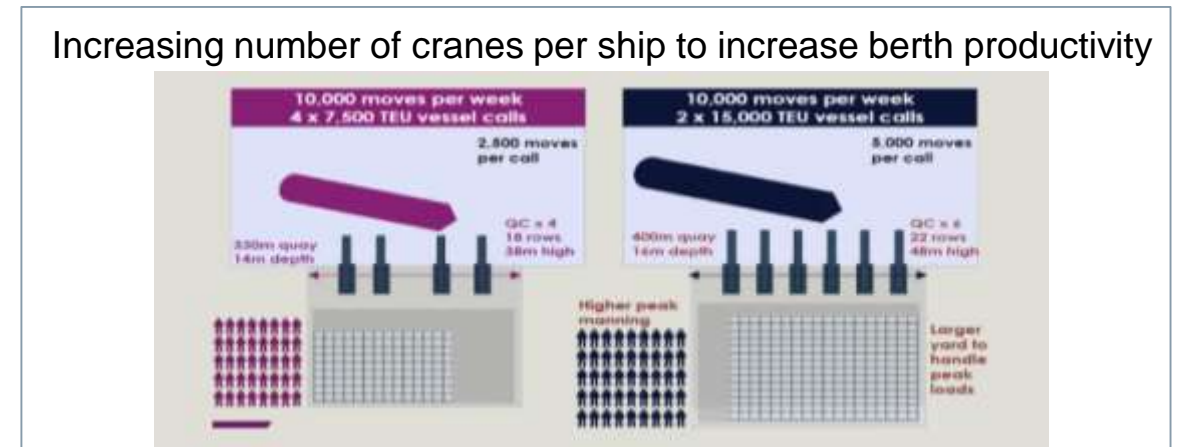
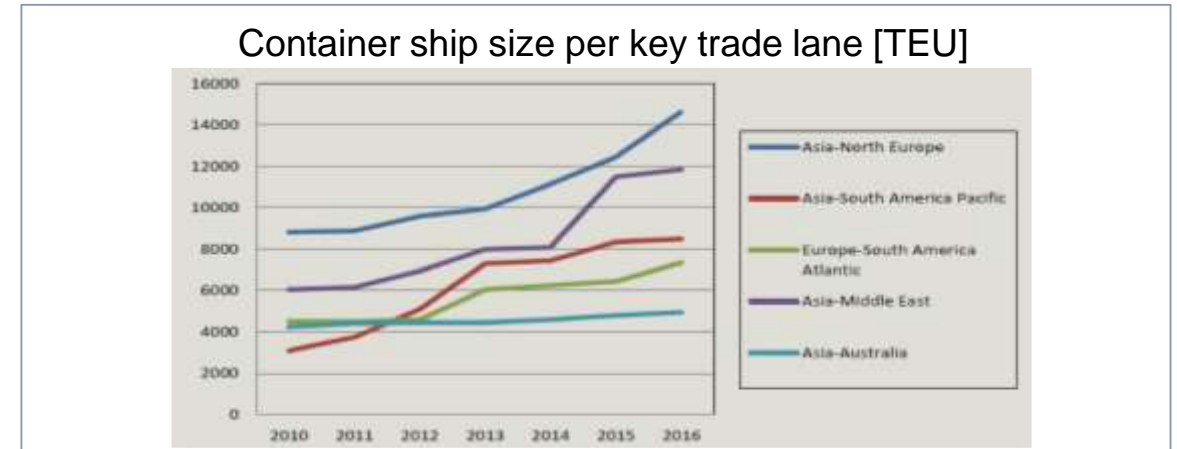
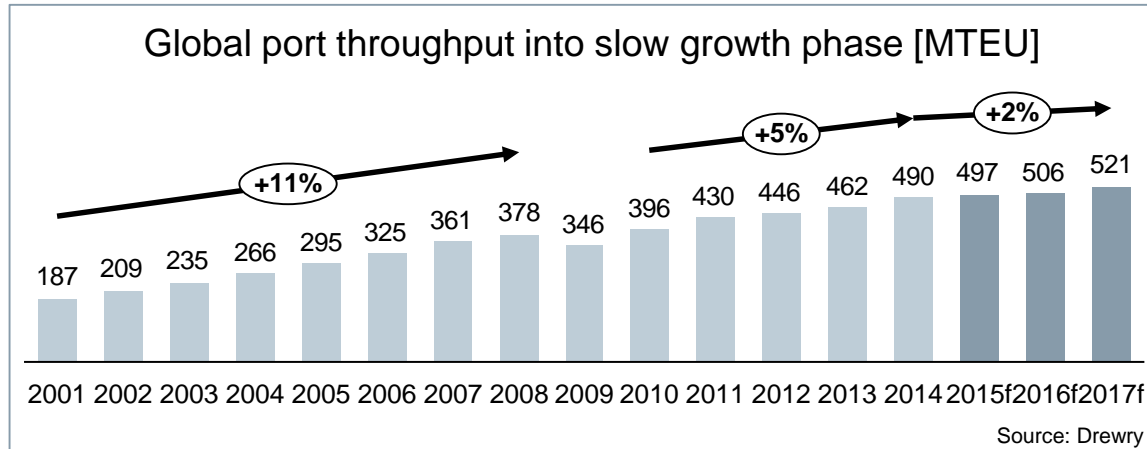


