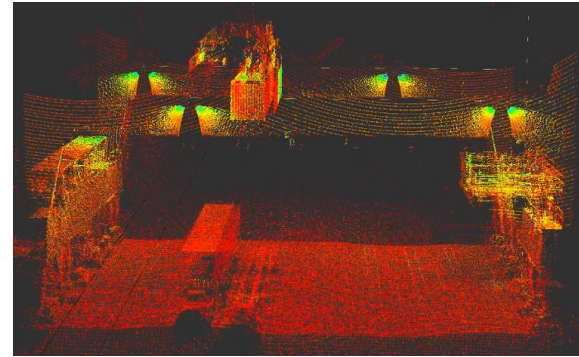


AI – a natural part of automation

Domain knowledge and leading technology

Integrated in solutions for quay, yard, gate and rail

- Increase automation and improve efficiency
- Enable and drive autonomy
- Digitalization
 - Real-time decisions on container handling and job promotion
- Reduce emissions and improve safety
 - Reduce idle time, turn times, and time under the hook



Power supply challenges

A need for smarter electrical infrastructure



New types and increments of loads

- Electrical vehicles
- Reefer loads
- Critical loads



Energy transition and lower emissions

- Solar and wind
- Green hydrogen
- Shore power



Consumption control and power quality

- Power demand costs
- Reefers optimized operation
- Lighting control
- Peak power limitations



Predictive maintenance of electrical infrastructure

- Plan ahead
- Measure data and use AI for predicting and control



Regulatory challenges

CO₂ and Cyber Security

The FuelEU Maritime regulation

- January 1, 2030, container and passenger ships greater than or equal to 5,000 gross tonnage must connect to shore power in main EU ports in the trans-European transport network (TEN-T).

NIS2 Directive – boost OT security

- The directive outlines security requirements as well as a process for incident reporting
- Essential entities in a wider range of industries





Build for the future

With leading automation and electrification

ABB