

SIFMENS

Electrification, Automation, Digitalization

Technological drivers

- Computing power
- Communication
- New sensors
- Virtualization
- Simulation
- Emulation
- Cloud computing

Different initiatives, e.g.,

- Industry 4.0
- Industrial Internet Consortium (IIC)
- Made in China 2025











Digital Enterprise

Integrated Engineering and Integrated Operations

TIA@Process Industry

Perfect interaction of all components along the life cycle

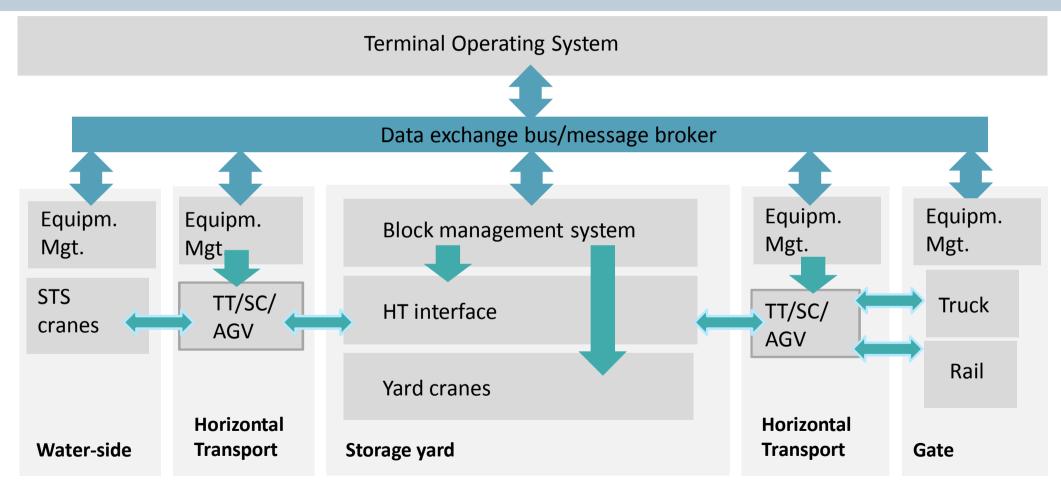
TIP@Process Industry

