

# Industry's Role in Developing a TWIC Reader Specification

Presented by

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# Transportation Worker Identification Credential

- Federal program to secure access to nation's regulated maritime facilities and vessels
- Joint TSA/USCG Program
- Legislative foundation
  - Maritime Transportation Security Act (MTSA) of 2003
  - SAFE Port Act of 2006
- Common, consistent credential may be used at over 3,200 facilities and on over 10,000 vessels
- Issuance of a biometric smart card based on a comprehensive security threat assessment
- Local maritime owners/operators control access

# TWIC Biometric Readers

- Purpose is to automatically read TWIC card and perform biometric verification
- Acquisition of readers responsibility of vessel and facility owner/operators
- Readers must comply with government technical specifications
- Policies of when, where and how readers will be used to be set through future regulatory process called rule making

# Reader Implementation Factors

- Large, diverse user population
- Wide range of potential locations
  - 10,000 vessels
  - 3,200 facilities
- Difficult environmental considerations
- Integration with existing physical access control infrastructure

# Challenging Environment

- Outdoor readers must operate in all weather conditions
  - Temperature
  - Humidity
  - Sunlight
  - Dirt
  - Rain
  - Snow
  - Salt spray



# TWIC Working Group

- TSA and Coast Guard requested assistance from the maritime and security industry in drafting reader technical specifications
- National Maritime Security Advisory Committee (NMSAC) formed TWIC Working Group on Nov. 14, 2006
  - TSA and Coast Guard provided guidance
  - Maritime industry team defined operational requirements
  - Security industry team presented technical options and developed specs
    - 53 volunteers from wide range of companies
    - Representing three trade associations
  - Advisory support from NIST
- Submitted recommendations on Feb. 28, 2007
  - Two technical specifications – with and without biometric data encryption
  - TSA published recommendations and solicited public comments

# Key Maritime Requirements

- Reader must function in weather-exposed outdoor marine environment
- Must allow contactless (RF) transfer of the biometric data from the TWIC card to the reader
- Transactions should take no more than 3 seconds
- Fingerprint technology should be at least 99% accurate
- No requirement for entry of PIN
- No requirement for maritime owner/operator to manage shared secret encryption keys

# Reader Specification

- TSA published the TWIC reader “working” specification on September 11, 2007
- Based on NMSAC TWIC Working Group alternate spec
  - Biometric data is encrypted on card
  - Does not require management of shared cryptographic keys
  - Contactless transfer of biometric data allowed without PIN
- Similar to approach in ePassport
  - TWIC “Privacy Key” unique to each card and stored on card
  - Treated as a “public key” and not as a secret
- Key accessible from magnetic stripe or contact interface
  - Can also be stored in local access control system server to eliminate need for magnetic swipe or contact read

# Reader Specification (cont.)

- Three reader types defined
  - Fixed mount for outdoor use
  - Fixed mount for indoor use
  - Handheld for mobile use
- May operate standalone or network attached
  - Network attached reader should support 2-way communications to allow upload of TWIC Privacy Key from server
- Outdoor reader ruggedized for environment
  - Operating range -20°C to +70°C
  - Humidity range of 5-100% condensing
- Transaction time of 3 seconds
  - From presentation of contactless card to completion of biometric match
- Biometric matching equal error rate of 1% or less
- Biometric sensor should provide “liveness” detection

# Lessons Learned

- Industry can play an important role in helping to ensure the operational success of large government credentialing programs
- Government and industry can work together to develop practical approaches to meeting program objectives

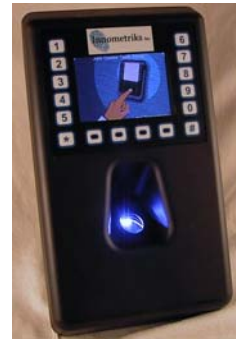
# What's Next?

- TSA finalizing pilot test plans
- TSA will conduct Initial Technology Test to develop list of approved devices for use in the field pilot phase
- Reader field pilot expected to take place in two stages
  - Early Operational Assessment – quick look for suitability & effectiveness
  - Full System Test & Evaluation – measures impact on operations
- Expect TSA to announce test plan and schedule this quarter
- Reader pilot status information is available through TSA's TWIC web site at: [www.tsa.gov/twic](http://www.tsa.gov/twic)

# TWIC Readers are being Developed to Meet the TSA Specification

- Expect at least ten manufacturers to offer TWIC compliant readers in various configurations
  - Fixed mount indoor
  - Fixed mount outdoor
  - Handheld mobile

# TWIC Reader Examples



Questions?

# Contact Information

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