6th MED Ports 2018, Livorno

Integrated solutions for increased efficiency in ports operation

Global Container Shipping Environment and Developments



This trend has significant influence on the world's Cranes business

- 1959 hoist 25t; outreach 25m

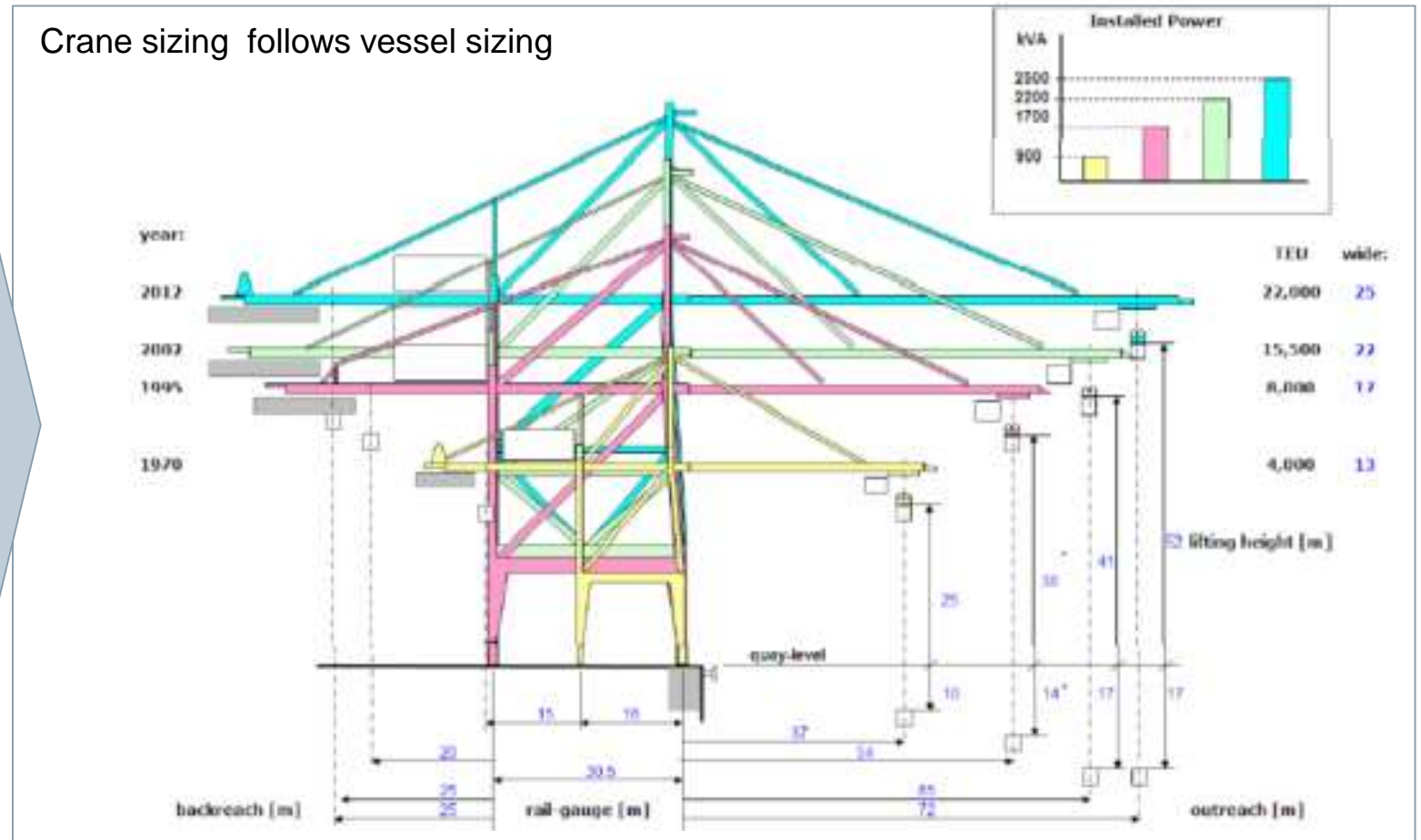


- 2014 hoist 80t; outreach 72m



Source: APMT

Crane sizing follows vessel sizing



Terminals from all over the world need bigger cranes to handle bigger ships

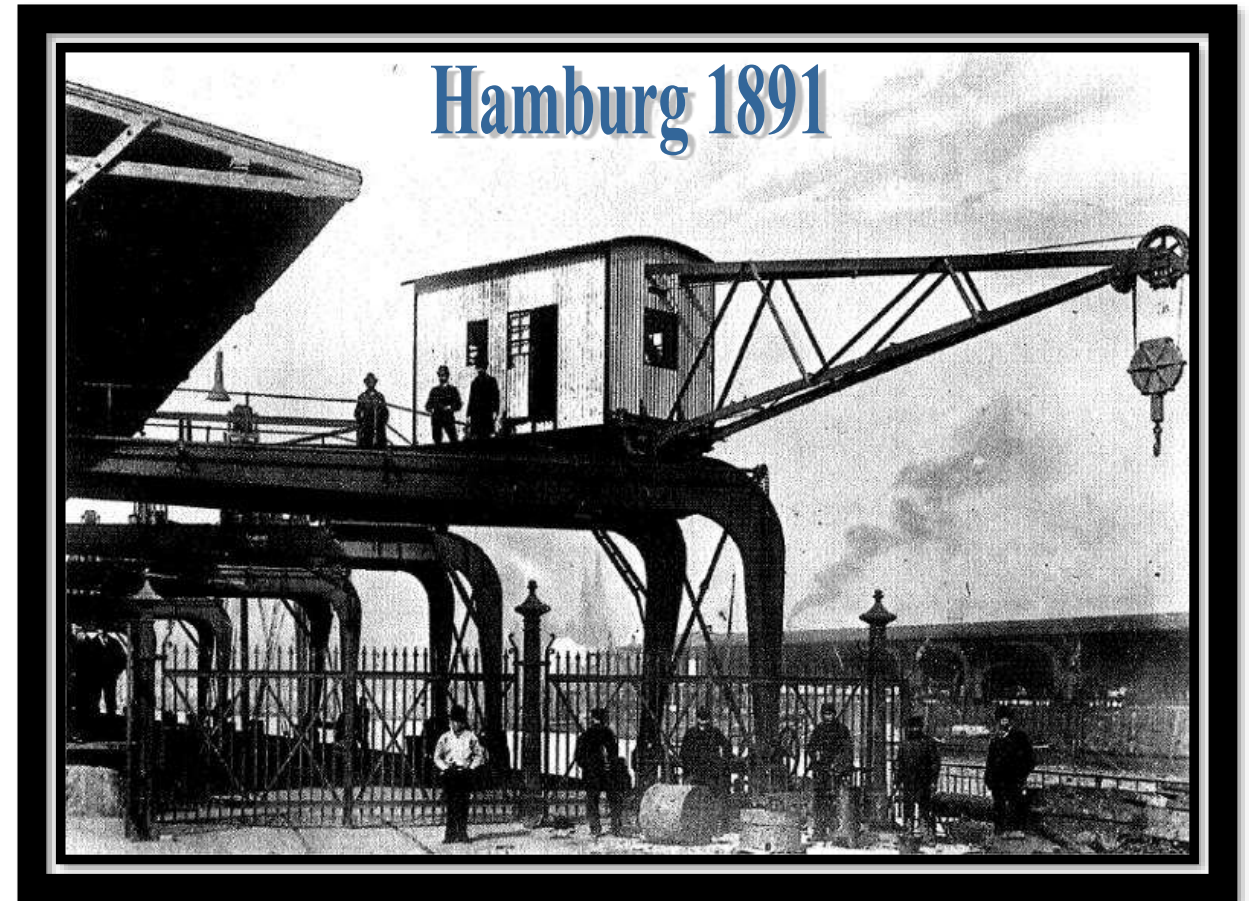
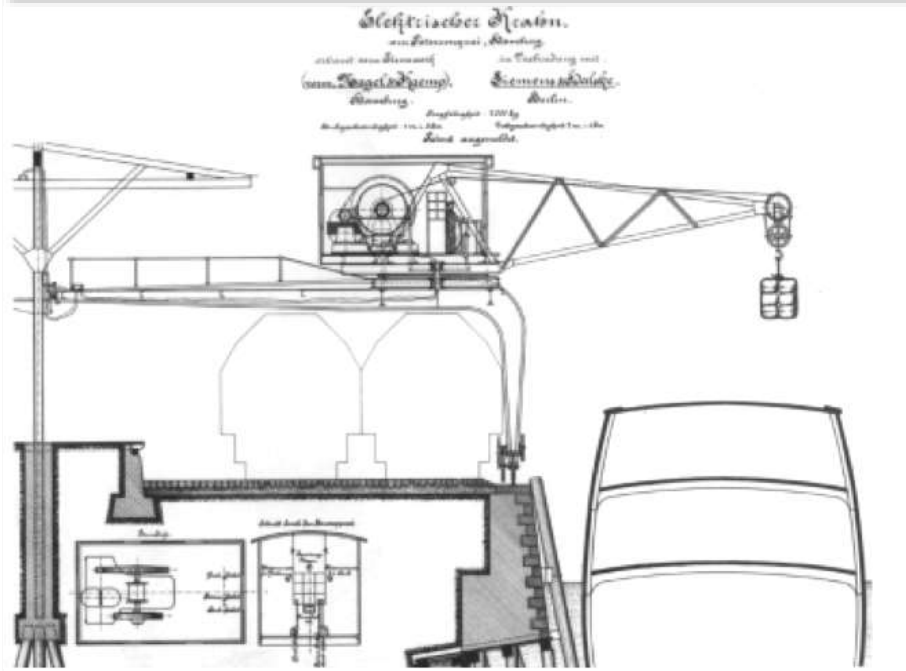
History of Siemens in electrical cranes dates back to 1891

More than 125 years of experience

26. 9.1890 Erste Anfrage von Eisenwerk vorm. Nagel & Kaemp in Hamburg-Uhlenhorst wegen elektr. Ausrüstung von Hafenkränen.

14.11.1890 S&H reichen Nagel & Kaemp eine überschlägige Kostenberechnung für den elektr. Betrieb von 30 Kränen ein.

9. 2.1891 **S&H** erklären sich auf Anfrage (vom 7.2.) bereit, zu der von der Hafenbehörde gewünschten probeweisen Aufstellung eines elektr. Kranes am Petersenkai, die Dynamomaschine mit Zubehör **auf eigene Kosten zu liefern** und sind mit der Bedingung einverstanden, dass **bei befriedigender Leistung der Ankauf** erfolgt.



