

Longterm optimization

Terminal performance

Longterm optimization

Terminal performance

Terminal performance

Core activities

- Discharge
- Load
- Temporary storage
- Acceptance/delivery



Longterm optimization

Terminal performance

Improve performance:

- Reduced cost
- Increased safety
- Increased profitability



Longterm optimization

Terminal performance

Importance of reporting:
Garbage in = garbage out

Line or Group: AES		Vessel Voy nr: LIGB34E	
Vessel: LIONS GATE BRIDGE		ECT Voyage nr: 69712	
Vessel Operator: KKK		ECT Employee: Ed Reus	

Expect

ETA:	08-JAN-08 16:15
ETD:	10-JAN-08 11:45
Berth prospect:	43:30
Agreed Sailing:	
Ag. Berthing Time:	

Arrival

Actual Arrival:	08-JAN-08 16:33
Actual Sailing:	10-JAN-08 06:00
Actual Berthing Time:	37:26

Vessel Operation Time

Start Vessel Operation:	08-JAN-08 17:06
Finish Vessel Operation:	10-JAN-08 06:00
Gross Operating Time:	36:53
Meal Breaks during Oper.:	3:20
Oper. Inter. during Oper.:	
Net Operating Time:	33:33

Vessel Handling Time

First Lift:	08-JAN-08 17:17
Last Lift:	10-JAN-08 06:59
Gross Handling Time:	36:42
Meal Breaks during Handling:	3:20
Oper. Inter. during Handling:	
Net Handling Time:	33:22

Moves

	Standard	Off Standard
Discharged:	1801	16
Loaded:	1269	
Shifted:		
Restowed Via Quay:	30	
Container Moves:	3100	16

Handlings

Total Container Moves:	3116
Hatch Covers:	56
Pcs Break Bulk:	4
Total Handlings:	3172

Production

Berth Productivity (BMPH):	92.3	Total handlings / (Last lift - ATA) - (Ext.Inter./Average cranes)
Plan. berth prod.:	72.9	Total handlings / Berth prospect
Deviation:	+19.4	Berth prod. - Plan. berth prod.
Handling Productivity:	95.1	Total handlings / Net Handling Time
Crane Productivity:	25.4	Total handlings / (Gross Crane hrs. - Ext. Inter. - Breaks)
Crane Split:	4.1	Gross Crane hrs / (Gross Operating time)

Longterm optimization

Terminal performance

Performance:

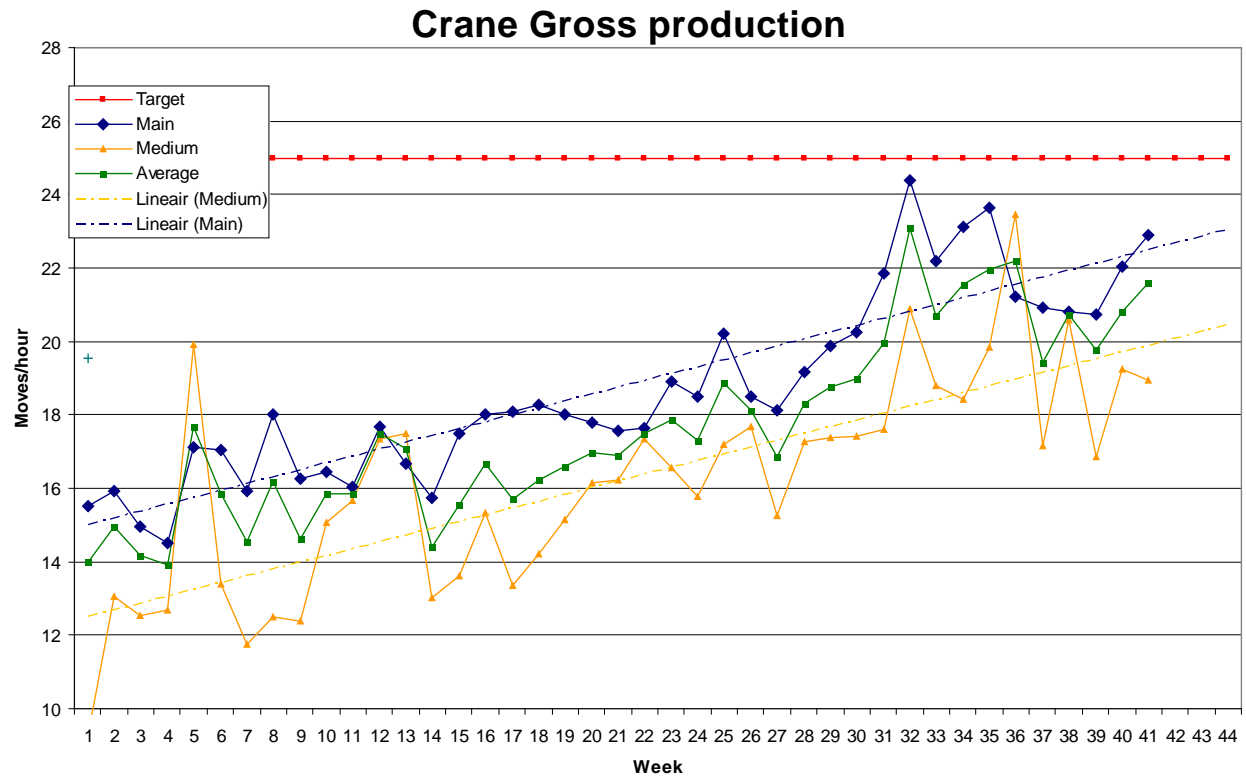
- Safety
- Damage prevention
- Efficiency
 - Production
 - Productivity
 - Utilization
 - Service



Longterm optimization Terminal performance

Statistics:

Key Performance Indicator
or KPI



Longterm optimization

Training

Longterm optimization Training

Training for:

- Aptitude test
Suitability of new staff
- Introduction
Introduce new employee to the terminal
- Functional training
Introduction to a specific function
- Refresher training
Updated methods, emergency drills
- Retraining
New tasks and procedures, new equipment



Longterm optimization

Key Performance
Indicators

Longterm optimization

Key performance Indicators

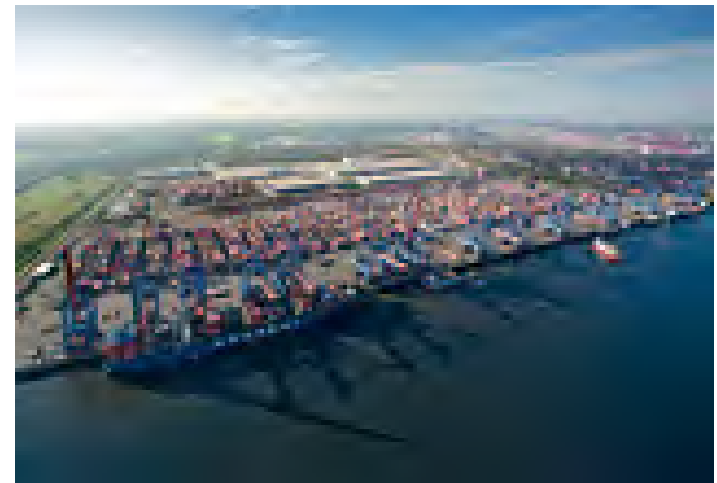
Which performs better:

PSA Singapore

Or

CTA Hamburg

?



