

Digital Terminal

Fast Productivity Automation and Digitalization

21st Intermodal Africa 2019, Djibouti
Buhle Yengwa

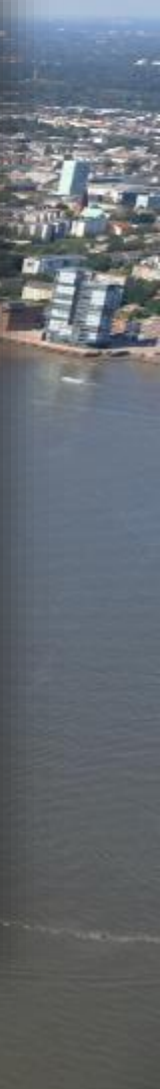


Siemens Cranes

1891 First Siemens Crane delivered Based on ROI

SIEMENS
Ingenuity for life

Over 128 years of experience



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

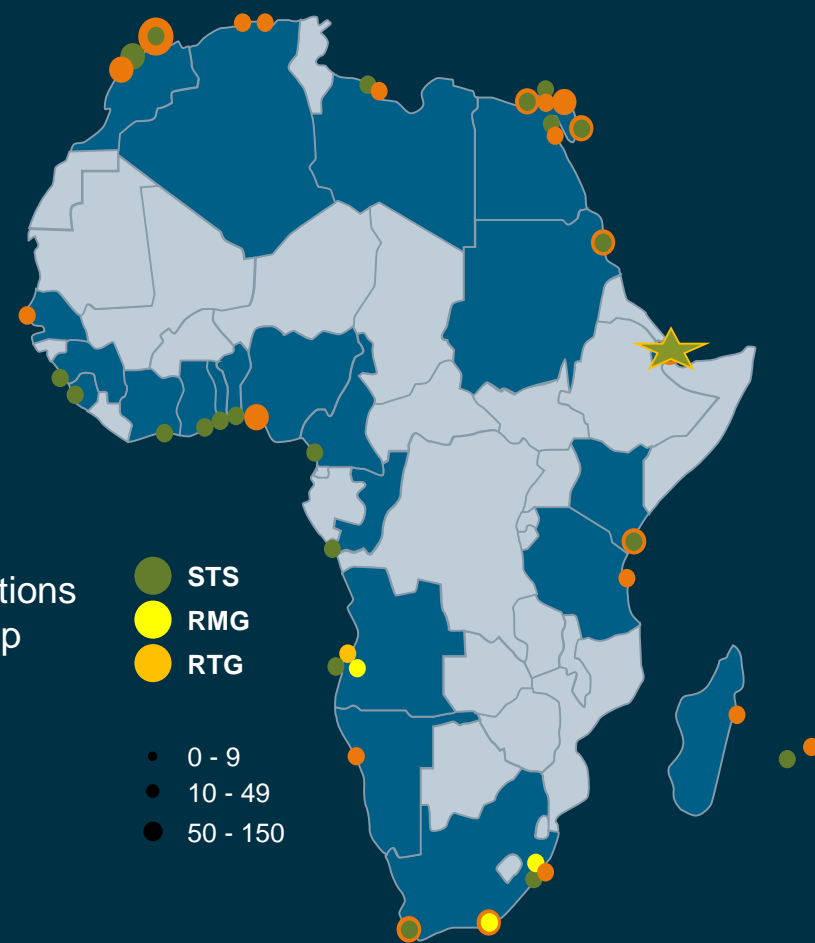
- Higher productivity required

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



Electrification in Ports along the value chain



Quay



Transfer Area



Stack



Rail/Road



Terminal



Gate



**Loading/
unloading vessel**

**Horizontal
transport**

**Stack shuffling/
storage**

**Rail Road
Interchange**

**Gate entry/exit
automation**

Hinterland transport

Electrifi-
cation
increase
up to
4x

Electric
power
demand to
quadruple
in ports
(e.g. Long
Beach –
2005 to
2030)¹

Ship to Shore
cranes

Hybrid straddle
carriers

e-Stacking cranes

e-Un-/Loading

Smart
Buildings

e-Highway

Rail Electrification

SIHARBOR On-
shore power supply

Battery powered
AGV

Reefers

Power to X
hydrogen fuel cell

Electrified TTs

e-vehicle charging
infrastructure

LED/LEP Lighting



High Voltage



Renewables



Storage technology



Medium-voltage
switchgear and
protection



Transformer

Low-voltage panels
with protection and
metering



Network
Management and
Control Systems

Electrical network (Power backbone)

