



GATE MANAGEMENT SYSTEMS

Increasing productivity, safety and security by Automation

6th Black Sea Ports and Shipping 2017 Exhibition and Conference

Batumi 19-May-2017



CAMCO TECHNOLOGIES

Agenda

- Introduction
- What is Gate Management?
- Gate Management Systems
 - Manual
 - Fully Automated
- Conclusion



Flanders
State of the Art



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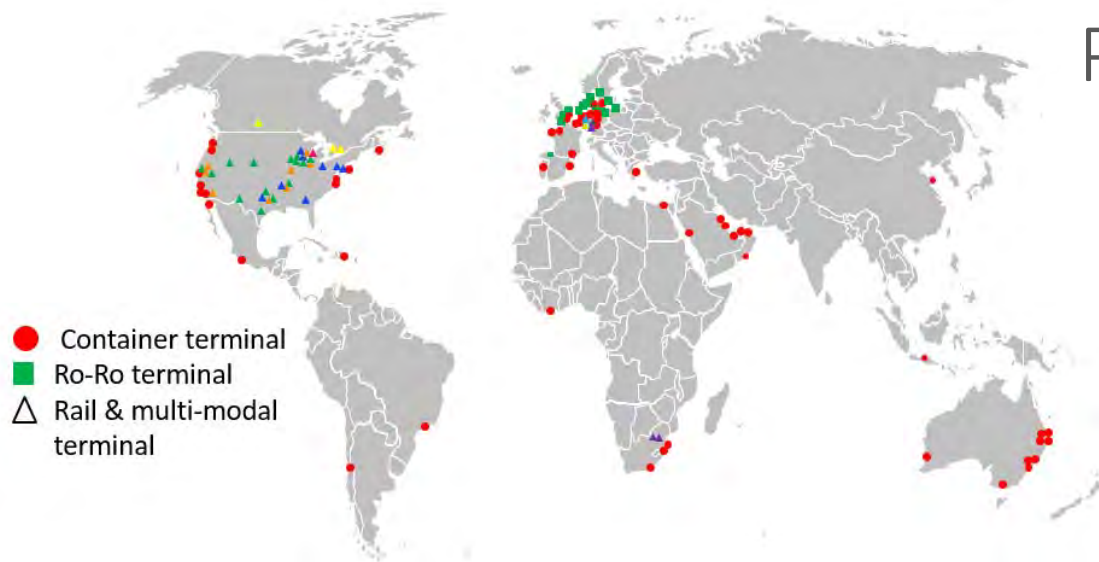