Longterm optimalization

Key performance Indicators

KPI

- Quality
 - Safety
 - Damage
- Quantity
 - Production
 - Productivity
 - Utilization
 - Service



Longterm optimization

Key performance Indicators

Traffic:

Containers per period

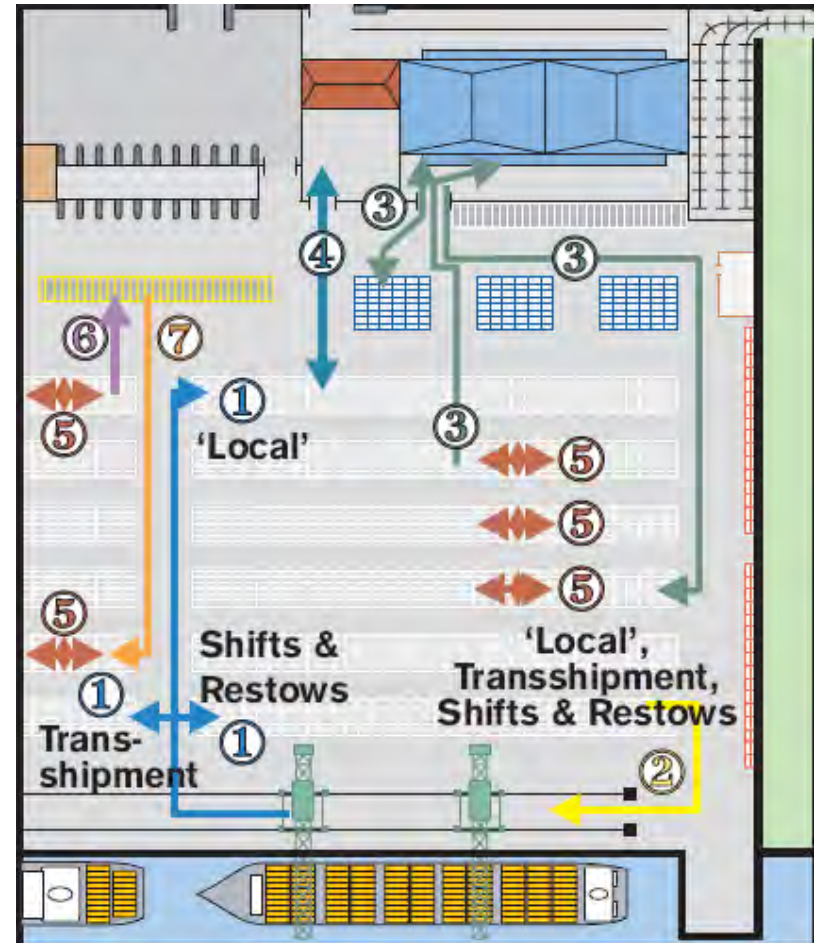
or

TEU per period

Troughput:

Movements per period

- Ship throughput
- Quay transfer throughput
- Container yard throughput
- Receipt/delivery throughput

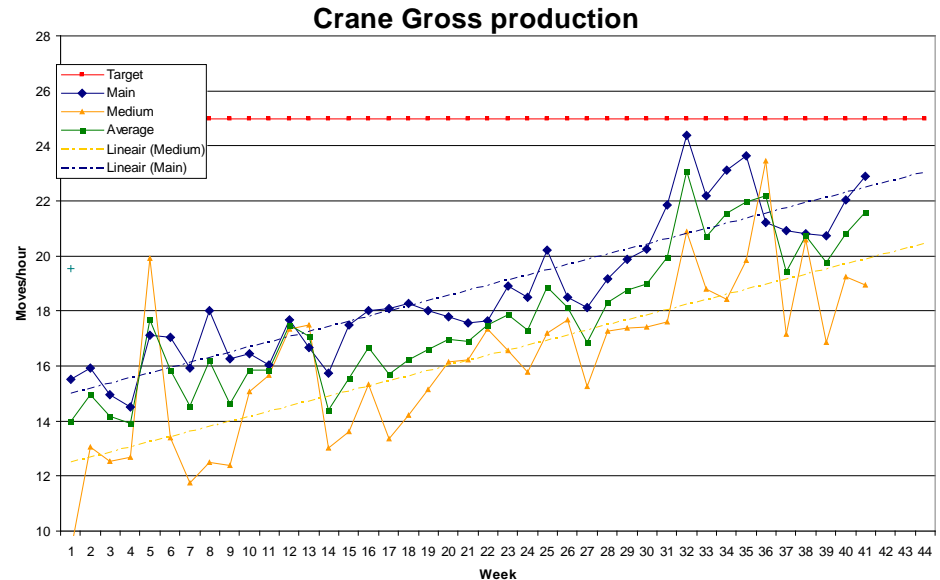


Longterm optimization

Key performance Indicators

Productivity

- Ship
- Crane
- Quay
- Terminal
- Stack
- CFS
- Equipment
- Labour
- Cost effectiveness