Automation solutions for Cranes



Ship to shore



Stacking



Intermodal



Bulk handling



Coil handling



Shipbuilding



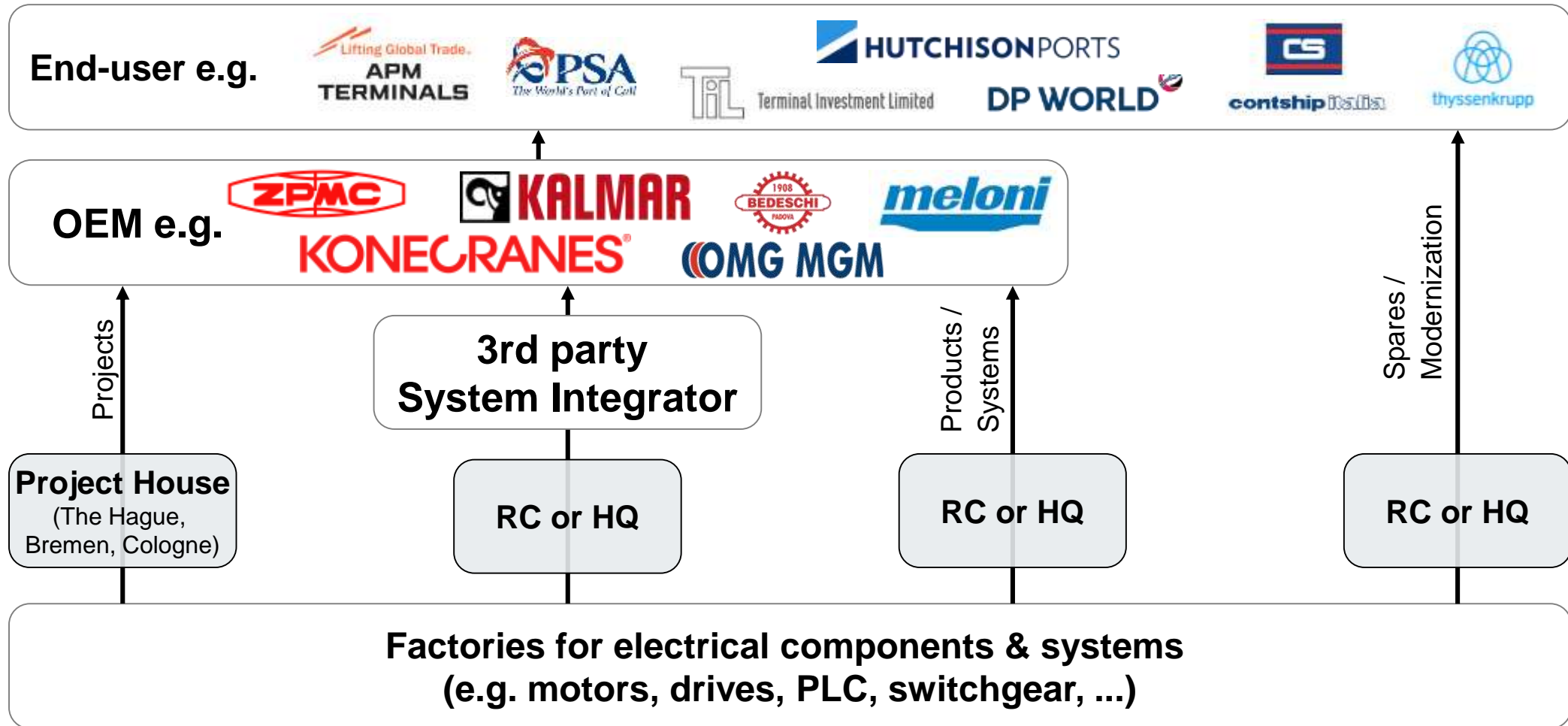
Steel



Offshore

Siemens Cranes

We serve all channels to the market with our diversified sales approach



Siemens Cranes

Installed Base - Worldwide



Over 5500 cranes in operation are driven and controlled by Siemens

Digitalization changes everything

Paradigm shift - from hardware to software and content



