Derived PIV Application and Data Model Test Guidelines (NIST SP 800-166 Draft) – Status Update

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Derived PIV Application & Data Model Test Guidelines – Status Update

- **Derived PIV Application & Data Model Tests – Objectives**
- **Scope of the SP 800-166 Document**
- **Overview of Contents**
- **Publication Process Timeline**

Derived PIV Application & Data Model Test Guidelines - Objectives

- Provide Test Requirements and Test Assertions for testing conformance of:

  (a) **Derived PIV Application**

  (b) **Derived PIV Application Data Model**

- **<u>TO THE FOLLOWING SPECIFICATIONS</u>**

  - *Derived PIV Credentials (SP 800-157)*

  - *Interfaces for Personal Identity Verification (SP 800-73-4)*

- **<u>ON NON-EMBEDDED TOKENS SUCH AS</u>**

  - *microSD*

  - *USB &*

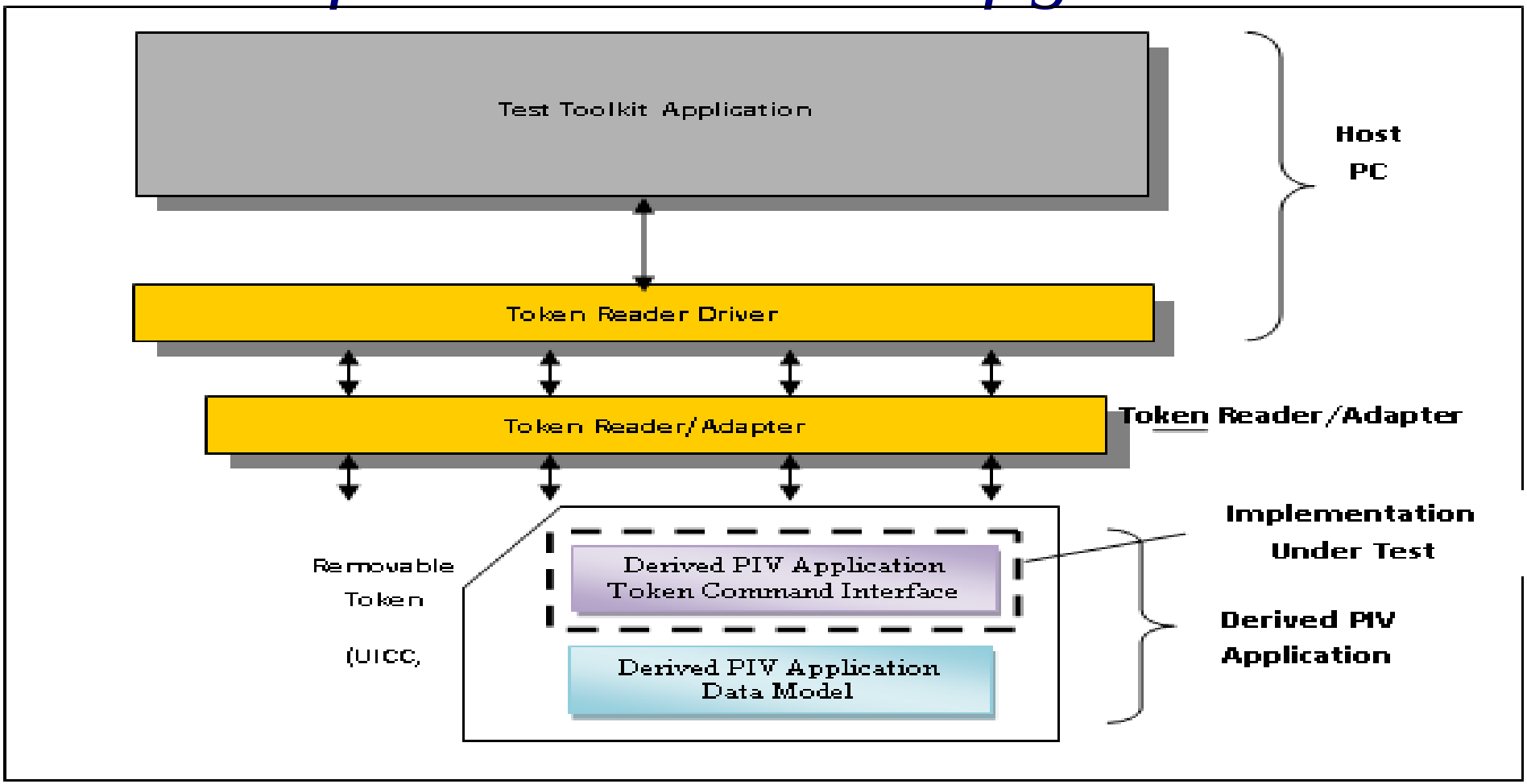
  - *Universal Integrated Circuit Cards (UICC)*

