

# **FIPS 201 Evaluation Program - Template Generator Test Procedure**

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## Document History

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# 1 Overview

Homeland Security Presidential Directive-12 (HSPD-12) - "*Policy for a Common Identification Standard for Federal Employees and Contractors*" directed the promulgation of a new Federal standard for a secure and reliable form of identification issued by all Federal Agencies to their employees and contractors.

In addition to derived test requirements developed to test conformance to the NIST standard, GSA has established interoperability and performance metrics to further determine product suitability. Vendors whose products and services are deemed to be conformant with NIST standards and the GSA interoperability and performance criteria will be eligible to sell their products and services to the Federal Government.

## 1.1 Identification

This document provides the detailed test procedure that needs to be executed by the Lab in order to evaluate the Template Generator (henceforth referred to as the Product) against the subset of applicable requirements that need to be electronically tested for this category.

## 2 Testing Process

As previously mentioned, this document prescribes detailed test steps that need to be executed in order to test the requirements applicable for this category. Please note that conformance to the tests specified in this document will not result in the Product being compliant to the applicable requirements of FIPS 201. The Product must undergo an evaluation using all the evaluation criteria listed for that category prior to being deemed as compliant. Only products that have successfully completed the entire Approval Process will be designated as conformant to the Standard. To this effect, this document only provides details for the evaluation using the Lab Test Data Report approval mechanism.

A Lab Engineer follows the steps outlined below in order to test those requirements that have been identified to be electronically tested. The end result is a compilation of the observed behavior of the Product in the Lab Test Data Report.

Section 3 provides the test procedures that need to be executed for evaluating the Product as conformant to the requirements of FIPS 201.

### 3 Test Procedure for Template Generator

#### 3.1 Requirements

The following table provides a reference to the requirements that need to be electronically tested within the Lab as outlined in the Approval Procedures document for the Product. The test cases that are used to check compliance to the requirements are cross-referenced in the table below.

Identifier #	Requirement Description	Source	Test Case #
T-GEN.7	The fingerprint template created by the Product passes the SP 800-85B tool tests for fingerprint biometric data conformance <sup>1</sup> .	Derived	T-GEN-TP.1

Table 1 - Applicable Requirements

#### 3.2 Test Components

##### 3.2.1 Baseline Configuration

The baseline configuration describes initial state of the Test System and its associated components. A Lab Engineer commences execution of this test procedure after performing the necessary updates to the baseline configuration based on the requirements of the test cases described below.

The test system includes the following components as part of its baseline configuration:

1. The Test System – It includes the workstation, the SP 800-85B conformance tool, related software, and the necessary drivers for the CREADER.

##### 3.2.2 Components Details

This section lists all the components required by the Lab to execute this test procedure.

#	Component	Component Details	Identifier
1	Test System	The workstation, running the SP 800-85B conformance test tool.	HOST
2	PIV Card Reader (contact)	Smartcard Reader Unotron SAC2 <a href="http://www.unotron.com/US/smart_reader.htm">www.unotron.com/US/smart_reader.htm</a>	CREADER
3	The PIV Card populated with the biometric fingerprint data object	GemCombi Xpresso R4 E72 PK Card with GemPIV applet v1.10 <a href="http://www.gemplus.com">www.gemplus.com</a>	PCARD

Table 2 - Test Procedure: Components

<sup>1</sup> CBEFF header and signature requirements are considered to be out of scope for Template Generators.

### 3.3 Test Cases

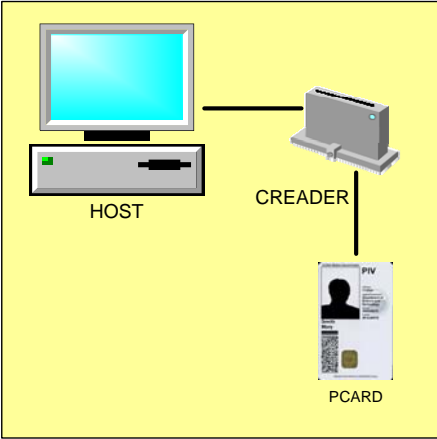
This section discusses the various test cases that are needed to test the Template Generator against the requirements mentioned above.

#### 3.3.1 Test Case T-GEN-TP.1

##### 3.3.1.1 Purpose

The purpose of this test is to verify whether the biometric fingerprint template (INCITS 378) is conformant to Table 3 of SP 800-76.

