FIPS 201 Evaluation Program
Attestation Form for Facial Image Capturing (Middleware)

This form serves to assert that the offering being submitted for FIPS 201 conformance evaluation is accurately meeting the requirements stated in the Standard.

Applicant Information

Company Name	

Product/Service Information

Name	
Part Number	
Hardware Version	
Software Version	
Firmware Version	

Lab Specific Information

Approval Procedure Version	8.0.0

Requirements being attested to:

Identifier #	Requirement Description	Source
FICM.1	Facial images need to conform to the application profile of INCITS 385-2004 tailored for PIV as outlined in Table 6 – "*INCITS 385 Profile for PIV Facial Images*".	SP 800-76-1, Section 5.2
FICM.2	More than one image may be stored in the record. It may be appropriate to store several images if appearances change over time (e.g. beard, no beard, beard) and images are gathered at issuance. If more than one image is stored in the record, the most recent image shall appear first and serve as the default provided to applications.	SP 800-76-1, Section 5.2
FICM.3	Facial images shall be compressed using a compression ratio no higher than 15:1. If ROI compression is used, the innermost region is centered around the face and compressed at no more than 24:1	SP 800-76-1, Section 5.2
FICM.4	For PIV, faces shall be acquired such that a 20 centimeter target placed on, and normal to, a camera's optical axis at a range of 1.5 meters shall be imaged with at least 240 pixels across it. This ensures that the width of the head (i.e. dimension CC in Figure 8 of [FACESTD]) shall have sufficient resolution for the printed face element of the PIV Card. This specification and Section 8.3.4 of [FACESTD] implies that the image width shall exceed 420 pixels.	SP 800-76-1, Section 5.2
FICM.5	The header and the entire data structure shall be CBEFF [compliant].	INCITS 385, Section 5.1
FICM.6	The image data shall be encoded using either JPEG or JPEG2000.	INCITS 385, Section 5.1
FICM.7	The Format Identifier and the Version Number for the standard, are [represented as] null terminated ASCII character strings.	INCITS 385, Section 5.1

FICM.8	All data is represented in binary format [except for the Format identifier and the Version Number].	INCITS 385, Section 5.1
FICM.9	Within the record format and all well-defined data blocks therein, all multi-byte quantities are stored in Big-Endian format.	INCITS 385, Section 5.2.1
FICM.10	All numeric values are fixed-length unsigned integer quantities, unless otherwise specified.	INCITS 385, Section 5.2.2
FICM.11	[The Format Identifier] of the Facial Image Record shall begin with the three ASCII characters 'FAC' to identify the record as following this standard, followed by a zero byte as a null string terminator.	INCITS 385, Section 5.4.1
FICM.12	The Version Number of this specification shall be 0x30313000; "010 - Version 1 revision 0.	INCITS 385, Section 5.4.2
FICM.13	[The Record Length] is the entire length of the record (facial header, facial information, feature points, image information and image data blocks).	INCITS 385, Section 5.4.3
FICM.14	The Number of Facial Images block shall be the number of facial images included in the record.	INCITS 385, Section 5.4.4
FICM.15	The Block Length denotes the sum of the lengths of the Facial Information Block, Facial Feature Block(s), Image Information Block(s), and the Image Data Block(s).	INCITS 385, Section 5.5.1
FICM.16	The Number of Feature Points Block shall be the number of Feature Point blocks that follow the Facial Information Block.	INCITS 385, Section 5.5.2
FICM.17	The Gender Block shall be specified in accordance with Table 3.	INCITS 385, Section 5.5.3
FICM.18	The Eye Color Block shall be specified in accordance with Table 4.	INCITS 385, Section 5.5.4
FICM.19	The Hair Color Block shall be specified in accordance with Table 5.	INCITS 385, Section 5.5.5
FICM.20	The Feature Mask is a bit mask of 3 bytes according to Table 6.	INCITS 385, Section 5.5.6
FICM.21	The Expression block shall be specified in accordance with Table 7.	INCITS 385, Section 5.5.7
FICM.22	The Pose Angles Block shall be used to store the estimate or measure pose of the subject in the image.	INCITS 385, Section 5.5.8

FICM.23	The pose angle yaw is the rotation in degrees about the y-axis (vertical axis) shown in Figure 3.	INCITS 385, Section 5.5.8.1
FICM.24	The pose angle pitch is the rotation in degrees about the x-axis (horizontal axis) shown in Figure 3.	INCITS 385, Section 5.5.8.2
FICM.25	The pose angle roll is the rotation in degrees about the z-axis (the horizontal axis from front to back) shown in Figure 3.	INCITS 385, Section 5.5.8.3
FICM.26	The Pose Angle Uncertainty represents the expected degree of accuracy of the pose angle yaw, pitch, and roll.	INCITS 385, Section 5.5.9
FICM.27	The number of Facial Feature blocks shall be specified in the Number of Facial Features block of the Facial Information structure.	INCITS 385 Section 5.6.1
FICM.28	[The feature type denotes the type of feature point for the Facial Feature block].	INCITS 385, Section 5.6.3
FICM.29	[The Feature Point shall be encoded as A*16+B].	INCITS 385, Section 5.6.3
FICM.30	[The X coordinate represents the horizontal pixel count from the upper left pixel].	INCITS 385, Section 5.6.3
FICM.31	[The Y coordinate represents the vertical pixel count from the upper left pixel].	INCITS 385, Section 5.6.3
FICM.32	[The Reserved bytes present in the facial feature block is reserved for later use with 3D images].	INCITS 385, Section 5.6.3
FICM.33	The Facial Image type field stores the integer associated with the defined type (format) of the captured face image(s) [and is in accordance with Table 10].	INCITS 385, Section 5.7.1
FICM.34	The Image Data Type block denotes the encoding type of the Image Data block [and is in accordance with Table 11].	INCITS 385, Section 5.7.2
FICM.35	The Width Block shall specify the number of pixels in the horizontal direction.	INCITS 385, Section 5.7.3
FICM.36	The Height Block shall specify the number of pixels in the vertical direction.	INCITS 385, Section 5.7.4
FICM.37	The Image Color Space indicates the color space used in the encoded Image Data block in accordance with the values in Table 12.	INCITS 385, Section 5.7.5

