FIPS 201 Evaluation Program - Template Generator Approval Procedure

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GSA

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1. Introduction

1.1 *Overview*

The FIPS 201 Evaluation Program (EP) is a U.S. Government entity administered by the Office of Government-wide Policy (OGP), within the General Services Administration (GSA) agency. The goal of the FIPS 201 Evaluation Program (EP) is to evaluate products and services against the requirements outlined in FIPS 201 and its supporting documents. In addition to derived test requirements developed to test conformance to the National Institute of Standards and Technology (NIST) Standard, GSA has also established interoperability and performance metrics to further determine product suitability. A set of approval and test procedures have been developed which outline the evaluation criteria, approval mechanisms and test process employed by the Laboratory during their evaluation of a Supplier's product or service against the requirements for that category.

A Supplier desiring to submit a Template Generator (hereafter referred to as the Product) for evaluation must follow the Suppliers Policies and Procedures Handbook. In addition to this handbook, Supplier also need to refer to this Approval Procedure which provides the necessary category-specific details in order to have a Supplier's Product evaluated by the EP and placed on the Approved Products List (APL).

1.2 *Category Description*

The *Template Generator* is a software component that converts a fingerprint image into an SP 800-76-1 compliant fingerprint minutiae template.

1.3 *Purpose*

The purpose of this document is to provide the following information:

(i)   Provide a list of the artifacts and/or documentation that needs to be submitted to the Evaluation Lab as part of the application package submission.

(ii)   Document the list of the requirements that apply to this category

(iii) Specify the evaluation criteria along with their approval mechanisms that will be used by Evaluation Labs to verify compliance of the Product against the requirements that apply to this category.

2. Application Package Contents

The Application Package Contents include the artifacts, documentation and in some cases the product itself that needs to be submitted to the Evaluation Lab so that evaluation can be performed. The Application Package Contents for this category include the following:

- An INCITS 378 fingerprint template created by the Product in accordance with Table 3 of SP 800-76. Additionally, this template must further be wrapped in a CBEFF structure (CBEFF header and signature) as specified in Section 6 of SP 800-76 (with the FASC-N and integrity option set in the CBEFF header). Lastly, the fingerprint object must be contained in a BER-TLV container as specified in Appendix A (Page 46) of SP 800-73-1. This means the fingerprint data must be preceded with tag 0xBC followed by length (encoded in BER-TLV format), followed by the fingerprint data itself. The data must be followed by tag 0xFE and length 0x00 for the Error Detection Code[1]. The biometric fingerprint data object shall be in binary form and uploaded to the Evaluation Program website;

- Completed Application Form, provided on the Evaluation Program website. (This form will be available through the web interface once users have been assigned a login credential);

- Completed and signed Attestation Form (found in the application submission package ZIP file). The Attestation Form should be completed and scanned into a document to be uploaded to Evaluation Program website;

- Completed and signed Lab Service Agreement (found in the application submission package ZIP file). The Lab Service Agreement should be completed and scanned into a document to be uploaded to Evaluation Program website;

- Official Certification documentation from the appropriate entity (e.g., NIST) showing conformance of the Product to the tested requirements of FIPS 201. Specific reference to the exact type of certification necessary can be found in Section 4.3.

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[1] SP 800-73-1 does not have a requirement for using an Error Detection Code

3. Evaluation Procedure for Template Generator

3.1 Requirements

In order to approve the Product as conformant to the requirements of PIV, it at a minimum, must comply with all the requirements listed below. The approval mechanism column describes the technique utilized by the Lab to evaluate compliance to that particular requirement.