The world of cranes

Today's challenges

We are likely to load shed on most days in the near future



- Adequate generation capacity available to meet demand and reserves
- Constrained generation capacity with sufficient supply to meet demand and reserves. Medium probability of load shedding
- Insufficient generation capacity unable to meet demand and reserves. High probability of load shedding

Jan-15

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Feb-15

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

Mar-15

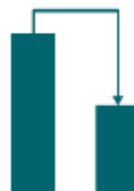
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29	30	31				

Apr-15

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		



Increased call sizes
and peak loads



Costs
reduction



Higher
automation-level



Concentration
and globalization



Shorter
handling times



Cyber
Security



Safety



Digitalization

Load Shedding

SIMOCRANE Technology – Our answer Standardization with a Modular Software Architecture



- ✓ Electrification
- ✓ Automation
- ✓ Advanced Automation
- ✓ Digitalization

Electrification

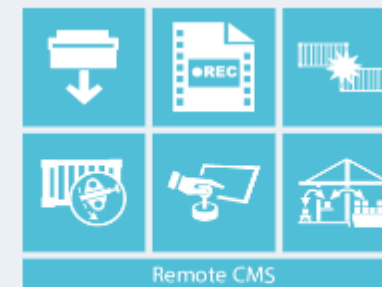


SIMOCRANE

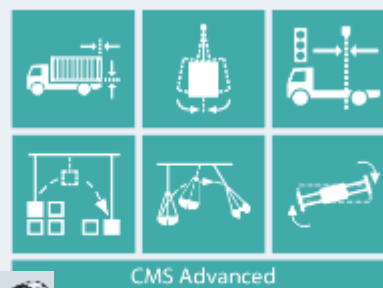
Digitalization



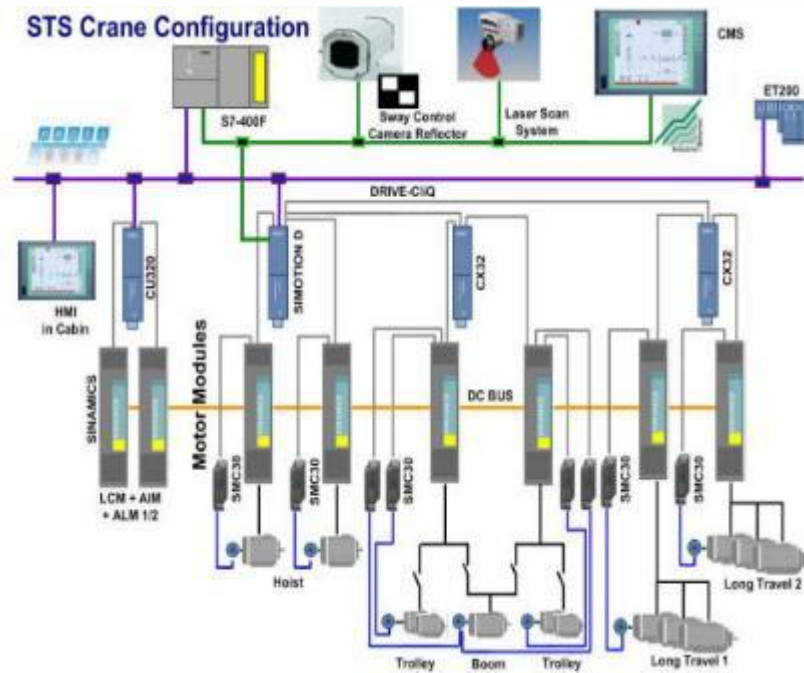
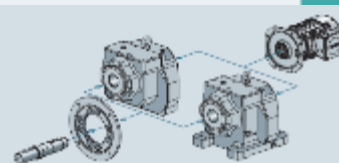
Advanced Automation



Automation



- ✓ Geared Motors up to 1600NM



SIMOCRANE Technology – Our answer Standardization with a Modular Software Architecture