Longterm optimization

Key performance Indicators

Utilization

- Quay
- Stack
- CFS
- Gate
- Labour
- Cost effectiveness



Longterm optimization

Key performance Indicators

Service

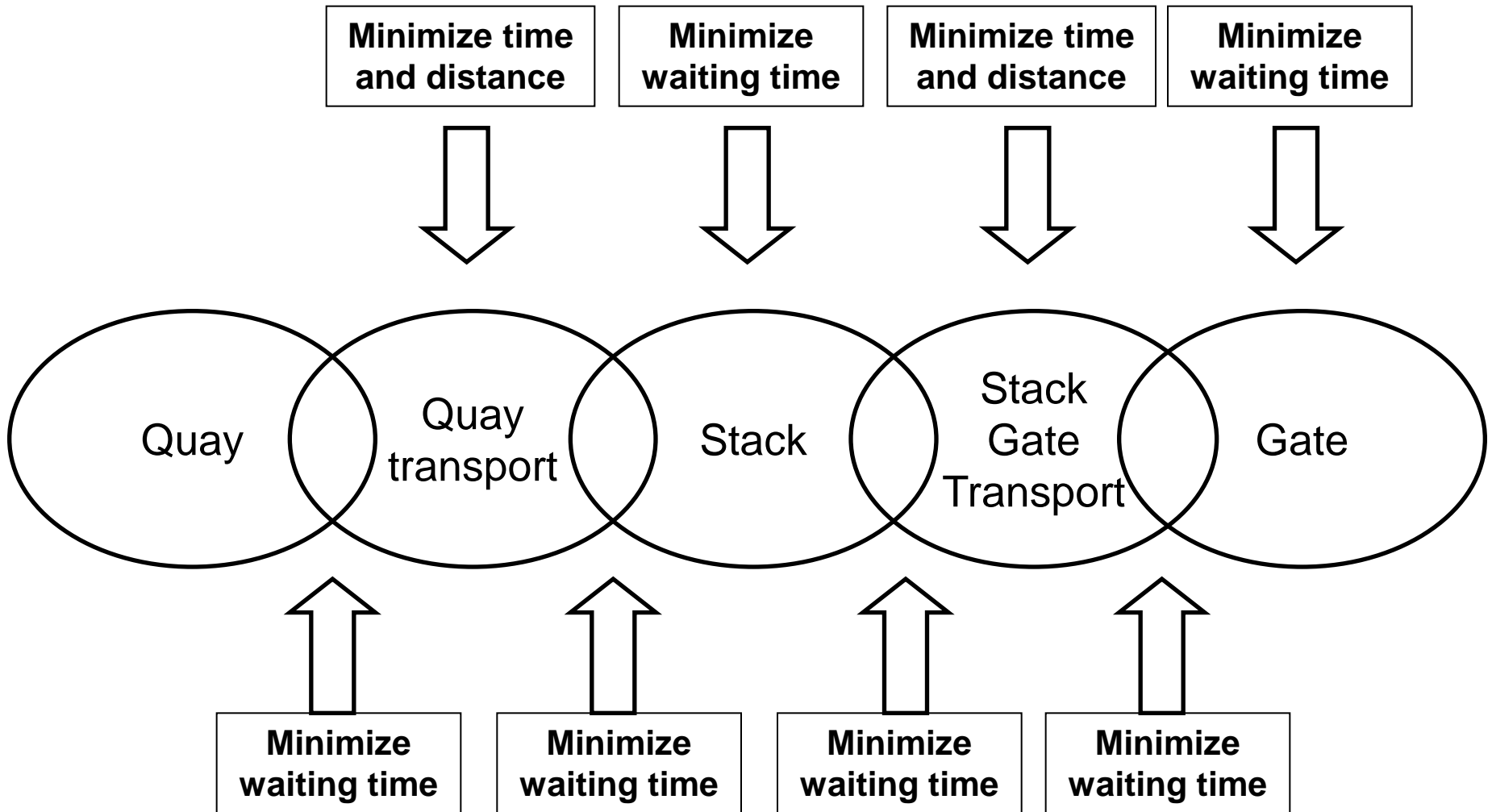
- Ship turnaround time
- Truck turnaround time
- Rail service time
- Operational dwell time
- Equipment downtime and availability



