



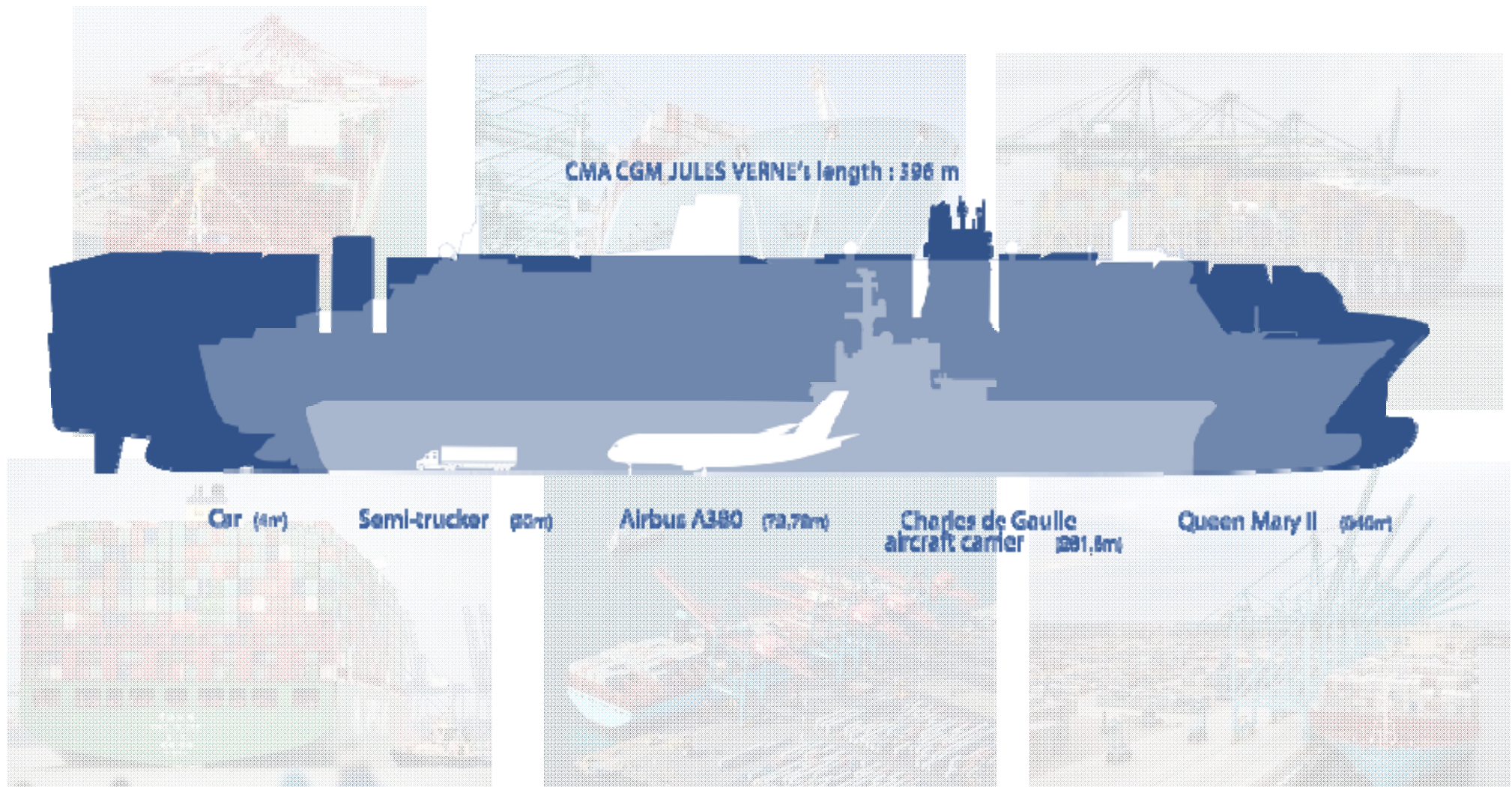
SIEMENS



16th Intermodal Africa, Mombasa – November 17th - 18th 2016

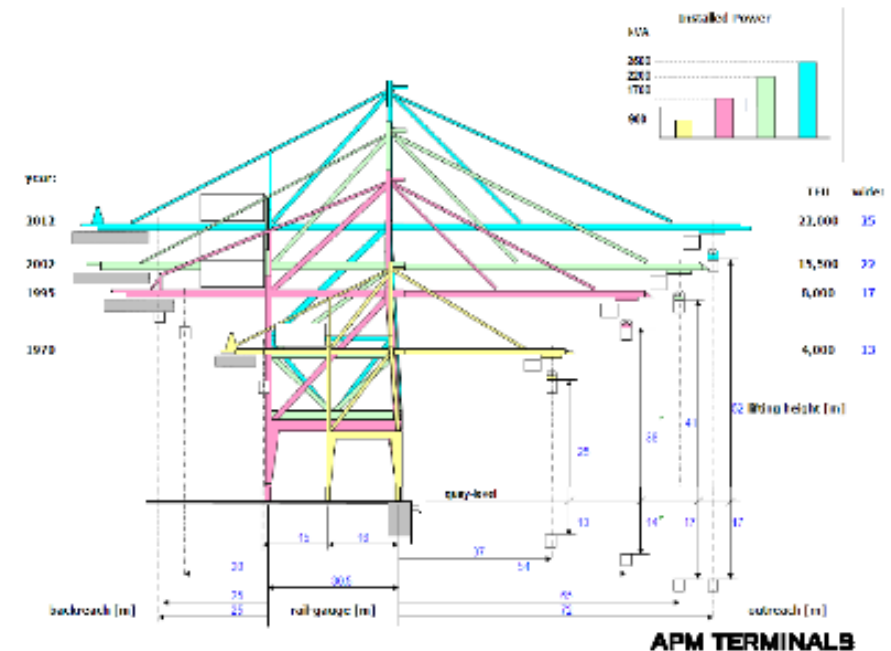
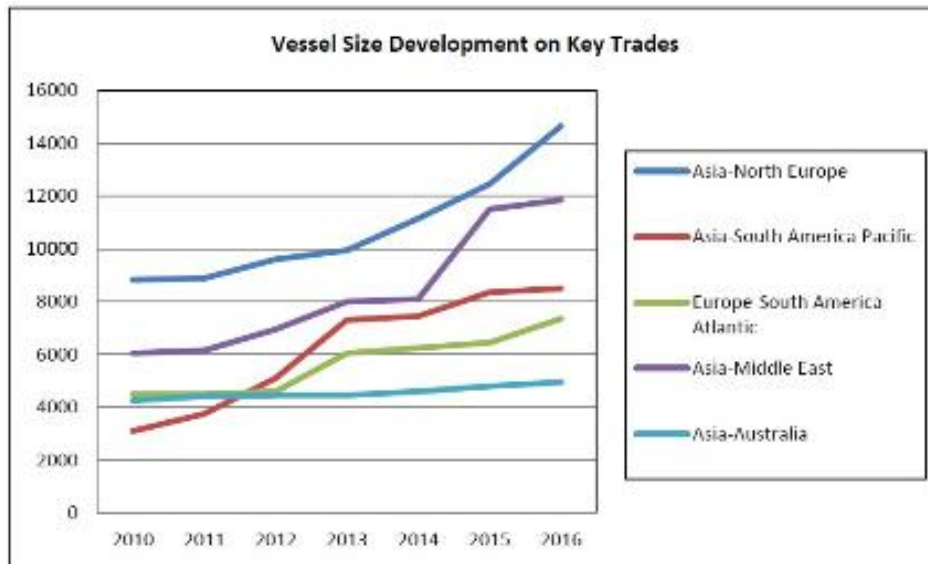
Integrated solutions for increased efficiency in port operations