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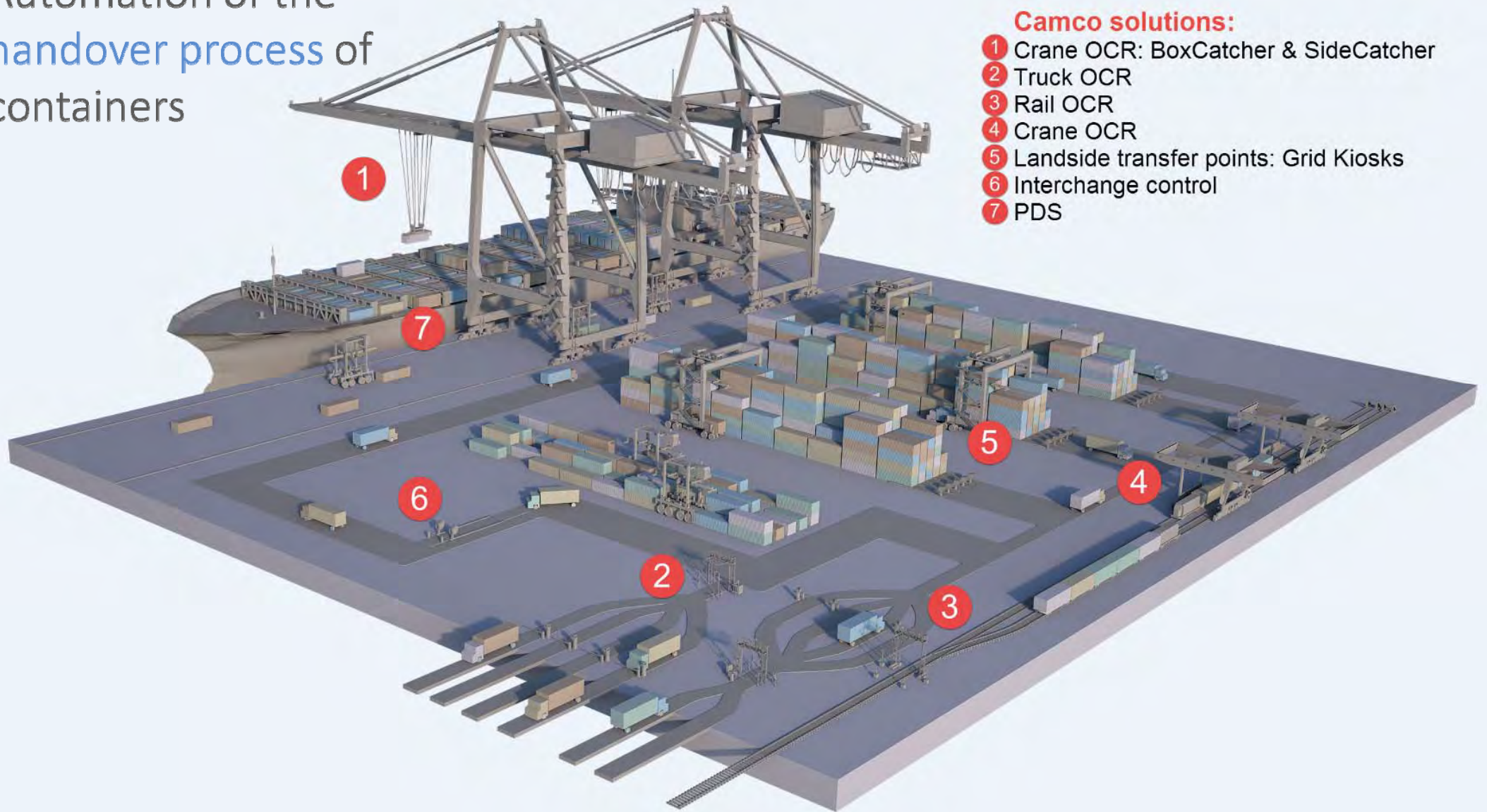
Camco Technologies – www.camco.be



Prime partner to container, ro-ro & rail terminals for process automation solutions based on visual and micro-location technologies



Automation of the handover process of containers



Camco solutions:

- 1 Crane OCR: BoxCatcher & SideCatcher
- 2 Truck OCR
- 3 Rail OCR
- 4 Crane OCR
- 5 Landside transfer points: Grid Kiosks
- 6 Interchange control
- 7 PDS

Solutions

◦ Gate Automation

- Truck OCR Portals
- Pedestal
- Lstp's
- GOS (Gate Operating System)



◦ OCR-assisted rail handling

- Rail track OCR Portals
- TGO (Train gate operator)



◦ Crane OCR

- High-end BoxCatcher
- Basic SideCatcher (Sill beam)
- COS server software



◦ Micro Location Solutions

- DGPS/INS/UWB distance Ranging
- VMT client software for CHE's (strads,TT's,..)
- CHEOPS Server software



