

From Manual to Automated: How OCR is Transforming Port Operations

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WWW.TMEIC.COM

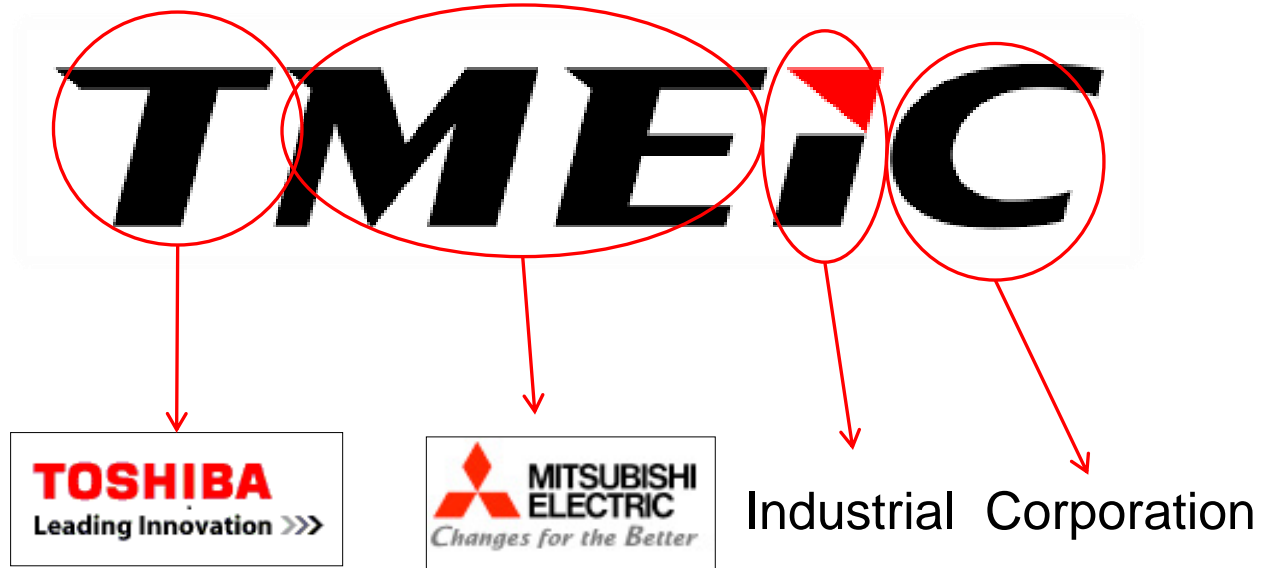
About Me



Sandra Esteban *Sales and Marketing Manager – TMEIC*

- +20 years of experience in the global maritime and port logistics industry
- Background working with leading terminals and shipping lines worldwide
- Passionate about innovation, digitalization and creating value through automation
- Specialized in commercial strategy, client relations and complex contract negotiations

About TMEIC



TMEIC is a global drive and automation systems supplier with manufacturing, engineering, sales, and service facilities around the World.



TMEIC Supports Our Customers Across the Globe

Local Roots. Global Footprint.



GLOBAL PRESENCE

IN **16** OFFICES
IN **9** FACTORIES

TOTAL **25** LOCATIONS

4,255+ EMPLOYEES
300+ SERVICE ENGINEERS

TMEIC: We Drive Industry. We Power & Control It, Too!

Renewable Energy



48+

GW Worldwide

29+

GW in North America

330+

Installations in North America

Photovoltaic Inverters / Battery Energy Storage Systems / Energy Management & Controls