##### 3.3.1.2 Test Setup

<p><b>Equipment:</b></p>	<p>The following components are necessary for executing this test case:</p> <ul style="list-style-type: none"> <li>▪ HOST</li> <li>▪ CREADER</li> <li>▪ PCARD</li> </ul>
<p><b>Configuration Diagram:</b></p>	<div style="text-align: center;">  <p>The diagram shows a computer system labeled 'HOST' with a monitor and keyboard. A line connects the HOST to a device labeled 'CREADER'. Another line connects the CREADER to a card labeled 'PCARD' which has a photo and a fingerprint sensor.</p> </div> <p style="text-align: center;"><b>Figure 1 - Configuration Diagram for Test Case T-GEN-TP.1</b></p>
<p><b>Preparation:</b></p>	<ul style="list-style-type: none"> <li>▪ Connect the CREADER into the appropriate port on the HOST.</li> <li>▪ Verify that the CREADER is correctly installed by reviewing its presence in list of hardware using the device manager of the host system.</li> <li>▪ Save the template file provided by the Supplier as part of the application package. Make sure the file is named “CARD_HOLDER_FINGERPRINTS”.</li> <li>▪ Update the configuration settings in the tool appropriately:             <ol style="list-style-type: none"> <li>a) Go to “Test Settings” and provide the following information about PCARD:                 <ol style="list-style-type: none"> <li>i. 9B key value (found under Key-Type Algorithm Keys)</li> <li>ii. The PIN Value</li> </ol> </li> <li>b) Go to “Connectivity” and provide the following information about CREADER:</li> </ol> </li> </ul>

	<ul style="list-style-type: none"> <li>i. The Reader name</li> <li>ii. Smart Card protocol (SCARD_PROTOCOL_T0)                             <ul style="list-style-type: none"> <li>▪ Once the configuration settings have been applied, go to Tools-&gt;Populate Card Containers menu item.</li> <li>▪ Select the file (CARD_HOLDER_FINGERPRINTS), saved in the earlier step and click on the “Populate” button.</li> <li>▪ Make sure by observing the log generated in the populate containers dialog box that the biometric fingerprints were loaded successfully on PCARD.</li> </ul> </li> </ul>
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3.3.1.3 Test Process

<b>Test Steps:</b>	<ol style="list-style-type: none"> <li>1. Insert the PCARD into the CREADER</li> <li>2. Click on the Test Manager tab and under the CHECK_biometric_data_conformance tests, execute Tests 27 to Test 48 in the SP 800-85B conformance tool</li> <li>3. Verify that the test has completed by viewing the result log area on the dialog box on the screen.</li> <li>4. Print and save a copy of the report for the Product evaluation.</li> </ol>
<b>Expected Result(s):</b>	<ol style="list-style-type: none"> <li>1. The test completes successfully showing that:                             <ul style="list-style-type: none"> <li>▪ The biometric fingerprint template on the PIV Card is conformant to the requirements of Table 3 of SP 800-76.</li> </ul> </li> </ol>

## 4 Template Generator Test Application Screens

### 4.1 SP 800-85B Testing Screen

The following screenshot is of the NIST 800-85B Data Conformance Test Tool.

