

FIPS 201 Evaluation Program - Card Printer Station Approval Procedure

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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 Card Printer Station (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 *PIV Card Printer Station* is a component consisting of hardware and software that provides the capability to graphically personalize PIV cards. The printing capabilities are used to customize the PIV card's physical topology as described by FIPS 201 section 4.1. As an option, the Card Printer Station may provide the ability to print SP 800-104 compliant zones. Suppliers who wish to perform these services must be evaluated against all optional requirements found within this document.

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:

- A set of PIV Cards¹ that contain the mandatory and optional printed elements as mandated in FIPS 201 and supporting documents shall be printed by the Product and submitted to the Lab. These should be delivered to the Lab (address can be found at <http://fips201ep.cio.gov/labs.php>) using a reliable method of delivery (e.g., FedEx, UPS, hand delivery). The specifications for the personalized cards that need to be submitted to the Lab can be found in Appendix A.
- 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 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;
- 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 Supplier VDR-VTDR justification worksheet (found in the application submission package ZIP file);
- A Vendor Test Data Report, which provides test results showing that the Product complies with the requirements for this category. In this regard, the Supplier is expected to develop and document the test procedures used to determine how the Product was tested to arrive at the conclusion that it met all necessary requirements. The VTDR must typically contain information as stated in the Supplier's Handbook. Wherever possible, information to be supplied as part of this Vendor Test Data Report has been described in Section 3.3 and Appendix B;
- 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 the Section 3.3; and
- All necessary Supplier documentation providing proof that the Product complies with the subset of requirements (as outlined in Section 3.1) for this category which has Supplier documentation review as its approval mechanism. Examples of specific documentation would include: user guides, technical specifications, white papers, line cards, etc.

2.1 Compatibility Acknowledgement

For a Product to be submitted under this category, it needs to meet all requirements as stated in Section 3.1. However, in the event that the Supplier provides only the software component, the Supplier needs to perform the following activities:

¹ PIV Cards used for Supplier testing and submission to the Lab must be listed on the GSA Evaluation Program's Approved Products List.

- Submit the Product in conjunction with a specific hardware product from another supplier
- Optionally, obtain a letter from the hardware vendor stating that the Supplier's software is known to work with the hardware product being submitted with. If this letter is being submitted by the Supplier, they need to submit this along with their application package. In the event that this letter isn't submitted, compatibility testing shall be performed by the Lab in accordance with Section 3.3.5.

3 Evaluation Procedure for Card Printer Station

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
CPS.1	The printing process shall not deposit debris on the printer rollers during printing and laminating.	FIPS 201-1, Section 4.1.1	1.1-36	Vendor Documentation Review Lab Test Data Report
CPS.2	The printing process shall print on the card such that printed material does not interfere with the contact and contactless ICC(s) and related components.	FIPS 201-1, Section 4.1.1	1.1-37	Vendor Documentation Review
CPS.3	The printing process shall support graphical personalization (i.e. printing)	Derived	N/A	Vendor Documentation Review
CPS.4	The printing process used shall print to dual interface smart cards (i.e. smart cards that contain BOTH contact and contactless interfaces).	Derived	N/A	Vendor Test Data Report
CPS.5	The CPS shall have a measured yield rate for printing of at least 98%. (i.e. at least 98% of cards printed by the CPS will emerge from the printing process with acceptable visual appearance AND with BOTH the contact and contactless interfaces fully functional.)	Derived	N/A	Vendor Test Data Report
CPS.6	The printing process shall support a printing resolution of 300 dots per inch (dpi) or greater.	FIPS 201-1, Section 4.1.4.1	1.1-54	Vendor Documentation Review
CPS.7	Personalized PIV Cards shall contain at least one security feature that aids in reducing counterfeiting, are resistant to tampering, and provide visual evidence of tampering attempts. Examples of such security features	FIPS 201-1, Section 4.1.2	1.1-38	Vendor Documentation Review Lab Test Data Report

Identifier #	Requirement Description	Source	Reqt. #	Approval Mechanism
	include: <ul style="list-style-type: none"> • Optical varying structures; • Optical varying inks; • Laser etching and engraving; • Holograms; • Holographic images; and • Watermarks 			
CPS.8	Incorporation of security features shall: <ul style="list-style-type: none"> • Be in accordance with durability requirements of ISO-7810 Be free of defects, such as fading and discoloration; • Not obscure printed information; and • Not impede access to machine-readable information 	FIPS 201-1, Section 4.1.2	1.1-39	Vendor Documentation Review Lab Test Data Report
CPS.9	The PIV Card shall not be embossed.	FIPS 201-1, Section 4.1.3	1.1-40	Lab Test Data Report
CPS.10	Decals shall not be adhered to the card.	FIPS 201-1, Section 4.1.3	1.1-41	Lab Test Data Report
CPS.11	The reagents called out in Section 5.4.1.1 of ISO 10373 shall be modified to include a two percent soap solution.	FIPS 201-1, Section 4.1.3	1.1-45	Vendor Test Data Report
CPS.12	The ANSI 322 tests shall include the Bar Code Abrasion (1D) test. This test applies only if the printer has the ability to print Linear 3 of 9 barcodes.	Derived	N/A	Vendor Test Data Report
CPS.13	The card shall be subjected to actual, concentrated, or artificial sunlight to appropriately reflect 2000 hours of southwestern United States' sunlight exposure. The tests shall be in accordance with ANSI 322, Section 5.15.	FIPS 201-1, Section 4.1.3	1.1-46	Vendor Test Data Report
CPS.14	The tests shall include the ANSI 322 Daylight Exposure Image Stability –	FIPS 201-1, Section	1.1-45	Vendor Test