Container Ports & Terminals



69+

Ports

670+

Automated Stacking Cranes

430+

Quay Cranes

10+

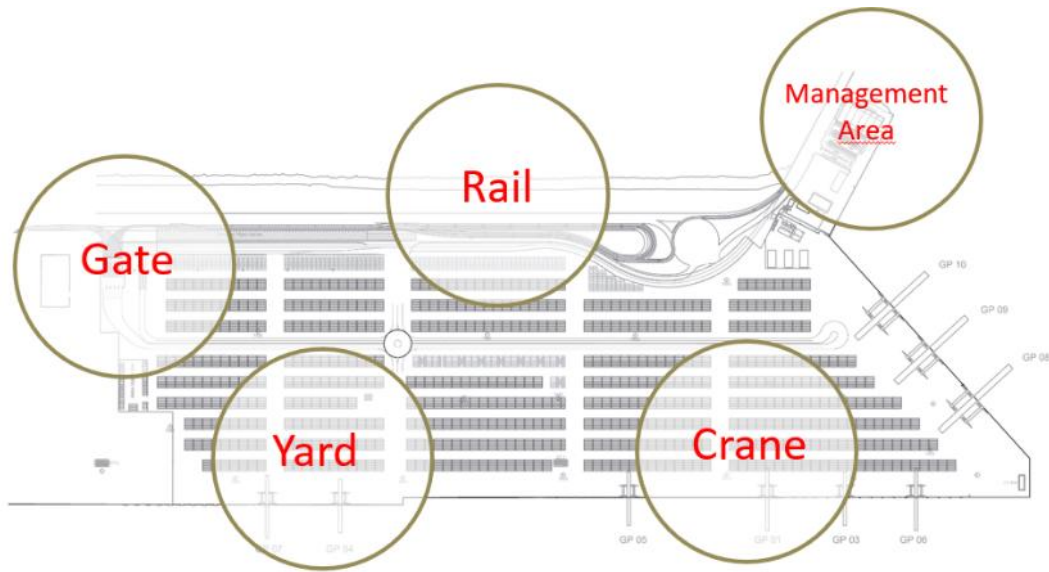
Crane OCR Sites

20+

Automated Gate Sites

“People come first. Automation makes port operations safer for them – and faster for everyone”