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

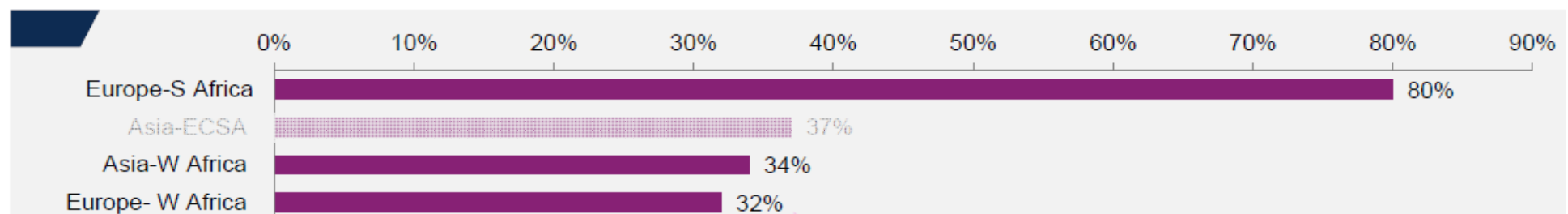


Terminals from all over the world need bigger cranes to handle bigger ships

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



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Cranes

Our competence

Automation solutions for Cranes



Ship to shore



Intermodal



Stacking



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
1LG4 / 1LP4 / 1LA8

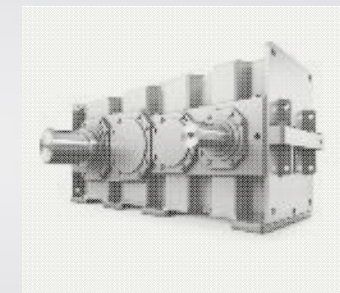


Asynchronous servo motors

1PL6
1PH7
1PH8

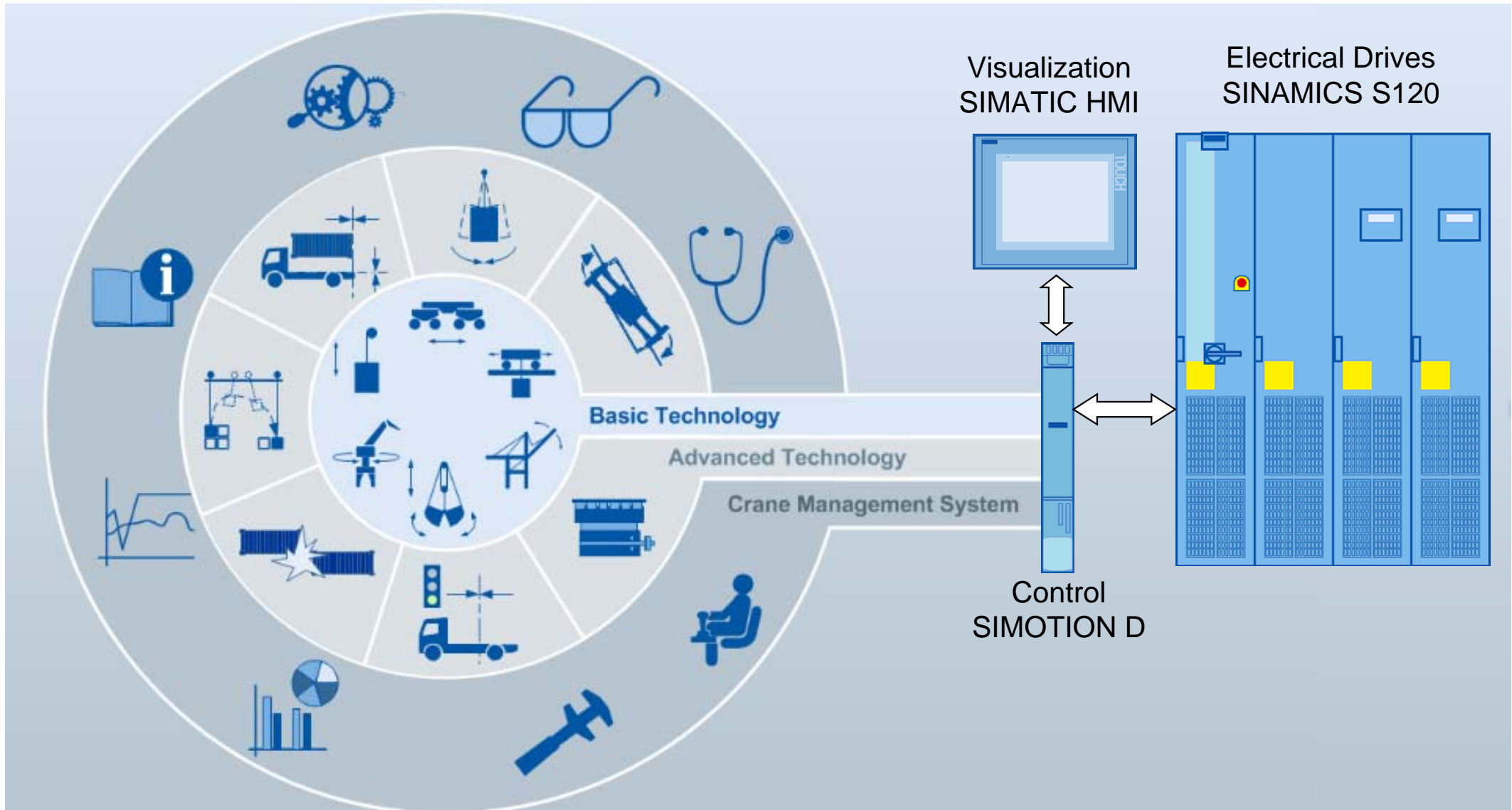


Gears & Geared Motors



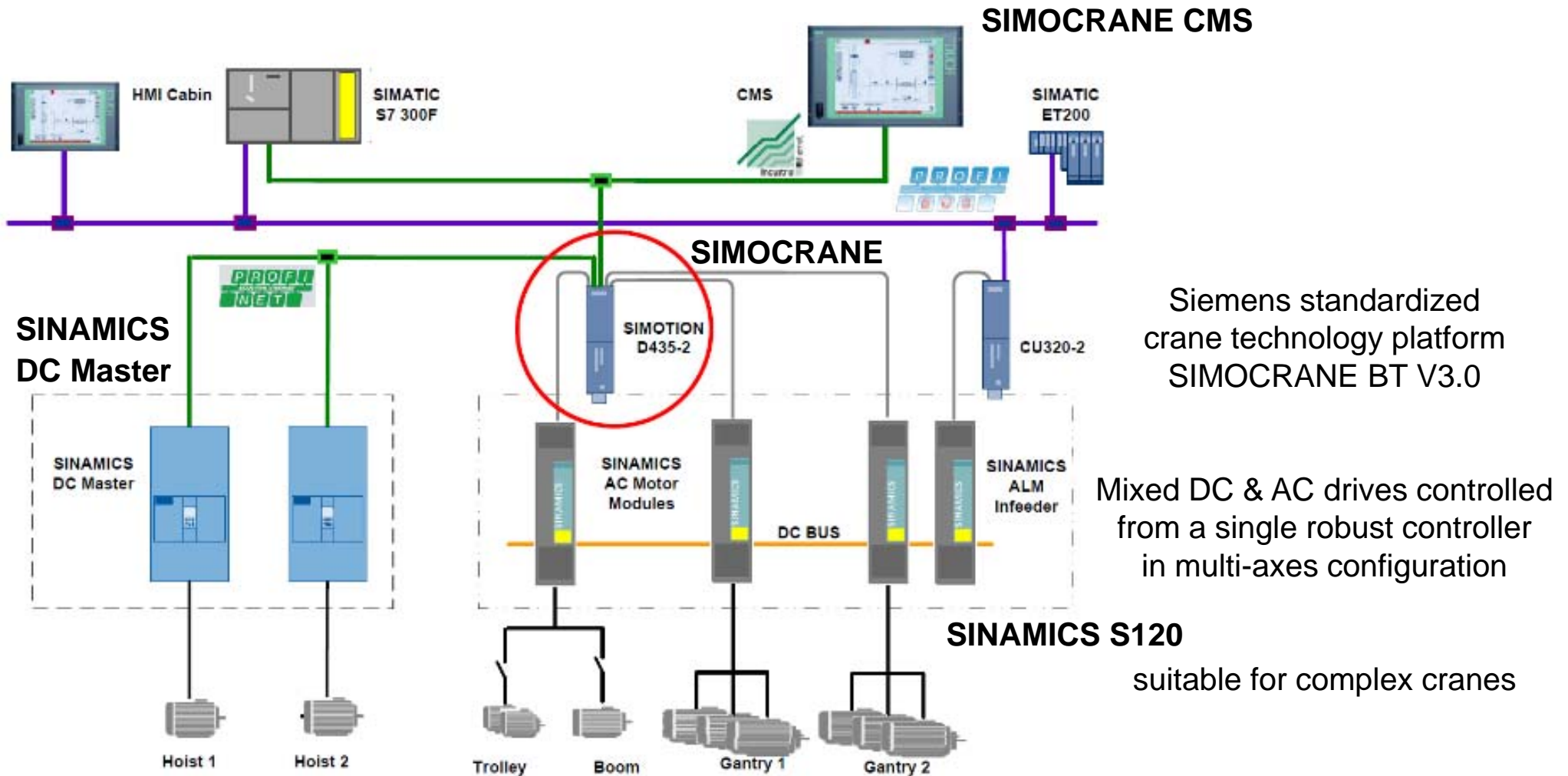