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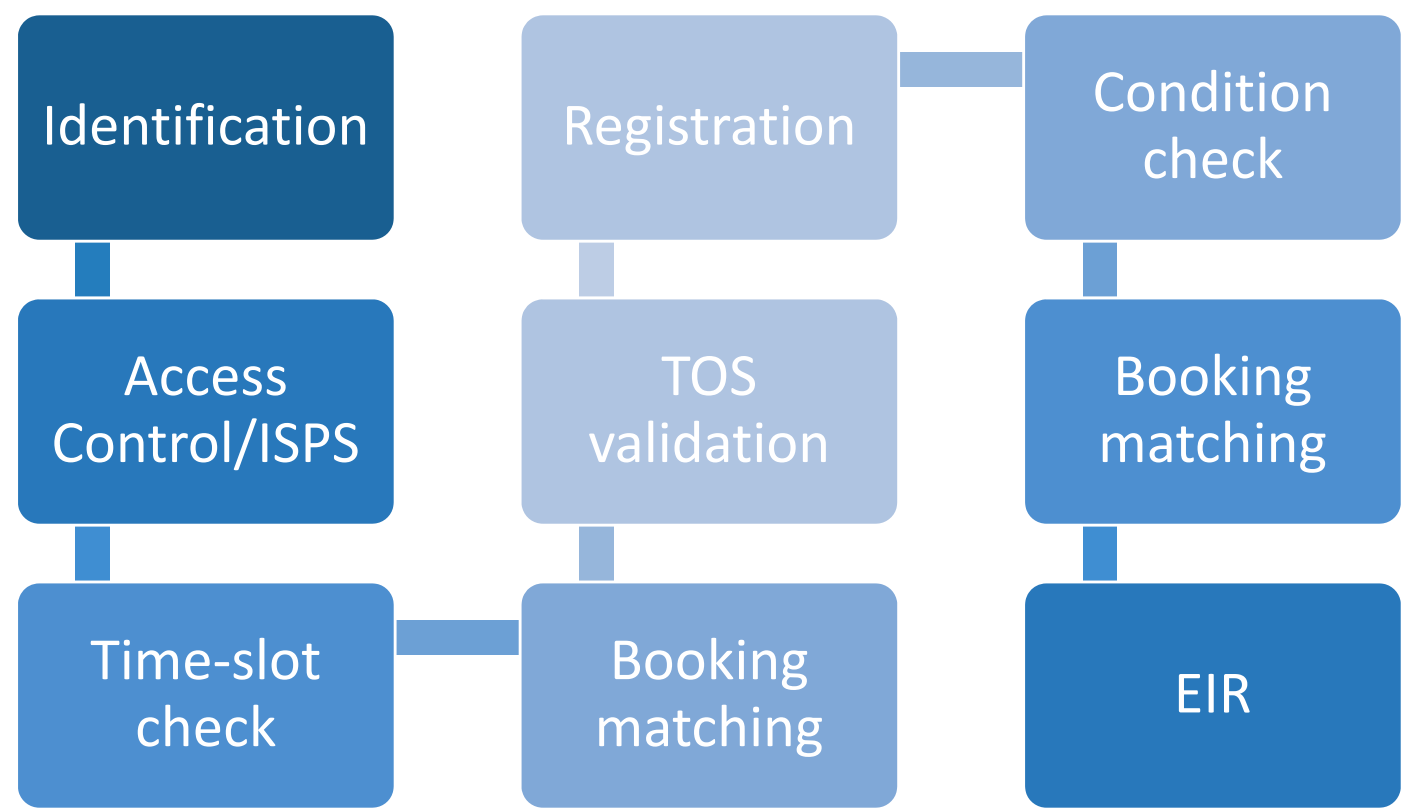


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Gate Management



Slide 8

JT1

Equipment Interchange Receipt (EIR)

A document transferring a container from one carrier to another, or to/from a terminal.