The world of cranes

Today's challenges



**Increased call sizes
and peak loads**



**Costs
reduction**



**Higher
automation-level**



**Concentration
and globalization**



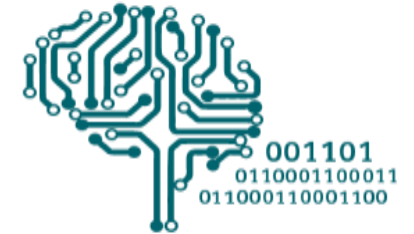
**Shorter
handling times**



**Cyber
Security**



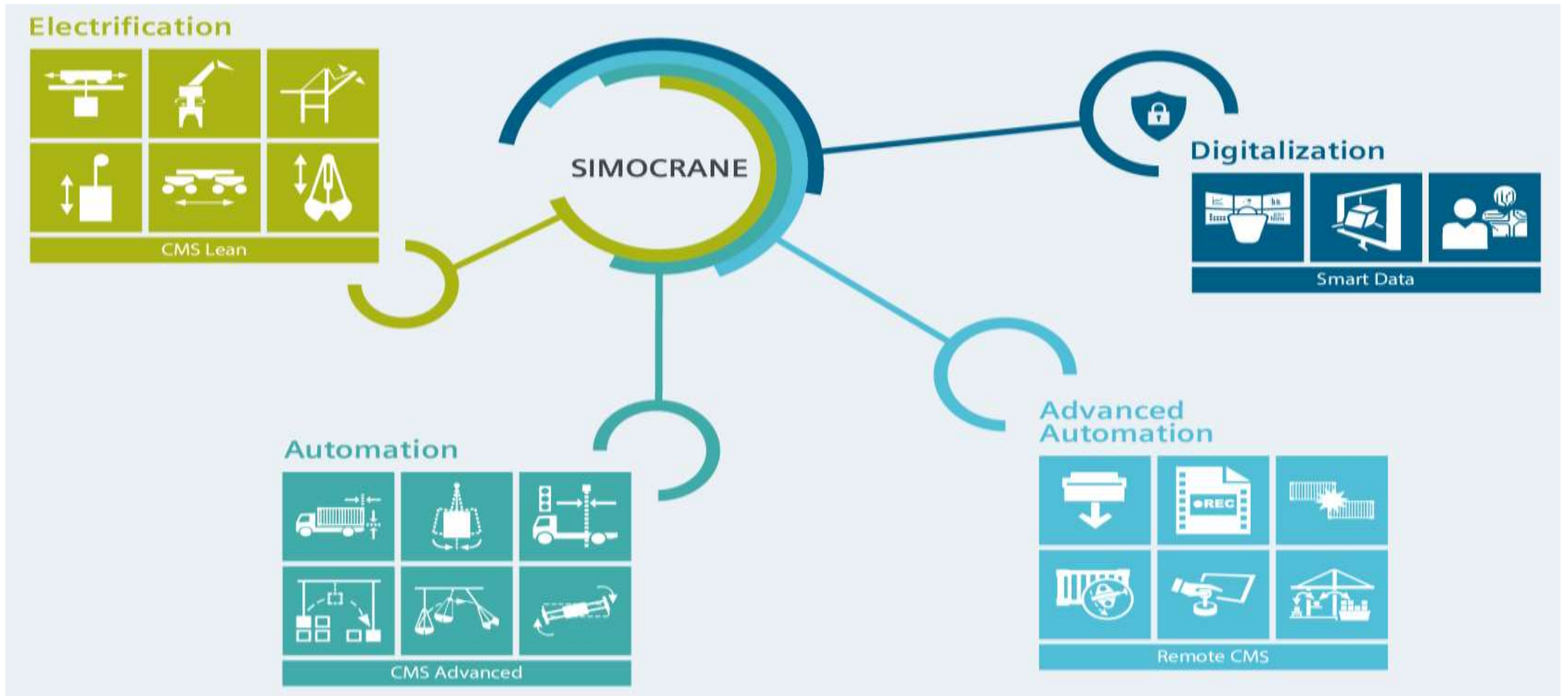
Safety



Digitalization

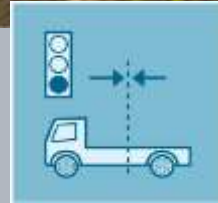
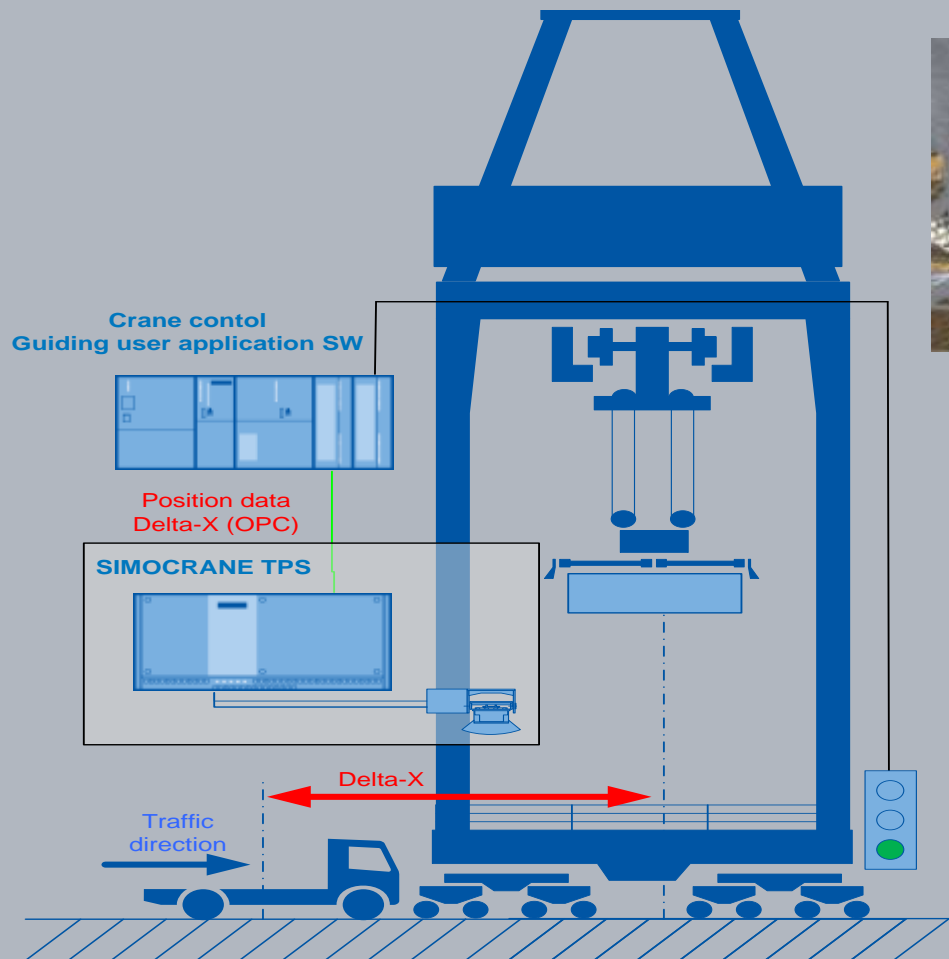
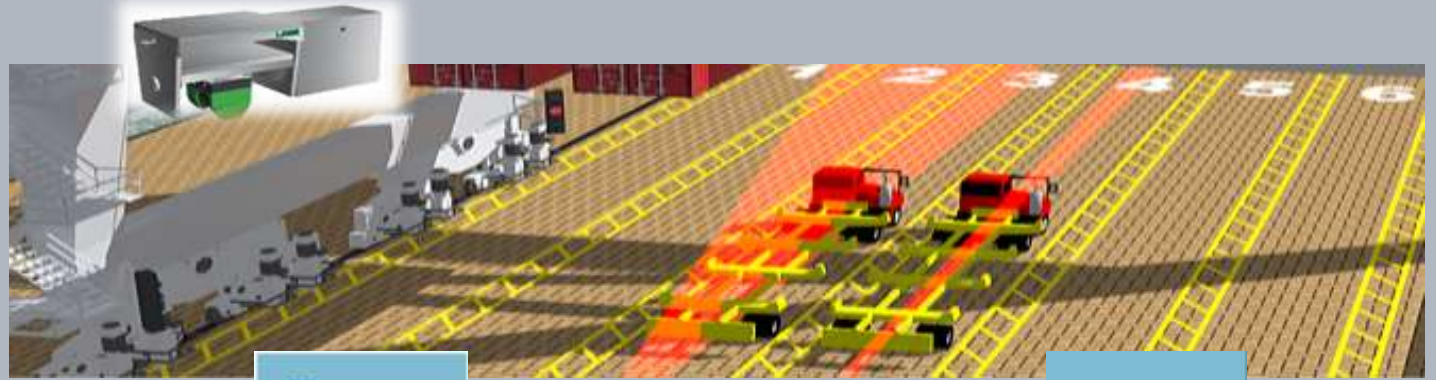
SIMOCRANE Technology – Our answer