SIMOCRANE Technology

Standardization with a modular software architecture



SIMOCRANE with SINAMICS

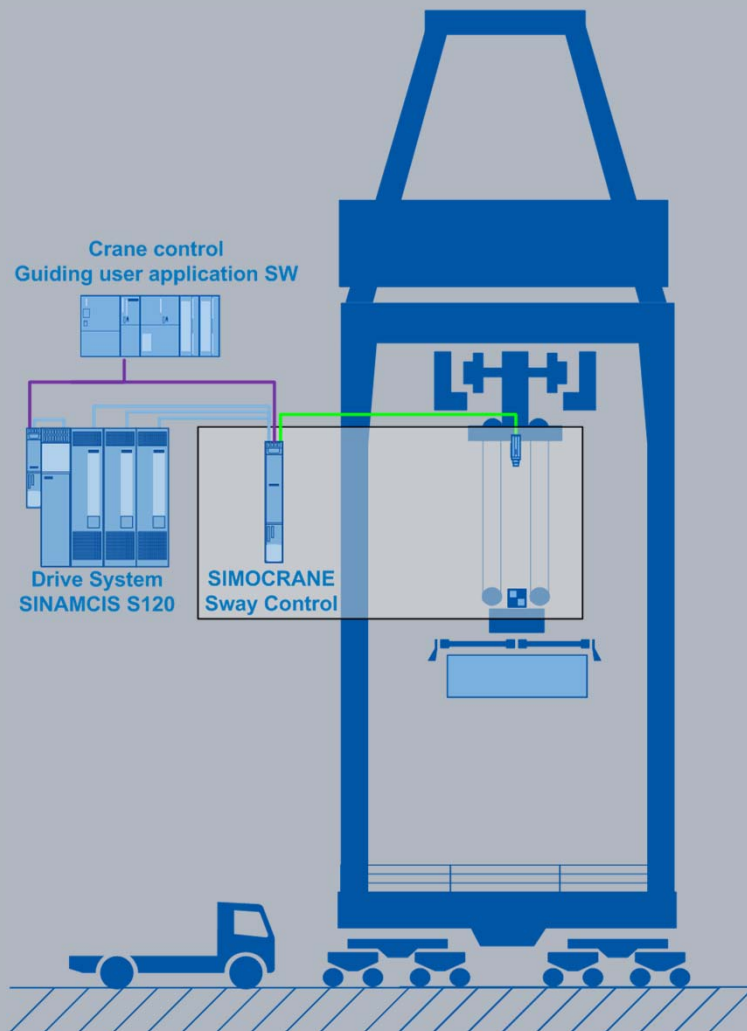
Multi-axes configuration with AC and DC Technology



Integrated full solutions

SIMOCRANE Advanced technology

Sway Control



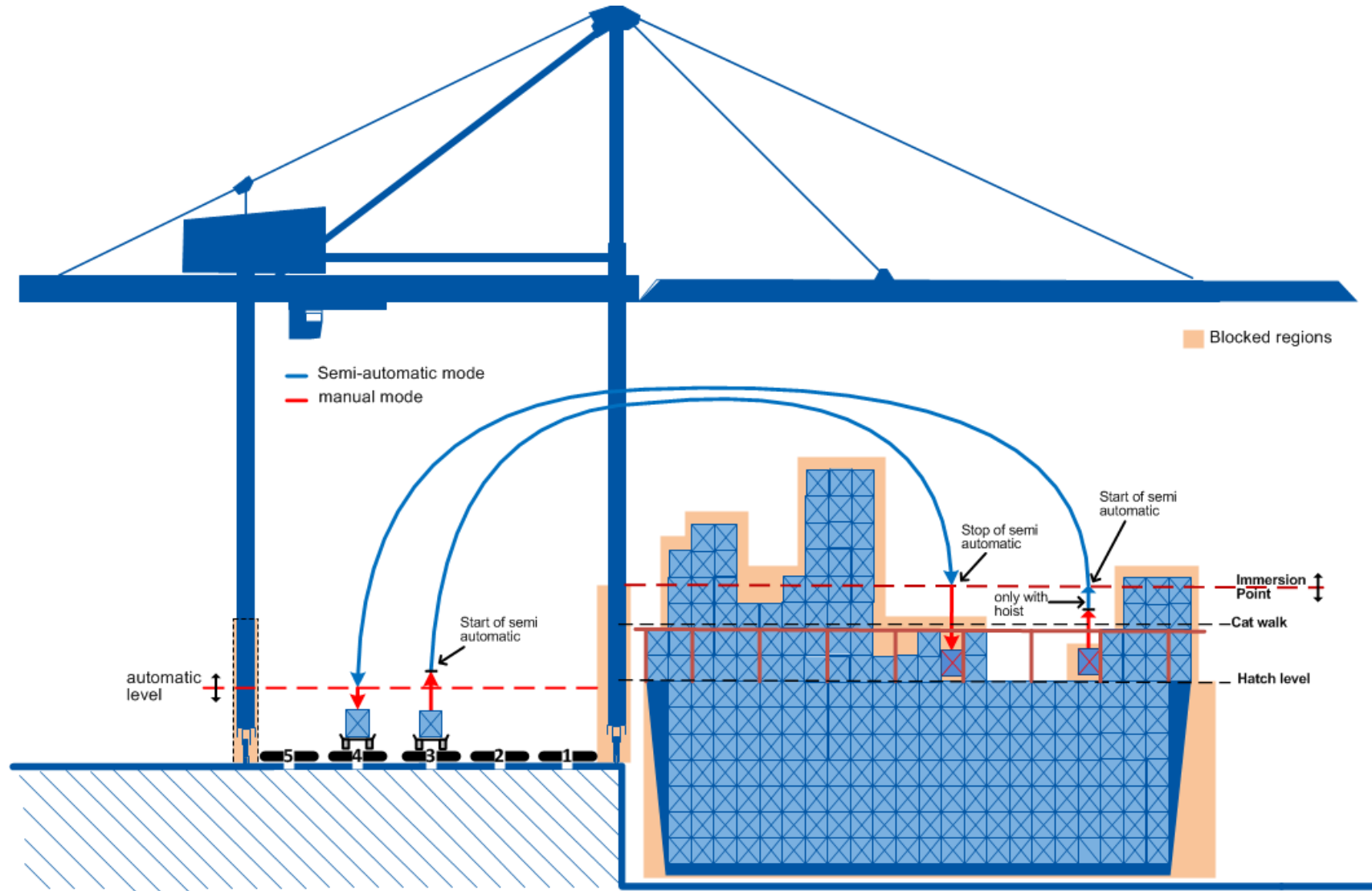
Functions:

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

Benefits:

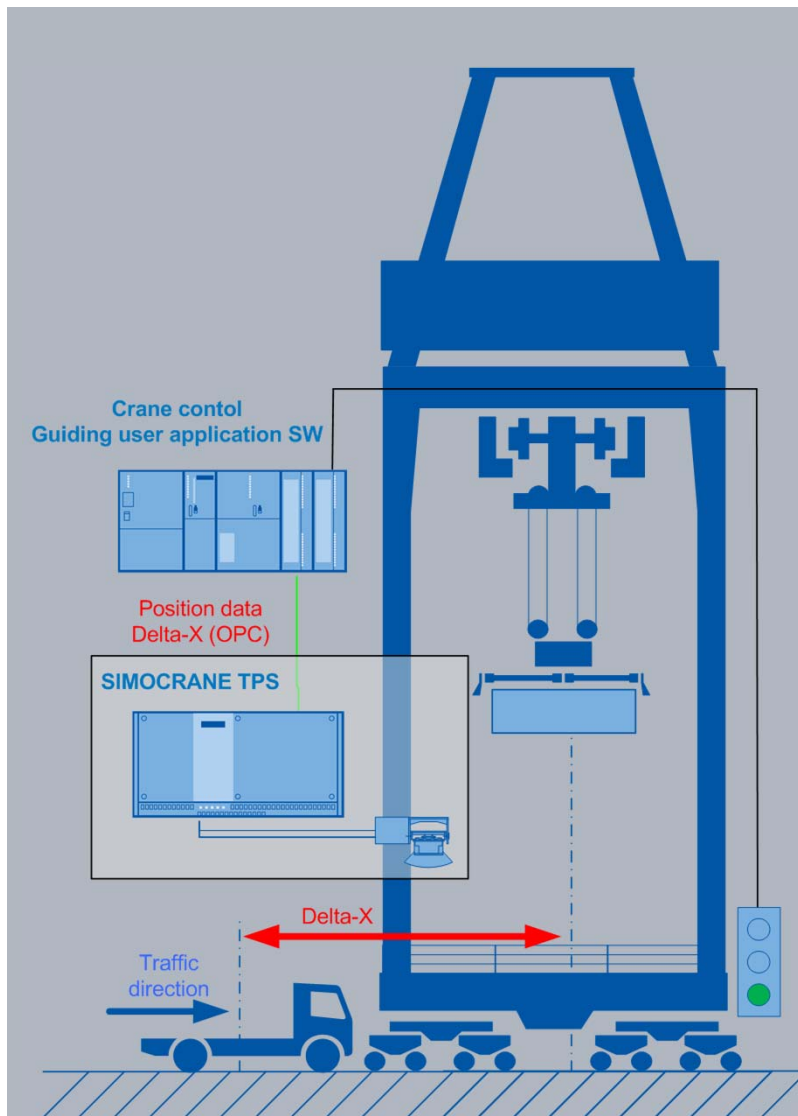
- Control of load trajectory
- Pre-requisite for remote control
- Reduction of the stressing on mechanical transmission elements

Typical Semi Automatic operation with Sway Control



SIMOCRANE Advanced technology

Truck Positioning System (TPS)



Functions:

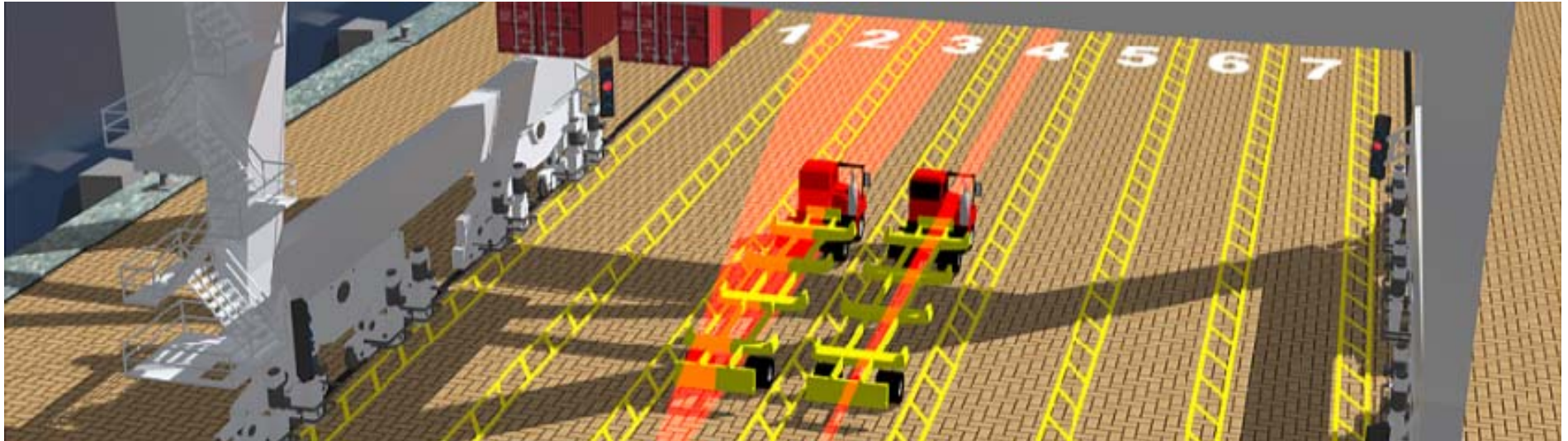
- Scan max. 2 working lanes
- Recognize parameterized objects
- Provide high precision position data of parameterized objects in 2D and 3D.
- Automatic system calibration

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 displays the SIMOCRANE CMS WinCC Runtime interface. The main area shows a crane overview with a 3D model and various status indicators. The interface is annotated with several callouts:

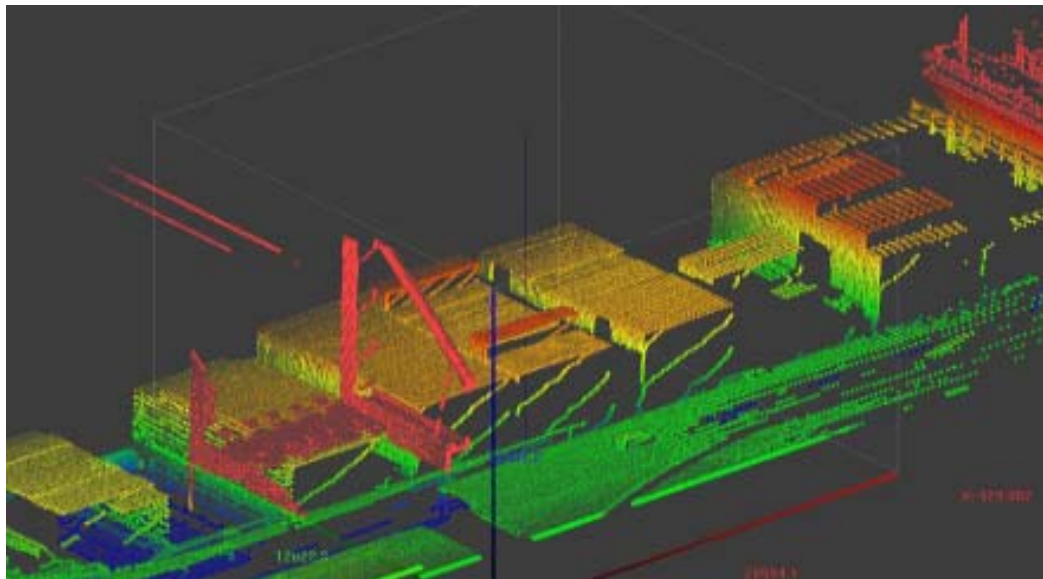
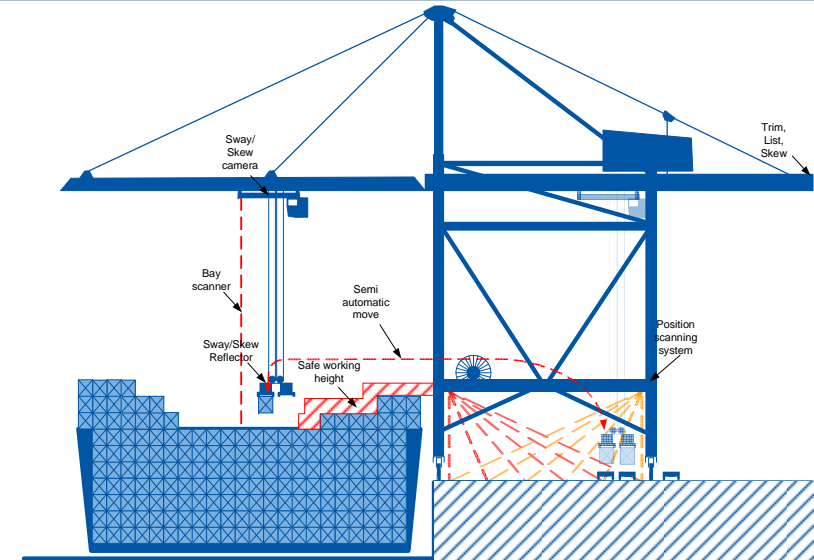
- Crane overview**: Points to the central 3D crane model.
- Navigation/Status sub-systems**: Points to the top right navigation icons.
- Details/Status sub-systems (e.g. drives, motor, brackes, drum, PLC, crane components, etc)**: Points to the hierarchical tree view on the right side.
- Status technology functions**: Points to the bottom right navigation icons.
- CMS Replay (Playback)**: Points to the play button icon at the bottom right.
- Error status bar (accumulative error)**: Points to the top left status bar.
- Navigation Main functions**: Points to the left side navigation icons.
- Status bar Operation data**: Points to the bottom status bar.
- Actual fault messages**: Points to the bottom left fault message table.

