3M Cogent, Inc.
Case Study

Raising the Bar
in Port Security

COGENT
a 3M Company

3M

The vulnerability of different transportation modalities is a concern for the Department of Homeland Security (DHS). In order to increase port security standards and limit access to United States entrance points, Congress has passed a number of Acts, including the Maritime Transportation Security Act of 2002 and the Security and Accountability For Every Port Act of 2006 (or SAFE Port Act).

The SAFE Port Act codified into law a number of programs to improve the security of U.S. ports including the creation of the Transportation Worker Identification Credential (TWIC).
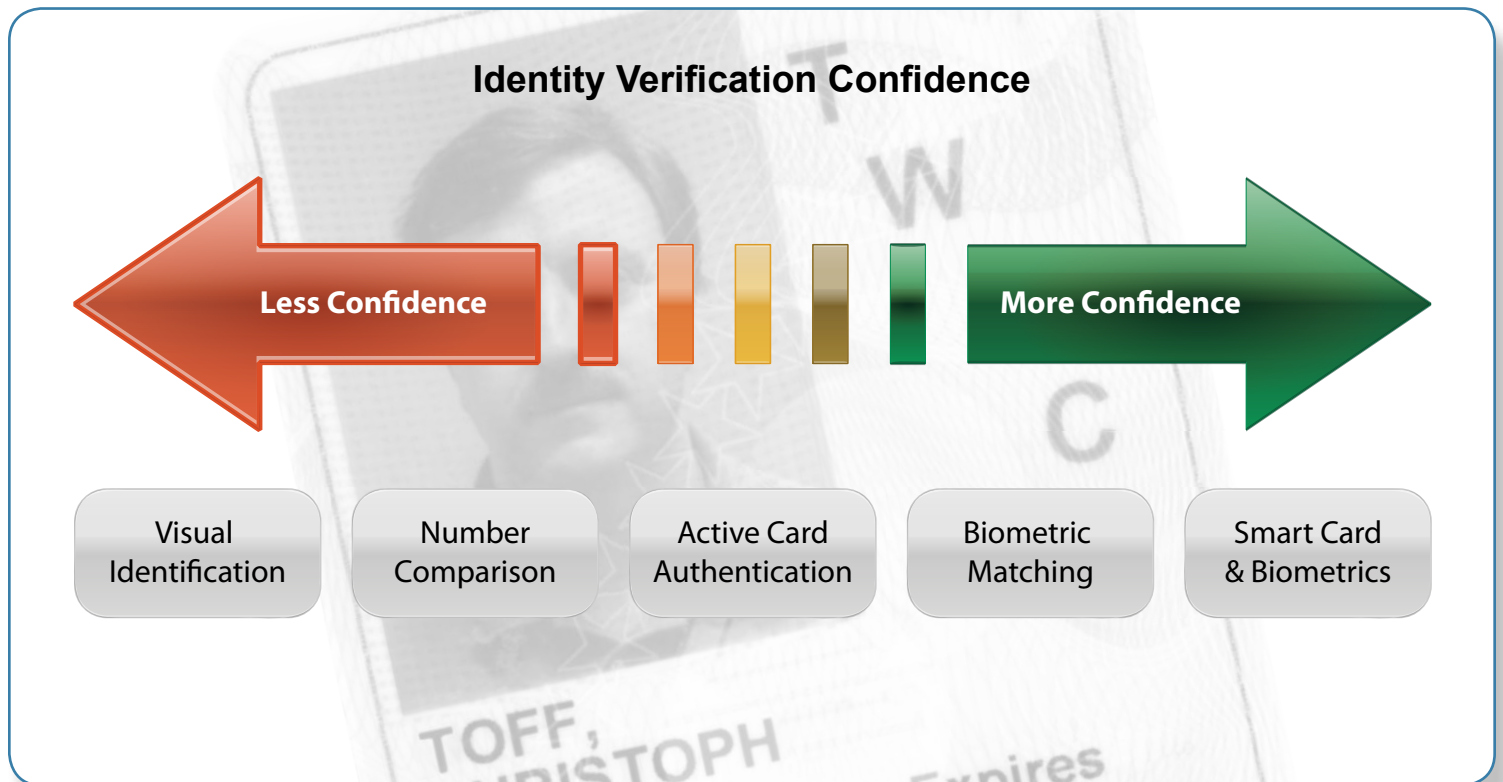
TWIC Reader Pilot Program Report

Even though the TWIC program provides a tamper-resistant biometric credential to maritime workers requiring unescorted access to secure areas of port facilities, the initial rulemaking did not require the installation of electronic TWIC readers during the initial issuance of the TWIC card. For this reason, many ports are still using the credential as a "flash-pass" and basing security decisions on a visual inspection.