Identifier #	Requirement Description	Source	Req. #	Approval Mechanism
	Xenon Arc.	4.1.3		Data Report
CPS.15	The card shall be subjected to the ISO 10373 dynamic bending test and shall have no visible cracks or failures.	FIPS 201-1, Section 4.1.3	1.1-45	Vendor Test Data Report
CPS.16	The ANSI 322 tests shall include the Image Abrasion Test.	Derived	N/A	Vendor Test Data Report
CPS.17	The ANSI 322 tests shall include the Temperature and Humidity Induced Dye Migration Test.	FIPS 201-1, Section 4.1.3	1.1-45	Vendor Test Data Report
CPS.18	The ANSI 322 tests shall include the Plasticizer Induced Dye Migration Test.	FIPS 201-1, Section 4.1.3	1.1-45	Vendor Test Data Report
CPS.19	The ANSI 322 tests shall include a laundry test.	FIPS 201-1, Section 4.1.3	1.1-45	Vendor Test Data Report
CPS.20	The card material shall allow production of a flat card in accordance with ISO 7810 after lamination of one or both sides of the card.	FIPS 201-1, Section 4.1.3	1.1-43	Vendor Test Data Report
CPS.21	Cards shall not malfunction after hand cleaning with a mild soap and water mixture.	FIPS 201-1, Section 4.1.3	1.1-45	Vendor Test Data Report Lab Test Data Report
CPS.22	Zone 1—Photograph. The photograph shall be placed in the upper left corner as depicted in Figure 4-1.	FIPS 201-1, Section 4.1.4.1	1.1-54	Lab Test Data Report
CPS.23	Zone 2—Name. The full name, or alternatively, pseudonyms as provided under the law, shall be printed directly under the photograph.	FIPS 201-1, Section 4.1.4.1	1.1-55	Lab Test Data Report
CPS.24	Zone 2—Name. The name shall be printed [directly below the photograph].	FIPS 201-1, Section 4.1.4.1	1.1-55	Lab Test Data Report
CPS.25	Zone 2—Name. The font shall be a minimum of 10 point.	FIPS 201-1, Section 4.1.4.1	1.1-55	Lab Test Data Report
CPS.26	Zone 8—Employee Affiliation. A printed employee affiliation shall be	FIPS 201-1, Section	1.1-56	Lab Test Data Report

Identifier #	Requirement Description	Source	Req. #	Approval Mechanism
	printed on the card. Some examples of employee affiliation are “CONTRACTOR,” “ACTIVE DUTY,” and “CIVILIAN.”	4.1.4.1		
CPS.27	Zone 10— Organizational Affiliation. The Organizational Affiliation shall be printed as depicted in Figure 4-1.	FIPS 201-1, Section 4.1.4.1	1.1-57	Lab Test Data Report
CPS.28	Zone 14—Expiration Date. The card expiration date shall be printed in a YYYYMMDD format.	FIPS 201-1, Section 4.1.4.1	1.1-58	Lab Test Data Report
CPS.29	Zone 1—Agency Card Serial Number. This item shall contain the unique serial number from the issuing department or agency. This zone shall be left-justified.	FIPS 201-1, Section 4.1.4.2	1.1-59	Lab Test Data Report
CPS.30	Zone 2—Issuer Identification. This item shall consist of six characters for the department code, four characters for the agency code, and a five-digit number that uniquely identifies the issuing facility within the department or agency. This zone shall be right-justified.	FIPS 201-1, Section 4.1.4.2	1.1-60	Lab Test Data Report
CPS.31	Zone 3—Signature. If used, the space for the signature shall not interfere with the contact and contactless placement.	FIPS 201-1, Section 4.1.4.3	1.1-61	Lab Test Data Report
CPS.32	Zone 4—Agency Specific text area. If used, [No requirement]	FIPS 201-1, Section 4.1.4.3	1.1-62	Lab Test Data Report
CPS.33	Zone 5—Rank. If used, the cardholder’s rank shall be printed in the area as illustrated.	FIPS 201-1, Section 4.1.4.3	1.1-63	Lab Test Data Report
CPS.34	Zone 6—Portable Data File (PDF) Two-Dimensional Bar Code. If used, the PDF bar code placement shall be as depicted in the diagram (i.e., left side of the card).	FIPS 201-1, Section 4.1.4.3	1.1-64	Lab Test Data Report
CPS.35	Zone 9— Header. If used, the text “United States Government” shall be	FIPS 201-1, Section	1.1-65	Lab Test Data Report

Identifier #	Requirement Description	Source	Req. #	Approval Mechanism
	placed as depicted in Figure 4-1.	4.1.4.3		
CPS.36	Zone 9— Header. If used, departments and agencies may choose to use this zone for other department or agency-specific information, such as identifying a Federal emergency responder role, as depicted in Figure 4-2.	FIPS 201-1, Section 4.1.4.3	1.1-65	Lab Test Data Report
CPS.37	Zone 11—Agency Seal. If used, the seal selected by the issuing department, agency, or organization shall be printed in the area depicted.	FIPS 201-1, Section 4.1.4.3	1.1-66	Lab Test Data Report
CPS.38	Zone 11—Agency Seal. If used, it shall be printed using the guidelines provided in Figure 4-2 to ensure information printed on the seal is legible and clearly visible. This zone shall be 20 x 20 mm in dimensions.	FIPS 201-1, Section 4.1.4.3	1.1-66	Lab Test Data Report
CPS.39	Zone 12—Footer. If used, a department or agency may print “Federal Emergency Response Official” as depicted in Figure 4-2.	FIPS 201-1, Section 4.1.4.3	1.1-67	Lab Test Data Report
CPS.40	Zone 12—Footer. If used, the departments or agency may also print a secondary line in Zone 9 to further identify the Federal emergency respondent’s official role. Some examples of official roles are “Law Enforcement,” “Firefighter” and “Emergency Response Team (ERT)”.	FIPS 201-1, Section 4.1.4.3	1.1-67	Lab Test Data Report
CPS.41	Zone 13—Issue Date. If used, the card issuance date shall be printed above of the expiration date in YYYYMMDD format as depicted in Figure 4-2.	FIPS 201-1, Section 4.1.4.3	1.1-68	Lab Test Data Report
CPS.42	Zone 15—Color-Coding for Employee Affiliation. If used, color-coding shall be used as a background color for Zone 2 (name) as depicted in Figure 4-4.	FIPS 201-1, Section 4.1.4.3	1.1-69	Lab Test Data Report