Julien Theys, 12/10/2016

Gate Management System



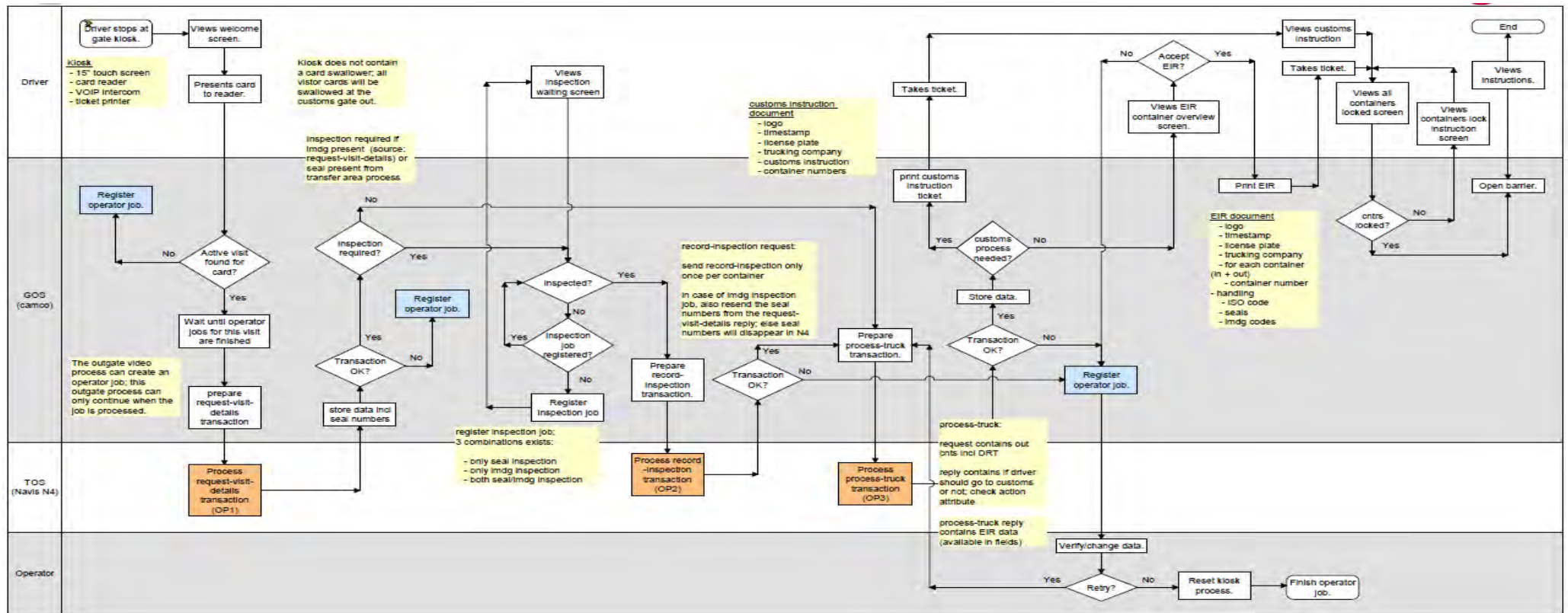


Gate Management System

Complex Combination

- Process flows
 - P-check
 - A-check
- Interfaces with Host systems
 - Access Control
 - TOS
 - Customs
- Lay-out of gate area
 - Space constraints
 - Green field vs Brown field
- Local regulations, norms, habits

Business Process Modelling



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Gate Management Systems – Manual



Gate Management Systems – Manual



HIGH COST

- Each lane is manned – gate operator

TIME-INTENSIVE

- Timely gate processes, paperwork

INACCURATE DATA

- Manual data input – people make mistakes

FRUSTRATED TRUCK DRIVERS:PERSONNEL

- People make even more mistakes

MANUAL DAMAGE-, SEAL-, IMDG DETECTION

- Unsafe environment for clerks







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Gate Management Systems – Automated



Gate Management Systems – Data

Automatic Identification

- Container number
- ISO code
- License plate number
- Dangerous Goods Labels classification

Automatic Detection

- Container location (front, mid, back)
- Door direction
- Seal Presence
- Reefer detection

Condition recording

- Condition Checking
- Storage for later retrieval
- Damage Claims management

Gate Management Systems – Automated

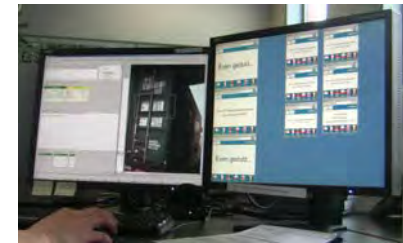
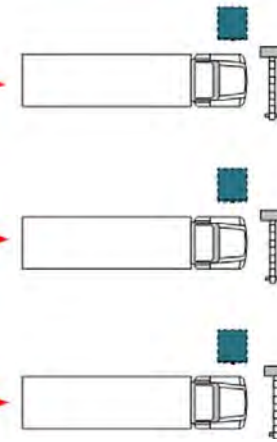
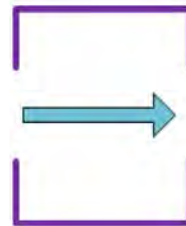
- Consists of three main components:
 1. Truck OCR Portal
 2. Gate Kiosks
 3. Gate Operating System



Gate Automation – Typical Set-up

Typical set-up:

- Limited # dynamic OCR portals
- Gate lanes with kiosks + traffic barrier
- Remote Help Desk/Exception Handling office





