

TWIC Reader Technology Phase

Deploying and Using TWIC Fixed Readers Lessons learned

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Lessons learned
while participating in the current
TWIC pilot being conducted at
the Port of Brownsville.



Current MorphoTrak, Inc. TWIC Installations

Port	Application	System Type
Port of Brownsville, TX	TWIC Pilot	TSA Sanctioned Pilot
Port of Miami, FL	Cruise line	Early TWIC Adopter
KY River Port Henderson County, KY	Phosphate Manufacturer	Early TWIC Adopter
Port of Greenville, SC	Scott Petroleum	Early TWIC Adopter

Coal pile at the Port of Brownsville

Environment: Tough and Dirty



Lesson 1

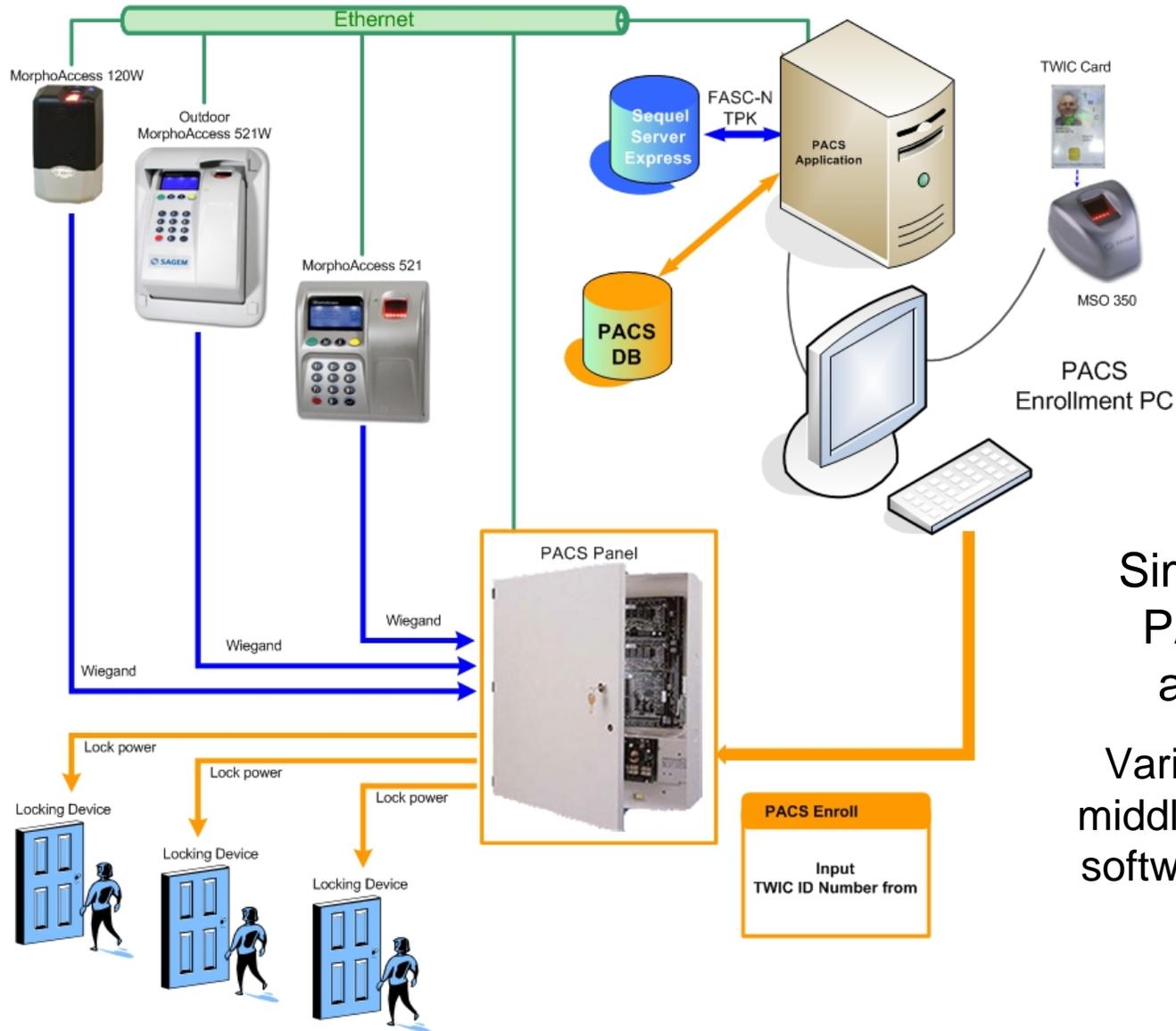
The implementation of TWIC readers is similar to installing Prox card readers in large PACS systems

- Power and conduit
- Signal and data network wiring
- Mechanical including poles and boxes
- Environmental considerations
- Terminal location considerations

However, these aspects are more challenging:

- Computer and Network equipment
- Software installation and configuring

Lesson 1 continued



Simplified TWIC PACS system architecture.

Various enrollment, middleware, and utility software tools may be installed.