Identifier #	Requirement Description	Source	Req. #	Approval Mechanism
CPS.43	Zone 15—Color-Coding for Employee Affiliation. If used, the following color scheme shall be used for the noted categories: a. Blue—foreign nationals b. Red—emergency responder officials c. Green—contractors	FIPS 201-1, Section 4.1.4.3	1.1-69	Lab Test Data Report
CPS.44	Zone 15—Color-Coding for Employee Affiliation. If used, blue, red and green shall be reserved color-codes and shall not be employed for other purposes.	FIPS 201-1, Section 4.1.4.3	1.1-69	Lab Test Data Report
CPS.45	Zone 16—Photo Border for Employee Affiliation. If used, the photo border shall not obscure the photo.	FIPS 201-1, Section 4.1.4.3	1.1-70	Lab Test Data Report
CPS.46	Zone 16—Photo Border for Employee Affiliation. If used, red shall be reserved for emergency response officials, blue for foreign nationals, and green for contractors. All other colors may be used at the department or agency’s discretion.	FIPS 201-1, Section 4.1.4.3	1.1-70	Lab Test Data Report
CPS.47	Zone 17—Agency Specific Data. If used, Zone 17 may display other department or agency-specific information, as depicted in Figure 4-5. [Note that Zone 17 overlaps Zone 3 and Zone 12, and is only available if these other zones are not used.]	FIPS 201-1, Section 4.1.4.3	1.1-71	Lab Test Data Report
CPS.48	The card material shall withstand the effects of temperatures required by the application of a polyester laminate on one or both sides of the card by commercial off-the-shelf (COTS) equipment.	FIPS 201-1, Section 4.1.3	1.1-43	Vendor Test Data Report Lab Test Data Report
CPS.49	Zone 4—Return To. If used, the “return if lost” language shall be generally placed on the back of the card as depicted in Figure 4-7. The font shall be 5pt Arial Normal.	FIPS 201-1, Section 4.1.4.4	1.1-73	Lab Test Data Report

Identifier #	Requirement Description	Source	Req. #	Approval Mechanism
CPS.50	Zone 5—Physical Characteristics of Cardholder. If used, the cardholder physical characteristics (e.g., height, eye color, hair color) shall be printed in the general area illustrated in Figure 4-7. English measurements shall be used.	FIPS 201-1, Section 4.1.4.4	1.1-74	Lab Test Data Report
CPS.51	Zone 6—Additional Language for Emergency Responder Officials. If used, this additional text shall not interfere with other printed text components or machine-readable components. The font shall be 5pt Arial Normal.	FIPS 201-1, Section 4.1.4.4	1.1-75	Lab Test Data Report
CPS.52	Zone 7—Standard Section 499, Title 18 Language. If used, standard Section 499, Title 18, language warning against counterfeiting, altering, or misusing the card shall be printed in the general area depicted in Figure 4-7. The font shall be 5pt Arial Normal.	FIPS 201-1, Section 4.1.4.4	1.1-76	Lab Test Data Report
CPS.53	Zone 8—Linear 3 of 9 Bar Code. If used, a linear 3 of 9 bar code shall be generally placed as depicted in Figure 4-7.	FIPS 201-1, Section 4.1.4.4	1.1-77	Lab Test Data Report
CPS.54	Zone 8—Linear 3 of 9 Bar Code. If used, a linear 3 of 9 bar code shall be in accordance with Association for Automatic Identification and Mobility (AIM) standards.	FIPS 201-1, Section 4.1.4.4	1.1-77	Vendor Documentation Review Vendor Test Data Report
CPS.55	Zone 8—Linear 3 of 9 Bar Code. If used, beginning and end points of the bar code will be dependent on the embedded contactless module selected.	FIPS 201-1, Section 4.1.4.4	1.1-77	Lab Test Data Report
CPS.56	Zone 9, Zone 10—Agency-Specific Text. If used, Zone 9 may display other department or agency-specific information, as depicted in Figure 4-8. [Note that Zone 9 overlaps Zone 6 and Zone 7, and is only available if these	FIPS 201-1, Section 4.1.4.4	1.1-78	Lab Test Data Report

Identifier #	Requirement Description	Source	Req. #	Approval Mechanism
	other zones are not used.]			
CPS.57	Unless otherwise specified, the recommended font size is 5pt normal weight for data labels (also referred to as tags).	FIPS 201-1, Section 4.1.4.4	1.1-81	Lab Test Data Report
CPS.58	Unless otherwise specified, the recommended font size is 6pt bold for actual data.	FIPS 201-1, Section 4.1.4.4	1.1-82	Lab Test Data Report
CPS.59	All text is to be printed using the Arial font.	FIPS 201-1, Section 4.1.4.4	1.1-80	Lab Test Data Report
CPS.60	The thickness added due to a laminate layer shall not interfere with the smart card reader operation.	FIPS 201-1, Section 4.1.3	1.1-43	Vendor Test Data Report Lab Test Data Report
CPS.61	Zone areas printed on PIV Cards shall be precisely placed in position using the measurements defined by FIPS 201.	Derived	N/A	Vendor Test Data Report Lab Test Data Report
CPS.62	All letterings on the PIV Card shall be printed in black except as explicitly stated. <i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i>	SP 800-104, Section 2.1	7-1	Lab Test Data Report
CPS.63	The ERO color-coding, when used, shall be depicted at the footer location of Zone 12 and must print “Emergency Response Official” with white lettering on a red background. <i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i>	SP 800-104, Section 2.1	7-4	Lab Test Data Report
CPS.64	When Zone 15 indicates Foreign National affiliation and the department or agency does not need to highlight ERO status, the footer location of Zone 12 may be used to denote the country or countries of citizenship. If so used, the department or agency shall print the country name or the three letter country abbreviation	SP 800-104, Section 2.1	7-6	Lab Test Data Report Vendor Documentation Review