TMEIC OCR's Automation Products



GateSuite

Container Code Recognition
GateOCR

Operating System
GateOS

Pedestal for driver identification
GateKiosk

Traffic control
GateTraffic

License Plate Recognition
GateLPR

Automatic Damage Detection
GateDMG 3D

Empty Container Inspection
GateECI 3D

CraneSuite

Container Code Recognition
CraneCCR

Operating System
CraneOS

Damage Inspection
CraneDMG

Truck Positioning System
CraneTPS

Traffic Management System
CraneTMS

Boom Collision Avoidance
CraneBCA

YardSuite

Truck Positioning System
Yard CraneTPS

Truck Lifting Avoidance
Yard CraneTLA

Obstacle Collision
Avoidance
Yard CraneOCA

Stack Collision Avoidance
Yard CraneSCA

Container Code Recognition
Yard CraneCCR

RailSuite

Container Code Recognition
RailOCR

Operating System
RailOS

Wagon / RailCar / Well ID

Inventory confirmation

TMEIC Gate Automation Products

GateSuite

Container Code Recognition
GateOCR

Operating System
GateOS

Pedestal for driver identification
GateKiosk

Traffic control
GateTraffic

License Plate Recognition
GateLPR

Automatic Damage Detection
GateDMG 3D

Empty Container Inspection
GateECI 3D

TMEIC Gate Automation Products

GateSuite

Container Code Recognition

GateOCR

Operating System

GateOS

Pedestal for driver identification

GateKiosk

Traffic control

GateTraffic

License Plate Recognition

GateLPR

Automatic Damage Detection

GateDMG 3D

Empty Container Inspection

GateECI 3D

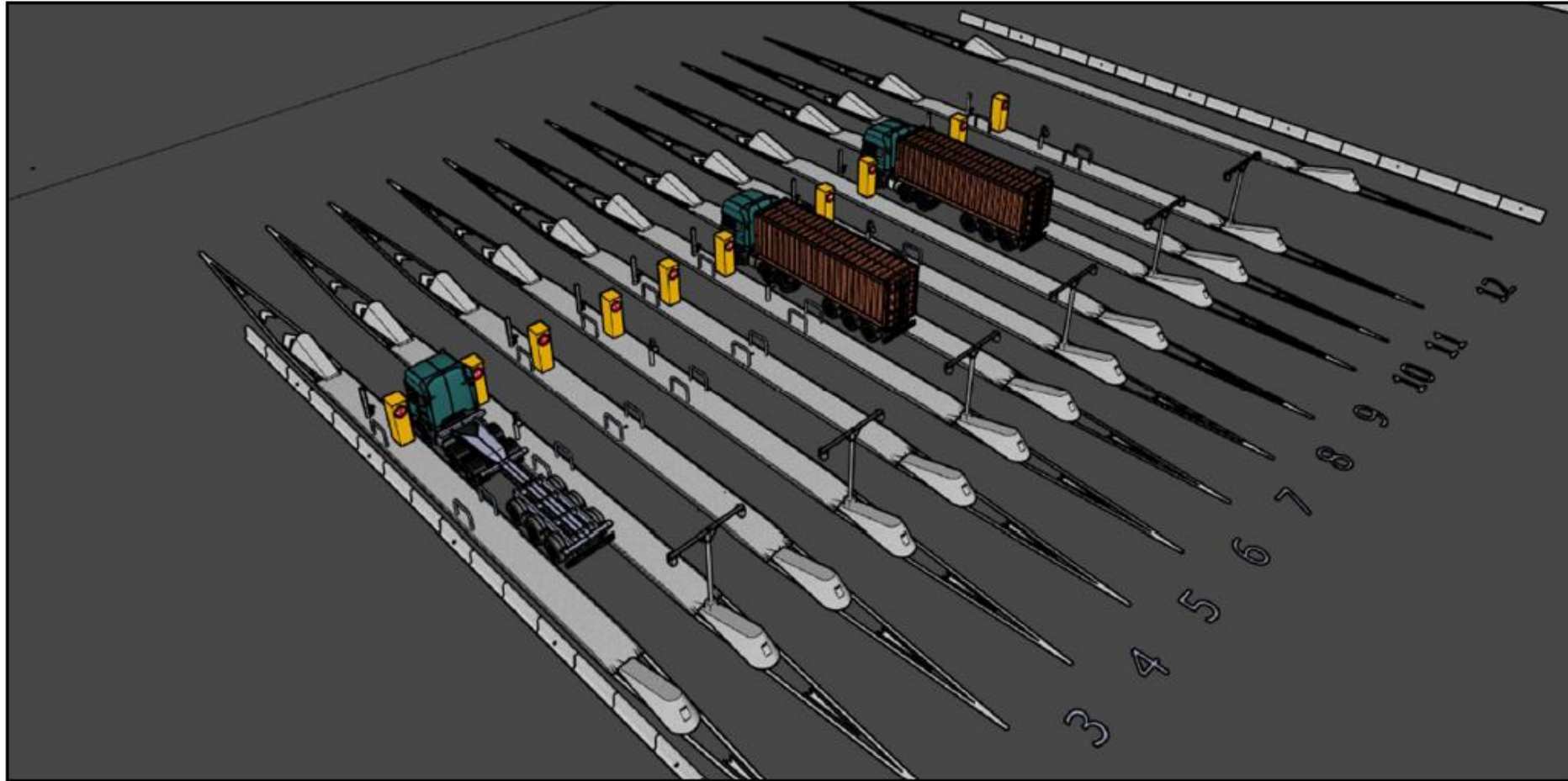


Figure 19. Gates In Concept design

TMEIC Gate Automation Solution

TMEIC's system consists of three primary modules:

- **GOS – Gate Operating System**

The “brain” behind all gate operations. It handles workflow logic for exception management and is fully configurable based on each terminal's specific processes. While the hardware (gates, kiosks, portals) is standardized, the GOS is adapted per terminal to reflect their operational logic.

- **Clerk Interface**

Enables remote exception handling by clerks. When data inconsistencies are detected (e.g. mismatched container number), clerks can review high-resolution images and metadata to correct the issue via a user-friendly interface.

- **KPI & Historical Data Tools**

Provides performance dashboards with customizable KPIs (e.g. OCR accuracy, turnaround time, transaction duration). Historical data access allows terminals to review any past transaction in detail — a key tool for damage claims, audits, and service tracking

Benefits of TMEIC GateSuite

The purpose of a gate system

1. Ensure secure access control
2. Verify and record container data
3. Reduce congestion and wait times
4. Support operational systems by capturing necessary data for planning and tracking
5. Maintain compliance with safety, customs and environmental regulations

Benefits of TMEIC automated gates

1. Real-time OCR data capture
2. Touchless and paperless gate process
3. Enhanced safety by minimizing manual checks and physical interactions
4. Advanced integration capabilities with TOS, analytics platforms and yard equipment
5. Scalable and customizable