Electrical power wherever and whenever

Time

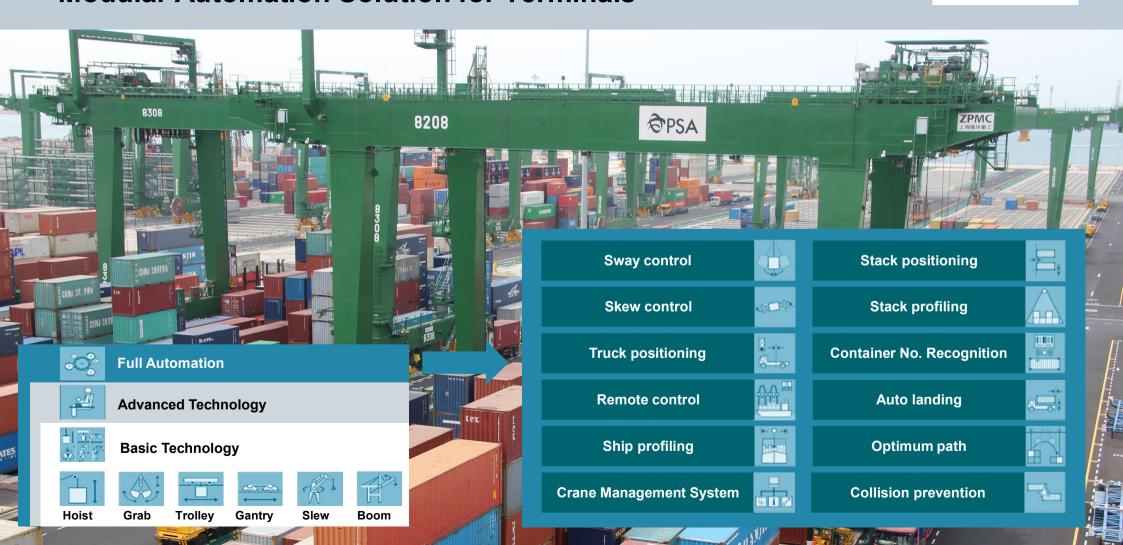
Automated Terminal Smart Data Sharing



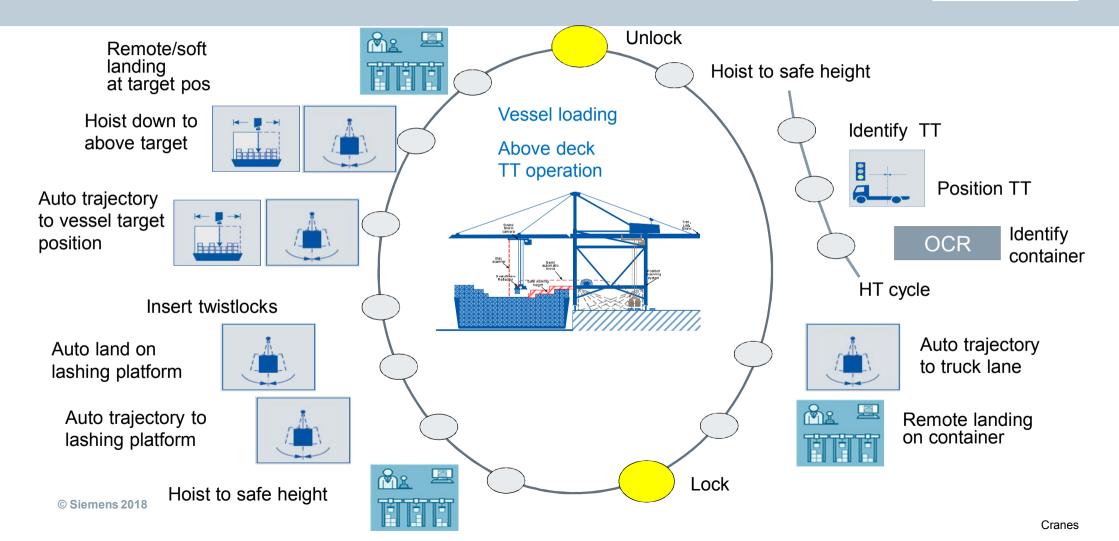


SIMOCRANE Modular Automation Solution for Terminals





SIMOCRANE Automation Modules



Remote Control Increasing Efficiency, Safety and Usability

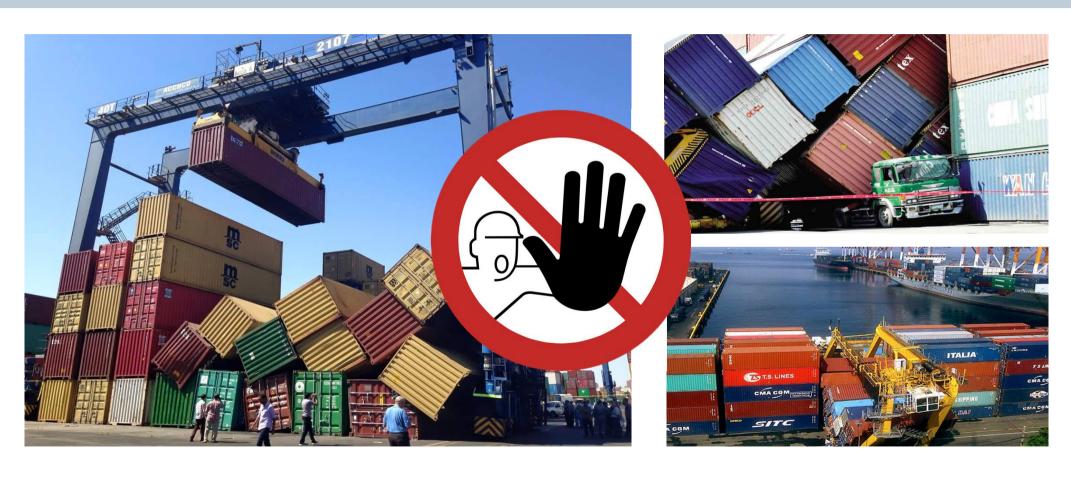




Safety

Load Collision Prevention System (LCPS)





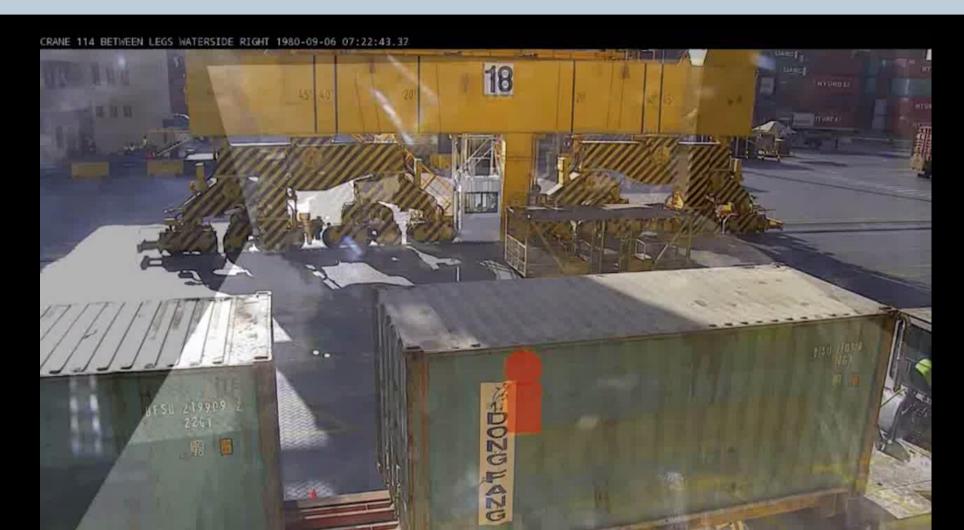
Safety Load Collision Prevention System (LCPS)



