



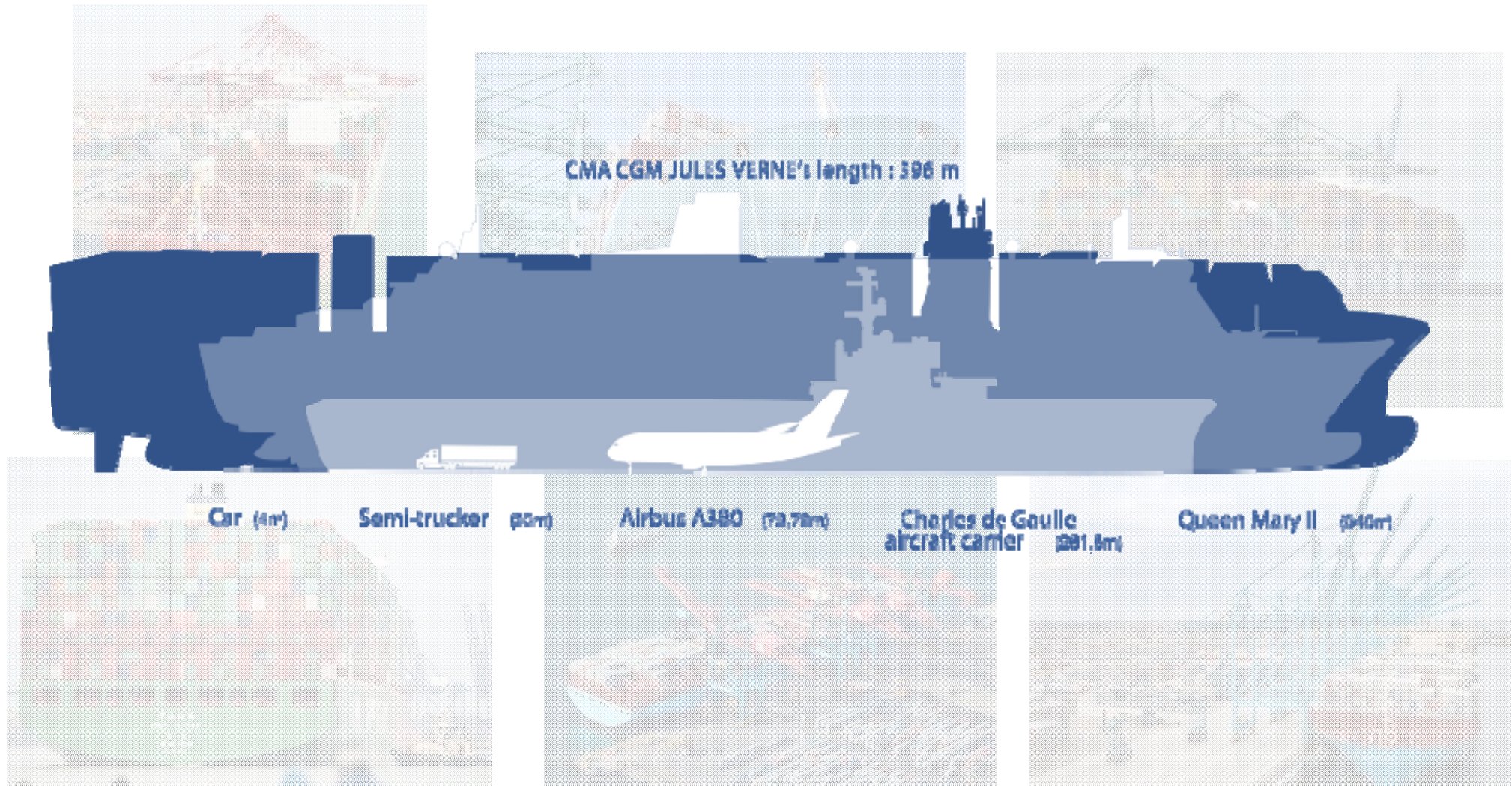
SIEMENS



17th Intermodal Africa, Cape Town – April 19th - 20th 2017

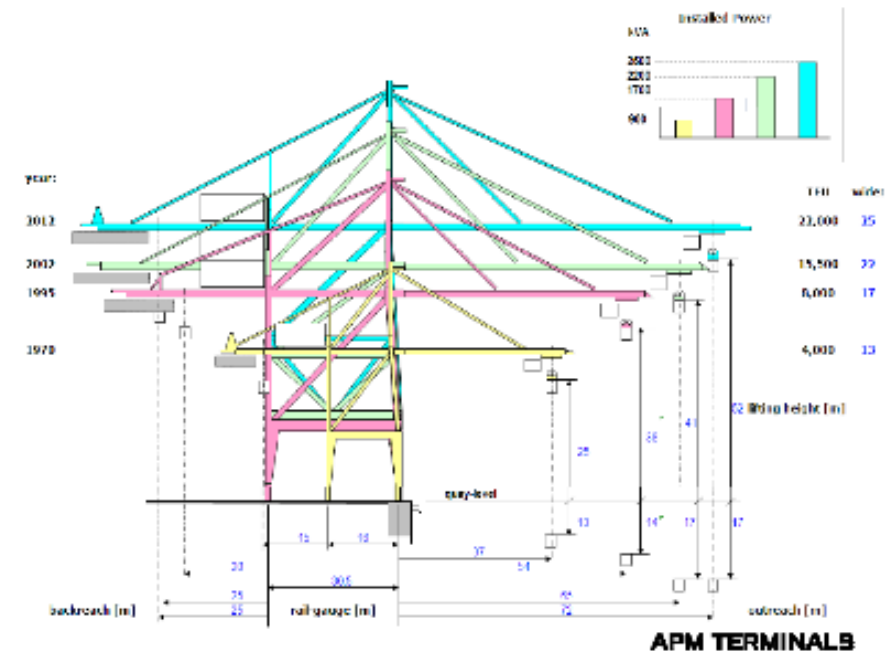
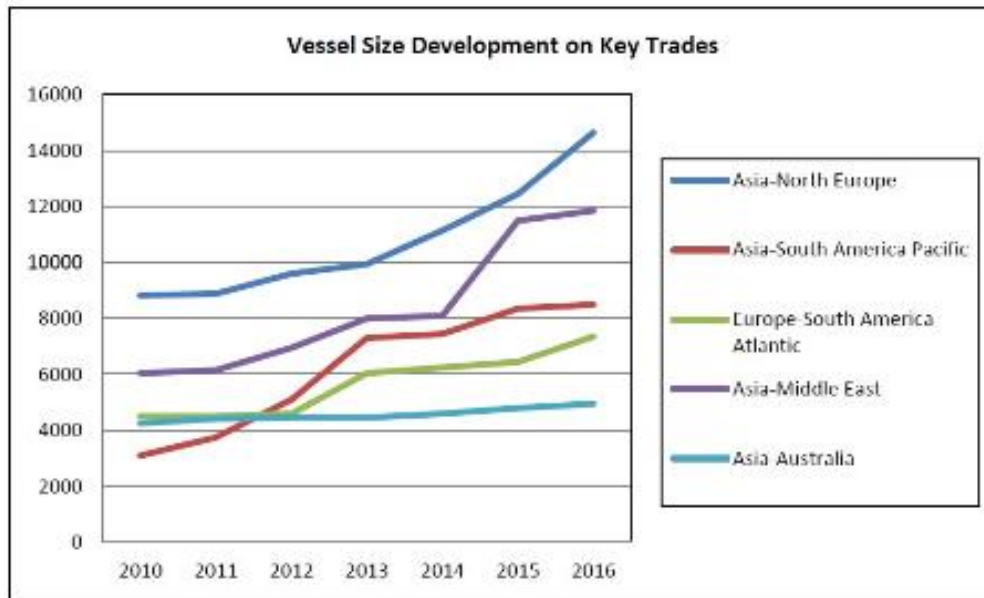
Integrated solutions for increased efficiency in port operations