Proven Success – TMEIC in Action



Autogate and Crane OCR Project ACT- APM Terminals



Project Summary

Pre-Gate

1 OCR IN / 2 Gate IN

Autogate

2 OCR In / 2 Gate IN

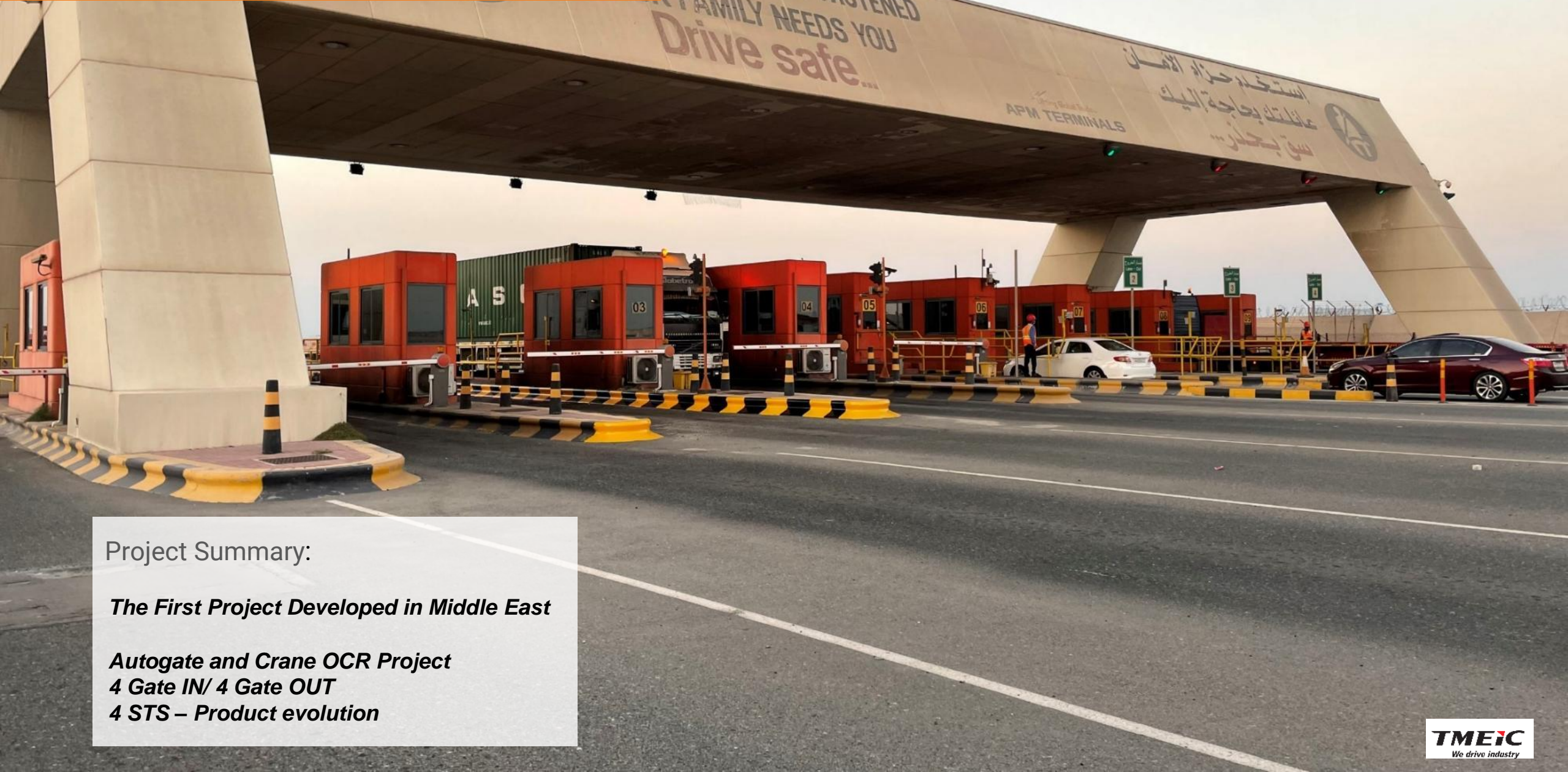
2 OCR Out / 2 Gate Out

Crane OCR Project

4 STS – Product evolution

Autogate and Crane OCR Project

APM TERMINALS BAHRAIN



Project Summary:

The First Project Developed in Middle East

Autogate and Crane OCR Project

4 Gate IN/ 4 Gate OUT

4 STS – Product evolution

Automation of more than 60 lanes in distinct areas of the Terminal
APM TERMINALS ELIZABETH, USA.

60 lanes

Fully automated and
control lanes by GateOS

2500 trucks/day

OCR portals (3 IN/3 OUT)

Before 5'

Now 1,45'

TRANSACTION TIME (TT)

Project Summary:

Container code recognition _GateCCR

Chassis recognition _ChassisCCR

Automatic container damage control _GateDMG 3D

Traffic control _GateTraffic

Driver pedestals _GateKiosk

License plate recognition _GateLPR

Gate Operating System and clerk interfaces _GateOS

**Monitor and manage KPIs and historical
access data _Operations Viewer**

Automation of 8-lane container terminal entry and exit gate. APM TERMINALS VALENCIA (SPAIN)



Shukran jazeelan