Lesson 1 continued

TABLE OF POTENTIAL READER REQUIREMENTS

Federal Register / Vol. 74, No. 58 / Friday, March 27, 2009 / Proposed Rules

	MARSEC Level 1	MARSEC Level 2	MARSEC Level 3
Risk Group A: Bulk CDCs, >1,000 passengers			
IDENTITY VERIFICATION:	Biometric match of fingerprint to template stored in TWIC at each entry.		
CARD AUTHENTICATION:	Electronic communication to achieve a successful CHALLENGE/RESPONSE result at each entry.		
CARD VALIDITY CHECK:	Compare FASC-N against Hotlist at each entry.		
	Update Hotlist WEEKLY.	Update Hotlist DAILY	Update Hotlist DAILY
Risk Group B: HAZ MAT, Crude Oil, 500-1,000 passengers.			
IDENTITY VERIFICATION:	Random biometric match of fingerprint to template stored in TWIC, at least one day a month; all other times as visual identity badge.	Biometric match of fingerprint to template stored in TWIC at each entry.	
CARD AUTHENTICATION:	Electronic communication to achieve a successful CHALLENGE/RESPONSE result at each entry.		
CARD VALIDITY CHECK:	Compare FASC-N against Hotlist at each entry.		
	Update Hotlist WEEKLY.	Update Hotlist DAILY	Update Hotlist DAILY
Risk Group C: Non-HAZMAT, <500 passengers MODU OSV.			
IDENTITY VERIFICATION:	Visual identity badge at each entry.		
CARD AUTHENTICATION:	Check security features on card at each entry and electronic verification during annual inspections and random spot checks.		
CARD VALIDITY CHECK:	Check expiration date at each entry; CG perform spot checks.		

"Reader Requirements" are subject to change based on public comment and additional data collection from the TWIC reader testing pilot program ("pilot program"); currently underway as required by the Safety and Accountability for Every Port Act of 2006 (SAFE Port Act), Public Law No. 109-347, 120 Stat. 1884, 1889 (Oct. 13, 2006).

Lesson 1 continued

TWIC readers are not simple Prox readers!

Don't assume that configuring a TWIC reader is a simple "Plug and Play" task.

Point to remember:

Depending upon the requirements of the PACS, middleware, and network architecture field installation can be complex.

Remedy:

TWIC systems must be set-up on the bench: configurations must be tested and documented before deployment to the field.

Lesson 2

Remember that TWIC cards are not Prox cards!

Don't assume that TWIC cards operate the same way as simple Prox cards.

Points to remember:

Prox cards transmit 26 bits; TWIC card transmits over 27,000 bits

Prox cards are "Touch and Go"

TWIC Cards are "Touch and Hold"

Remedy:

Port operators, administrators, and contractors must have their own TWIC cards for set-up and test cycles.

This will speed-up the learning curve.

Lesson 3

It is not always the index fingerprint templates enciphered on the TWIC card.

Don't assume that cardholders will try fingers for biometric authentication at the terminal.

Point to remember:

If at enrollment an index fingerprint cannot be enrolled with high enough quality another finger may be used.

Remedy:

Remember to instruct cardholders having problems authenticating to try other fingers.

Lesson 4

It is not obvious to all cardholders how to place their finger on the readers bio-sensor.

Don't assume that cardholders will understand how and where to place their fingers for authentication.

Point to remember:

The readers graphic display will indicate where the finger must be placed to be read.

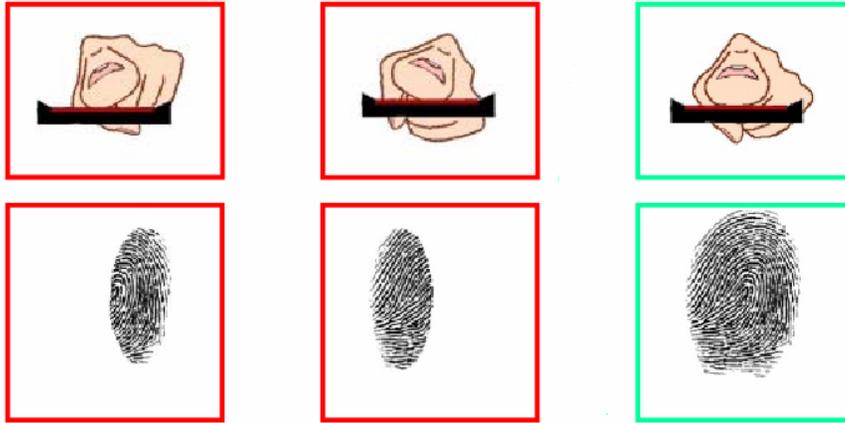
Remedy:

Train the cardholder on finger placement upon registration

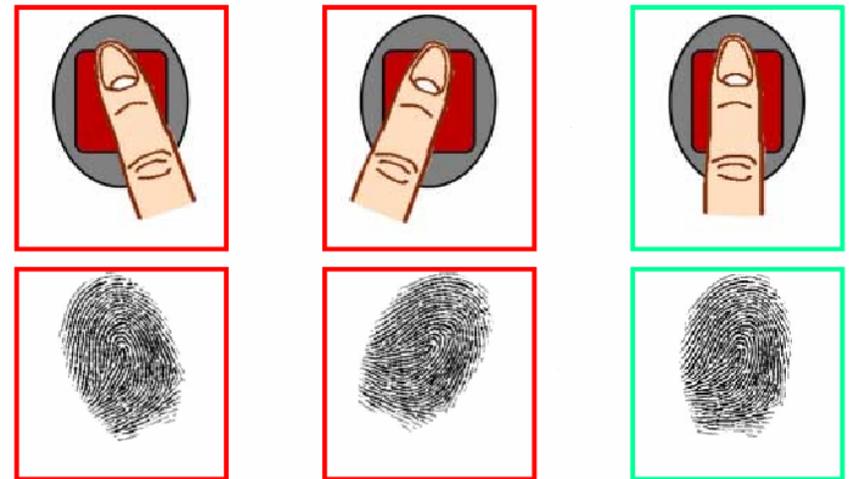
Common Finger Placement Errors

Lesson 4 continued

Finger Rotation



Finger Angle



Lesson 5

Card applicants are not clearly instructed to remember their PIN at TWIC card issuance.

Don't assume that cardholders will remember their PIN.

Point to remember:

The PIN is required at enrollment to release picture from the card.

Data available from the card without the PIN includes: name, encrypted biometric, the biometric encryption key, the Federal Agency Smart Credential Number (FASC-N), the credential expiration date and more.

Remedy:

Cardholders must be reminded before they register in the PACS that they are required to know their PIN

Lesson 6

Card applicants do not understand how to use their TWIC card.

Don't assume that cardholders will intuitively understand how to use their TWIC card..

Point to remember:

*The TWIC card is not "Touch and Go"; it's "Touch and Hold"
Finger placement on the bio-sensor is important.*

Knowing the PIN is important.

Remedy:

After registering the TWIC card, ask the cardholder to authenticate to the card biometrically on a TWIC reader that will be installed in the port facility.

Lessons Learned: Training is the Key

- #1 The implementation of TWIC readers is similar to installing Prox card readers in large PACS systems, BUT MORE COMPLEX.
- #2 Don't assume that TWIC cards operate the same way as simple Prox cards.
- #3 It is not always the index fingerprint templates enciphered on the TWIC card.
- #4 It is not obvious to all cardholders how to place their finger on the readers bio-sensor.
- #5 Card applicants are not clearly instructed to remember their PIN at TWIC card issuance.
- # 6 Card applicants do not understand how to use their TWIC card.

MorphoTrack

TWIC Reader Product Overview

MorphoTrak TWIC Reader Product Range

MorphoAccess Product Range

	MA120W Series	MA5xx Series Obselete June 2009	MA5xx+ Series New	OMA52x Series	MC250 Series
					
		Indoor		Outdoor Ruggedized IP65	Outdoor Ruggedized IP66
Environmental usage					
End-use Applications	PIV PACS	TWIC and PIV Physical Access Control			
ICE Listed	N/A	Yes			
Functional - Specification Conformance Test (F-SCT)	N/A		N/A	Submitted	N/A
Environmental - Specification Conformance Test (E-SCT)	N/A		N/A	Submitted	N/A
GSA APL	Yes	Yes	Pending	Yes	N/A
Biometric Sensor	500 dpi Optical Sensor (0.9 x 0.9 inch) FBI IQS Certified				
Authentication (1:1)	1:1 with card				
Fake Finger Detection	N/A	Yes with O/MA521 versions			N/A
Smart Card Badge Reader Technology	PIV & TWIC Data Models - MiFare compliant				
Display	N/A	Yes	Yes: Improved brightness	Yes	Yes
Keypad	N/A	Yes	Yes: Improved touch	Yes	Yes
Communications interfaces	Customizable Wiegand IN&OUT (MA1xx out only), RS422/RS485, Clock & Data IN&OUT, Relay, Ethernet, Wi-Fi				Bluetooth, WiFi, GSM/GPRS
Processor	Dual Core ARM 9 @200MHz CPU with multi-threading capability				Intel PXA270
Communications security	SSL on Wired TCP/IP				Windows Mobile 6
Operating modes	Standalone, Proxy or Networked				Standalone or Networked
Regulatory approvals	CE, FCC, and RoHS compliant				
Operation conditions	Temperature: 14°F to +122°F; Humidity: 10% to 80%				Temperature: 14°F to +122°F Humidity: 5% to 5%
Power Supply	External 9V to 16V (350mA typical @12V) or Power Over Ethernet (POE)				Li-ion Battery: 3000 mAh Operating time: > 8 hours
Software applications	Morpho PIV-TWIC Connect and Morpho Access Remote Interface System for PIV and TWIC (MARIS)				Morpho Mobile TWIC

Your Questions and Comments?

Acknowledgement and Contact Information

Many of the “Lessons Learned” in this presentation are the result of the recent on-site experiences of MorphoTrak’s Senior Government Programs Manager, Consuelo Bangs.

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Thank You!