Identifier #	Requirement Description	Source	Req. #	Approval Mechanism
	(alpha-3 format) in accordance with ISO 3166-1, Country Codes [ISO 3166]. <i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i>			
CPS.65	Zone 18—Affiliation Color Code. The affiliation color code “B” for Blue or “G” for Green shall be printed in a white circle in Zone 15. <i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i>	SP 800-104, Section 2.3	7-8	Lab Test Data Report
CPS.66	The diameter of the circle shall be 5 mm. <i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i>	SP 800-104, Section 2.3	7-9	Lab Test Data Report
CPS.67	The lettering shall correspond to the printed color in Zone 15. <i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i>	SP 800-104, Section 2.3	7-10	Lab Test Data Report
CPS.68	Zone 19—Expiration Date. The card expiration date shall be printed in a MMMYYYY format in the upper right hand corner. <i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i>	SP 800-104, Section 2.3	7-11	Lab Test Data Report
CPS.69	The expiration date shall be printed in Arial 12pt Bold. <i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i>	SP 800-104, Section 2.3	7-12	Lab Test Data Report
CPS.70	Zone 20—Organizational Affiliation Abbreviation. The organizational affiliation abbreviation may be printed in the upper right hand corner below the date as shown in Figure 1. <i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i>	SP 800-104, Section 2.3	7-13	Lab Test Data Report
CPS.71	If printed, the organizational affiliation abbreviation shall be printed in Arial 12pt Bold. <i>(This requirement will be evaluated only if SP</i>	SP 800-104, Section 2.3	7-14	Lab Test Data Report

Identifier #	Requirement Description	Source	Req. #	Approval Mechanism
	<i>800-104 zones are able to be printed)</i>			
CPS.72	<p>White color values are printed as follows:</p> <ul style="list-style-type: none"> • sRGB Tristimulus value {255, 255, 255} • sRGB value {255, 255, 255} • CMYK value {0, 0, 0, 0} • Pantone value {White} <p><i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i></p>	SP 800-104, Section 2.4	7-18 7-19 7-20 7-21	Lab Test Data Report
CPS.73	<p>Green color values are printed as follows:</p> <ul style="list-style-type: none"> • sRGB Tristimulus value {153, 255, 153} • sRGB value {203, 255, 203} • CMYK value {40, 0, 40, 0} • Pantone value {359C} <p><i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i></p>	SP 800-104, Section 2.4	7-22 7-23 7-24 7-25	Lab Test Data Report
CPS.74	<p>Blue color values are printed as follows:</p> <ul style="list-style-type: none"> • sRGB Tristimulus value {0, 255, 255} • sRGB value {0, 255, 255} • CMYK value {100, 0, 0, 0} • Pantone value {630C} <p><i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i></p>	SP 800-104, Section 2.4	7-26 7-27 7-28 7-29	Lab Test Data Report
CPS.75	<p>Red color values are printed as follows:</p> <ul style="list-style-type: none"> • sRGB Tristimulus value {253, 27, 0} • sRGB value {254, 92, 79} • CMYK value {0, 90, 86, 0} • Pantone value {032C} <p><i>(This requirement will be evaluated only if SP 800-104 zones are able to be printed)</i></p>	SP 800-104, Section 2.4	7-30 7-31 7-32 7-33	Lab Test Data Report

Table 1 - Applicable Requirements

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	LTDR	VDR	C	A
75	N/A	17	59	8	N/A	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 Vendor Test Data Report

The Lab will update the status in the Web-Enabled Tool to “VTDR Begun” as instructed in the Web-enabled Tool Laboratory User Guide.

3.3.1.1 CPS.4, CPS.5

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Print Capabilities:</i> The CPS is capable of printing on dual interface cards. • <i>Yield Rate:</i> 98% of cards produced by the CPS are acceptable in print quality and both the contact and contactless interfaces are fully functional. <p>At a minimum, the following test scenario must be performed to confirm compliance:</p> <ol style="list-style-type: none"> a. A minimum sampling size of 50 PIV Cards¹ was used b. An Answer to Reset (ATR) from both the contact and contactless interfaces was obtained from each of the 50 PIV Cards prior to printing. c. Front and back of the 50 PIV Cards were graphically personalized. d. Obtain the ATR from both the contact and contactless interfaces once again after graphical personalization. <p><i>Note:</i> Suppliers in their documentation/report need to provide the ATR values received for the cards as part of their test result and all other accompanying information needed to prove successful completion of this test.</p>
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Expected Results:	The test results shows that 49 PIV Cards were acceptable after the graphical personalization activity and the ATR from both the contact and contactless interfaces was obtained successfully once again for at least 49 PIV Cards.
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3.3.1.2 CPS.11

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Resistance to Chemicals:</i> The Product has been tested using the test procedure defined in Section 5.4.2 of ISO 10373. <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <ol style="list-style-type: none"> a. A report generated as a result of chemical testing which shows the short term contamination tests have been performed as called out in ISO 10373. The short term contamination test shall include a test using a two percent soap and water solution which has been completed. Each test (8 total) must be performed on two (2) cards.
Expected Result:	All cards tested remain visually in good condition, meaning cards are not bent, twisted, puckered, bubbles have not started to form on the surface, or portions of the card dissolved.

3.3.1.3 CPS.12

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Bar Code Abrasion:</i> The Product has been tested using the test procedure defined in Section 5.10.4 of ANSI 322 with test cards generated by the standard configuration of the Supplier's card printer. <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <ol style="list-style-type: none"> a. A report generated as a result of bar code abrasion test which shows that two (2) cards have been tested until 3,500 Taber cycles. The bar code must be placed as specified in Figure 18 of ANSI 322.
Expected Result:	Both cards tested have an ANSI grade of D or higher after completion of the 3,500 Taber cycles.