What do the names “Emma”, “Jules Verne”, “Globe” or “Oscar” have in common?



Bigger ships are being used to due lower cost per transported container

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

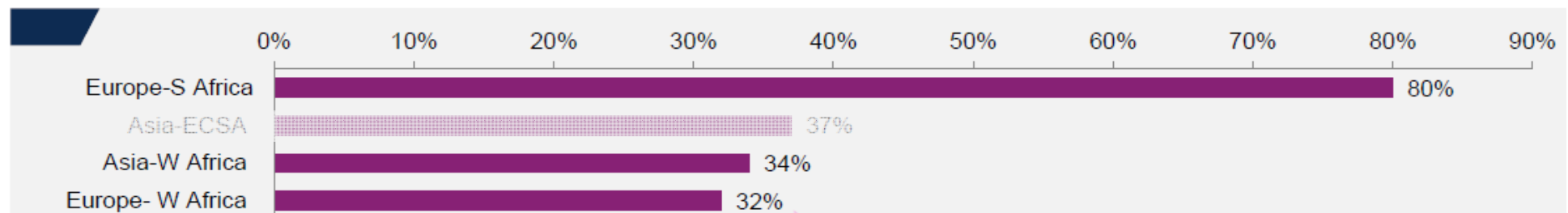


Terminals from all over the world need bigger cranes to handle bigger ships

Africa is experiencing the biggest relative increase

Vessel cascading

Increase in average ship size: 1Q 2013 - 1Q 2015



Source: Drewry Maritime Research

- Vessel cascading affects all terminals in the World
- Africa is experiencing the biggest relative increase
- Bigger Ships = Bigger Cranes !!