Inbound OCR portals

In-Gate lanes

Exit-Gate lanes

Outbound OCR portals

Ngqura Container Terminal, Port Elizabeth, South Africa

Gate Management Systems – Automated

- Consists of three main components:
 1. Truck OCR Portal
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 3. Gate Operating System



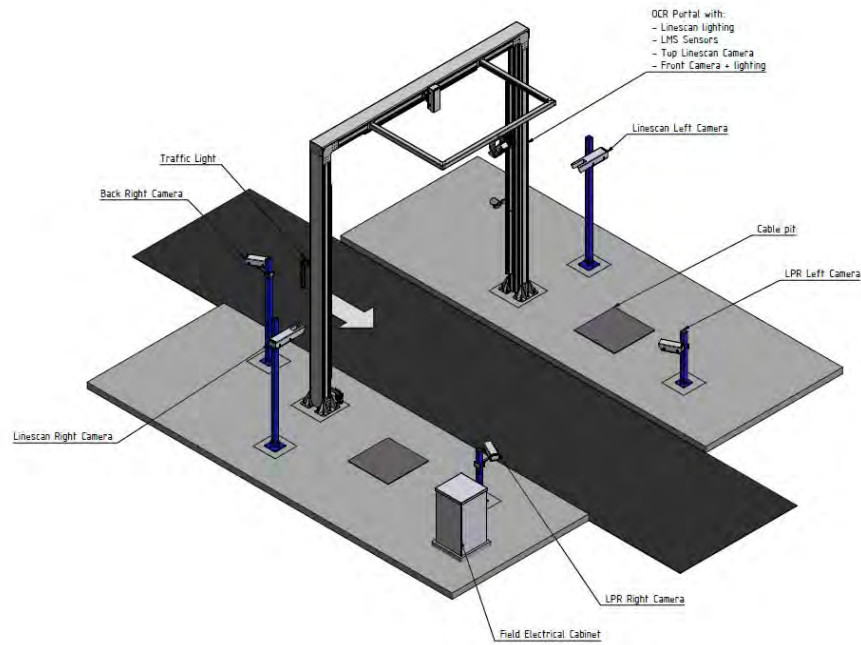
Gate Automation – Components



OCR CAMERA PORTAL

- Condition recording
- Identification:
 - Truck
 - License plate number
 - Container(s)
 - Container number
 - ISO code
 - IMDG Label classification
 - Container location
 - Door direction
 - Seal Presence

Gate Automation – OCR Camera Portal









Gate Management Systems – Automated

- Consists of three main components:

1. Truck OCR Portal
2. Gate Kiosks
3. Gate Operating System



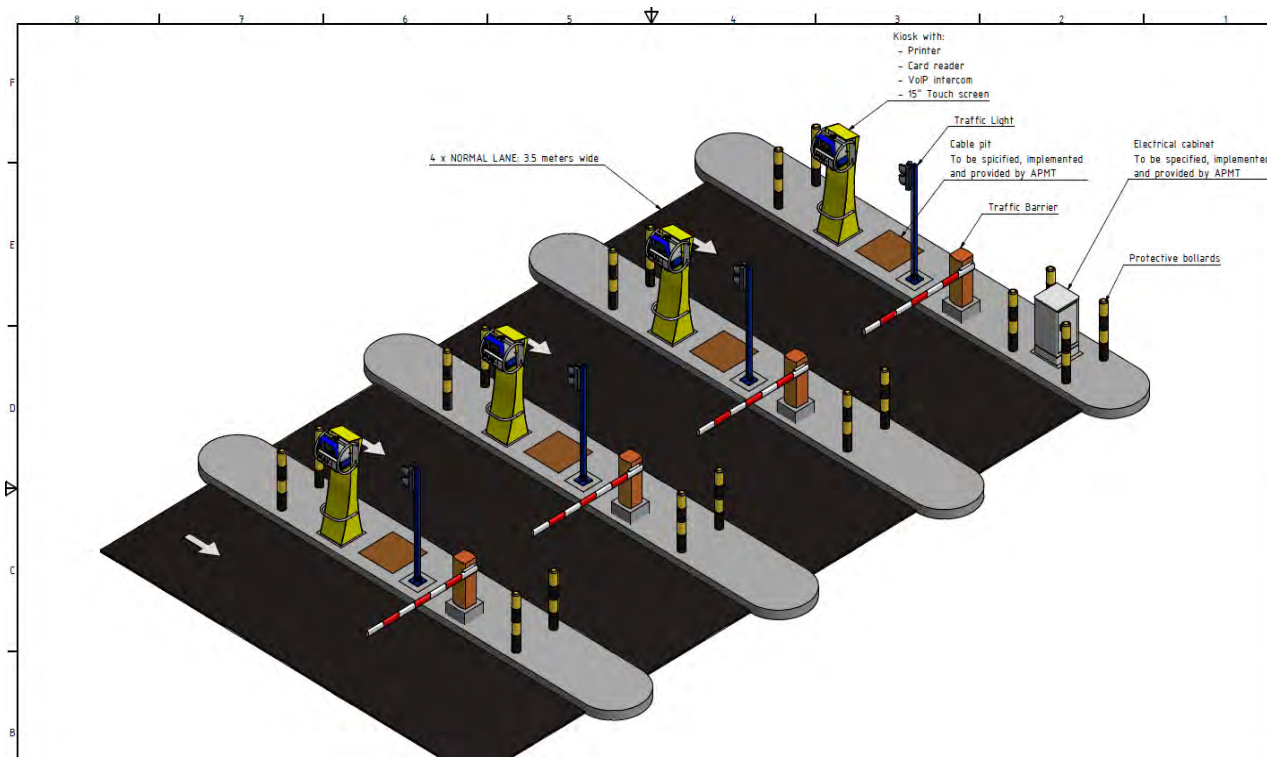
Gate Automation – Components



KIOSK/PEDESTAL SYSTEMS

- Drivers process own registration

Gate Automation – Kiosk system



Gate Automation – Kiosk system

APM TERMINALS Welkom

 Hou uw CargoCard voor de kaartlezer.

Ik heb geen CargoCard.

 NEDERLANDS
  ENGLISH
  DEUTSCH
  FRANÇAIS

TIPS رحلة المعدة داخلية

ادخل رمز رحلة المعدة الداخلية.

1	2	3	تصحیح
4	5	6	
7	8	9	إدخال
	0		

DP WORLD Gemeinheim

Kennzeichen Chassis: GER-GA 102

Container: TRLU5632872 [F][OUT]
 Container Typ: 40HC
 Siegeln: N, 6000121

Bestätigen Sie diese angezeigte Daten?

 JA
  NEIN

 Deutsch
  Nederlands
  Français
  English

PCT

Παρουσιάστηκε πρόβλημα.
 Παρακαλώ περιμένετε όσο ο Χειριστής διορθώνει το πρόβλημα.

 ΕΛΛΗΝΙΚΑ
  ENGLISH

Antwerp Gateway EIR Overzicht

Containernummer	ISO Code	Zegelnummer(s)	Schade
CBHU6006991	42G1	000840	23,94
CMAU1021698	22G1	177683	23,94




 Nederlands
  Français
  Deutsch
  English

DP WORLD CAUCEDO Bienvenido

Coloque su carnet de la RNTT frente al lector [CARD] de la derecha.

 SIN CARNET

 Español
  English

Gate Management Systems – Automated

- Consists of three main components:
 1. Truck OCR Portal
 2. Gate Kiosks
 3. Gate Operating System