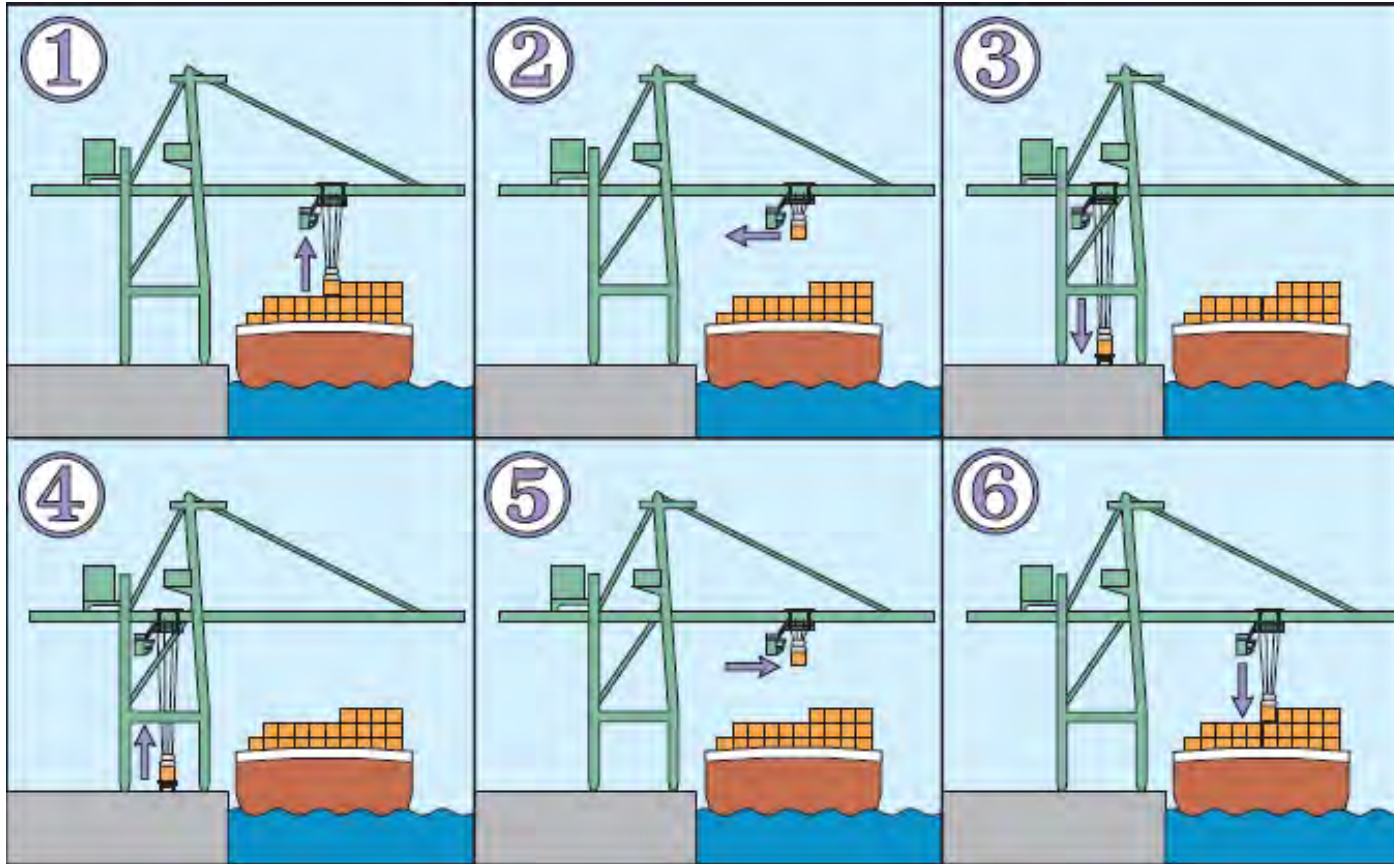
Longterm optimization

Activities

Longterm optimization Activities



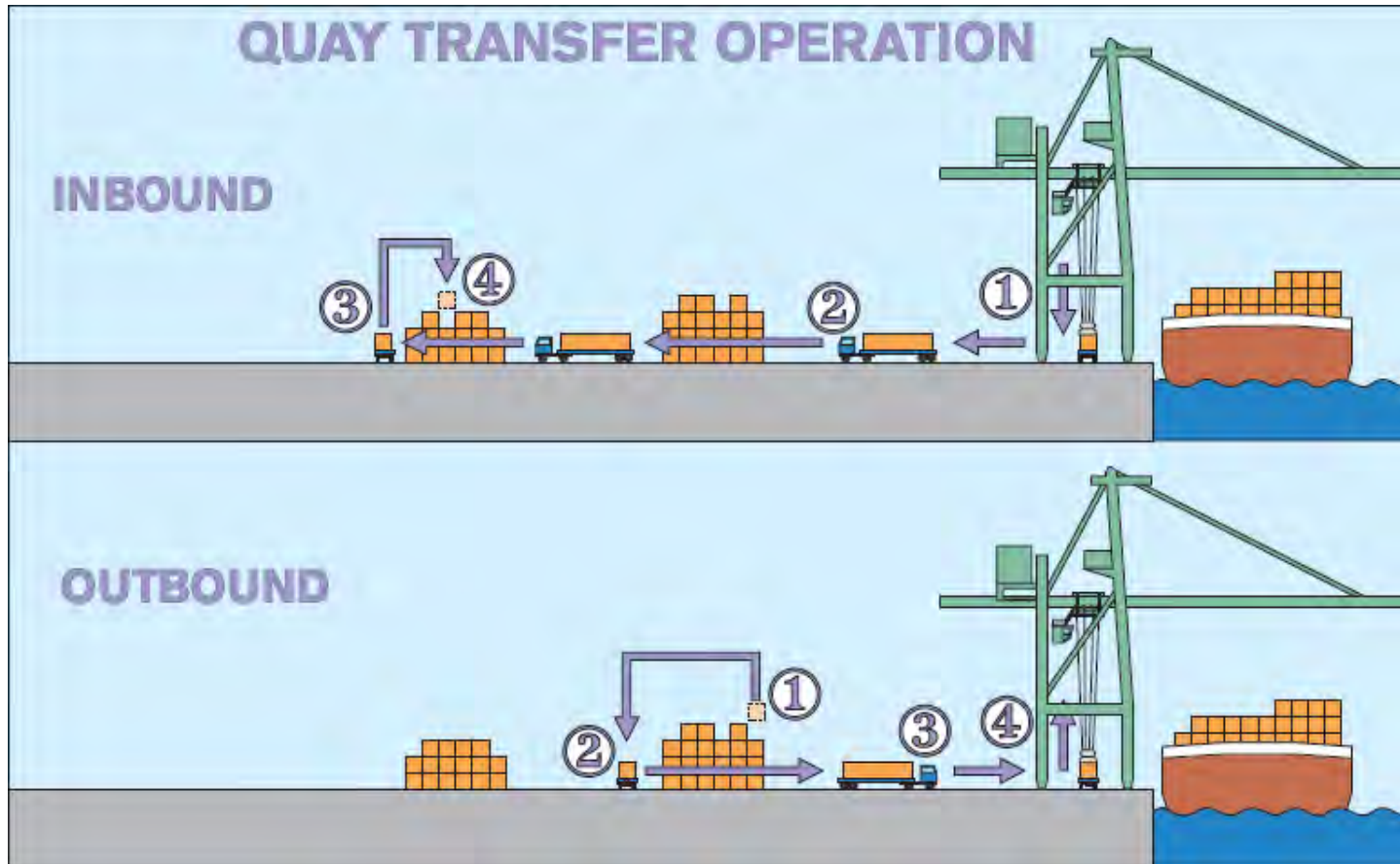
Longterm optimization Activities



Shipoperation

- Discharge move 1-3 = 0,5 cycle
- Load move 4-6 = 0,5 cycle

Longterm optimization Activities



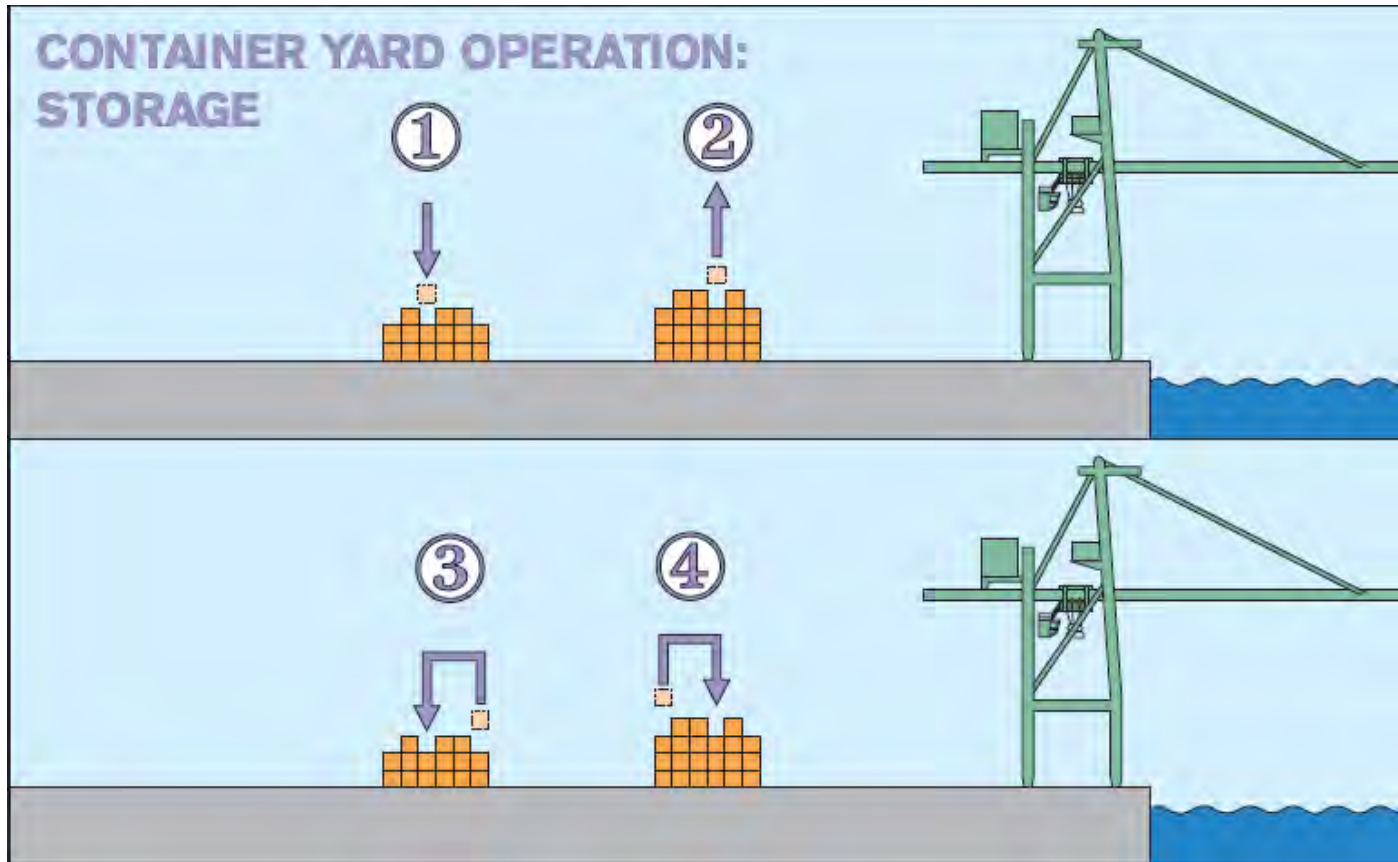
**Import to
container stack
near land-side**