Siemens Cranes

Over 100 Years of Experience



Hamburg 1891

Cranes

Our competence

Automation solutions for Cranes



Ship to shore



Stacking



Intermodal



Bulk handling



Coil handling



Shipbuilding



Steel



Offshore

Siemens Drive Train Portfolio For Cranes

Drives & Motion Controller

Inverters **High Performance Motion**

SINAMICS **SIMOTION** **SIMOCRANE**

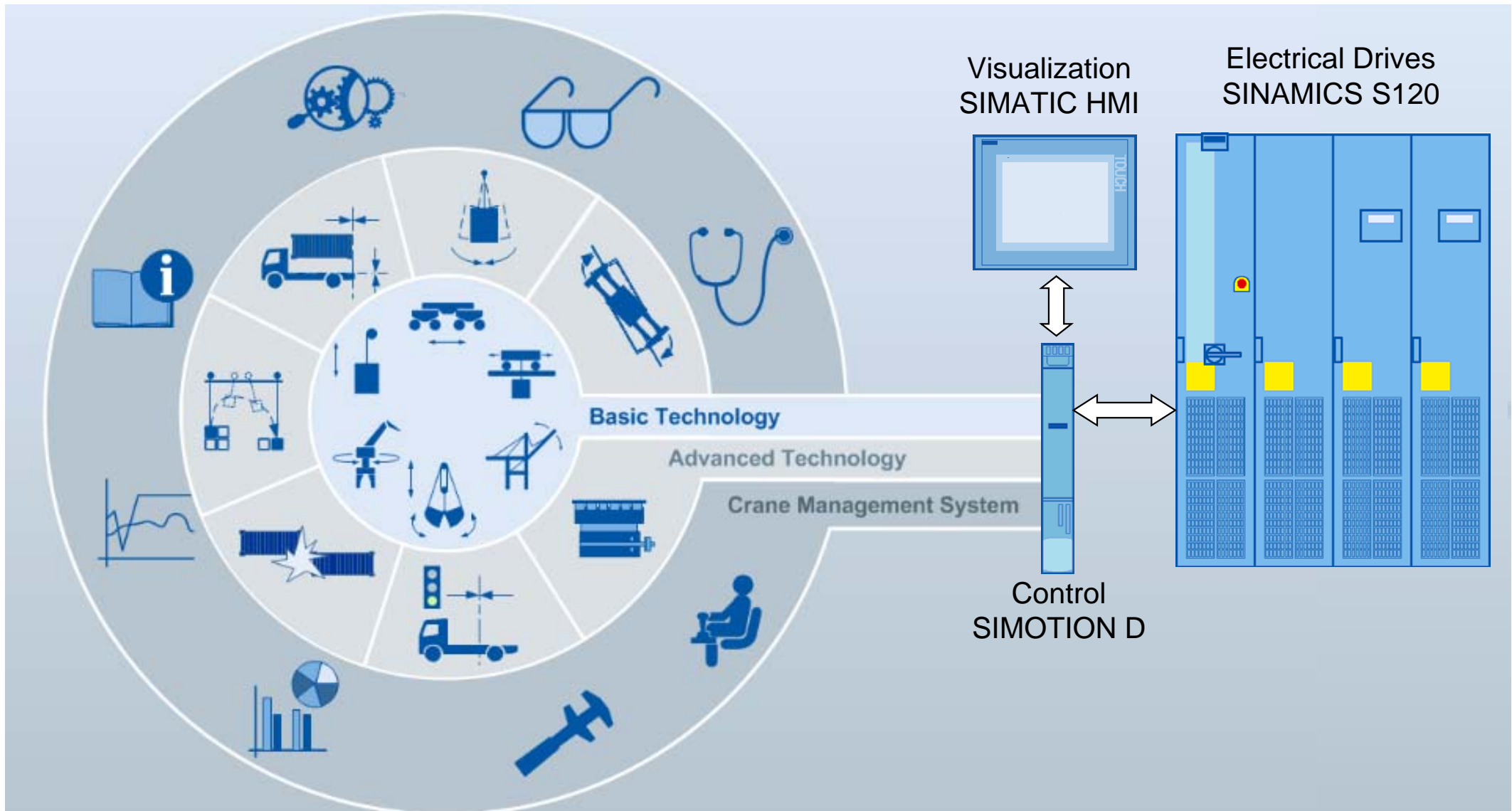
Motors

LV motors **Asynchronous servo motors**
1LG4 / 1LP4 / 1LA8 **1PL6**
1PH7
1PH8

Gears & Geared Motors