- ✓ Electrification
- ✓ Automation
- ✓ Advanced Automation
- ✓ Digitalization

Electrification

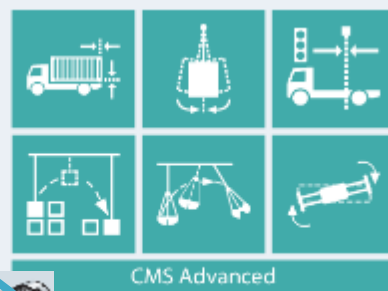


SIMOCRANE

Digitalization



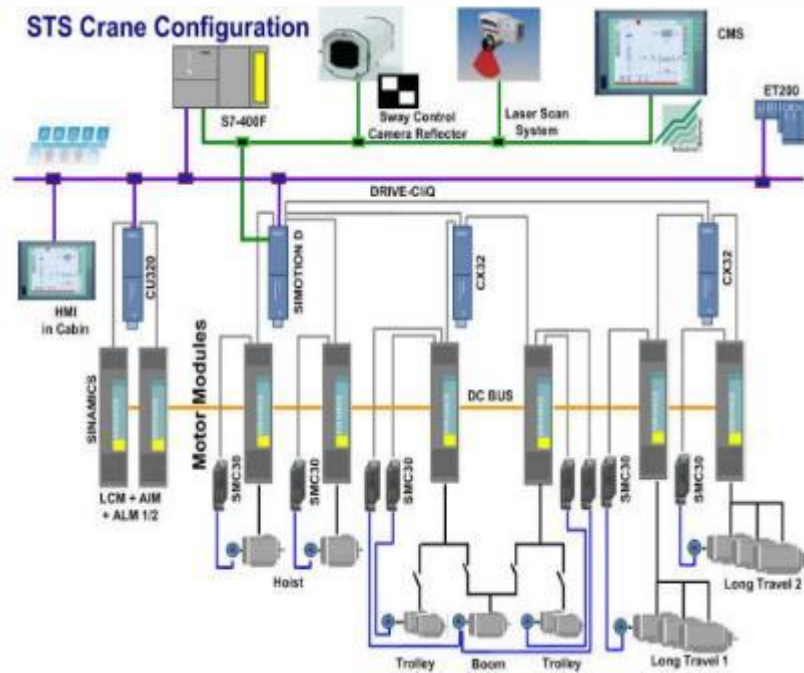
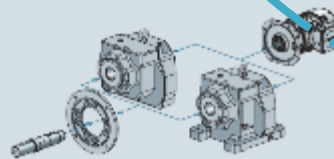
Automation



Advanced Automation



✓ Geared Motors up to 1600NM



SIMOCRANE Technology Siemens Automation

SIEMENS
Ingenuity for life

Challenges



Increased call sizes
and peak loads



Costs
reduction



Shorter
handling times



Safety

Siemens Answers

- ✓ Final Landing
- ✓ Sway Control
- ✓ Truck positioning
- ✓ Route Calc
- ✓ Skew Control



Benefits

- ✓ Accurate Landings
- ✓ Increase productivity in a secure way
- ✓ More safer and precise operations
- ✓ Accurate stacking

SIMOCRANE Technology Siemens Advanced Automation

SIEMENS
Ingenuity for life

Challenges



Higher
automation-level



Safety



Siemens Answers

- ✓ ECO Solutions
- ✓ RCOS
- ✓ LCPS
- ✓ RCMS



Benefits

- ✓ Energy management
- ✓ Smart HD integrated Views
- ✓ Efficient workflow on every cycle
- ✓ Record and play back