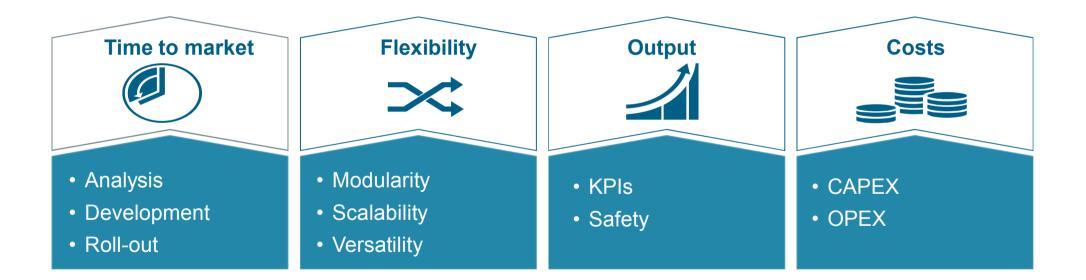


Safety Augmented Reality



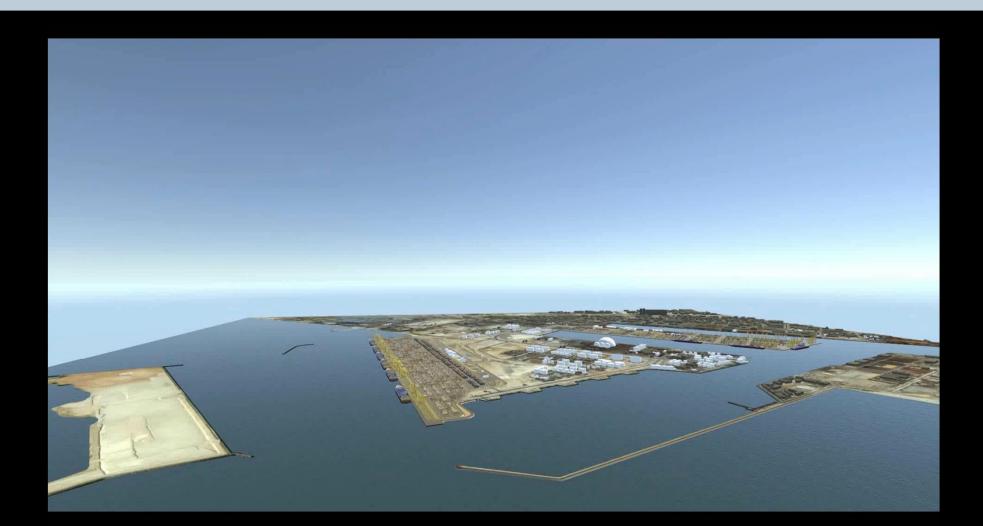


Digitalization Drivers





Innovation – Simulation



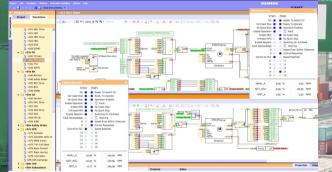
Simulation & Emulation Digital Twin

Virtual Model



- Physics Engine
- Scanner Simulation
- Camera View
 - Always available
 - Faster prototyping
 - Lower investment
 - Faster adaption to changes

Virtual Commissioning



- Pre Commissioning Tool
- ✓ Real/Emulated PLC
- ✓ Virtual Test Environment
 Verification of
 - → Design
 - → Functionality
 - → KPIs
- Training platform