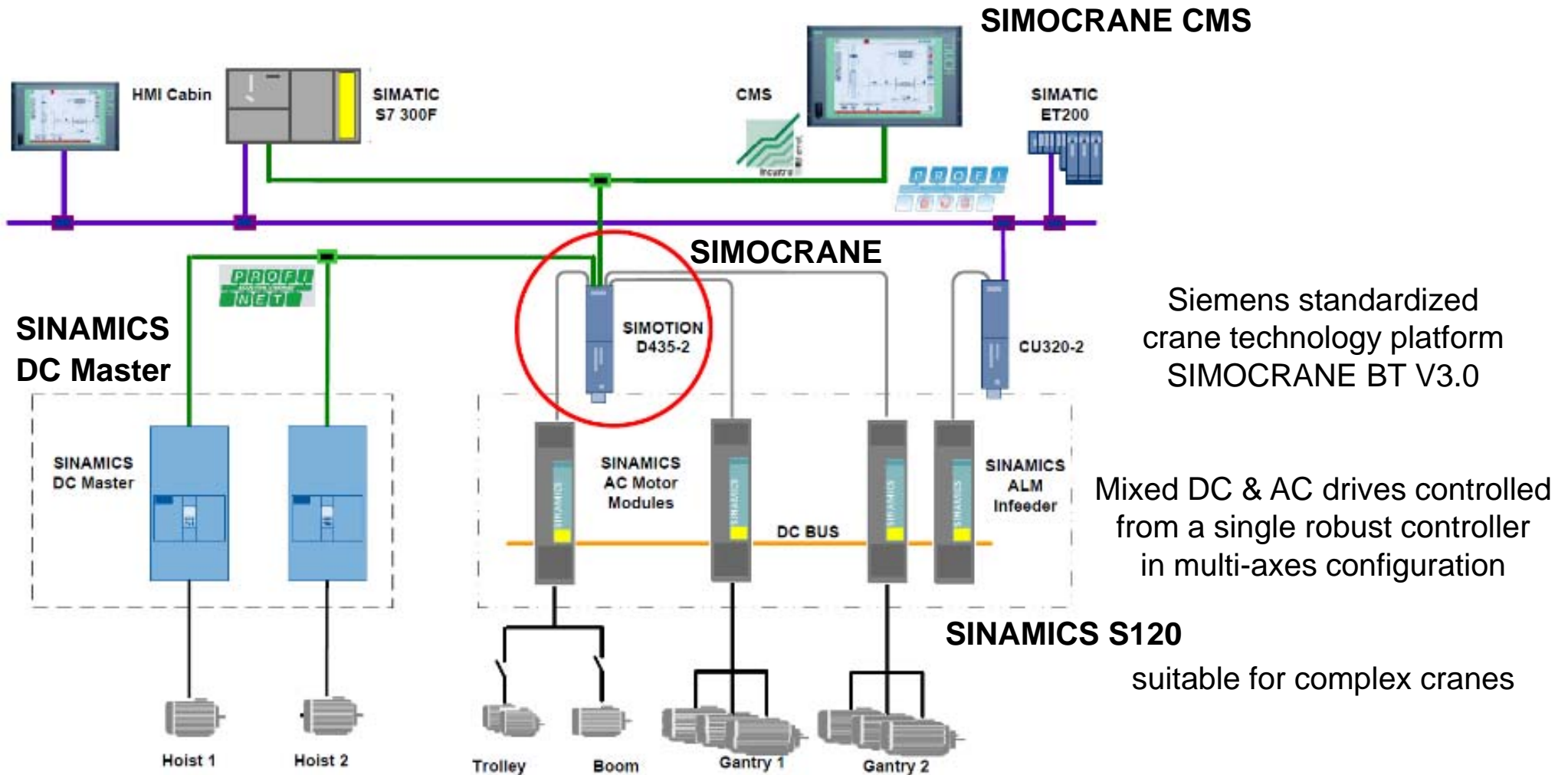
SIMOCRANE Technology

Standardization with a modular software architecture



SIMOCRANE with SINAMICS

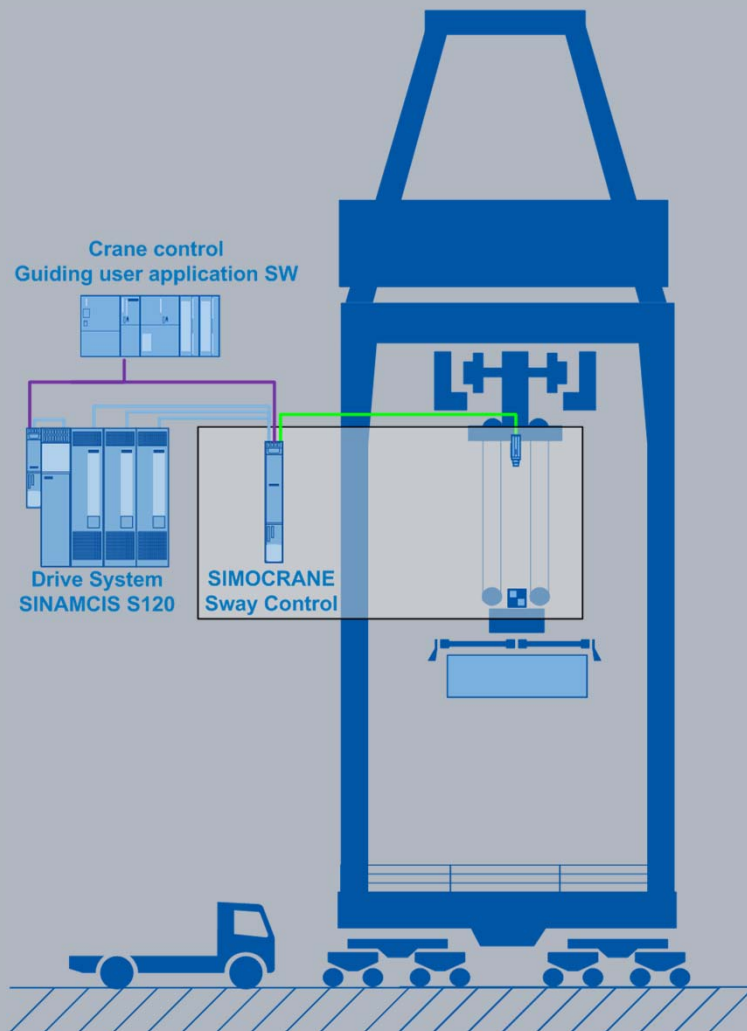
Multi-axes configuration with AC and DC Technology



Integrated full solutions

SIMOCRANE Advanced technology

Sway Control



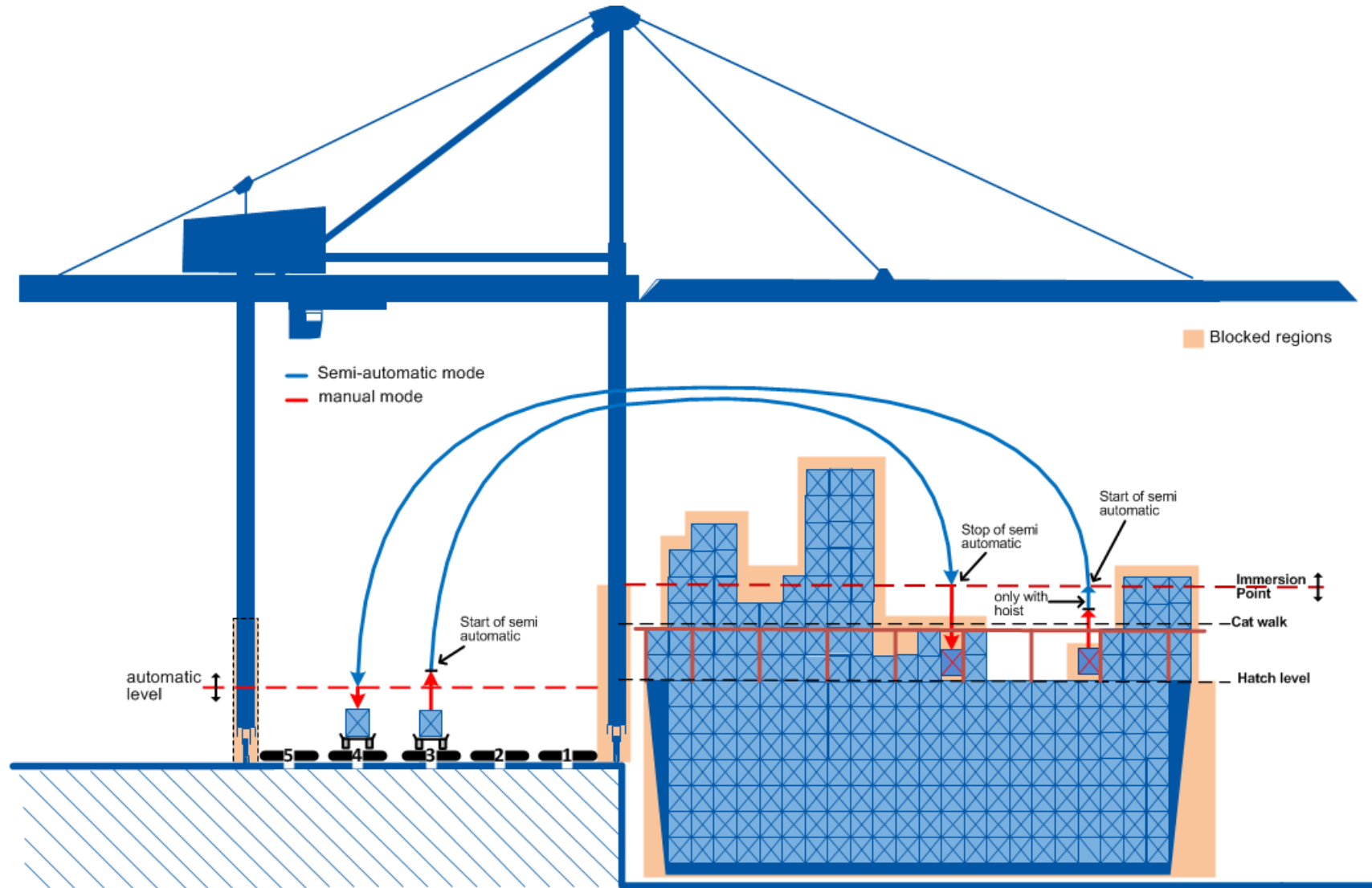
Functions:

- Controls the load sway angle
- Positioning of the load
- (semi) Automatic crane operation
- Smooth operation
- Trim, list and skew control

Benefits:

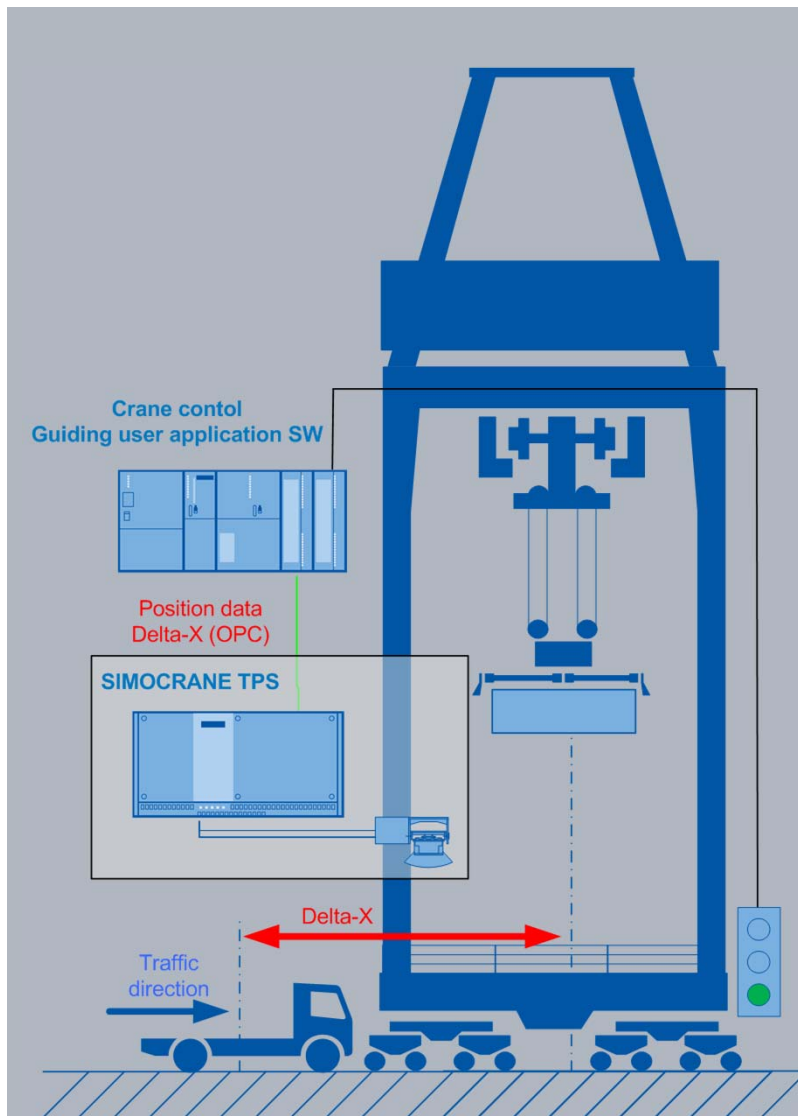
- Control of load trajectory
- Pre-requisite for remote control
- Reduction of the stressing on mechanical transmission elements

Typical Semi Automatic operation with Sway Control



SIMOCRANE Advanced technology

Truck Positioning System (TPS)



Functions:

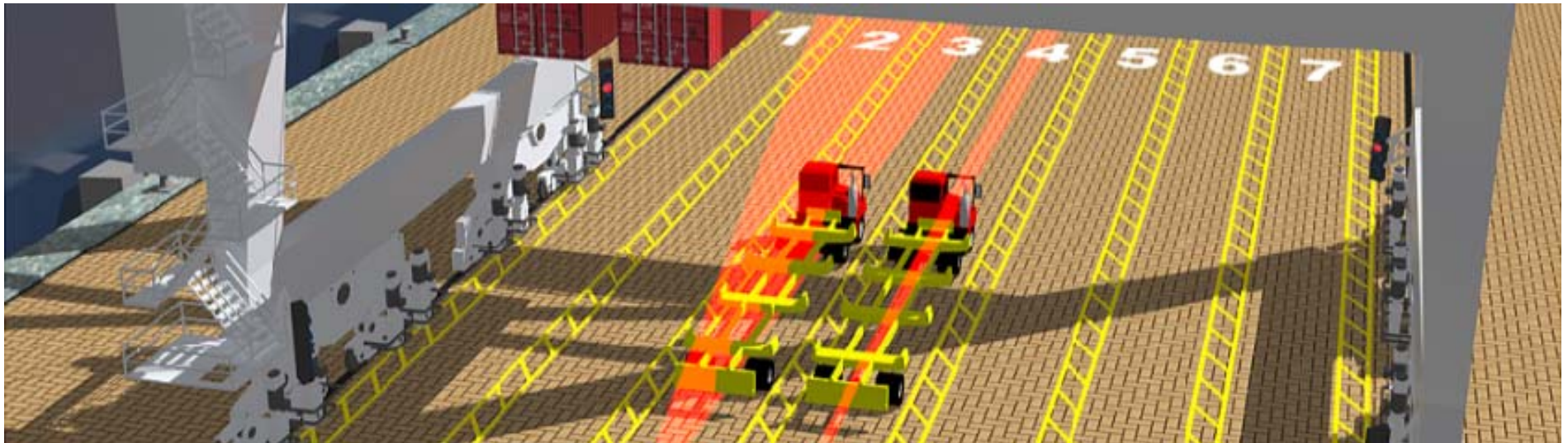
- Scan max. 2 working lanes
- Recognize parameterized objects
- Provide high precision position data of parameterized objects in 2D and 3D.
- Automatic system calibration

Benefits:

- Productivity boost (up to 10%)
- Increase safety, less interaction with personnel in the container hand-over zone

SIMOCRANE TPS

Aligning the vehicle/container with the crane



Vehicle alignment (STS)

Vehicle recognition based on 2D model mapping.
(*On the fly measurement*)



Tracking vehicle or ISO container(s) in gantry direction (X), max. 2 lanes simultaneously.
Computing gap between twin 20' containers
Transfer position data (X) to the crane control (PLC) via OPC.
Traffic control via crane control (PLC)

SIMOCRANE CMS

Crane Management System

SIMOCRANE CMS

- Crane Management System from SIEMENS based on SIMATIC WinCC
- Advanced Crane diagnosis
- Playback function
- Condition monitoring
- Retrofitting projects