**Export from
container stack
near water-side**

Quay transfer operation

- Inbound move, from crane into stack
- Outbound move, from stack to crane

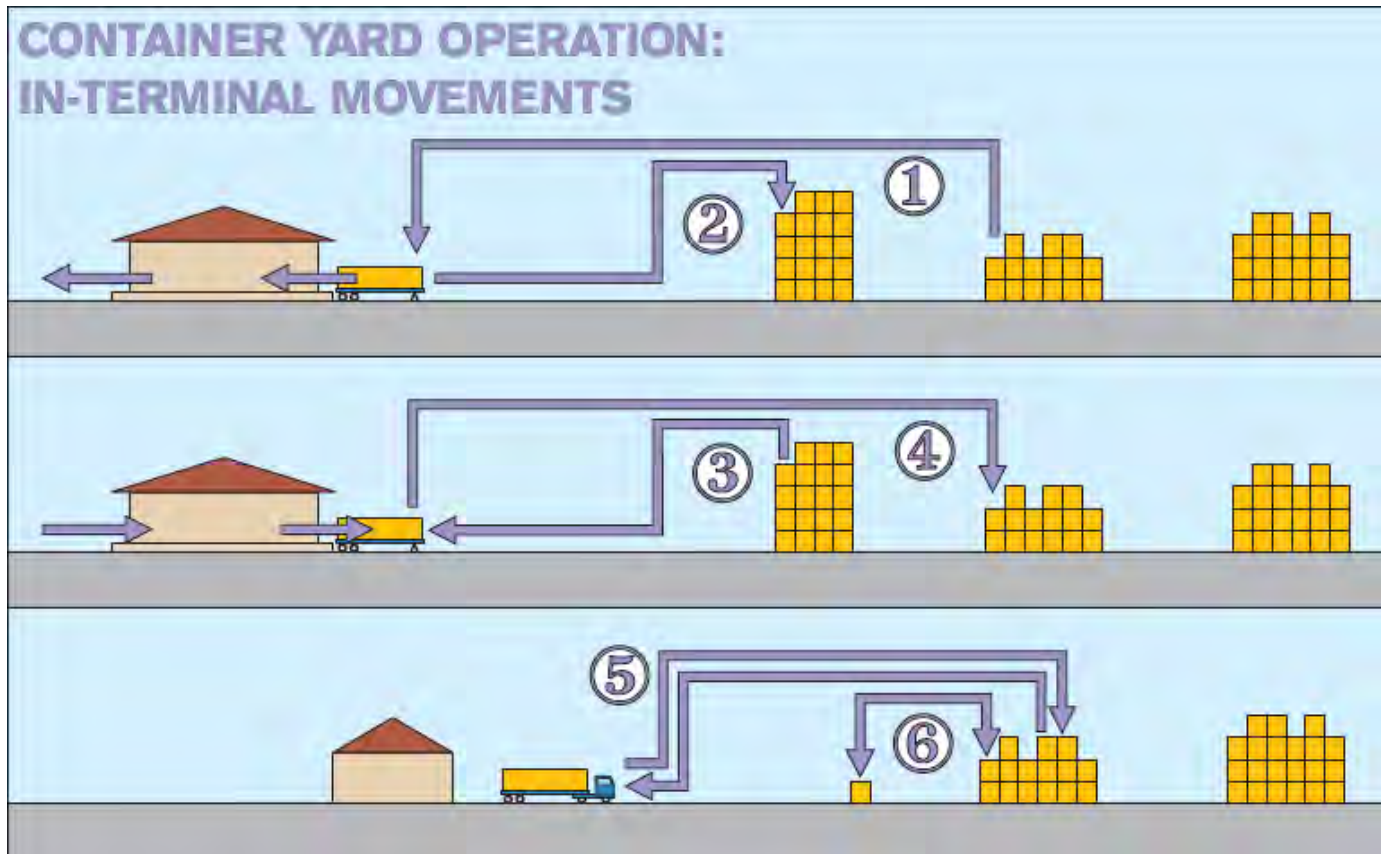
Longterm optimization Activities



Stack operation (storage)