SP 800-166 (Derived PIV Application & Data Model Test Guidelines) - Scope

- **Derived PIV Application Conformance Tests**
  - Derived PIV Application Object Access & Storage Tests
  - Derived PIV Application Interface Conformance Tests

- **Derived PIV Application Data Model Conformance Tests**
  - BER-TLV Format Conformance
  - Digital Signature Conformance
  - PKI Profile Conformance

Derived PIV Application & Data Model Conformance Test Configuration



SP 800-166 – Overview of Contents ***(Generic Token Requirements)***

- UICC shall implement the Global Platform Card Secure Element Configuration v1.0
- USB ICCDs (Secure Element) used shall comply with USB Device Class – Smart Card Specification [ICCDSPEC]
- The APDUs for Derived PIV Application shall be transported to Secure Element using Bulk-out command pipe and responses be received using Bulk-in command pipe.
- USB Tokens with cryptographic modules shall be compliant with "APDU Support for contact card readers" specification in SP 800-96.

*SP 800-166 – Overview of Contents (**Derived PIV Application Conformance Tests**)*

- **I. Object Access & StorageTests**

- Accessibility of Mandatory object and any optional object specified in the documentation using BER-TLV tags of the corresponding PIV application objects of Section 4 of SP 800-73-4 Part 1 based on mapping in Table B-1 of SP 800-157
- Usage of all key references based on references to corresponding keys in Table 4 of SP 800-73-4 Part 1 & Table 6-1 of SP 800-78-4 based on mapping in Table B-2 of SP 800-157.

*SP 800-166 – Overview of Contents (**Derived PIV Application Conformance Tests**)*

I.Object Access & StorageTests.. Contd

- Usage of Cryptographic algorithm identifiers as per Tables 6.2 & 6.3 of SP 800-78-4 and Cryptographic mechanism identifiers as per Table 5 of SP 800-73-4
- Allocation of right container size for objects
- Access of data objects & private key usage based on access rule (Password – its size & wrong attempts)
- Satisfaction of Security condition for Update/Storage of data objects

*SP 800-166 – Overview of Contents (**Derived PIV Application Conformance Tests**)*

II. Interface Conformance Tests

- Testing the following commands : SELECT, GET DATA, VERIFY, CHANGE REFERENCE DATA, RESET RETRY COUNTER, GENERAL AUTHENTICATE, PUT DATA & GENERATE ASYMMETRIC KEY PAIR - ***for***
- Right precondition for use
- Expected Return/Status codes
- Right post condition (e.g., State Variable value)

*SP 800-166 – Overview of Contents (**Derived PIV Application Data Model Conformance Tests**)*

I. BER-TLV Conformance

- Derived PIV Authentication Certificate ***(Mandatory)***
- Digital Signature Certificate
- Key Management Certificate
- Discovery Object
- Key History Object
- Retired Certificates for Key Management
- Security Object

*SP 800-166 – Overview of Contents (**Derived PIV Application Data Model Conformance Tests**)*

II. Digital Signature Conformance

- Security Object ***(Only Signed Object)***
  - *Presence of Discovery Object & Key History Object Hashes*
  - *Asymmetric Digital Signature for conformance to Cryptographic Message Syntax – RFC 5652*
  - *Digest Algorithm & Signature Algorithms in accordance with SP 800-78-4 specification*

*SP 800-166 – Overview of Contents (**Derived PIV Application Data Model Conformance Tests**)*

III. PKI Profile Conformance

- Derived PIV Authentication Certificate
- Digital Signature Certificate
- Key Management Certificate
- PIV Credential Issuer Certificate (Data Object Signing Certificate)

SP 800-166 – Publication Timeline

Milestone	Planned Date
First Public Comment Draft	4/24/2015
Public Comment Period - Closing Date	5/22/2015
Publication of Final Document	10/06/2015

Thank you

Questions?

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