Identifier #	Requirement Description	Source	Reqt. #	Approval Mechanism
T-GEN.1	A template generator shall be certified as a software library.	SP 800-76, Section 7.3.1	2-62	Certification
T-GEN.2	For PIV a template generator is a library function that shall convert an image into a minutiae record.	SP 800-76, Section 7.3.1	2-62	Certification
T-GEN.3	A supplier's implementation, submitted for certification, shall satisfy the requirements of an application programming interface (API) specification to be published by the test organizer. The API specification will require the template generator to accept image data and produce [MINUSTD] templates conformant to Table 11.	SP 800-76, Section 7.3.1	2-63	Certification
T-GEN.4	The template generator shall parse this record and produce [MINUSTD] templates conformant to Table 12. Where values or practices are not explicitly stated in Table 12, the specifications of section 3.3.2 and Table 3 apply (e.g. on minutiae type).	Derived	N/A	Certification
T-GEN.5	A template generator shall be certified on the basis of the conformance of its output, its speed of computation, and on the error rates observed when its templates are used in one-to-one verification trials.	Derived	N/A	Certification
T-GEN.6	A template generator shall be certified if:1. it converts all input Table 10 [FINGSTD] instances to Table 11 [MINUSTD] templates and these pass the template conformance test suite established by NIST, and2. it converts 90% of Table 10 [FINGSTD]	SP 800-76, Section 8.9	2-91	Certification

Identifier #	Requirement Description	Source	Reqt. #	Approval Mechanism
	instances in fewer than 1.3 seconds4 each, and3. all certified matchers verify its output templates with FRR less than or equal to 1% at a FAR of 1%.			
T-GEN.7	The fingerprint template created by the Product passes the SP 800-85B tool tests for fingerprint biometric data conformance[2].	Derived	N/A	Lab Test Data Report

Table 1 - Applicable Requirements

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[2] CBEFF header and signature requirements are considered to be out of scope for Template Generators.

3.2 Approval Mechanism Matrix

The table below provides an indication of the total number of requirements applicable for the Product and provides a breakup of how the evaluation will be conducted based on the different approval mechanisms available to the Lab.

Total Requirements	Approval Mechanisms					
	SV	**VTDR**	**LDTR**	**VDR**	**C**	**A**
7	N/A	N/A	1	N/A	6	1
Legend: SV – Site Visit; VTDR – Vendor Test Data Report; LTDR – Lab Test Data Report; VDR – Vendor Doc. Review; C – Certification; A - Attestation						

Table 2 - Approval Mechanism Matrix

3.3 Evaluation Criteria

This section provides details on the process employed by the Lab for evaluating the Product against the requirements enumerated above.

3.3.1 Certification

Reference(s):	T-GEN.1 to T-GEN.6
Evaluation Procedure:	1. The Lab will update the status in the Web-Enabled Tool to "C Begun" as instructed in the Web-enabled Tool Laboratory User Guide. 2. The Lab will perform the following activities for the Template Generator in order to determine certification status of the Product with SP 800-76 requirements: ▪ Review the list of Template Generators to determine inclusion of the Product. The list is available on the website located at: http://fingerprint.nist.gov/MINEX/QPL.html ▪ Optionally if provided, examine the certification statement for authenticity (i.e. see if it provided by NIST) and that it is still current i.e. valid. 3. The Lab will update the status to "C Complete" as instructed in the Web-enabled Tool Laboratory User Guide.
Expected Results:	1. The Product has been certified by NIST as conforming to the certification criteria for Template Generators as specified in SP 800-76.

3.3.2 Lab Test Data Report

Reference(s):	T-GEN.7
Test Procedure:	1. The Lab will update the status in the Web-Enabled Tool to "LTDR Begun" as instructed in the Web-enabled Tool Laboratory User Guide. 2. The Lab will execute test procedures for this category in accordance with the *Template Generator Test Procedure*. 3. The Lab will update the status to "LTDR Complete" as instructed in the Web-enabled Tool Laboratory User Guide.

Expected Result:	The Product successfully passes all the test cases documented within the test procedure.

3.3.3   Attestation

Reference(s):	N/A
Evaluation Procedure:	1. The Lab will update the status in the Web-Enabled Tool to "A Begun" as instructed in the Web-enabled Tool Laboratory User Guide. 2. Review the Attestation Form provided by the Supplier, confirming that the Product to the best of their knowledge, conforms to all the necessary requirements of the category under which the Product applies. Verify that person signing this Attestation Form has the authority to do so (a minimum "C" level [e.g. CSO, CEO, CIO, CFO, Vice-President, President, Business Partner or Owner]). 3. The Lab will update the status in the Web-Enabled Tool to "A Complete" as instructed in the Web-enabled Tool Laboratory User Guide.
Expected Results:	The Attestation Form has been signed by an authorized individual (e.g. CSO, CEO, CIO, CFO, Vice-President, President, Business Partner or Owner).