SIMOCRANE Technology Siemens Digitalization

Challenges

Siemens Answers

Benefits



Digitalization



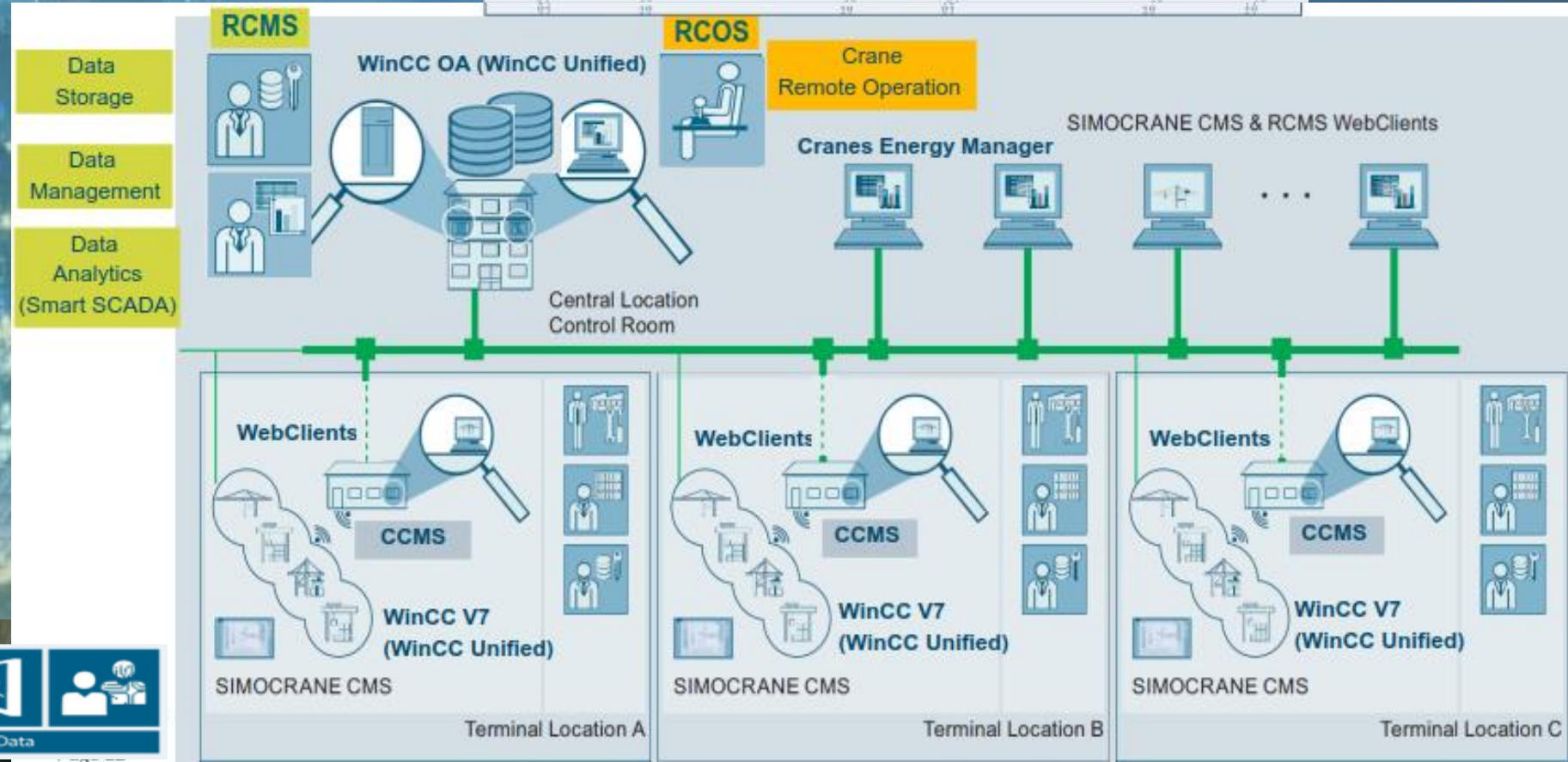
Cyber Security



Concentration and globalization



Safety



SIEMENS SERVICE Masterdrives Phased out

SIEMENS
Ingenuity for life

SIEMENS

Industry

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 Date: July 2010

Product life cycle MASTERDRIVES – Notification of product phase-out

With its functionality, performance range and flexibility MASTERDRIVES has for years been a highly successful system for single and multiple motor applications for production machines, in general mechanical engineering and in all industries.

We wish to continue the success story with the new drives family SINAMICS. With SINAMICS you have a drive system with expanded modularity and functionality, e.g. Safety Integrated functions, or Drive Control Chart (DCC) for graphics configuration and extension of device functionality by means of freely available control, arithmetic and logic blocks.