If the TWIC card stores much more information than a worker's picture, why not fully utilize it?

The Transportation Security Administration (TSA) directed DHS to conduct a TWIC Card Reader Pilot Program to focus specifically on the use of TWIC cards with biometric readers. From 2008 to 2011, several vessel facilities participated in the pilot program through the implementation of the biometric reader. The Port of Long Beach was one of them.

In February 2012, TSA published the TWIC Reader Pilot Program Report. The report listed a number of challenges and difficulties faced during the process. It showed that the installation of readers needed to be part of a wider effort, including an effective system architecture and Physical Access Control Systems (PACS), functioning TWIC cards, and TWIC holders familiar with using TWIC Readers[1].

The report also showed that the level of identity verification confidence increases as more authentication factors are added.

Identity Verification Confidence

Less Confidence → More Confidence

| Visual Identification | Number Comparison | Active Card Authentication | Biometric Matching | Smart Card & Biometrics |

A Challenge at the Port of Long Beach

After the pilot program was finalized, two areas of the Port of Long Beach operated by SSA Marine initiated a pilot program of their own. SSA Marine was looking for a whole security integrated system that could provide fast entrance with high-level security.

TRL Systems, a system integration company, was chosen to tailor what was envisioned by SSA Marine. Based on their client requirements, TRL needed to integrate video surveillance with multiple authentication TWIC readers and biometric matching, as listed on the Initial Capability Evaluation (ICE) List. The systems had to be secure, easy to install, customizable, and flexible to adapt to new technologies.

After analyzing a number of available options, SSA Marine decided to remove the current readers during TSA's Pilot Program and find a more suitable and secure solution.

Security Meets Flexibility

3M Cogent's MiY Outdoor Biometric Access Control Reader was the device selected by TRL after a thorough analysis of a number of readers available on the market. A whole access control solution was integrated in the "BeastBox," ruggedized housing for the MiY access control readers, with an external contact card attached to the device, connected to a surveillance camera. BeastBoxes were installed in two different areas of the Port of Long Beach: the truckers' lane and the employee's entrance at one of the piers.

Curt Campbell, SSA Marine's Director of Security, states, "The BeastBox is for Super Container Terminals that support 4,500-plus gate moves per day. Configured and integrated for the most complex

SSA Marine™
A Carrix Enterprise

Facts in a Glance[2]

The Port of Long Beach is one of the world's busiest seaports and a leading gateway for trade between the United States and Asia. It supports over a million jobs nationally and generates billions of dollars in economic revenue each year.

In 2011, the Port handled:

- 6,061,085 containers (TEUs)
- Cargo valued at $155 billion
- 76.6 million metric tons of cargo
- On average, the equivalent of 16,600 20-ft. containers (TEUs) each day
- 4,898 vessel calls

The Port comprises:

- 3,200 acres of land
- 10 piers
- 80 berths
- 66 post-Panamax gantry cranes

The Port Employs 30,000 people in Long Beach and 11,000 drayage trucks servicing the Port terminals.
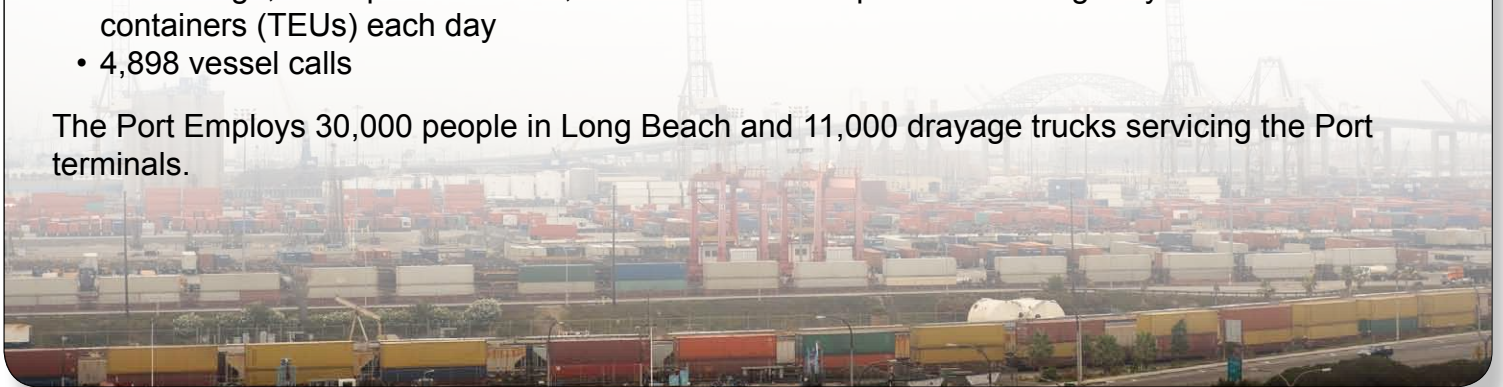
aspect of access control, pedestrian turnstiles, and for trucking lanes, the BeastBox System provides unprecedented through-put speed while factoring in policy, strategy, and technology hardware."

The MiY reader allows for fast authentication, which is key for the operation of one of the busiest seaports in the world. A great benefit of the MiY reader is its flexibility. Based on the Port's operation needs, a custom integration was developed allowing switching the readers between different TWIC Maritime Security Levels (Marsec); from Marsec Level 1 to Marsec Level 3 and vice versa, with one simple step.

Custom messages can also be sent over Wiegand from the edge readers to a back-end panel, based on events defined by the integrator via the MiY Security Manager software. One example of this event is when a cancelled card is presented to the reader, a custom notification message will be sent from the reader. The possibility of customization and integration of 3M Cogent's MiY reader allow leveraging new technologies without having to replace the readers.
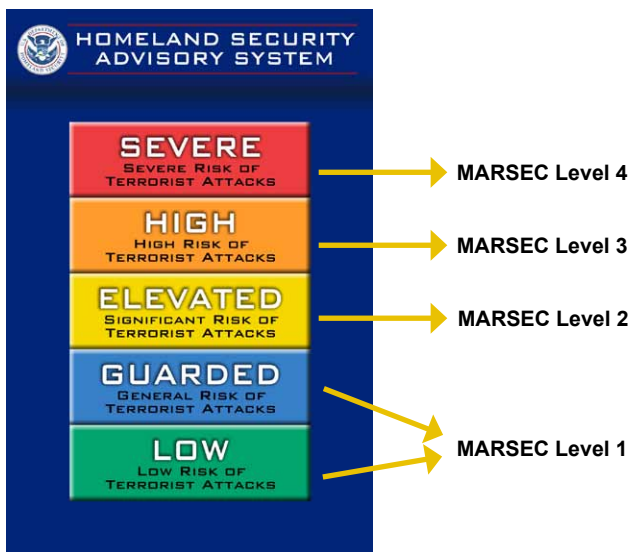
Custom Wiegand output events alert the PACS about:

- Biometric mismatch
- TWIC CCL updated
- Tamper detected
- Card Authentication Certificate failed
- Card reader failures
- Cancelled card presented
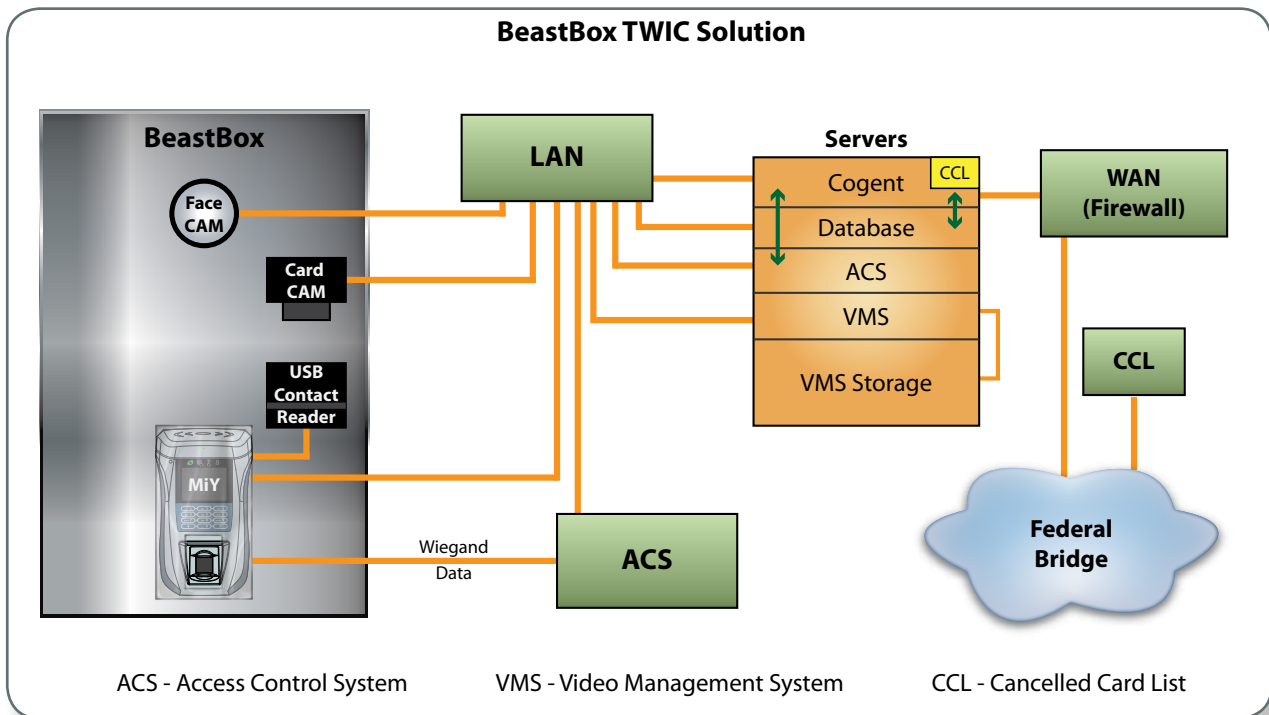
The Integration Process

Video Camera

Mag-stripe Reader
Video Camera

3M Cogent's Biometric Access Control Reader

Front-End System

BeastBox TWIC Solution

BeastBox
- Face CAM
- Card CAM
- USB Contact Reader
- MiY

Wiegand Data

LAN

ACS

Servers
- Cogent — CCL
- Database
- ACS
- VMS
- VMS Storage

WAN (Firewall)

CCL

Federal Bridge

ACS - Access Control System   VMS - Video Management System   CCL - Cancelled Card List

Back-End System

Curt Campbell also states, "By creating its own database out on the edge, the system automatically processes the transaction data of truckers and longshoreman into several unique configurations through customized software spreadsheets, allowing us to implement both a Global Banning Strategy and Regional Database Sharing through network-to-network connectivity."

Going Beyond TWIC Specification

All TWIC readers should be capable of achieving a standard maximum transaction time (defined as the time between presentation of the contactless card to a TWIC reader and completion of the biometric match) of three seconds[3]. The MiY Reader exceeds this requirement achieving a transaction time – with a contact card – of two and a half seconds.

	Transaction Time
With MiY Reader	2.5 seconds
TWIC Requirement	3 seconds

"We were able to create customized workflows and integrate different systems with minimum dependence on 3M Cogent," stated Gary Chavarria,

TRL's General Manager. "The integrator has the ability to tailor solutions according to its clients' needs, and manage the system with ease."

Why the MiY Reader?

3M Cogent's MiY Outdoor Access Control Biometric Reader is very flexible, customizable, and allows the integrator to benefit from its "Make it Yours" Sandbox SDK.

The reader allows the integrator to create complex workflows to meet its clients' requirements with minimum support from 3M Cogent.

Ruggedized, the MiY readers are robust enough to resist low and high temperatures, rain, dust, and other environmental changes. Tamper resistant, the reader is secure in any location.

The reader is in accordance with the TSA and the U.S. Coast Guard requirements, and is listed on the TWIC ICE List.

The MiY meets all the security requirements of the second busiest container port in the United States and goes beyond TSA's standards.

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3 Transportation Worker Identification Credential (TWIC) Qualified Technology List (QTL) Program - Fixed Physical Access Control Reader Approval Procedures, May 23, 2012.

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3M Cogent is committed to providing accurate and up-to-date project information.
Information is subject to change without notice as the Port of Long Beach Solution is an ongoing live service.

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