Message ID	Date	Time	Description	Category
173	11/05/10	05:26:15.584 PM	HO2 - Hoist Drive 2	HO2
13	11/05/10	05:26:16.334 PM	Group message of Hoist	HO

Remote Control Operation System (RCOS)

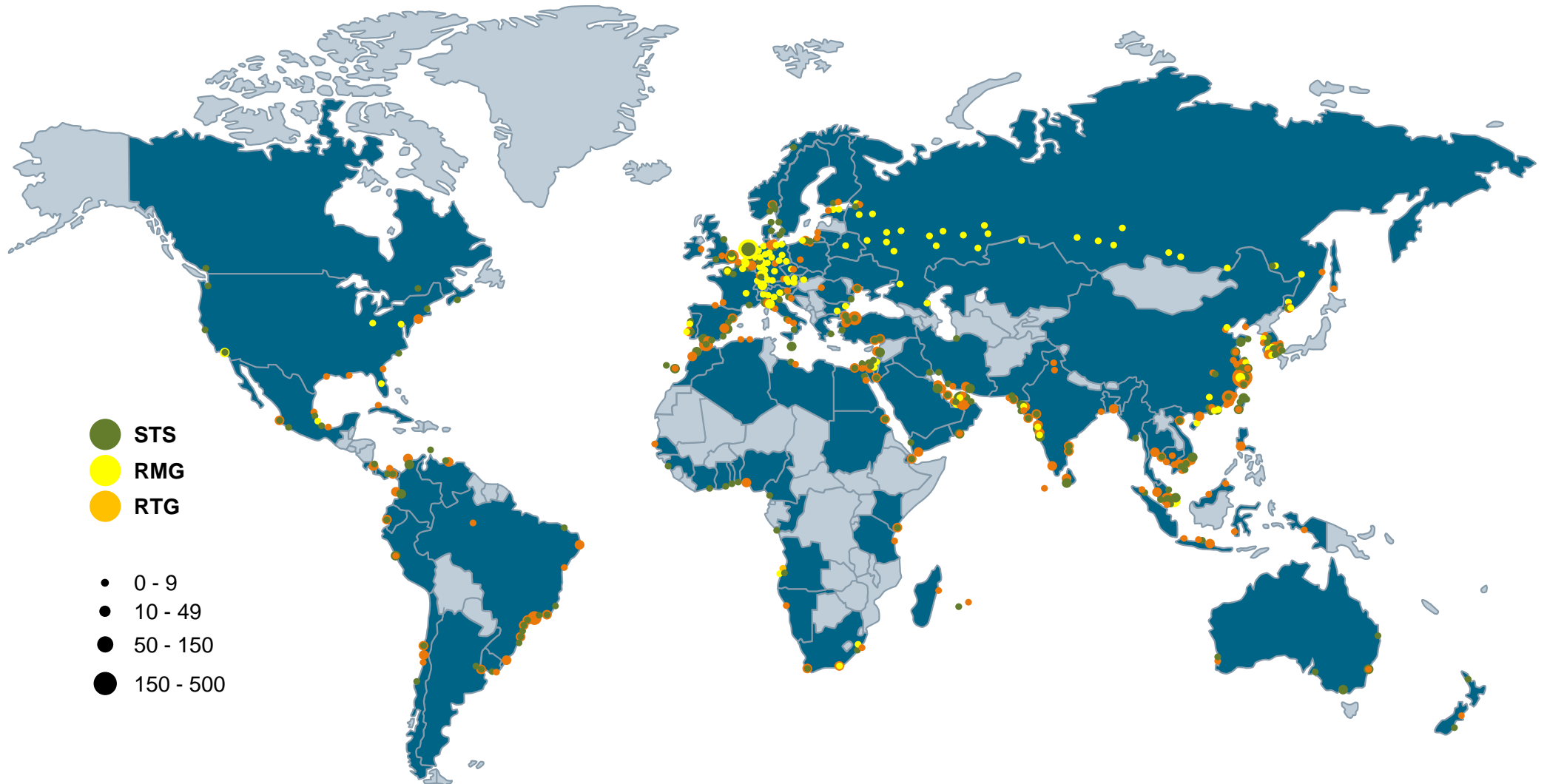
Higher productivity with STS Remote Control