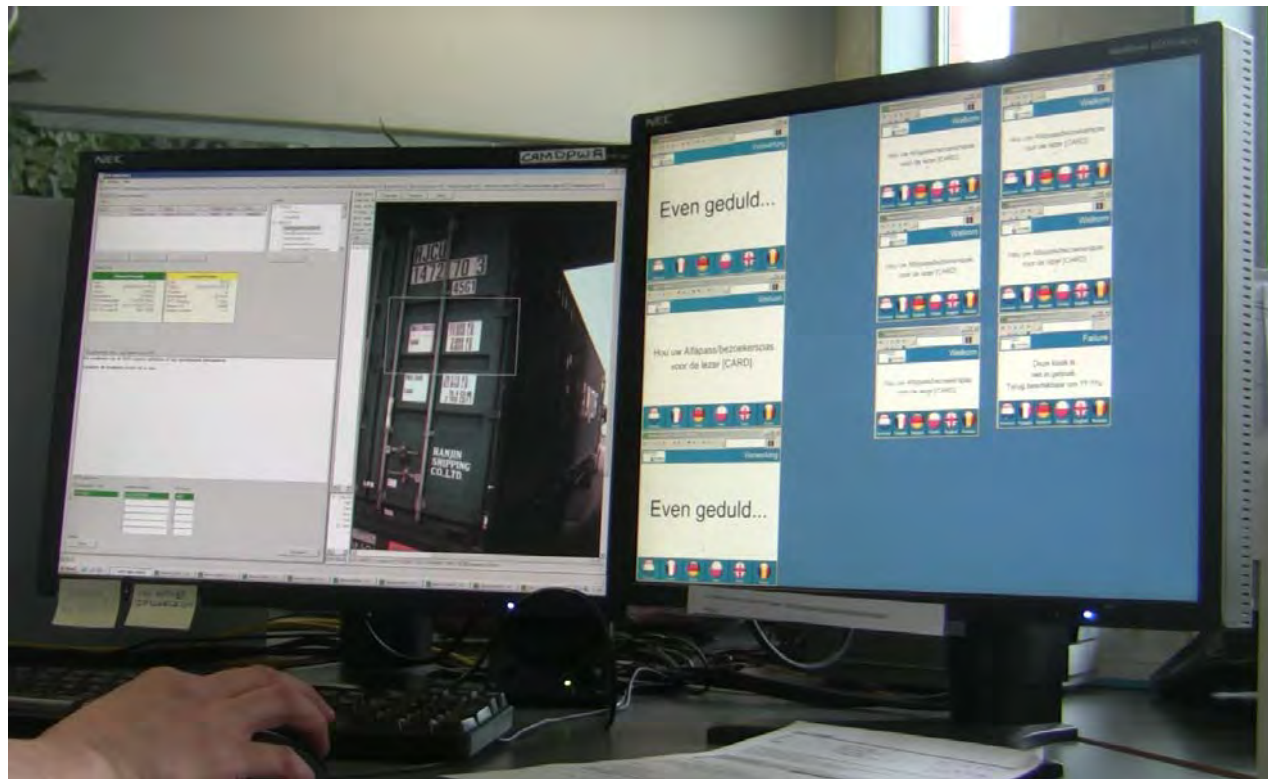
Gate Automation – Components



GATE OPERATING SYSTEM GOS

- Gate control
- Data capture
- Interaction with driver
- Interaction with ISPS
- TOS integration
 - Data validation
 - Yard & equipment management
 - EDI interfacing

Gate Automation – Components



GATE OPERATING SYSTEM GOS

- Exception handling
 - OCR corrections
 - Booking mismatches
 - Help Desk for drivers

Gate Management Systems – Automated



OCR CAMERA PORTAL

- Condition recording
- Identification truck – container(s)

KIOSK/PEDESTAL SYSTEMS

- Drivers process own registration

GATE OPERATING SYSTEM GOS

- Interface with TOS

FAST - PRECISE - EFFICIENT

- Limited gate staff
- Safe environment
- Remote exception handling



Manual vs Automated Gate Systems

MANUAL GATE SYSTEM

- LIMITED INVESTMENT
(NO EQUIPMENT REQUIRED)
- HIGH OPERATING COST
- TIME-INTENSIVE
(ALL DATA NEEDS TO BE ENTERED MANUALLY)
- INACCURATE DATA
- UNSAFE WORK ENVIRONMENT
- LOT OF SPACE REQUIRED