As our partner and customer we wish to inform you of our plans for the coming years. In order to allow you as a user of MASTERDRIVES sufficient time to complete your migration to SINAMICS.

We are therefore giving notice, effective October 1, 2010, of intended product phase-out. On October 1, 2011 active marketing of the MASTERDRIVES range will cease. As from that date our comprehensive spare parts, repairs and after-sales service support will remain fully available. This way we wish to ensure availability of the drive systems installed in the field. The product will then be finally and completely discontinued as from October 1, 2020.

Our aim is to provide you with sufficient investment security for equipping your machines, and to ensure support for the drives installed in the field. Furthermore we wish to offer you an innovative successor product in the form of the new SINAMICS drive system.

Uwe Frank
 Uwe Frank
 I DT MC

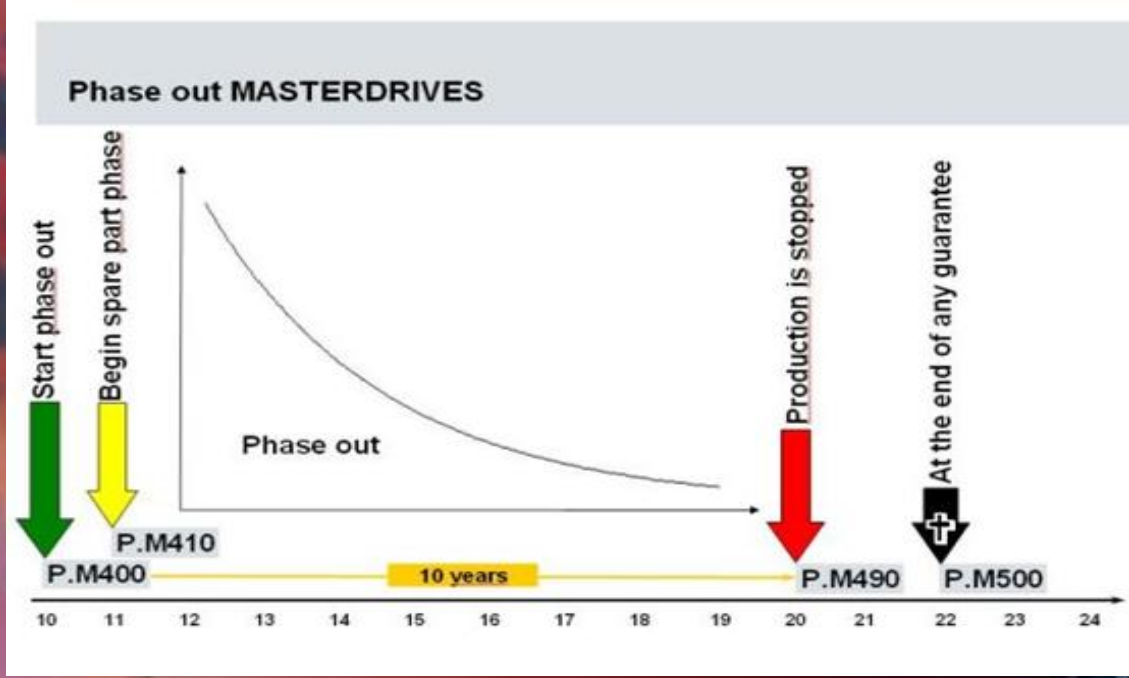
Dr. Jürgen Brandes
 Dr. Jürgen Brandes
 I DP LD
 14.07.2010

