Navigating the Future with Automated Terminal Operations

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Navigating the Future of European Waters with Autonomous Innovation

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These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements N° 815012, 859992, 861678.

Today's CHALLENGES

Automation is not a one size fits all situation. The optimal approach depends on a number of factors such as:

- The type of project: Brownfield / Greenfield
- The current way of working and local labour requirements
- The selection of the right level of automation
- The constant disruptions in the global supply chain
- The availability of the electric infrastructure
- The energy costs & carbon taxation
- The local renewable resources available and future initiatives
- The State/Country level legislation
- The Transition and implementation timeline

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DESIGNING

a future proof terminal

Efficient

Productive, low handling unit cost.

Flexible, scalable

Possibly to adapt to changes in business environment.

Emission free

Zero emission at source.

Safe

Zero fatalities

Challenge: **How to manage all 4 aspects at the same time?**

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One size does NOT FIT all

The right automated solution for you depends on **your specific targets & current situation.**

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Our approach towards

AUTOMATION

- Operational
- Financial
- Environmental

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Terminal Design for an Automated Reachstacker Operation

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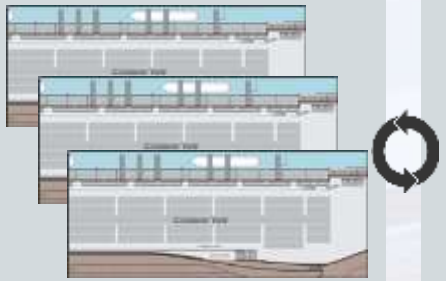
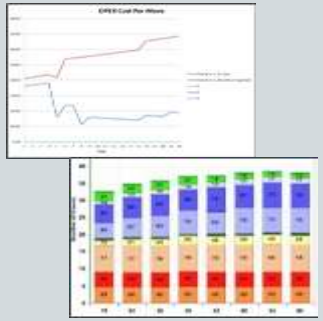
The Terminal Design Process

INVESTIGATE → **QUALIFY** → **DEMONSTRATE**





Electric reachstacker charged with 100% renewable energy

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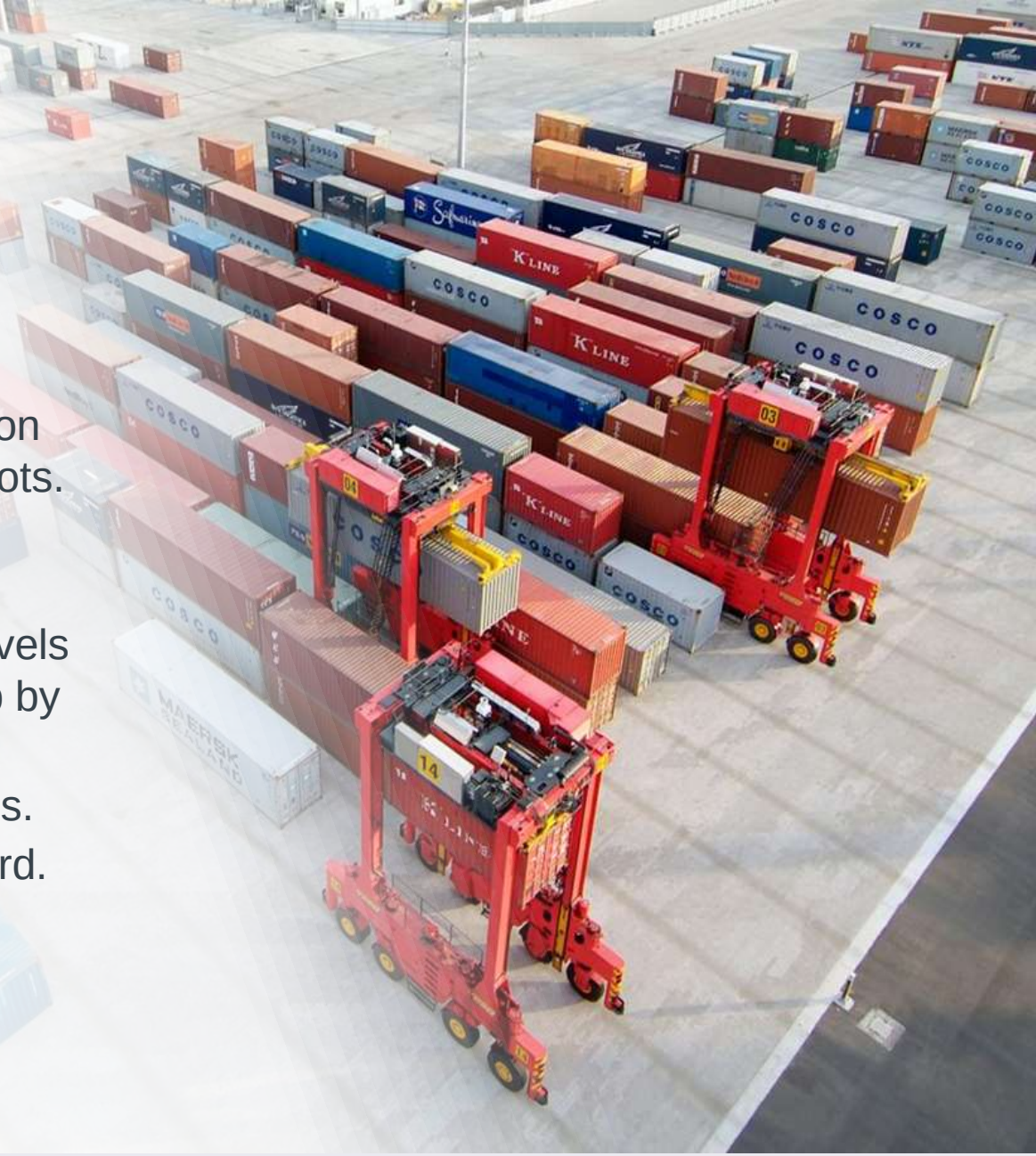
RoboStacker Operation Simulation

SUMMARY

- There are many different opportunities to increase the eco-efficiency and automation level in your terminals, intermodal, and depots.
- Brownfield conversions & Decarbonization roadmaps need careful planning
- When implementing different automation levels in your brownfield terminals focus on a step by step approach.
- Simulation & Emulation verifies assumptions.
- Openness & Collaboration is the way forward.



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Thank you

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