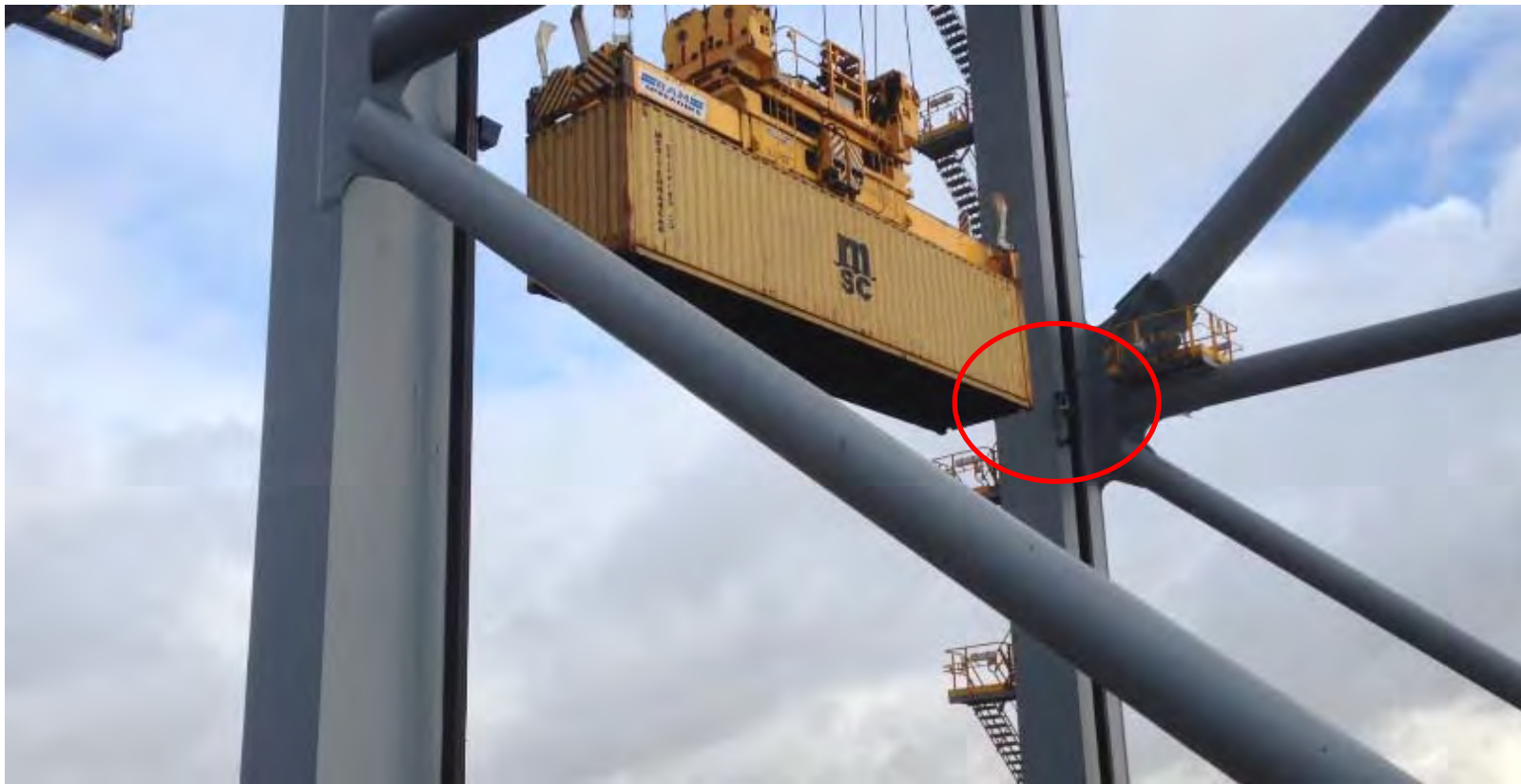
AUTOMATED GATE SYSTEM OCR PORTAL

- LIMITED INVESTMENT
(LIMITED # OF PORTALS REQUIRED)
- LOW MAINTENANCE COST
- FAST & EFFICIENT
(AUTOMATED REGISTRATION & HANDLING)
- HIGH ACCURACY RATE
- SAFE WORK ENVIRONMENT
- LIMITED SPACE REQUIRED

Gate Management Systems: Rail



Gate Management Systems: Crane



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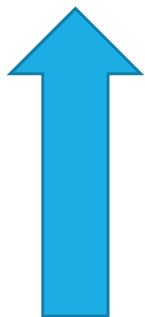


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Gate Automation – Conclusion

- Reduction turnaround time of the trucks
- Smoother traffic flow at the Gate Lanes
- Higher Data accuracy
- Minimum processing time
- Efficient exception handling
- Extensive Integration



Productivity

Safety

Profitability

Security



CAMCO TECHNOLOGIES

THANK YOU

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