Virtual Logistics

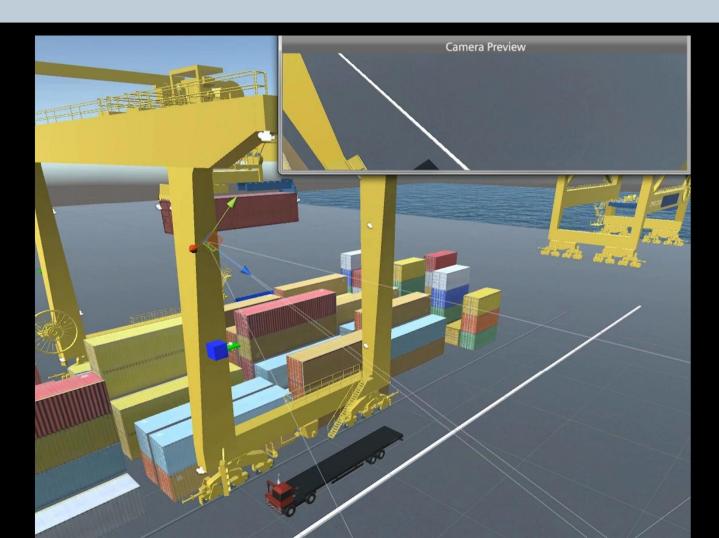


- Identify bottlenecks
- Avoid over engineering
- Match contractual KPIs

☑ Block Management System

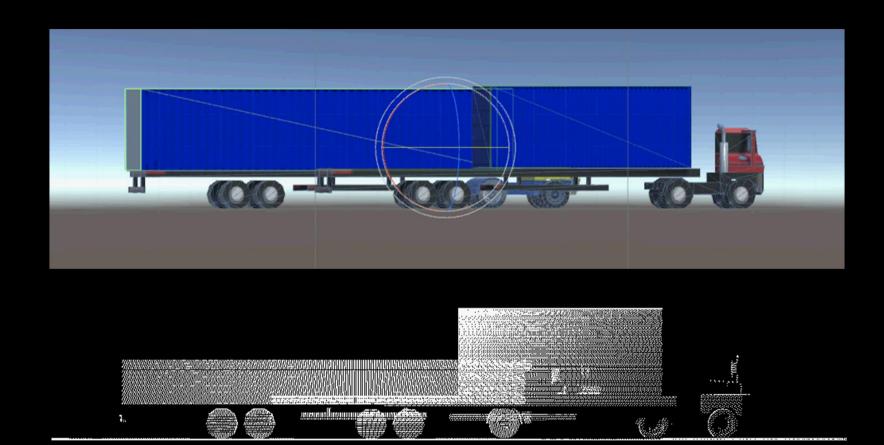
- → Peak smoothening
- Faster load & unload
- → Energy saving

Innovation – Simulation Sensors



Innovation – Simulation Virtual Laser Testing

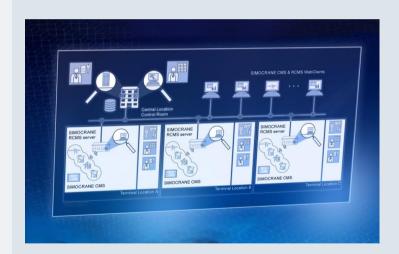




Crane Management System Managing of information

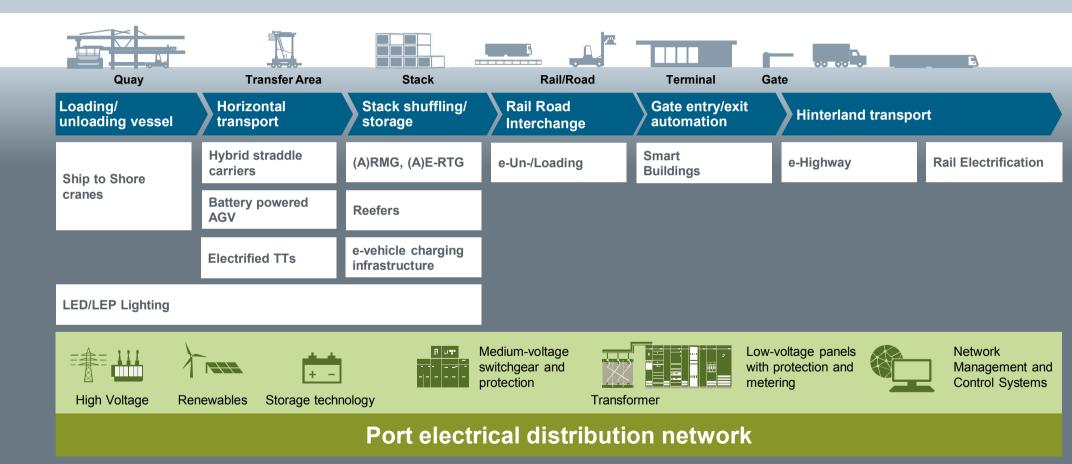


Alarm Logging	Performance Data	Replay Functionality	Condition Monitoring
	KPI		
Alarm message system	Relevant performance data generation for further KPI calculation;	Record all performed operations	Fast recording - analog signals - binary signals
Diagnosis - fault diagnosis - root cause analysis	Operational excellence key figures	Replay - all data - chronological order	Detect time-critical switching states



Electrification, Automation and Digitalization in Ports Conclusion





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