SIMOCRANE CMS – User Interface

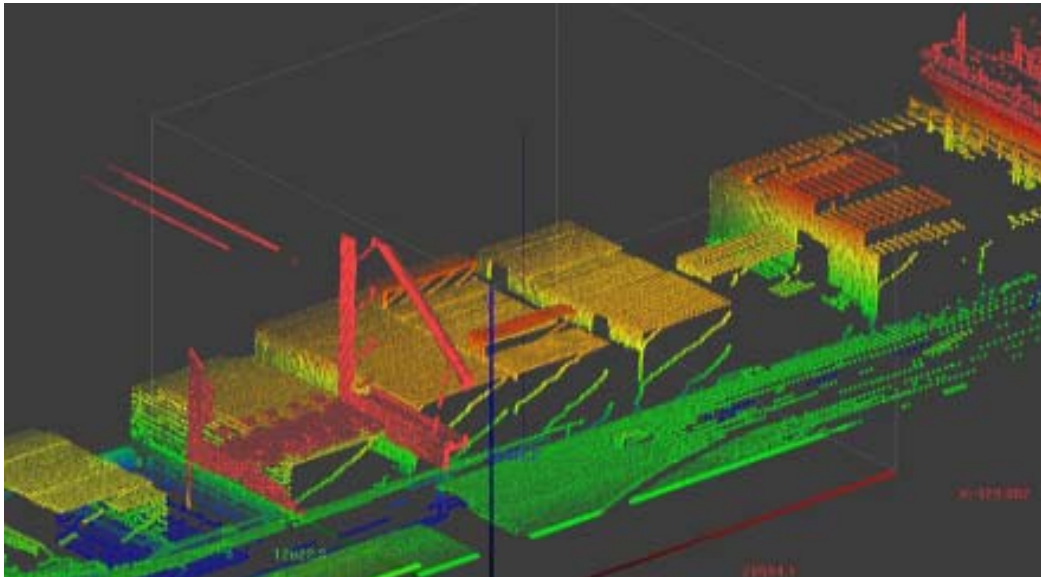
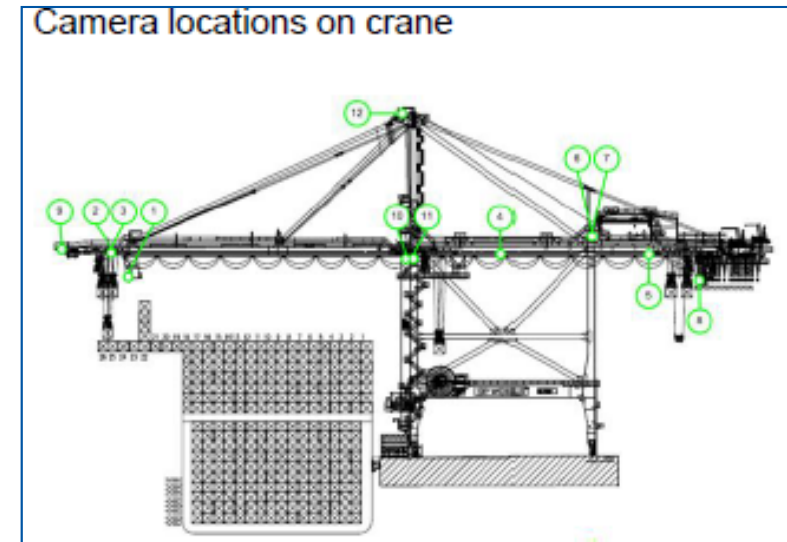
The screenshot shows the SIMOCRANE CMS WinCC Runtime interface. The main display area is divided into several sections:

- Crane overview:** A central area showing a crane schematic with various status indicators, including a 98.00% load indicator and two 80.00% load indicators.
- Navigation/Status sub-systems:** A vertical bar on the right side containing icons for different sub-systems.
- Details/Status sub-systems (e.g. drives, motor, brackes, drum, PLC, crane components, etc):** A detailed view of a sub-system, showing a 33.30% load indicator and a 80.00% load indicator.
- Status bar Operation data:** A horizontal bar at the bottom showing operation data such as 0,00 m, 60,00 m, 20,00 m, and 20,40 t.
- Actual fault messages:** A yellow bar at the bottom showing fault messages, including "HO2 - Hoist Drive 2" and "Group message of Hoist".
- Status bar:** A horizontal bar at the top showing error status, including an accumulative error indicator.
- Navigation Main functions:** A vertical bar on the left side containing icons for main functions.
- Status technology functions:** A horizontal bar at the bottom showing status technology functions.
- CMS Replay (Playback):** A button at the bottom right for CMS Replay (Playback).

Remote Control Operation System (RCOS)

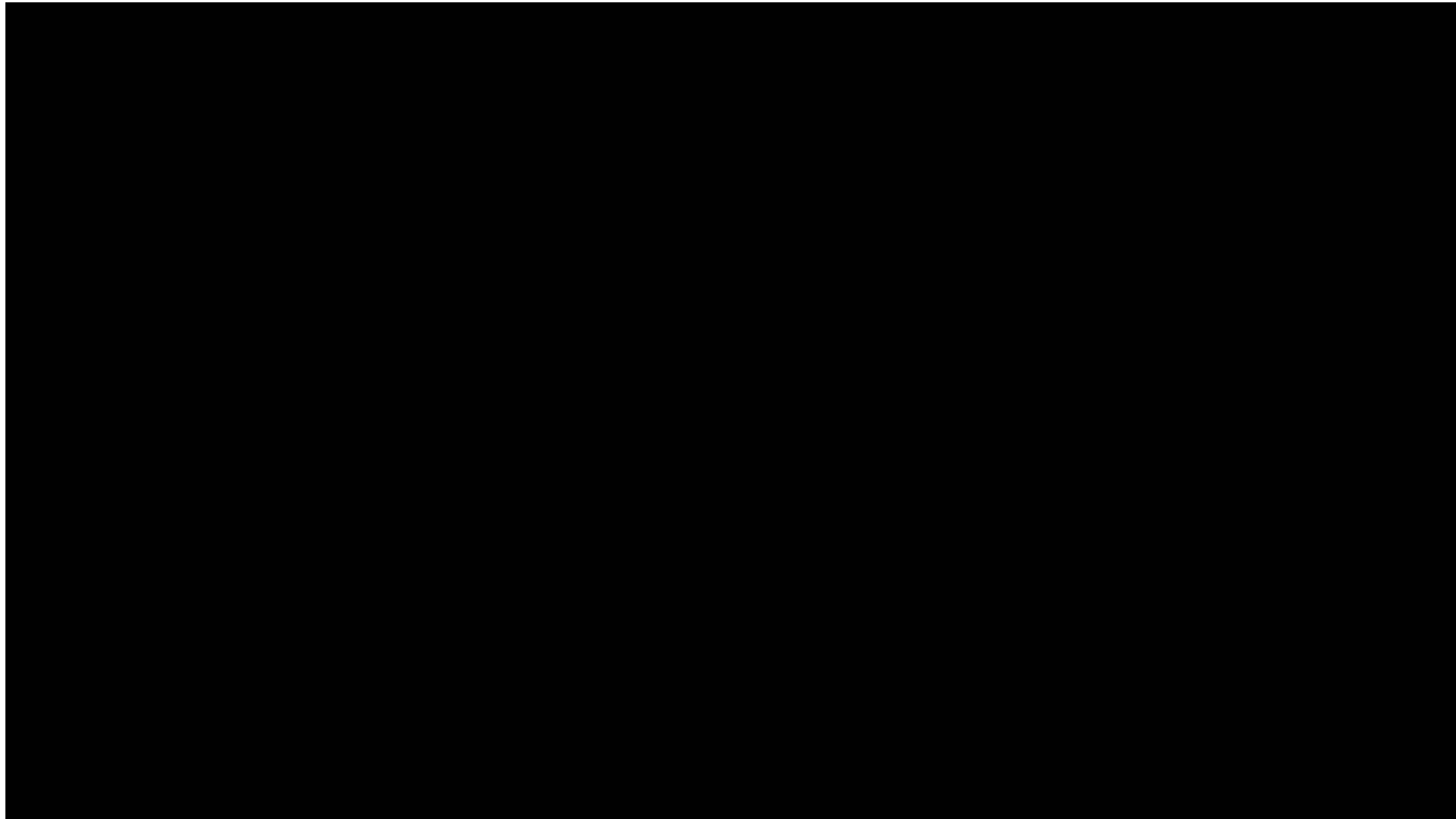
Higher productivity with STS Remote Control