3.3.1.4 CPS.13, CPS.15

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ol style="list-style-type: none"> a. <i>Sunlight Exposure:</i> The Product has been tested using the test procedures defined in ANSI 322, Section 5.15. • <i>Dynamic Bending Stress:</i> The Product has been subjected to a dynamic bending stress test described in ISO 10373, Section 5.8
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	<p>using the apparatus depicted in Figure 10.</p> <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <ol style="list-style-type: none"> a. A report generated as a result of sunlight exposure, showing that four (4) cards were tested – 1 pair tested using the front and the other pair tested using the back. b. Using the cards tested in the sunlight exposure test, subject each card to the ISO 10373 dynamic bending stress test. With the card facing up, perform 250 bends. Repeat this process on the perpendicular axis. Flip the card over and repeat both tests again. A total of 1,000 bends per card shall be performed.
<p>Expected Result:</p>	<ol style="list-style-type: none"> 1. At the end of the sunlight exposure test, each tested card has a reflection density increase of less than 20%². 2. Graphic overlays should not be peeling, bubbling, or cracking.

3.3.1.5 CPS.14, CPS.15

<p>Evaluation Procedure:</p>	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Daylight Exposure Image Stability – Xenon Arc Test:</i> The Product has been tested using the test procedure defined in Section 5.16.4 of ANSI 322 in accordance with the precondition defined in Section 5.16.3 with test cards generated by the standard configuration of the Supplier’s card printer in accordance with the precondition described in Section 5.16.3, using the apparatus described in Section 5.16.2. • <i>Dynamic Bending Stress:</i> The Product has been subjected to a dynamic bending stress test described in ISO 10373, Section 5.8 using the apparatus depicted in Figure 10. <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <ol style="list-style-type: none"> a. A report generated as a result of the daylight exposure image stability test which shows that two (2) pairs of cards (4 cards total) have been tested – 1 pair tested using the front and the other pair tested using the back. a. Using the cards tested in the sunlight exposure test, subject each card to the ISO 10373 dynamic bending stress test. With the card facing up, perform 250 bends. Repeat this process on the perpendicular axis. Flip the card over and repeat both tests again. A total of 1,000 bends per card shall be performed.
<p>Expected Result:</p>	<ol style="list-style-type: none"> 1. At the end of the test, the colored squares found on all cards tested each have a reflection density decrease of less than 20%.

² This is calculated using unprinted areas on the PIV Card (used to determine the extent of “yellowing” of the card).

	2. Graphic overlays should not be peeling, bubbling, or cracking.
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3.3.1.6 CPS.16

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Image Abrasion</i>: The Product has been tested using the test procedure defined in Section 5.12.4 of ANSI 322 with test cards generated by the standard configuration of the Supplier's card printer in accordance with the pre-condition defined in Section 5.12.3 of ANSI 322 as depicted in Figure 20. <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <ol style="list-style-type: none"> a. A report generated as a result of image abrasion test which shows that two (2) pairs of cards (4 cards total) have been tested – 1 pair tested using the front and the other pair tested using the back³ until 3,500 Taber cycles.
Expected Result:	At the end of the test (i.e. 3,500 Taber cycles), both pairs of cards (2 tested on the front and 2 on the back) have reflection densities (for yellow, magenta, cyan, composite black, resin black) that is not below 50% of its original value.

3.3.1.7 CPS.17

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Temperature and Humidity Induced Dye Migration</i>: The Product has been tested using the test procedure defined in Section 5.13.4 of ANSI 322 with test cards generated by the standard configuration of the Supplier's card printer in accordance with the pre-condition defined in Section 5.13.3 of ANSI 322 as depicted in Figure 21. <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <ol style="list-style-type: none"> a. A report generated as a result of temperature and humidity induced dye migration test which shows that two (2) pairs of cards (4 cards total) have been tested – 1 pair tested using the front and the other pair tested using the back³.
Expected Result:	At the end of the test, both pairs of cards (2 tested on the front and 2 on the back) have reflection density increases (for composite black, magenta,

³ The Image Abrasion test on the back of the card needs to be only completed if the bar code abrasion test has not been performed. Additionally, if the product has the capability to only print monochrome on the back of the card, the image abrasion test (on the back of the card) may be performed using only black. If the product is approved, the restriction column on the APL will reflect the Product's limited ability to print only black on the back of the card.

	yellow, and cyan) of less than 20%.
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3.3.1.8 CPS.18

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Plasticizer Induced Dye Migration Test:</i> The Product has been tested using the test procedure defined in Section 5.14.4 of ANSI 322 with test cards generated by the standard configuration of the Supplier's card printer in accordance with the pre-condition defined in Section 5.14.3 of ANSI 322 as depicted in Figure 22. <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <ol style="list-style-type: none"> a. A report generated as a result of plasticizer induced dye migration test which shows that two (2) pairs of cards (4 cards total) have been tested – 1 pair tested using the front and the other pair tested using the back³ – for an exposure period of 48 hrs.
Expected Result:	At the end of the test (i.e. 48 hrs), both pairs of cards (2 tested on the front and 2 on the back) have retained 75% of the original contrast.

3.3.1.9 CPS.19

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Laundry Test:</i> The Product has been tested using the test procedure defined in Section 5.17.4 of ANSI 322 with test cards generated by the standard configuration of the Supplier's card printer. <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <ol style="list-style-type: none"> a. A report generated as a result of laundry test which shows that two (2) cards have been tested.
Expected Result:	At the end of the test, both cards shall not show signs of delamination, bubbling, warpage or water penetration.

3.3.1.10 CPS.20

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Flat Card Production:</i> The Product has been tested to simulate the effects of lamination of the card, using the test procedure found in ISO 7810, Annex A. <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <ol style="list-style-type: none"> a. A report showing that ten (10) cards were subjected to the heat
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	<p>resistance test described in ISO 7810. Five (5) cards are tested with the front side up and the remaining with the back side up.</p> <p>b. The Δh values for each of the cards tested.</p>
Expected Result:	The cards subjected to the heat test have a Δh value less than 3 mm.

3.3.1.11 CPS.21

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Hand Cleaning:</i> The Product has been tested to verify that the personalized card does not delaminate after cleaning with a mild soap solution (e.g. Dawn, Joy, Palmolive, etc.). <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <p>a. A report generated as a result of hand cleaning which shows the length of time (minimum 60 seconds) for which the card was washed, the type of soap used, and whether or not the card has delaminated or shows signs of delamination.</p>
Expected Result:	The cards have not delaminated or show signs of delamination.

