



International
Biometrics+Identity
Association

**Identity
Matters**

Application & Benefits of TWIC[®] Readers

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About IBIA

- A trade association that promotes using technology effectively and appropriately to determine identity and enhance security, privacy, productivity and convenience
- Non-profit 501(c)(6) trade association founded in 1998 and based in Washington, DC

Purpose of TWIC Reader

- Electronic inspection of TWIC® card
 - Validate that card is legitimate and not counterfeit
 - Validate that card has not expired
 - Validate that card has not been revoked by TSA
 - Validate that cardholder is the same person to whom the card was issued



Source: TSA, July 2018

Visual vs. Electronic Inspection

- Visual inspection doesn't address all security concerns
 - Subject to human error
 - Requires security personnel at each access point
- Electronic inspection uses the security features stored in the TWIC card's smart chip
 - Digital certificates (card is a valid TWIC card)
 - Electronic check of Canceled Card List (CCL)
 - Fingerprint templates for card holder authentication
 - Performs automated check of expiration date
- Electronic inspection may reduce need for staffing at all access points

Types of TWIC Readers

- Fixed mount
 - Located at vehicle or pedestrian gates
 - Typically integrated with facility access control system
- Portable
 - Operator attended
 - May operate independent of PACS or network
 - Can be used for spot checks



Examples of Fixed Readers



Examples of Portable Readers



TWIC Reader Scenarios

- Present TWIC card to fixed reader at each access point
- Initial registration of TWIC and fingerprint biometrics into facility access control database
 - Then use linked facility-issued access card at entry
 - May also use alternate biometric technology (vein, face, iris, etc.)
 - Allows automated periodic check by backend system for revoked or cancelled TWIC cards
- Portable readers at each access point or for spot checks within facility
- Approach is dependent on approved facility security plan

Card Interfaces

- Contact
 - Requires card insertion in slot on reader
 - Not ideal for outdoor fixed readers
- Contactless
 - Allows reader to be completely sealed
 - 13.56 MHz frequency close proximity

TWIC Reader Modes Today

Authentication & Identification

Based on the requirements of each facility/vessel and specific threat levels, TWIC is designed to be used in various Access Control Systems at different levels of security

01/

Static Identification



Proximity Card Emulation

- Contact or Contactless
- Verify digital signature
- Identify card using unique identifier or CHUID*

02/

Cryptographic Authentication



1 Factor: Something you HAVE

- Trusted issuance by TSA
- No biometric authentication
- Authentication certificate and private key

03/

Biometric Identification



1 Factor: Something you ARE

- Biometric Authentication
- No card authentication
- Digital signature protects biometric templates

04/

Combined Authentication



2 Factor: Something you ARE & HAVE

- Biometric Authentication
- Card Authentication
- FASC-N verified against CCL

*Federal Agency Smart Credential Number (FASC-N) may be checked against the TWIC Canceled Card List (CCL).

Note: TWIC may have other modes of operation. This graphic details TSA's planned TWIC modes of operation



SECURE
TECHNOLOGY
ALLIANCE

A SECURE TECHNOLOGY ALLIANCE ACCESS CONTROL COUNCIL WHITE PAPER

TWIC® Card/Reader Use with Physical Access Control Systems: A Field Troubleshooting Guide

A Guide to Effective Diagnosis and Correction of TWIC® Card/Reader Field Issues

Version 1.0

May 2018

Secure Technology Alliance

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In May 2018, the Secure Technology Alliance (STA) published an industry paper on troubleshooting TWIC readers. A cross industry effort, the publication represents a positive step in providing guidance to facilities and vessels implementing access control solutions. The white paper is intended to help Physical Access Control System (PACS) operators and users diagnose the cause of different card or reader issues.

Review the white paper at:

<https://www.securetechalliance.org/twic-card-reader-challenges-with-physical-access-control-systems-a-field-troubleshooting-guide>

TWIC Reader Availability

- TWIC Readers are available
- Deployed successfully at over 100 maritime facility locations
- TSA provides a Qualified Technology List (QTL) of TWIC readers
 - Independently tested for conformance with TSA *TWIC Reader Hardware and Card Application Specification* (May 2012 edition)
 - QTL recently updated - can be directly accessed at [https://homeport.uscg.mil/Lists/Content/Attachments/2767/TWIC%20Reader%20QTL%20Web%20format%20\(7-12-18\)%20FINAL.PDF](https://homeport.uscg.mil/Lists/Content/Attachments/2767/TWIC%20Reader%20QTL%20Web%20format%20(7-12-18)%20FINAL.PDF)
 - Hard copy of new QTL available here as handout

Implementation Considerations

- Fixed readers should meet environmental requirements
 - Protection against moisture and airborne contaminants
 - Shock/vibration
 - Temperature/humidity extremes
 - Electrical/safety
- May be integrated with other systems
 - Facility access control system
 - Pedestrian turnstile/vehicle gate actuators
 - Video/audio link to remote operator
 - Sensors for vehicle/chassis weight/ID



TWIC Reader Suppliers are Here

- Gemalto Cogent
- Idemia (formerly MorphoTrak)
- idSoftware
- Identity One
- P-Sig

Demonstrations available – bring your TWIC card



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