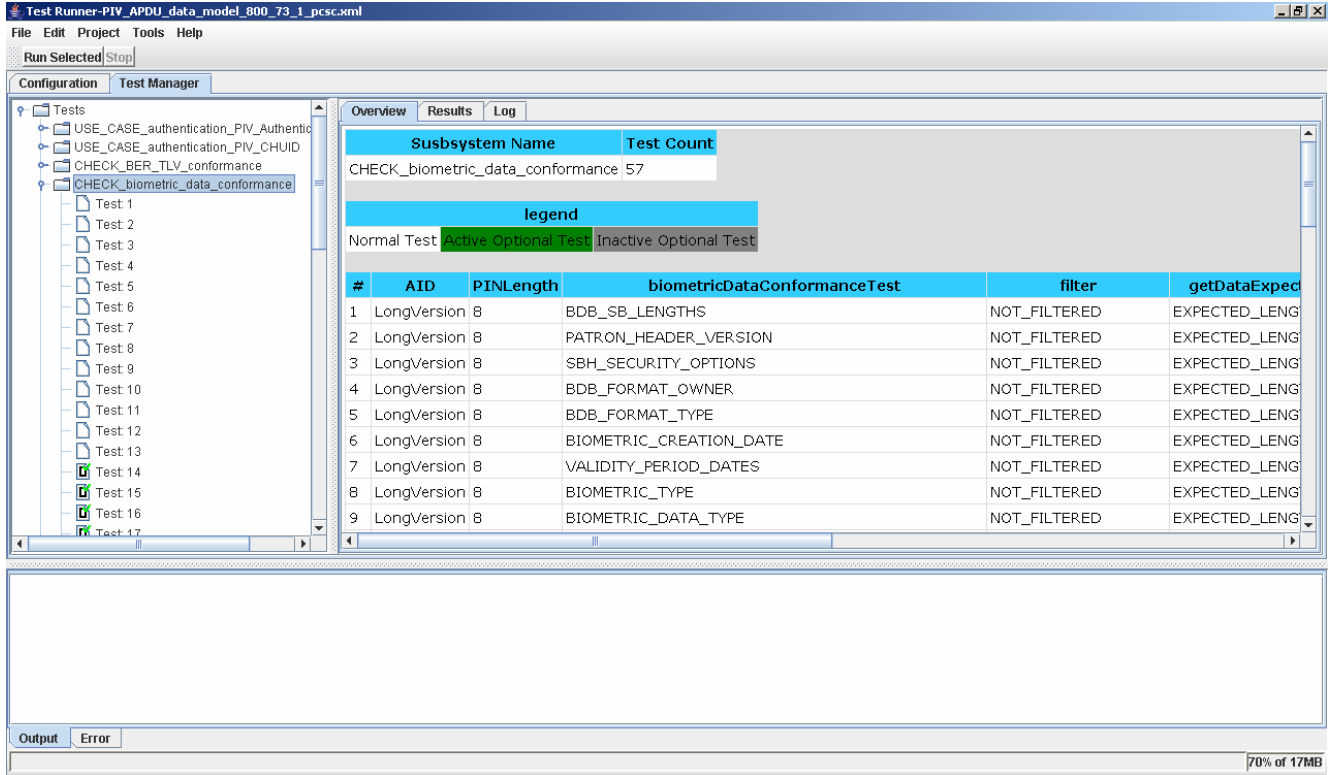


Figure 2 -SP 800-85B too screen shot

## 4.2 SP 800-85B Test Report Screen

The following represents a screen shot of the test report that is generated by the NIST 800-85B application after testing of the PIV Card populated with a biometric fingerprint data object. It provides the Lab Engineer with a reference of what to expect as a result of successful execution of the test procedure.

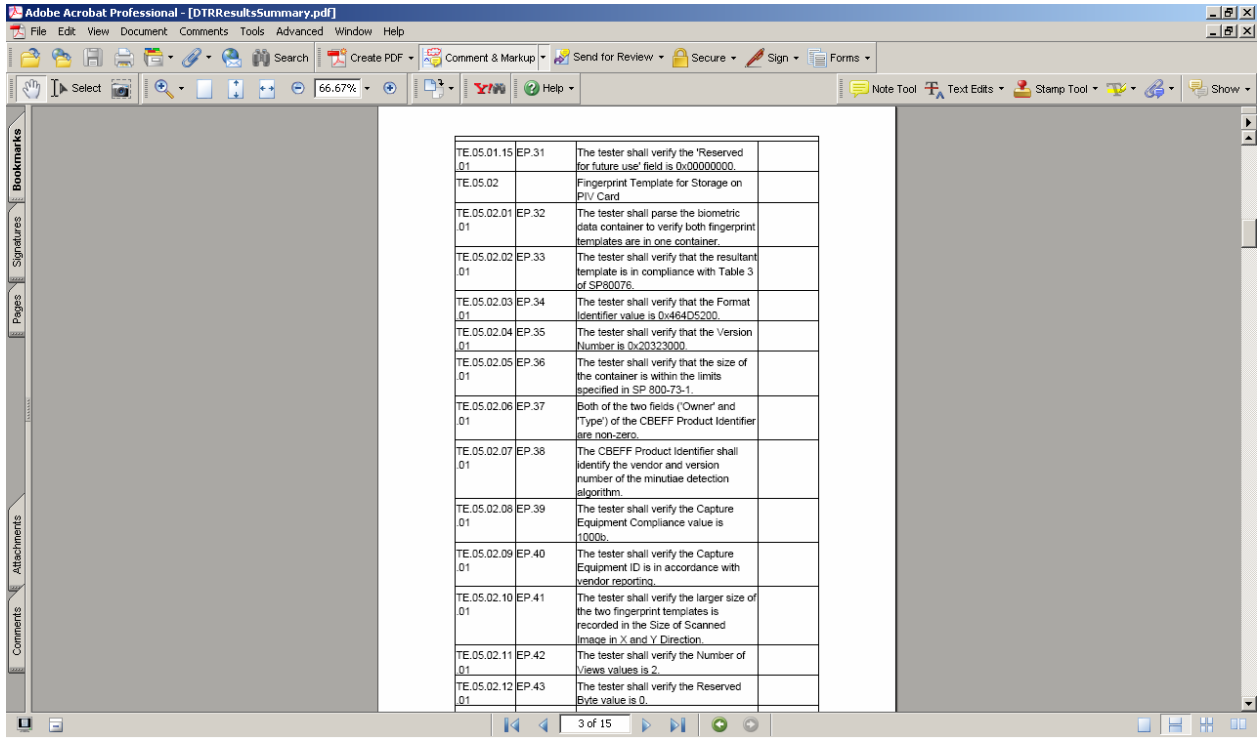


Figure 3 - Test Report Screen shot