



Terminal Cranes Automation

Business drivers for automation

Ahmed Gamal
Siemens Cranes

SIEMENS

First automation references

RMG, ECT, 1997.

STS, ECT, 2022, remotely controlled without cabinet.

RTG, Felixstowe, 2017.



What are the key factors for successful terminal operation?

Safety

Efficiency

Sustainability



MANUAL CRANES



HIGHER FATALITY RATE

**FATALITIES
RATE**



**25%
REDUCTION**



AUTOMATED CRANES



LOWER FATALITY RATE

Safety

People detection

Chassis lift

Collision prevention





MANUAL CRANE OPERATION

HIDDEN OPERATION LOSSES

30%

**HIDDEN OPERATION
LOSSES**



IDLE TIME
(WAITING FOR
OPERATORS)



**LOW
UTILIZATION**
(UNDERUSED
CAPACITY)



**HUMAN
ERRORS**
(REWORK &
DELAYS)



**UNPLANNED
DOWNTIME**
(MAINTENANCE
& CHECKS)

Efficiency

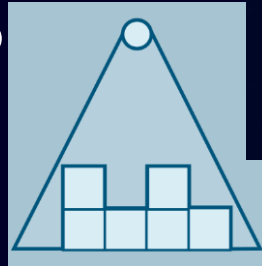
Cycle time improvement

Running cost reduction

Operation

Cost

Condition monitoring/P



RTG CRANES
FUEL SAVINGS.
SMARTER OPERATIONS.

AVERAGE FUEL SAVING POTENTIAL
~55%
WITH FUEL SAVING SOLUTIONS

LESS FUEL CONSUMPTION | **OPTIMIZED OPERATIONS** | **LOWER EMISSIONS** | **COST SAVINGS** | **A GREENER TOMORROW**

Condition monitoring
Predicts failures in advance

An illustration of a rubber-tired gantry (RTG) crane lifting a blue container. The crane has 'eRTG' written on its side.

CARBON EMISSION REDUCTION



DIESEL RTG
(DIESEL POWERED)




130 – 350
TONS OF CO₂
REDUCTION
PER YEAR



eRTG
(ELECTRIC POWERED)



ASSUMING A TYPICAL
WORKLOAD OF
4,000
OPERATING HOURS
PER YEAR



**CLEANER
AIR**

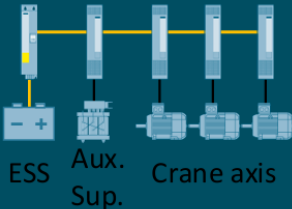
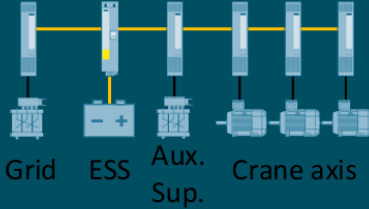
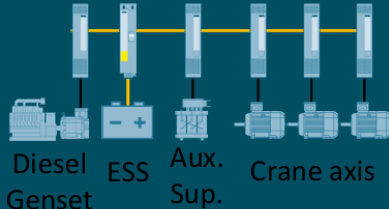
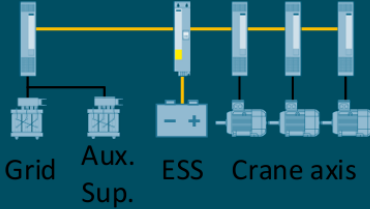


**LOWER
CARBON FOOTPRINT**



**A GREENER
TOMORROW**

Sustainability

	Mobile Cranes			Shore Powered Cranes
Dive Scheme				
Power Supply	Battery	Grid & Battery	Battery & Diesel Genset	Grid & Battery
ESS use case	load handling & long travelling	long travelling & Emergency load handling	load handling & travelling	power peak shaving Emergency load handling
Battery charging	via Grid	via Grid	via Diesel Genset	via Grid
				

AUTOMATED CRANES

SAFER PEOPLE. SMARTER OPERATIONS. A STRONGER, CLEANER FUTURE.



**AUTOMATION
CREATES VALUE**



SAFETY

Fewer risks.
Fewer fatalities.



EFFICIENCY

Less downtime.
Higher productivity.



SUSTAINABILITY

Lower emissions.
Cleaner tomorrow.



COST SAVINGS

Less waste.
Better utilization.



FUTURE READY

Smarter technology.
Greater possibilities.

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