Standardization with a Modular Software Architecture



SIMOCRANE Automation

Truck Positioning System (TPS)

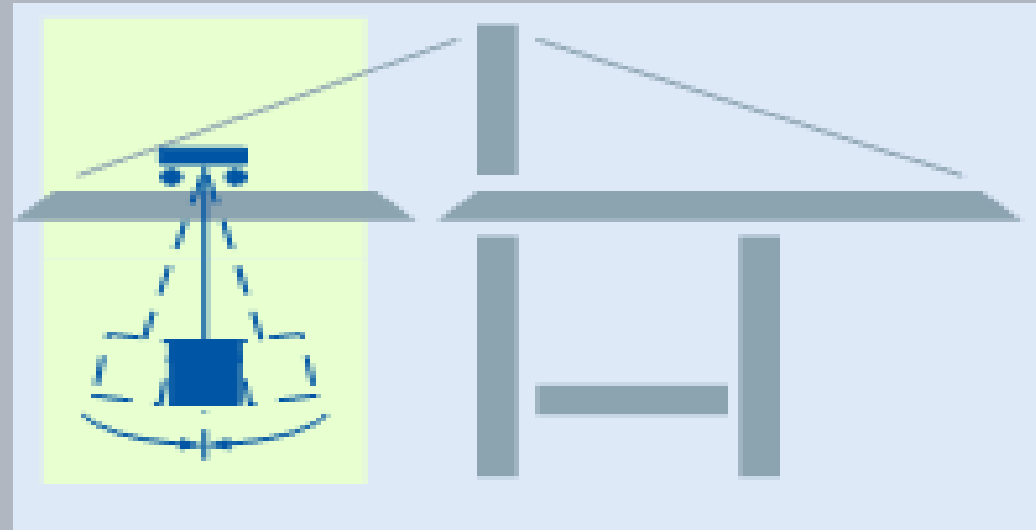
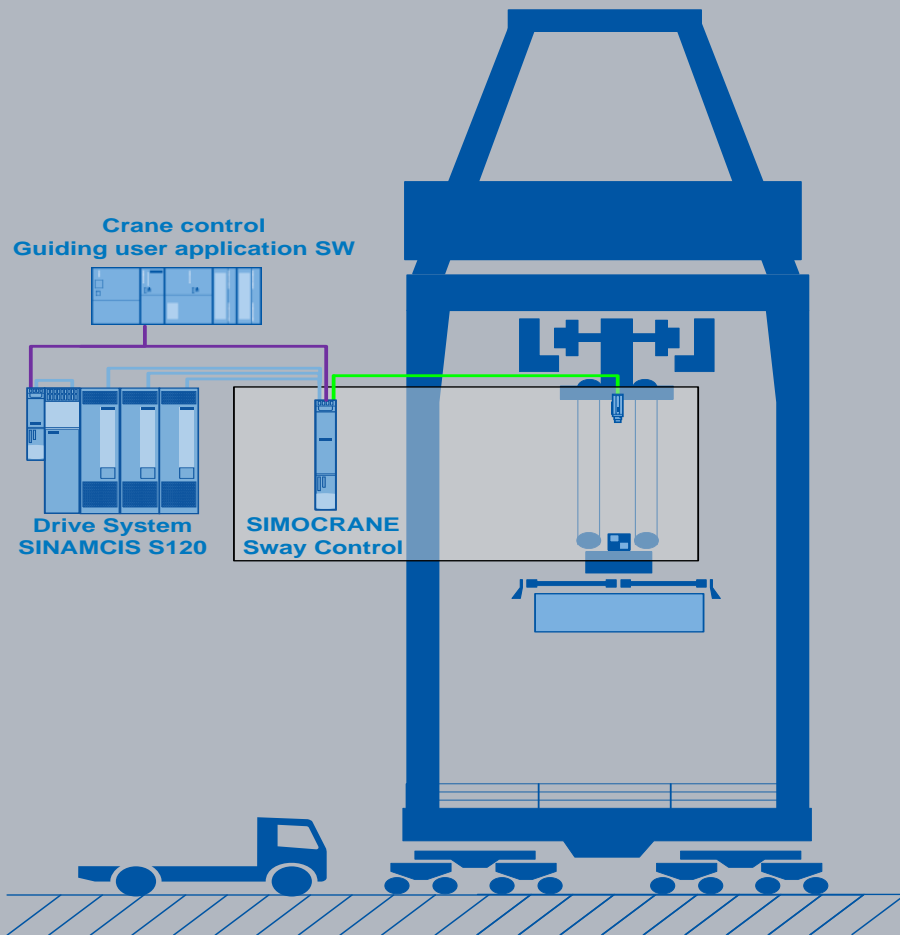


Benefits:

- Truck(s) correctly aligned with the crane
- Skew correction during trolley travel
- Productivity boost (up to 10%)
- Increased safety in the hand-over zone