- Full use of trolley speed and acceleration
- Full use of sway control
- Shift changes quicker and more flexible
- Close to operations
- Better work conditions
- Diversity in operators



Remote Control Operation System (RCOS)

In commercial operation



Reference Siemens Crane Automation

APMT Tangerang Med 2

Terminal will serve ULCV up to 20,000 TEU, with a full build capacity of 5MTEU

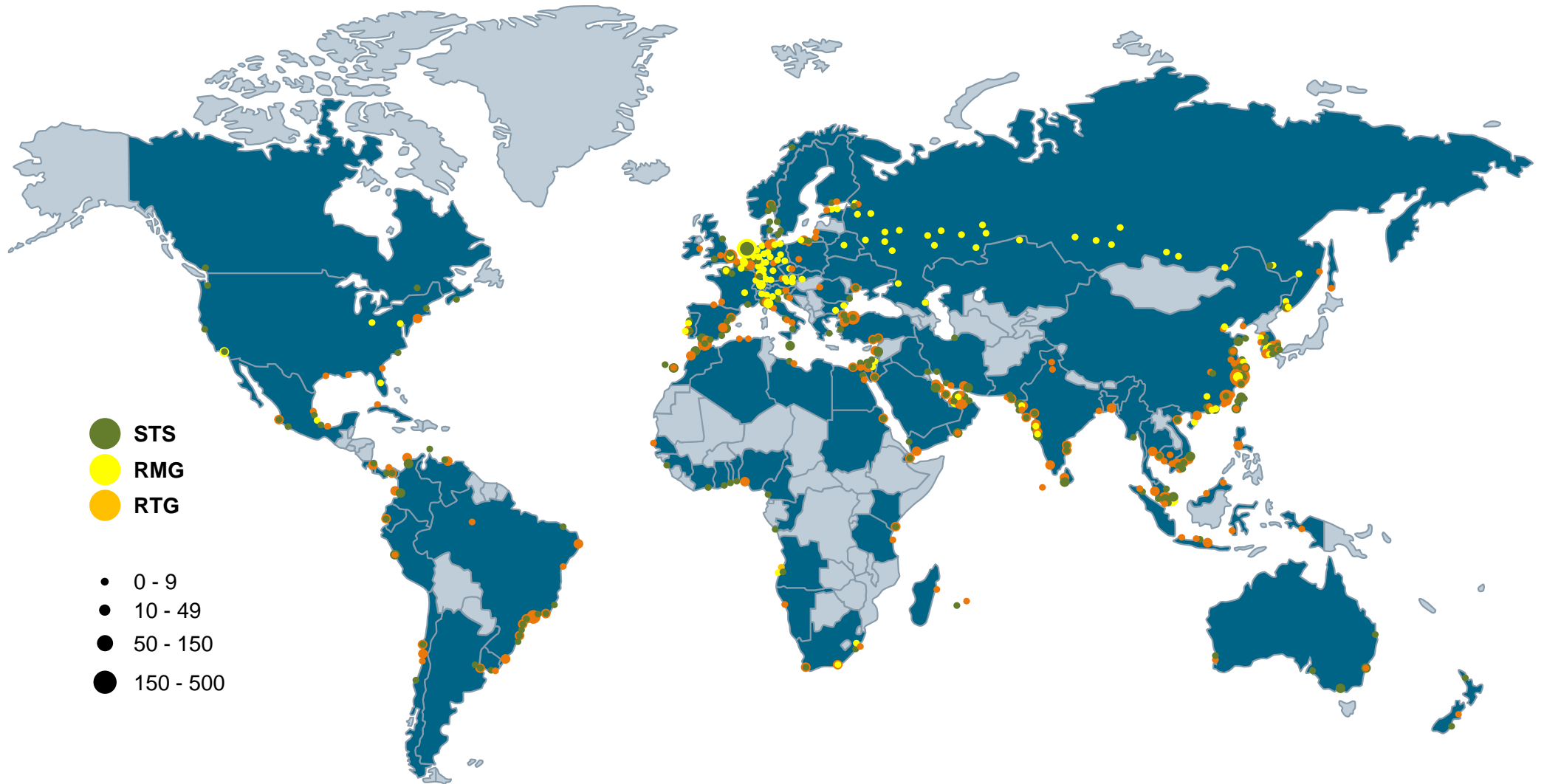


Cutting edge technology:

- 12x STS from ZPMC
 - Double trolley
 - Remote controlled
- 32x ARMG from Künz
 - Fully automatic

Siemens Cranes

Installed Base - Worldwide



Over 5500 port Cranes in operation are driven and controlled by Siemens

Siemens Cranes

Installed Base – Africa

Key facts Africa:

Higher, larger and longer Cranes brought into operation

- Vessel cascading effect

New and modernized terminals are STS operated

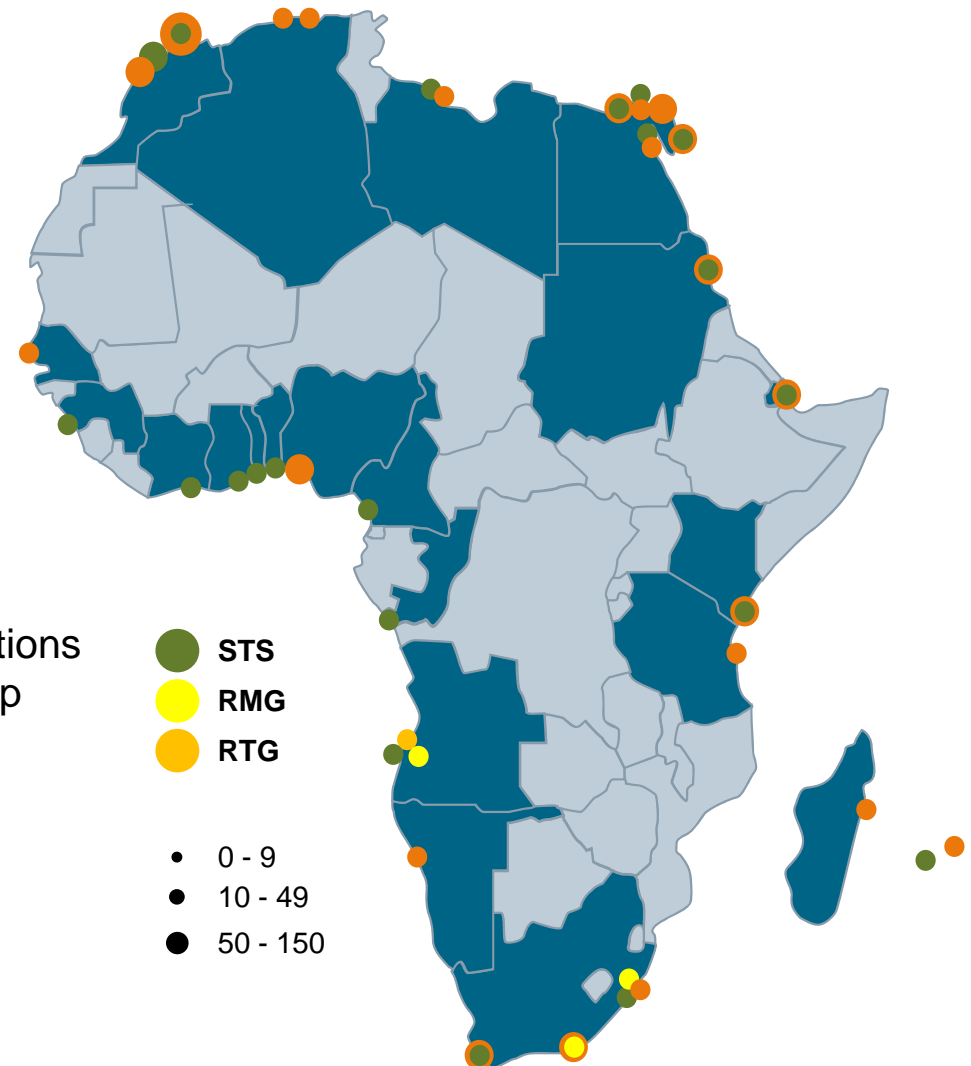
- Higher productivity required

Installed Base:

- over 100x Siemens equipped STS handle quay operations
- Harbour Cranes installed base as per locations on map

Half of these Cranes were ordered in the last 5 years

- Local Service presence
- Local know-how and repair capabilities
- Support from the Global Siemens Service Network

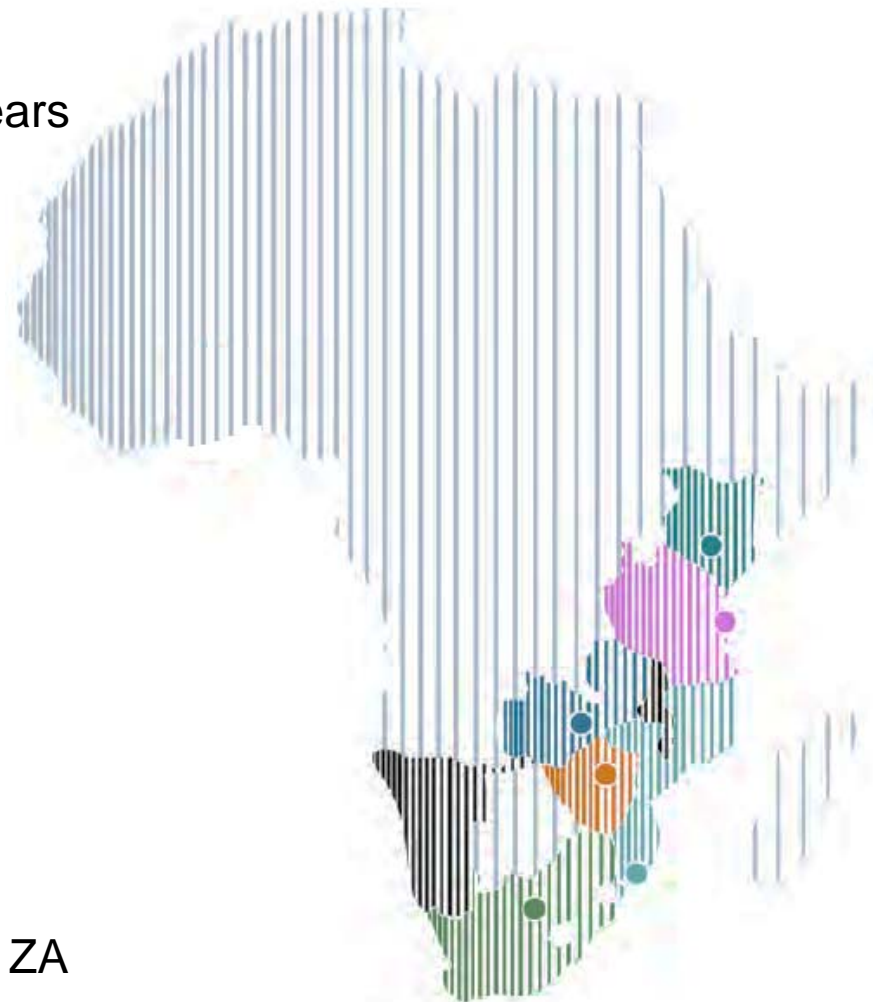


Siemens

Presence in South and East Africa

Key Facts:

- Present for over 155 years
- Head offices in:
 - Kenya
 - Tanzania
 - Zambia
 - Zimbabwe
 - Mozambique
 - South Africa
- 4x Corporate Offices in ZA
- 5x Manufacturing and Assembly Centers in ZA



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Siemens Cranes

Proven experience and competence

More than 100 years of experience in Cranes

Technical Competence in Crane Automation

Local presence in more than 190 countries

Largest installed base

State of the art Crane products and systems

Project execution Competence

Thank you!



Pay us a visit
at Stand 3



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