3.3.1.12 CPS.48, CPS.60

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Application of Laminate:</i> The Product has been tested to ensure that the card is capable of withstanding the temperature effects of laminate application. • <i>Card Thickness:</i> The Product has been tested to verify that the personalized cards do not interfere with smart card reader operation. <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <p>a. Graphically personalize all cards as specified in Appendix A, that are to be submitted for evaluation.</p> <p>b. Visually examine all cards to ensure that the cards have not warped or bent, that the Integrated Circuit remains firmly in place and the antenna has not been exposed as a result of lamination.</p> <p>c. Ensure that laminated cards remain functional by (i) insert the cards into a contact smart card reader and (ii) hover the cards within 10 cm of a contactless smart card reader. As a result of both tests, the cards shall respond by presenting their ATR to the smart card reader.</p>
Expected Result:	1. The cards have not warped or bent, the integrated circuit remains firmly in contact and the card is visually in excellent condition after the

	<p>personalization process.</p> <p>2. The cards respond to the smart card reader with their ATR string.</p>
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3.3.1.13 **CPS.54**

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Linear 3 of 9 Bar Code Testing:</i> The Product has been tested to verify that the linear 3 of 9 bar codes applied by the printer are in accordance with the Association for Automatic Identification and Mobility (AIM) standards. <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <ol style="list-style-type: none"> a. The verifier used to determine compliance with the AIM standard for linear 3 of 9 bar codes. b. The output report for each card submitted to the Lab which displays the test results generated by the verifier.
Expected Result:	<p>The scan profile analysis performed by the verifier reports 75% or better for each test performed by the device.</p>

3.3.1.14 **CPS.61**

Evaluation Procedure:	<p>The Lab will review the documentation submitted by the Supplier to ascertain the following:</p> <ul style="list-style-type: none"> • <i>Zone Placement:</i> The Product has been tested to verify that the zones printed on personalized cards are placed precisely as defined by FIPS 201. <p>As a result of testing, the following must be included as part of the Vendor Test Data forwarded to the Lab:</p> <ol style="list-style-type: none"> a. Print the cards which will be submitted for evaluation, as defined by Appendix A. b. Using the templates provided in Attachment 1, which have been printed on transparency film, align each card with its corresponding template. c. Verify that the zones printed on the card are within the allowed measurement variances as described in Appendix A.
Expected Result:	<p>The zones printed on submitted cards do not vary more than 0.5mm for non-bordering zones and 0.2mm for bordering zones.</p>

The Lab will update the status in the Web-Enabled Tool to “VTDR Complete” as instructed in the Web-enabled Tool Laboratory User Guide.

3.3.2 Vendor Documentation Review

Reference(s):	CPS.1 to CPS.3, CPS.6 to CPS.8, CPS.54, CPS.64
Evaluation Procedure:	<ol style="list-style-type: none"> 1. The Lab will update the status in the Web-Enabled Tool to “VDR Begun” as instructed in the Web-enabled Tool Laboratory User Guide. 2. The Lab will review the Product’s documentation to determine the following. At a minimum the documents submitted by the Supplier must include: <ul style="list-style-type: none"> ▪ <i>Printing Process (CPS.1, CPS.2)</i> <ul style="list-style-type: none"> • A statement indicating that the printing process does not deposit debris on the printer rollers during printing and laminating. • A statement indicating that printed material does not interfere with the contact and contactless ICCs and related components. ▪ <i>Card Personalization (CPS.3)</i> <ul style="list-style-type: none"> • A statement indicating that the printer supports graphical personalization of the card ▪ <i>Print Resolution (CPS.6)</i> <ul style="list-style-type: none"> • A statement indicating that the printer is capable of printing at a resolution of 300 dots per inch or greater. ▪ <i>Printable Security Features (CPS.7, CPS.8)</i> <ul style="list-style-type: none"> • Cards submitted for evaluation contain examples of all security features that are able to be printed by the Service. Note that additional cards, beyond the 5 prescribed by Appendix A may need to be submitted to satisfy this requirement. • The security feature(s) is/are in accordance with the requirements of CPS.38, which satisfy the durability requirements of ISO 7810. • The printable security feature(s) is free of any defects such as fading and discoloration. • The printable security feature(s) does not obscure any printed information. • The printable security feature(s) does not impede access to machine-readable information. ▪ <i>Linear 3 of 9 Bar Codes (CPS.54)</i> <ul style="list-style-type: none"> • A statement by the Service Provider that all linear 3 of 9 bar codes are printed in accordance with the Association for Automatic Identification and Mobility (AIM) standards. • A process description whereby the printed linear 3 of 9 bar codes on each batch of printed PIV Cards are randomly tested to ensure the quality of printing is sufficient and that the bar codes are able to be read by scanning equipment. ▪ <i>Country Abbreviations (CPS.64)</i> <ul style="list-style-type: none"> • If SP 800-104 printing is supported, the Suppliers implementation of the list of acceptable country codes, as prescribed by ISO 3166-1, shall be submitted.

	3. The Lab will update the status to “VDR Complete” as instructed in the Web-enabled Tool Laboratory User Guide.
Expected Results:	<ol style="list-style-type: none"> 1. The Product supports a printing process that does not deposit debris on the rollers and printed material does not interfere with the contact and contactless ICCs of the PIV Card. 2. The Product supports graphical personalization of the PIV Card. 3. The Product is capable of printing at a resolution of 300 dpi or greater. 4. Graphically Personalized Cards, if applicable, conform to the printable security features requirements listed.

3.3.3 Lab Test Data Report

Reference(s):	CPS.7 to CPS.10, CPS.21 to CPS.53, CPS.55 to CPS.75
Test Procedure:	<ol style="list-style-type: none"> 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 “<i>Graphical Personalization Test Procedure</i>”. 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.

3.3.4 Attestation

Reference(s):	N/A
Evaluation Procedure:	<ol style="list-style-type: none"> 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:	1. The Attestation Form has been signed by an authorized individual (e.g. CSO, CEO, CIO, CFO, Vice-President, President, Business Partner or Owner).