FICM.38	The Source Type block denotes the classification of the source of the captured image and is given in Table 13.	INCITS 385, Section 5.7.6
FICM.39	The Device Type block denotes the vendor specific capture device ID.	INCITS 385, Section 5.7.7
FICM.40	The Quality block shall contain the value 0 indicating Unspecified.	INCITS 385, Section 5.7.8
FICM.41	The Image Data block shall be the raw image data encoded by either the JPEG or JPEG2000 standards.	INCITS 385, Section 5.8.1
FICM.42	One of two possible encodings is to be used for all image types: 1) The JPEG Sequential baseline (ISO/IEC 10918, Part1) mode of operation and encoded in the JFIF file format (the JPEG file format); or 2) The JPEG-2000 Part-1 Code Stream Format (ISO/IEC 15444-1, Part 1) and encoded in the JP2 file format (the JPEG2000 file format).	INCITS 385, Section 6.2
FICM.43	The Format Identifier, Version Number, Length of Record, and Number of Faces blocks shall be specified.	INCITS 385, Section 6.4.1
FICM.44	The Block Length and Number of Feature Points blocks shall be specified.	INCITS 385, Section 6.4.2
FICM.45	The Face Image Type shall be specified. The Image Data Type, Width, and Height blocks shall be specified.	INCITS 385, Section 6.4.3
FICM.46	The full-face frontal pose shall be used. Rotation of the head shall be less than +/- 5 degrees from frontal in every direction – up/down, rotated left/right, and tilted left/right.	INCITS 385, Section 7.2.2
FICM.47	The expression shall be classified as one of the following: a) Neutral (nonsmiling) with both eyes open normally (i.e., not wide-open), and mouth closed. b) A smile where the inside of the mouth and/or teeth is not exposed (closed jaw). c) A smile where the inside of the mouth and/or teeth is exposed. d) Raised eyebrows. e) Eyes looking away from the camera. f) Squinting. g) Frowning.	INCITS 385, Section 7.2.3
FICM.48	Digital cameras and scanners used to capture facial images shall produce images with a pixel aspect ratio of 1:1. That is, the number of pixels per inch in the vertical dimension shall equal the number of pixels per inch in the horizontal direction.	INCITS 385, Section 7.4.2.1

FICM.49	Frontal images shall be represented as one of the following: a) The 24-bit RGB color space where, for every pixel, eight (8) bits will be used to represent each of the Red, Green, and Blue components. b) An 8-bit monochrome color space where, for every pixel, eight (8) bits will be used to represent the luminance component. c) The YUV422 color space where, for every pixel, twice as many bits are dedicated to luminance as the two color channels.	INCITS 385, Section 7.4.3.3
FICM.50	The Full Frontal face image type is a subclass of the Frontal image type and therefore obeys all normative requirements of clause 6, The Basic Face Image Type, and clause 7, The Frontal Face Image Type. It has a Face Image Type field value of 1 (one).	INCITS 385, Section 8.1
FICM.51	The approximate horizontal midpoints of the mouth and of the bridge of the nose shall lie on an imaginary vertical line AA positioned at the horizontal center of the image.	INCITS 385, Section 8.3.2
FICM.52	An imaginary horizontal line BB through the center of the eyes shall be located between 50% and 70% of the vertical distance up from the bottom edge of the captured image.	INCITS 385, Section 8.3.3
FICM.53	The minimum (Image Width: Head Width) ratio (A:CC) is 7:4.	INCITS 385, Section 8.3.4
FICM.54	The crown to chin portion (DD) of the Full Frontal Image pose shall be no more than 80% of the vertical length of the image (B).	INCITS 385, Section 8.3.5
FICM.55	The Face Image Type shall be specified with value 1.	INCITS 385, Section 8.5.2
FICM.56	The images shall be embedded within the CBEFF structure defined in Section 6.	SP 800-76, Section 5.2
FICM.57	When facial imagery is stored on the PIV Card, only one image shall be stored.	SP 800-76-1, Section 5.2 - Normative Note #3
FICM.58	PIV facial images shall conform to the Full Frontal Image Type defined in Section 8 of [FACESTD].	SP 800-76-1, Section 5.2 - Normative Note #4
FICM.59	Facial image data shall be formatted in either of the compression formats enumerated in Section 6.2 of [FACESTD].	SP 800-76-1, Section 5.2 - Normative Note #5
FICM.60	This specification and Section 8.3.4 of [FACESTD] implies that the image width shall exceed 420 pixels.	SP 800-76-1, Section 5.2 -

		Normative Note #7
FICM.61	Facial image data shall be converted to the sRGB color space if it is stored.	SP 800-76-1, Section 5.2 - Normative Note #8

Signature

I hereby claim that I am authorized to sign this form on behalf of the above specified company. I acknowledge that I have am aware of the requirements of FIPS 201 and its related publications that my Product needs to comply with and that the Product that has been submitted to the Lab is, to the best of my knowledge, complete and accurately meeting these requirements. Furthermore, by signing below, I attest that the Product/Service is being submitted under each category for which this Product/Service applies. I am also aware that any false claims to this statement could result in a penalty as defined by the Federal Acquisition Regulation (FAR).

Signature		Date	
Name			
Title			