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 WERB-Reg. No. DE 20781322

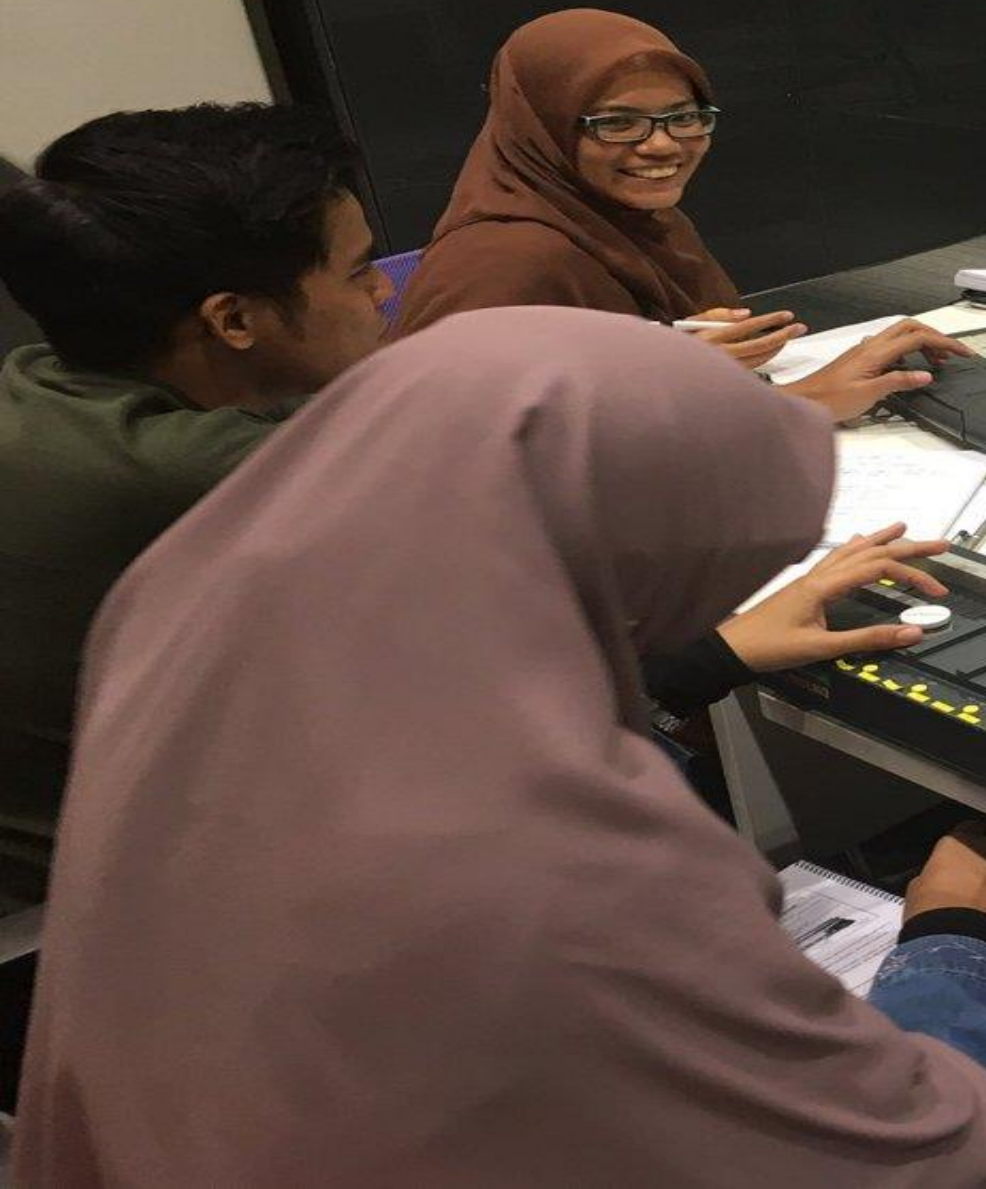


Consequences:

- Masterdrive spare parts availability will get critical
- Masterdrive spare parts prices are steadily increasing
- Price development will depend on capacity/ demand
- **October 2020**



Training Customer's and Partners



Cranes: SIMOCRANE, SINAMICS

Basics crane course

Crane Physics and Drive sizing

5 days

Simocrane Commissioning

Drive Based Technology
Basic Motions and Sway Control

3 days

SINAMICS Safety integrated for Cranes

2 days

Simocrane Maintenance

Maintenance SIMOCRANE,
SIMOTION/SINAMICS

5 days

Practical crane installation

Collision Prevention

Load Collision Prevention System

3 days

Sway Control

Training Course for Commissioning of SIMOCRANE Sway Control

3 days

CeNIT

SIMOCRANE CeNIT
Electronic Straight-run Controller

1 day

Safety standards

Factory Automation Safety Standards

3 days

Thank you for your attention

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