3.3.5 Compatibility Testing

In the event that the Supplier manufactures only the software component, the Supplier will have to demonstrate to the Lab, the compatibility and proper functioning of the Supplier’s software component along with the hardware device. In this respect, the Supplier has the following options:

1. Setup a time to visit the Lab with the Product; or
2. Make provisions for a Lab Technician to visit the Supplier's facility and review the Product.
3. The above two options need not be exercised, if the Supplier submits a letter from the card printer station hardware vendor stating the compatibility of the Supplier's software with the hardware.

If found to be compliant, the Supplier's Product will be placed on the Approved List with a restriction requiring implementation with the specific hardware device.

Appendix A: Specification for Personalized Cards Submitted to the Lab

For cards sent to the Lab for evaluation, reference the table below. Please ensure that each card submitted has all of the mandatory fields, marked by “M”, printed. For cards that have optional fields (marked by “O”), the Supplier may print these fields on the submitted card to show the capability of their product to print optional fields.

Unless noted with an asterisk (*), the measurement for each zone printed on the card shall not vary from the measurements prescribed by FIPS 201-1 more than 0.2 mm in the X and Y directions. Zones marked with an asterisk (*) shall not vary more than 0.5 mm. Refer to Attachment 1 for the templates that are to be used when measuring variances in distances. Note that these templates can be printed on transparency film to be used as an overlay to verify that all zones printed on the card satisfy the exact measurements as per FIPS 201-1.

Card		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 10	Zone 11	Zone 12	Zone 13	Zone 14	Zone 15	Zone 16	Zone 17	Zone 18	Zone 19	Zone 20	Employee Affiliation Color	
1	Front	M	M						M		M				M								White
	Back	M	M																				
2	Front	M	M	O			O ⁴		M	O ⁵	M	O		O	M	O	O						Blue
	Back	M	M							O	O												
3	Front	M	M		O	O*			M	O ⁶	M		O ⁷		M	O	O						Red
	Back	M	M		O	O	O	O	O														
4	Front	M	M		O		O		M		M				M	O		O					Green
	Back	M	M					O*			O*												
5	Front	M	M	O		O			M		M			O	M		O						Green
	Back	M	M				O				O*												
6	Front	M	M						M		M				M	O	O		O	O	O		Blue
	Back	M	M																				
7	Front	M	M						M		M		O		M	O	O		O	O	O		Green
	Back	M	M																				

Notes:

1. Cards 6 and 7 are optional but must be submitted if SP 800-104 compliance is to be achieved.
2. Zones 1 and 2 on the back of the card shall begin at 48 mm from the left edge.
3. Zone 2 – Names, on the front of the card shall be formatted as:

**Last Name,
First Name, MI.**

⁴ Zone 6 – Size of PDF barcode should be reduced to not interfere with Zone 3

⁵ Zone 9 – This field is to read “United States Government”

⁶ Zone 9 – This field is to read “Fire Fighter”

⁷ Zone 12 - This field is to read “Federal Emergency Response Official”

Front of Card – Mandatory Elements				
Zone #	Description	Content	Font	Comments
Zone 1	Photo of subject	Full frontal photo of Cardholder	Dimensions = 37.0 x 27.75 (.75 aspect) Resolution ≥ 300 dpi	Photograph shall be placed in the upper left corner.
Zone 2	Name of subject	Last Name, First Name, MI.	Arial 10 pt Bold	
Zone 8	Employee affiliation	e.g. "CONTRACTOR, "ACTIVE DUTY", "CIVILIAN"	Arial 6 pt Bold	
Zone 10	Organizational affiliation	Agency, Department or Organization affiliation of the Cardholder.	Arial 6 pt Bold	An optional second line may be used to print additional information if necessary
Zone 14	Expiration Date	YYYYMMDD format (e.g. "2013SEP12")	Arial 6 pt Bold	The actual expiration date shall be printed according to the current date and time. Expiration date shall not exceed 5 years past issuance date, if printed.

Front of Card – Optional Elements				
Zone 3	Signature	Signature of Cardholder	N/A	The signature shall be placed below the photograph.
Zone 4	Agency Specific text	Agency specific requirements (i.e. employee status)	Arial 6 pt Bold	
Zone 5	Rank	Rank of subject	Arial 6 pt Bold	Department / agency specific
Zone 6	Two-Dimensional Bar Code	Portable Data File (PDF) two-dimensional bar code	Arial 6 pt Bold	
Zone 9	Header	"United States Government"	Arial 6 pt Bold	If Zone 12 is used, Zone 9 may identify Federal emergency responder role (e.g. "Firefighter")
Zone 11	Agency Seal	Seal of the issuing department, agency or organization	Dimension = 20 x 20 mm	The Agency seal shall be legible and clearly visible
Zone 12	Footer	Preferred location for the "Federal Emergency Response Official"	Arial 6 pt Bold	Bottom of the card is preferred. Area beneath Zone 2 shall be used if printing is not permitted at the bottom
Zone 13	Issue Date	YYYYMMDD format (e.g. "2007SEP12")	Arial 6 pt Bold	Issuance date shall be printed above the expiration date
Zone 15	Employee affiliation color code	Following color schemes are reserved and shall be used for depicting employee affiliation: a. Blue – foreign nationals b. Red – emergency responder officials c. Green - contractors	N/A	May be a solid or gradient shaded line.
Zone 16	Employee affiliation photo border	Following color schemes are reserved and shall be used in the employee affiliation photo border: a. Red - Emergency Responders b. Blue - Foreign Nationals c. Green - Contractors	N/A	Color must match Zone 15.
Zone 17	Agency Specific Data	Other department or agency-specific information	Arial 6 pt Bold	Zone 17 overlaps Zones 3 & 12, and only used if specified zones are not available.