SIMOCRANE Automation

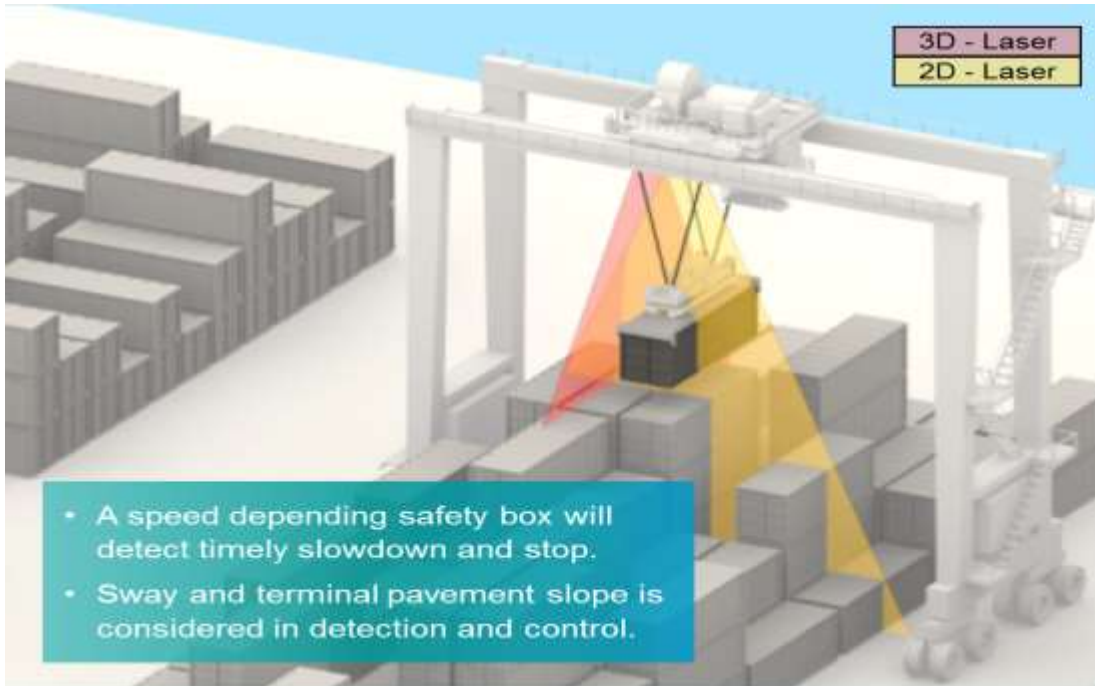
Sway Control System



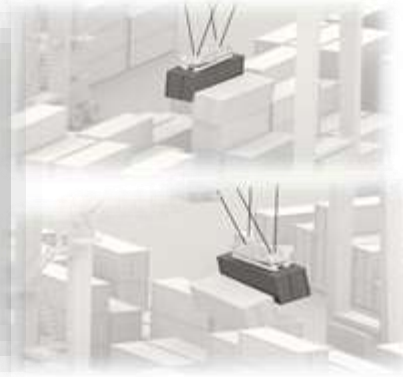
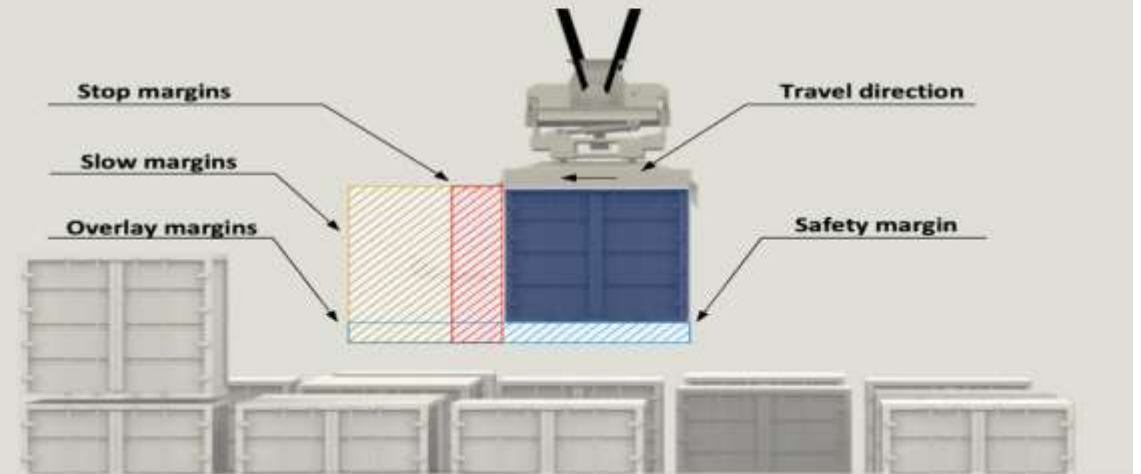
Benefits:

- Operator independent performance
- Control of load/ unload trajectory
- Profile scanning for safe operation
- Reduction mechanical stress
- Pre-requisite for remote control

SIMOCRANE Advanced Automation Load Collision Prevention System (LCPS)



- Two laser scanners are installed on the bottom of the RTG trolley
- The laser scanners are placed with 90° offset to each other
- Laser in trolley direction (yellow beam) detects trolley position and spreader height



Problem Statement – Why need for RCOS?

Stress on human body (neck/back)
Difficult to create comfortable environment

Reduced visuals due to increase of ship size
(>70 high, >10m deep, >20.000 containers)