- 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



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

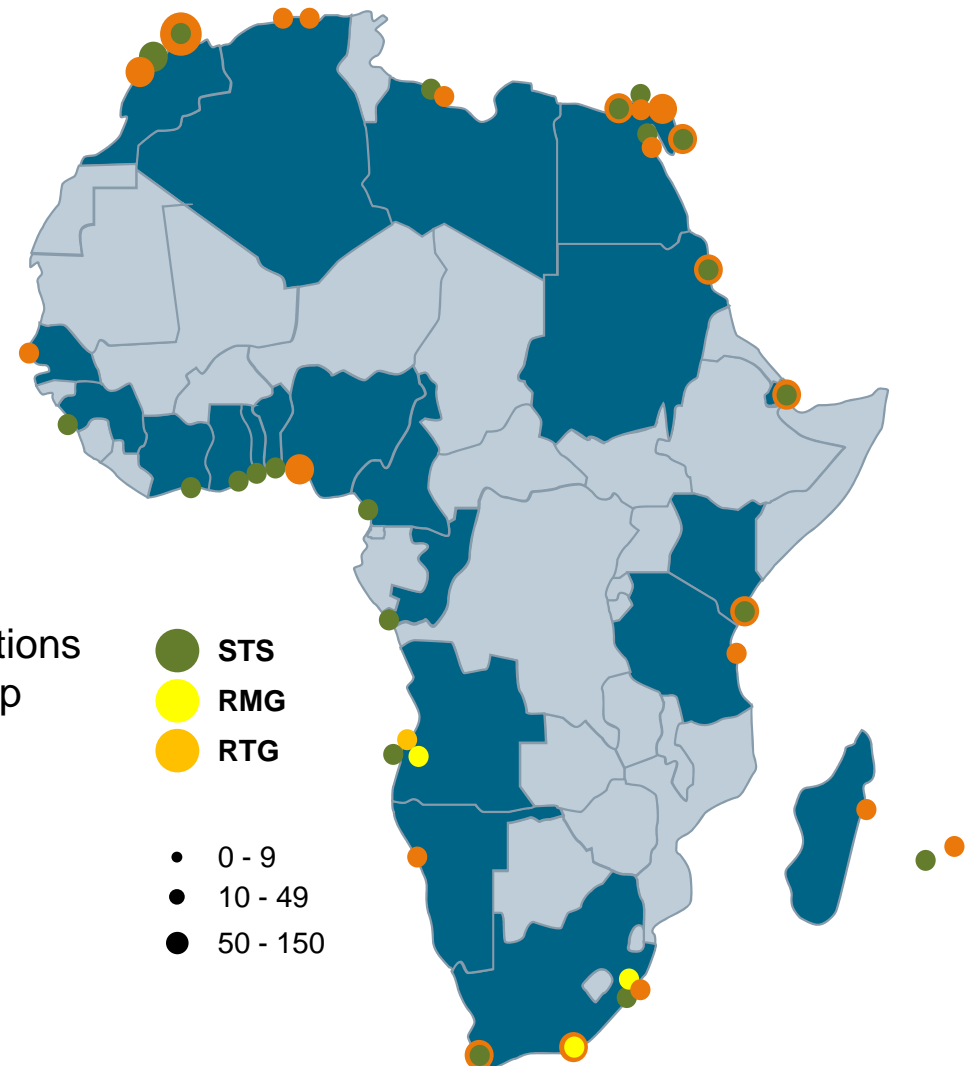
- Higher productivity required

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

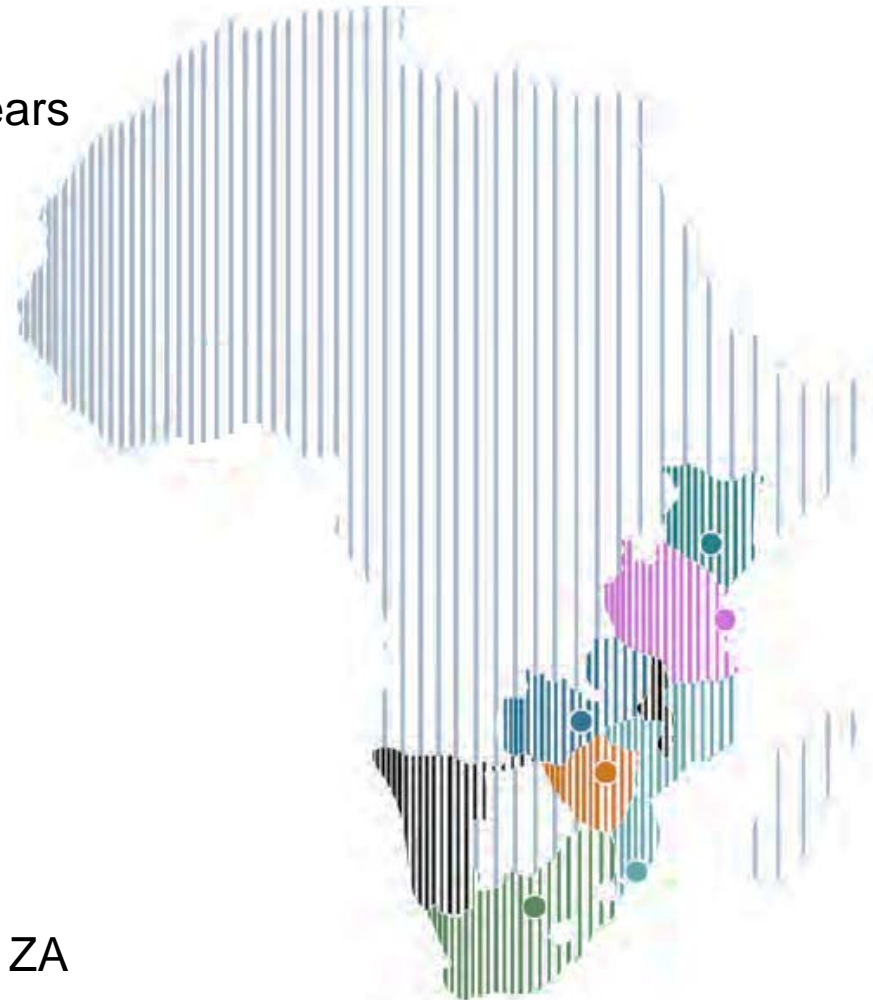


Siemens

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



- **Kenya**
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- **Tanzania**
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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 11



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