- Lifting and landing containers
- Moving containers in the stack

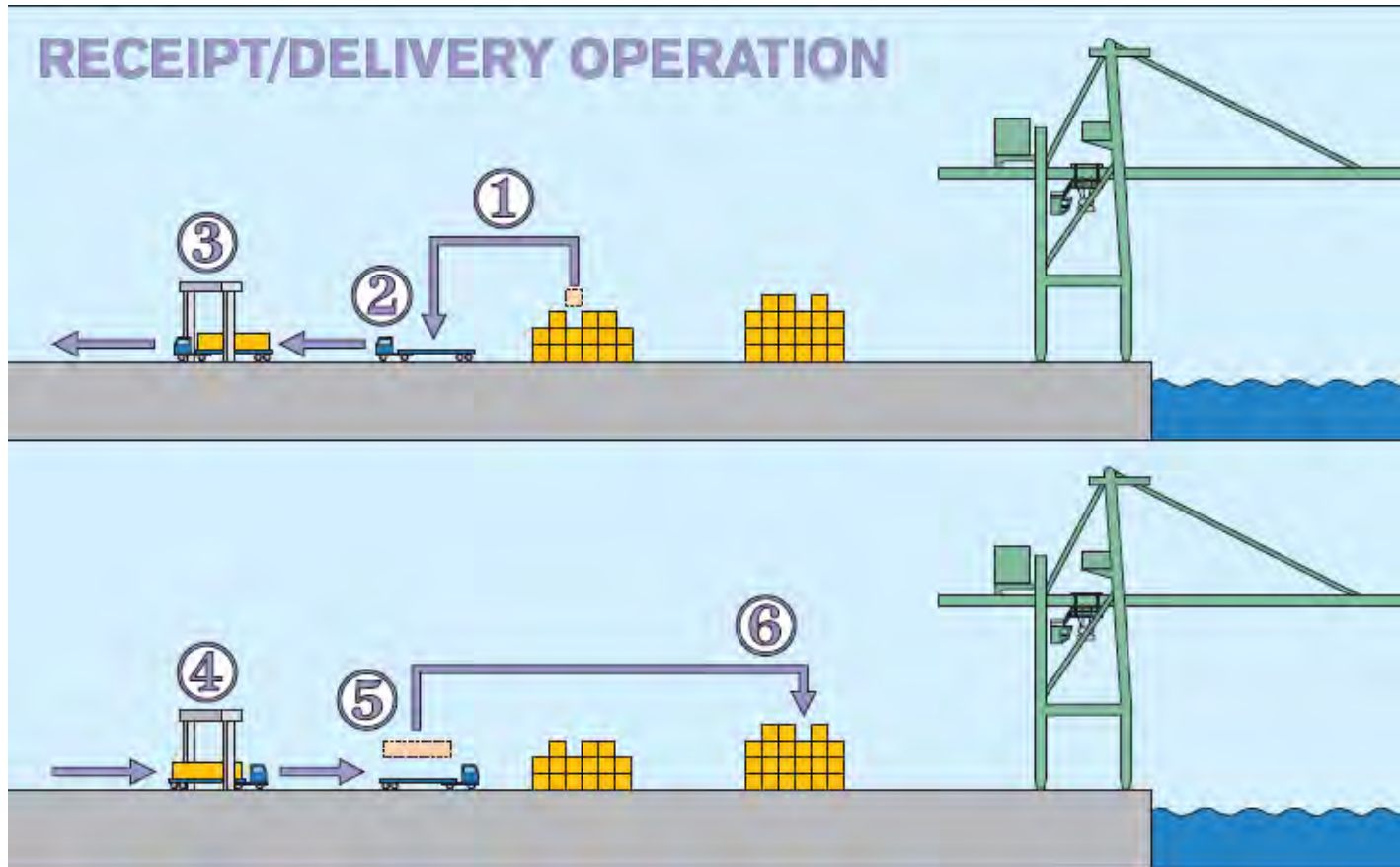
Longterm optimization Activities



Stack operation (internal movements)

- Import- and export movements via CFS
- Movements for inspections by customs etc.

Longterm optimization Activities



Receipt and delivery operation

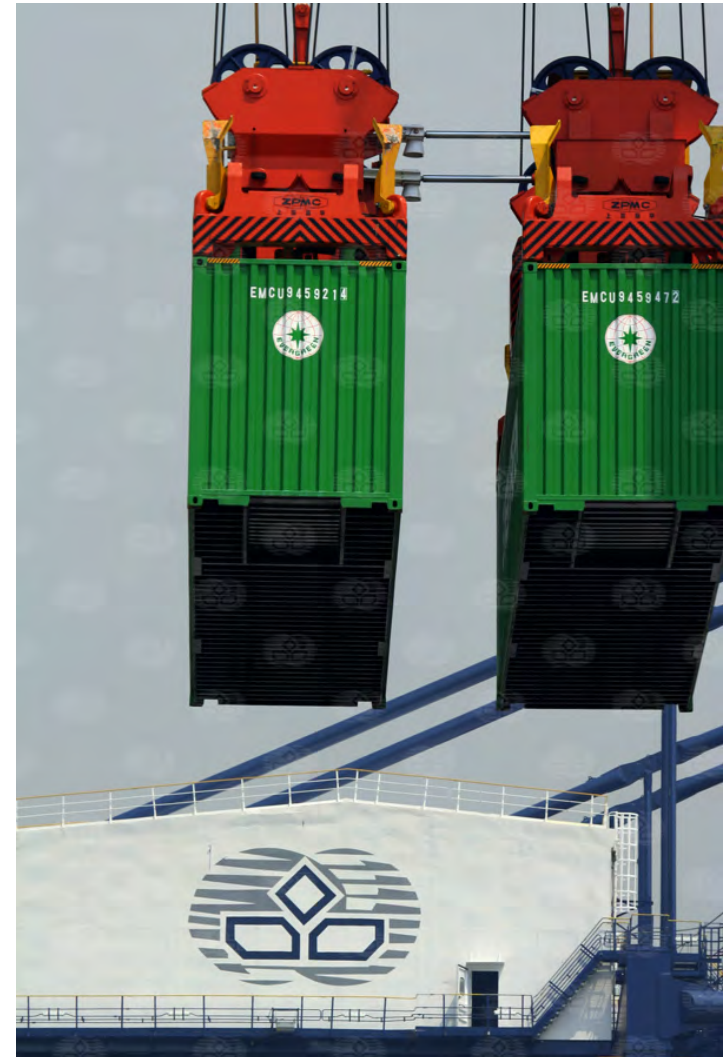
- From stack to external modality for import
- From external modality to stack for export

Longterm optimization
Improvement

Longterm optimalization Improvement

Ship operation
improvements (1):