Automatic moves do not require active human
interaction / supervision

Transportation to and from cranes
No toilets, no coffee machines



SIMOCRANE Advanced Automation Remote Control Operation System – Desk overview

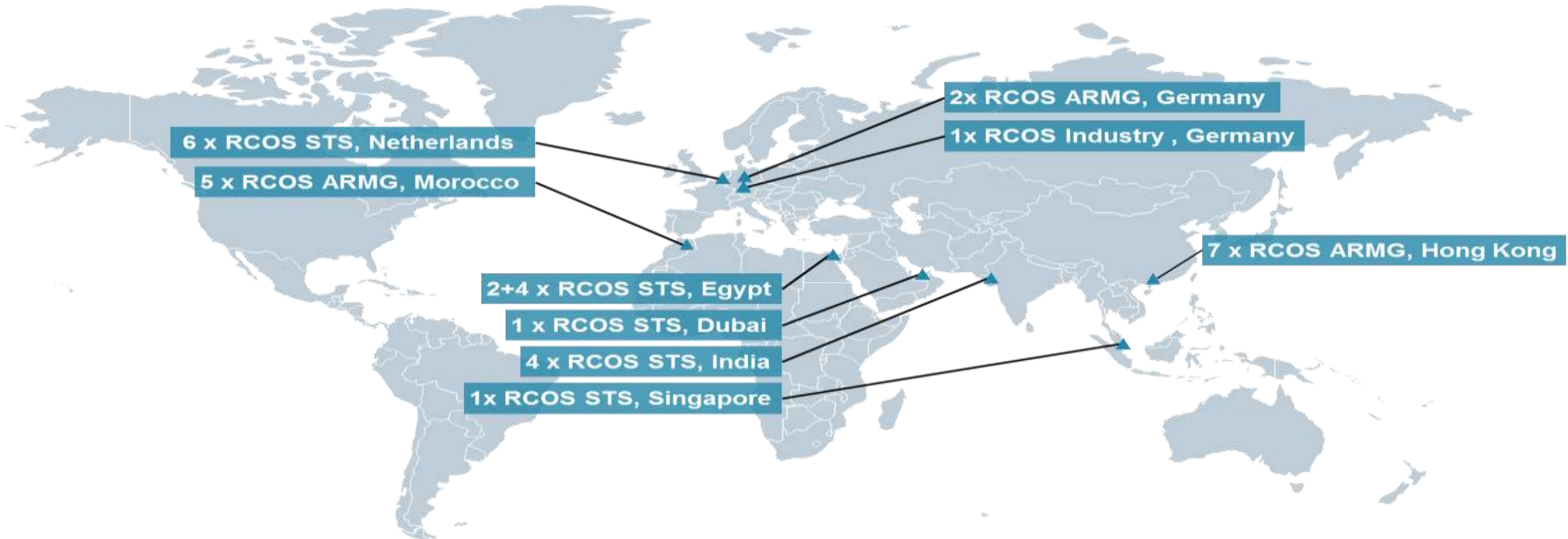


SIMOCRANE Advanced Automation

Installed base of Siemens RCOS

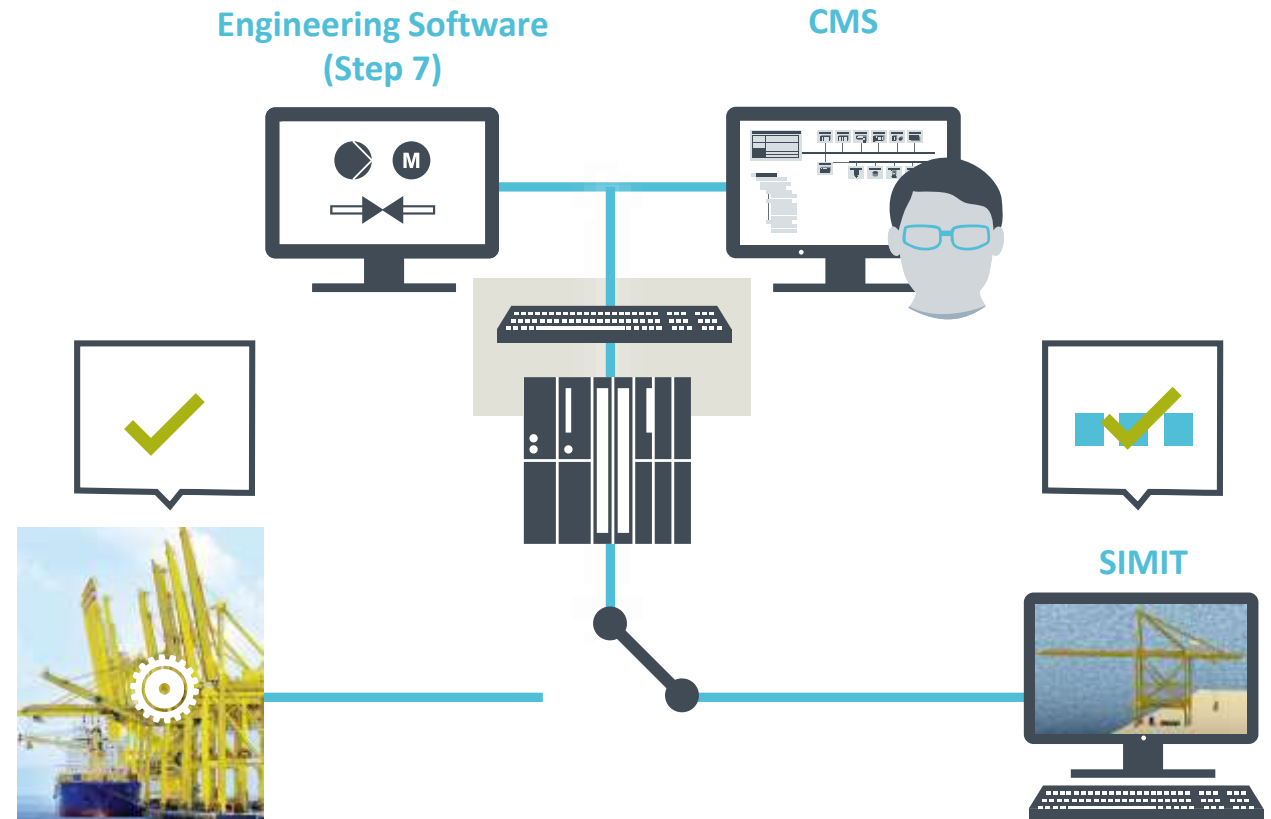


References: 34 desks connected to 72 cranes



Simulation and testing of the automation function with **SIMIT**

~~Save time and assembly time~~
~~and expense of installing~~
the automation solution



Thank you for your attention!



Martin Metz

Regional Manager

Siemens Cranes Headquarters

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Coffee Bar

Pay us a visit at our booth #3

6th MED PORTS
2018

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