Back of Card – Mandatory Elements				
Zone 1	Agency Card Serial Number	Unique serial number from the issuing department or	Arial 6 pt Bold	Serial Number Zone shall be left justified

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		agency.		
Zone 2	Issuer Identification	[6] Characters – department code [4] Characters – agency code [5] Numbers – issuing facility within the department / agency	Arial 6 pt Bold	Issuer Identification Zone shall be right justified
Back of Card – Optional Elements				
Zone 4	Return To Language	Return Address	Arial 5 pt Normal	
Zone 5	Physical characteristics of card holder	i.e. Height, Eyes, Hair	Arial 6 pt Bold	Units of physical characteristics shall be English
Zone 6	Additional language for emergency responder official	“The bearer of this card is a designated Emergency responder. After credential verification, bearer should be given access to controlled areas”	Arial 5 pt Normal	The text shall not interfere with other printed text
Zone 7	Section 499, Title 18 language	“This credential is the property of the U.S. Government. Counterfeiting, altering, or misusing violates Section 499, Title 18 of the U.S. Code.”	Arial 5 pt Normal	
Zone 8	Linear 3 of 9 Bar Code	N/A	N/A	Bar code shall be in accordance with Association for Automatic Identification and Mobility (AIM) standards.
Zone 9	Agency specific text	Other agency or department specific information (e.g. Medical Care Information)	Data - Arial 6 pt Bold	Zone 9 overlaps Zones 6 & 7 and is only used if specified zones are not available
Zone 10	Agency specific text	Other agency or department specific information (e.g. DOB, ID, Geneva Conv.)	Data - Arial 6 pt Bold	Zone 10 overlaps zone 4 & 5 and is only used if specified zones are not available

SP 104 Elements – Front of Card					
Zone #	Description	Content	Font	Comments	
Zone 12	Footer	“Emergency Response Official”	Arial 7 pt Bold White lettering on red background	Zone 12 may be used to denote the country or countries of citizenship when Zone 15 indicates Foreign National affiliation and the organization does not need to highlight ERO status. If used the country name or the 3-letter country abbreviation (alpha-3) shall be printed in accordance with ISO 3166.	
Zone 15	Employee Affiliation color code	Following color schemes are reserved and shall be used for depicting employee affiliation: a. Blue – foreign nationals b. White ¹ – Government Employee c. Green – contractors ¹ Note that the card body shall be white	N/A		
Zone 18	Affiliation Color Code	Employee affiliation color coding lettering “B” – Blue “G” - Green	Arial 6 pt Bold Circle Diameter = 5mm	Color Code lettering shall be printed in a white circle in Zone 15	
Zone 19	Expiration Date	MMMYYYYY format (“SEP2010”)	Arial 12 pt Bold	Expiration date shall be printed in the upper right corner	
Zone 20	Organization Affiliation Abbreviation	e.g. DHS	Arial 12 pt Bold	The affiliation abbreviation shall be printed in the upper right hand corner below the date.	
SP 104 – Color Specification					
Zone	Color	sRGB Tristimulus Value	sRGB Value	CMYK Value	Pantone value
Zone 12	Red	{253, 27, 20}	{254, 92, 79}	{0, 90, 86, 0}	032C
Zone 15	White	{255, 255, 255}	{255, 255, 255}	{0, 0, 0, 0}	White
Zone 15	Green	{153, 255, 153}	{203, 255, 203}	{40, 0, 40, 0}	359C
Zone 15	Blue	{0, 255, 255}	{0, 255, 255}	{100, 0, 0, 0}	630C

Appendix B: Specification for Personalized Cards for VTDR Testing

This section defines the cards necessary to perform ANSI 322 testing per GSA Evaluation Program requirements. It is noted that each card submitted for testing must be printed using the standard configuration of Suppliers card printing device for which graphically personalized cards will be produced for Agency consumption.

Test(s)	# Cards tested	Personalization – Front	Personalization - Back
Resistance to Chemicals	16 total – 8 tests, 2 cards each	Mandatory FIPS 201 elements	Mandatory FIPS 201 elements
Bar Code Abrasion	2 cards	N/A	Zone 8 – Linear 3 of 9 barcode, as per Figure 18 of ANSI 322
Image Abrasion	4 total – 2 front, 2 back	Cyan, Magenta, Yellow, and Black circles, as depicted in Figure 20 of ANSI 322.	Cyan, Magenta, Yellow, and Black circles, as depicted in Figure 20 of ANSI 322. <i>Note: For cards with magnetic stripes, the notch may be cut from the side which contains the magnetic stripe.</i>
Temperature and Humidity Induced Dye Migration	4 total – 2 front, 2 back	Cyan, Magenta, Yellow and Black square grids, as depicted in Figure 21 of ANSI 322. <i>Note: The placement of the square grids may deviate slightly from Figure 21 to avoid placement over ICCs or OVD security features.</i>	Cyan, Magenta, Yellow and Black square grids, as depicted in Figure 21 of ANSI 322. <i>Note: The placement of the square grids may deviate slightly from Figure 21 to avoid placement over laser etched text or magnetic stripes.</i>
Plasticizer Induced Dye Migration Test	4 total – 2 front, 2 back	Any AIM compliant barcode, placed as depicted in Figure 22 of ANSI 322. <i>Note: The placement of this barcode may deviate slightly from Figure 22 to avoid placement over OVD security features.</i>	Any AIM compliant barcode, placed as depicted in Figure 22 of ANSI 322. <i>Note: The placement of this barcode may deviate slightly from Figure 22 to avoid placement over OVD security features.</i>
Sunlight Exposure, Dynamic Bending Stress	4 total – 2 front, 2 back,	Mandatory FIPS 201 elements	Mandatory FIPS 201 elements
Daylight Exposure Image Stability – Xenon Arc, Dynamic Bending Stress	4 total – 2 front, 2 back	Cyan, Magenta, Yellow and Black square grids	Cyan, Magenta, Yellow and Black square grids
Laundry Test	2 cards	Mandatory FIPS 201 elements	Mandatory FIPS 201 elements
Flat Card Production	10 total – 5 front, 5 back	Mandatory FIPS 201 elements	Mandatory FIPS 201 elements
Hand Cleaning	1 card	Mandatory FIPS 201 elements	Mandatory FIPS 201 elements
Card Thickness	5 cards	See Appendix A	See Appendix A
Linear 3 of 9 Bar Code	1 card	See Appendix A	See Appendix A
Total Cards Tested:	57 cards		