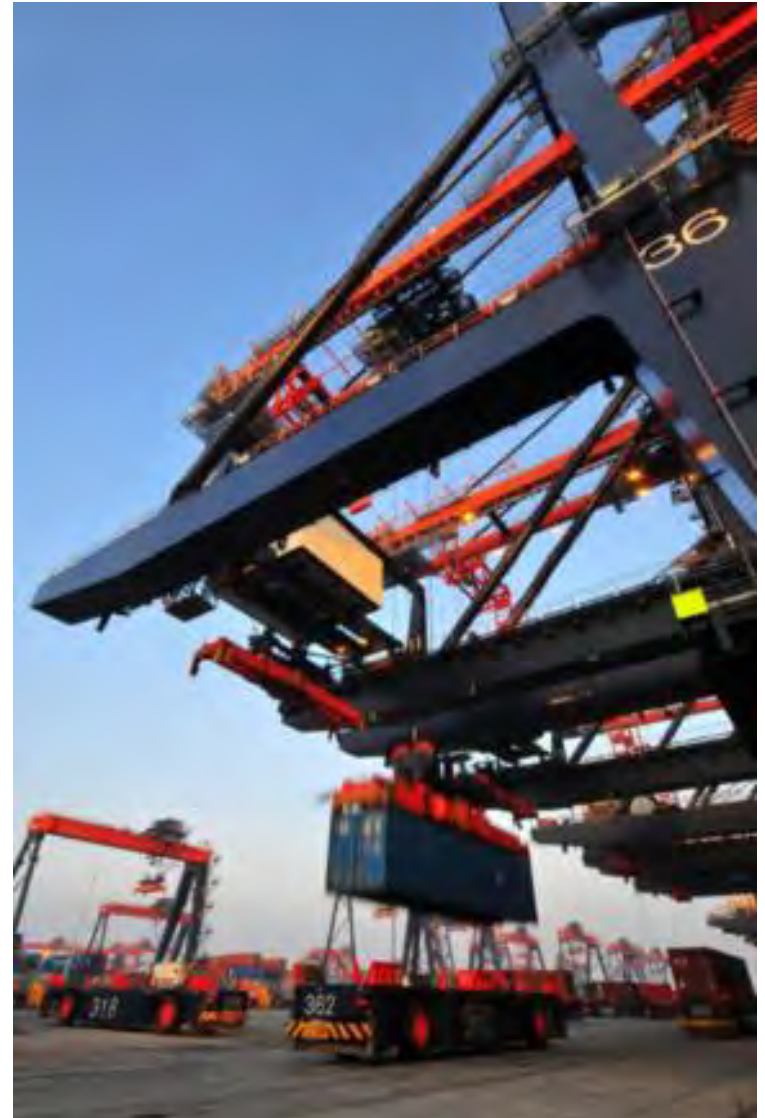
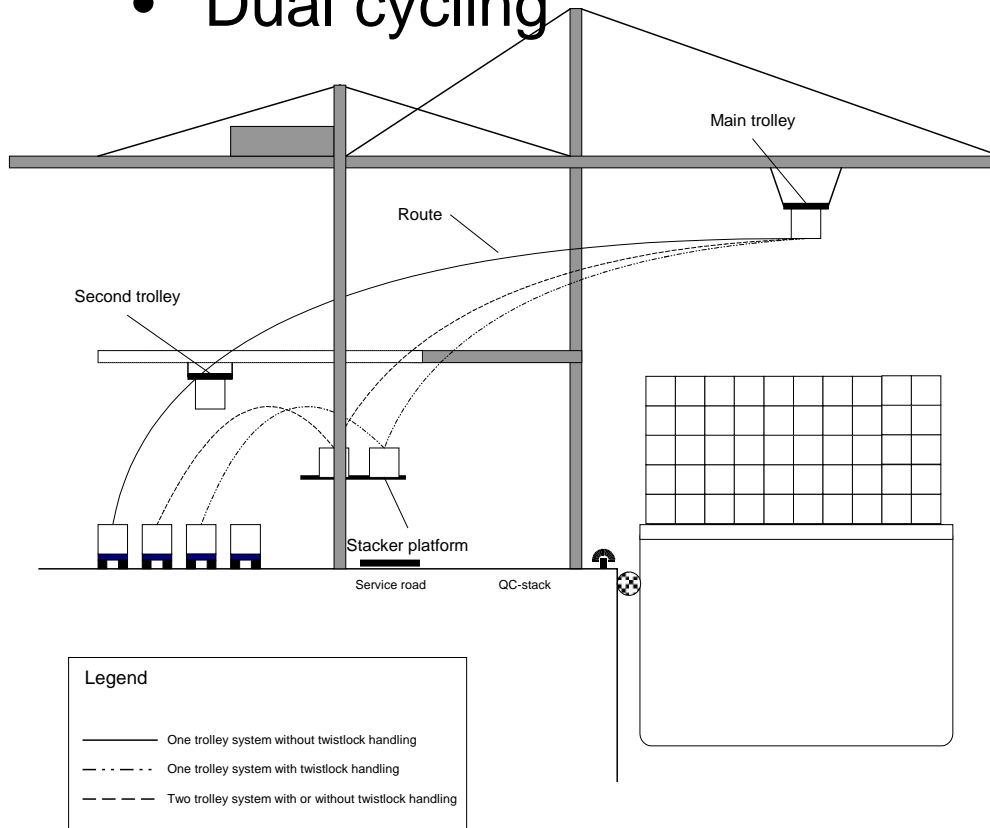
- Increased crane speeds
- Twin lift
- Tandem lift



Longterm optimalization Improvement

Ship operation
improvements (2):

- Second trolley
- Dual cycling



Longterm optimalization Improvement

Ship operation
improvements (3):

- Reduce waiting time



Longterm optimization Improvement

Quay transfer
improvements (1):

- Increase speed
- Reduce travel distance



Longterm optimalization Improvement

Quay transfer
improvements (2):

- Increase equipment



Longterm optimalization Improvement

Quay transfer
improvements (3):

- Automation



Longterm optimization Improvement

Container yard improvements

- Decrease waiting time
- Increase stack capacity
 - Area
 - Height
 - Change concept
 - Block size
 - Equipment



Longterm optimization Improvement

Gate area:

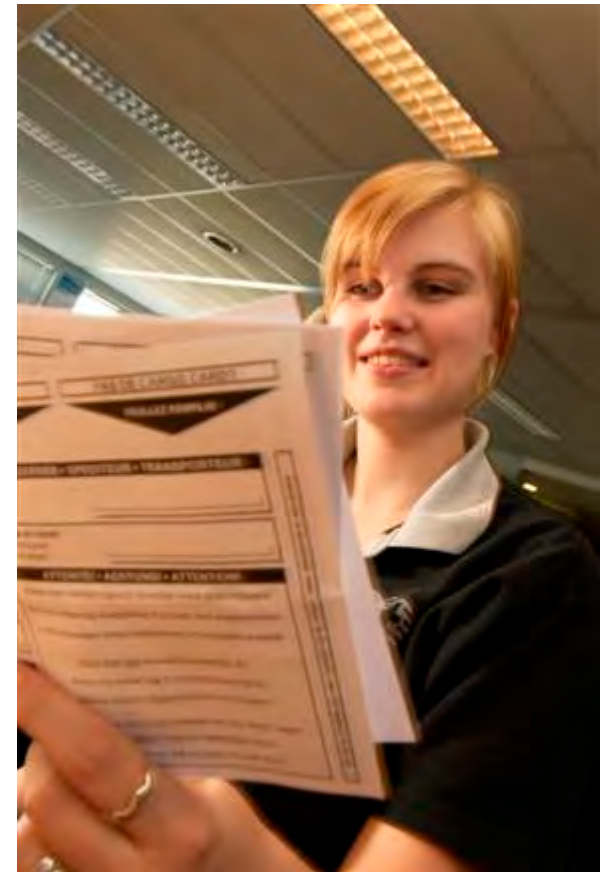
- I-Card and pre-announce
- EDI
- OCR
- Auto gate
- E-seal



Longterm optimization Improvement

Customer awareness:

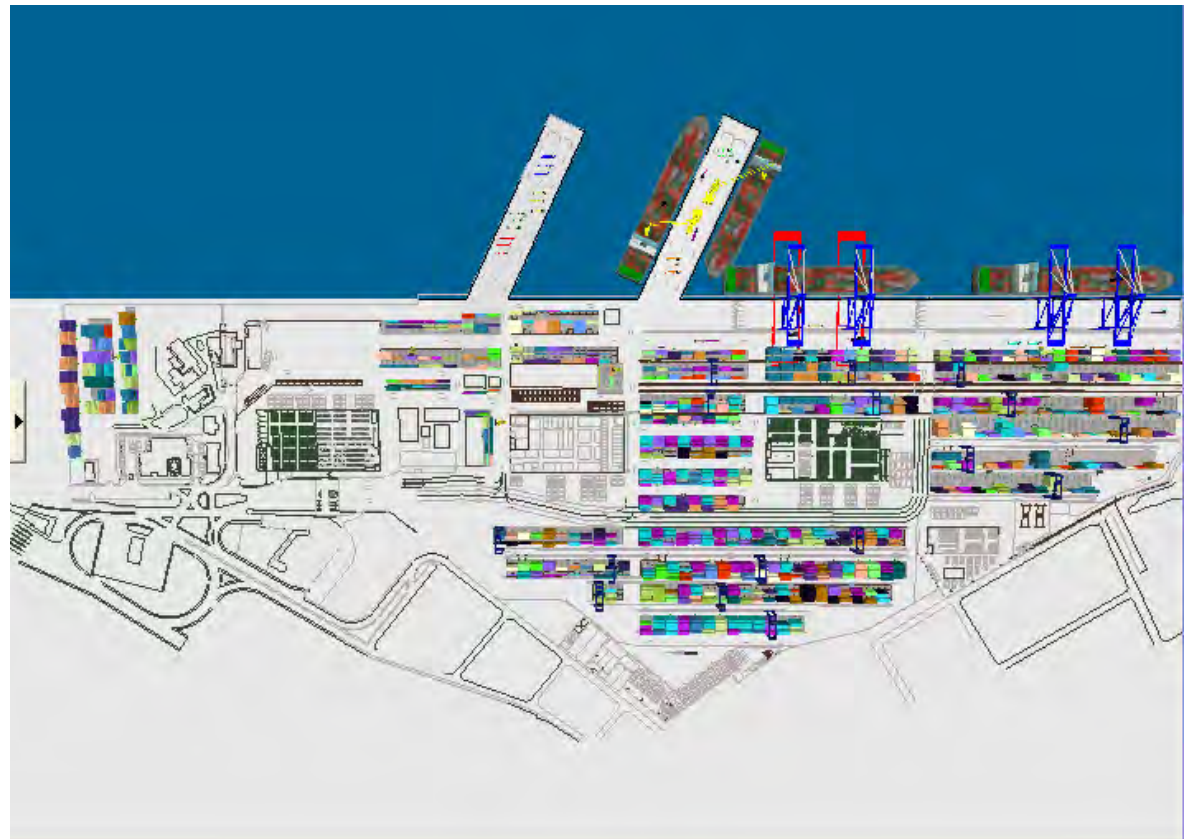
- Ship construction
- Staff quality
- Dwell time
- Information quality



Longterm optimization Simulation

Longterm optimization Simulation

- Design
- Improvements



Longterm optimization Simulation

- Training
- Safety



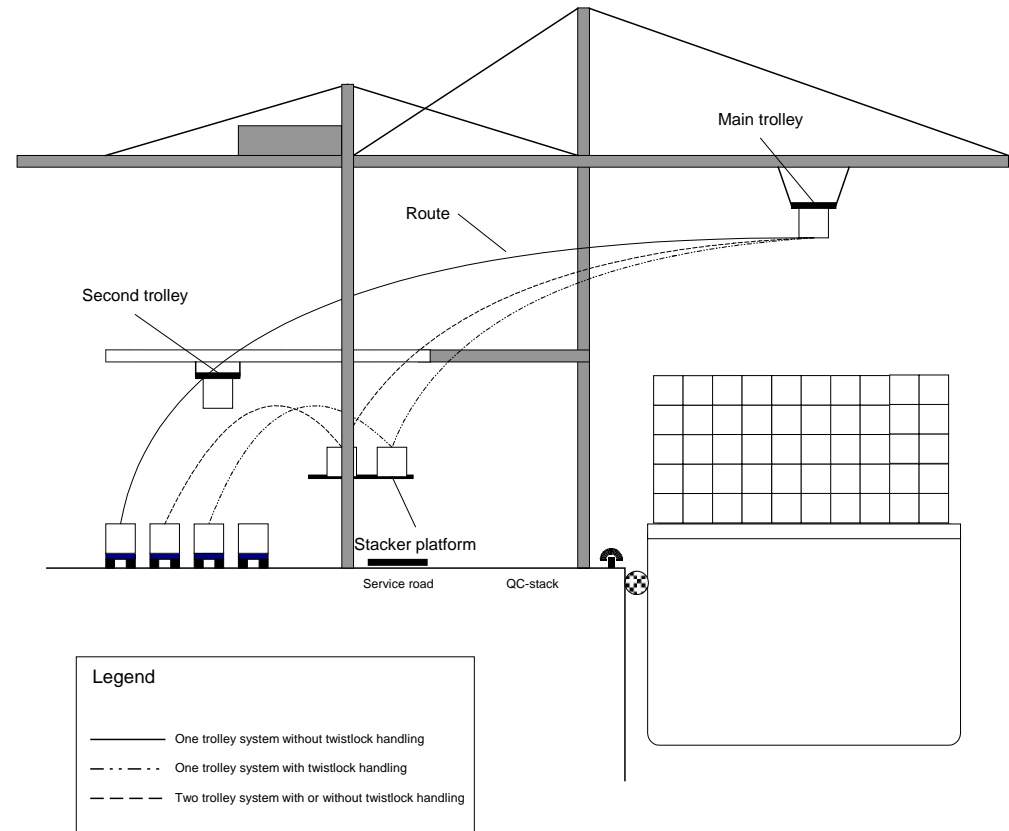
Longterm optimization

Automation

Longterm optimization Automation

Ship operation

- Second trolley
- Semi automation



Longterm optimization Automation

Quay transfer operation



Longterm optimization Automation

Stack operation



[illegible]

- Entrance
- Exit
- Security
- Parking
- Visual + nuclear gate
- Waiting area
- Gate lanes
- Main office
- Staff parking
- Customs

Longterm optimization

Finance

Longterm optimalization

Finance

- Cost versus benefits
- Cost of automation



TT/TC € 85,000.-

AGV € 350,000.-

Delta € 265,000.-

5 drivers @ € 50,000.- /year