X9 REGISTRY FOR CHECK IMAGE TESTS

FSTC Undersize Image Dimension #002.00

Check Image Test Status: A

Where:
A = Active (approved for use)
W = Withdrawn (not for use)
S = Superseded (not for use - replaced by specified test)

Check Image Test Summary:

Field/ Element	Defined Values	Recommended Value	Data Units
Image Test Name	FSTC Undersize Image Dimension		
Image Test Number	002.00		
Image Test Version	00		
Image Test Results (Ref. #):			
Image Height (R1)	'0' through '255'		Tenths of inches
Image Width (R2)	'0' through '255'		Tenths of inches
Image Test Parameters (Ref #):			
Minimum Image Height Threshold (P1)	'0' through '255'	Front: 22 Rear: 22	Tenths of inches
Minimum Image Width Threshold (P2)	'0' through '255'	Front: 57 Rear: Not Available	Tenths of inches

1.0	Applicant Information	
1.1	Organization Name:	**Financial Service Technology Consortium**
1.2	Organization Address:	**44 Wall St. 12th Floor New York, NY 10005**
1.3	Organization Web Site URL:	www.fstc.org

2.0	Image Test Description	
2.1	**Image Test Name:**	FSTC Undersize Image Dimension
2.2	**Image Test XML Name:**	UndersizeImageDimension
2.3	**Image Test Definition:**	A defect due to the document image rendition's width or height being below the minimum image size based on the minimum check size and tolerances associated with the image capture platform.
2.4	**Image Test Applicability:**	☒*Front Image* ☒ *Rear Image* ☒*B/W Image* ☒*Grayscale Image* ☒ *Color Image*
2.5	**Intended Use:** Intended business use/ application, business context, and business impact when test fails.	FSTC recommends this metric for use as part of a general system-health monitoring and image quality assurance program. The Undersize Image metric for all check images is designed to detect occurrences of images where there is a high probability that the check data is improperly framed, folded or torn. The impact of this may be: • Creation of partial images of the check due to clipping, tears or folds could render specific fields of the check unusable. • Esthetic artifacts within the document image could create issues for image statement print applications and/or customer acceptance. • Tears and/or folds could impact MICR and OCR depending on the location of the tear or fold. • Inability to create legible substitute checks • Financial losses due to information being eliminated in one or more fields • Information missing in customer statements, CD ROM delivery, or online viewing. • General customer service issues and complaints.

2.6	**Possible Causes for Condition Being Tested:**	This defect may be due to one or more of the following problems: • Torn document. An image where a significant portion of the original source document is absent (top missing, right side missing, bottom missing, or left side missing). • Folded document. An image where a significant portion of the original source document is folded (top edge folded, right edge folded, bottom edge folded, or left edge folded). • Improperly framed document, e.g., image capture begins too late, or ends too early. An image where the leading or trailing edge of the document has been truncated due to a camera synchronization error during the image capture process.
2.7	**Additional (or Repetitive) Information:**	**XML Names**: FSTC defined XML names as needed for its project. FSTC is not submitting these XML names, and instead requests that the RMG or X9B assign appropriate XML names and data structures for the metrics. **Rounding Rule**: All fractional values shall be rounded to the nearest whole unit of measure when rounding is required. Fractional values of exactly ½ unit shall be rounded up. **Data Ranges**: FSTC did not establish a formal data range for individual metrics. Any data ranges provided are based on adjusted values used during the FSTC project. FSTC does not object if the RMG modifies the data ranges. **Data Range Exception Handling:** If a result exceeds the defined data range, the preferred handling is to truncate the result at the maximum (or minimum) value. If truncation is not implemented, then the test should fail and a result of indeterminate should be returned. **Margin of Error**: FSTC established a margin of error for use during the FSTC Image Quality and Usability Phase 2 project. This margin of error is included in the recommendations below. It was established based on the expertise of the project's membership, the potential for various algorithms to produce slightly different results for a given metric, and the observed precision of the results submitted during accuracy testing of metric implementations. **Value Reporting**: The value of this metric will be reported under all image quality flag conditions. If the defect condition is "not tested" or "indeterminate", the value of the image metric(s) reported for this defect will be set to zero (0). **Edge Definition:** The terms "aligning edge", "leading edge", and "trailing edge" are defined in ANS X9.7-1999.

2.8	Test Results Reported
	A test result is the outcome realized from executing an image test. The outcome will typically be the observed or measured value of some attribute pertaining to the image being tested.
	Any dependency of a test result on an image side (front or rear), image rendition (B/W, Gray, Color), or other condition shall be fully defined in the Additional Information section.
	For "Margin of Error", please describe in the Additional Information section how the margin of error was determined (e.g. observation, theoretical considerations, etc.).
	Data types allowed are as defined in ANS X9.100-180-2006, but are typically alphabetic, numeric, alphanumeric, signed numeric (using "+" and "-" to denote sign), etc.

2.8.1 First Image Test Result (R1)

Test Result Name: Image Height

Test Result XML Name:	Data Type:	Data Units:	Data Range:	Margin of Error (in Data Units) (Where Applicable):
ImageHeight	Numeric	Tenths of an inch	0-255	0
Description:	Height measurement (presumed to be from the aligning edge to the top edge for both front and rear check images) result for the image view of the check			
Formula and/ or Algorithm:	N/A			
Additional Information:	See section 2.7			

2.8.2 Second Image Test Result (R2)				
Test Result Name: Image Width				
Test Result XML Name:	**Data Type:**	**Data Units:**	**Data Range:**	**Margin of Error in Data Units (Where Applicable):**
ImageWidth	Numeric	Tenths of an inch	0-255	0
Description:	Width measurement (presumed to be from the leading edge to the trailing edge for the front view of a check) result for the image view of the check			
Formula and/ or Algorithm:	N/A			
Additional Information:	See section 2.7			

2.9	**Test Parameters Reported**
	Examples of image test parameters are threshold values used to compute a pass/fail image test flag condition, and constant values used in a formula or algorithm to compute an image test result.
	Any dependency of a test parameter on an image side (front or rear), image rendition (B/W, Gray, Color), or other condition shall be fully defined in the Additional Information section.
	Any dependency of recommended values on an image side (front or rear), image rendition (B/W, Gray, Color), or other condition shall be fully defined in the Recommended Values section.
	Data types allowed are as defined in ANS X9.100-180-2006, but are typically alphabetic, numeric, alphanumeric, signed numeric (using "+" and "-" to denote sign), etc.

2.9.1 First Test Parameter (P1)

Test Parameter Name: Minimum Image Height Threshold

Test Parameter XML Name:	Data Type:	Data Units:	Data Range:	Recommended Value(s) (Where Applicable):
MinImageHeightThreshold	Numeric	Tenths of an inch	0-255	Front: 22 Rear: 22
Description:	This threshold represents the minimum height allowed for the image			
Additional Information:	See section 2.7			

2.9.2 Second Test Parameter (P2)

Test Parameter Name: Minimum Image Width Threshold

Test Parameter XML Name:	Data Type:	Data Units:	Data Range:	Recommended Value(s) (Where Applicable):
MinImageWidthThreshold	Numeric	Tenths of an inch	0-255	Front: 57 Rear: Not Available
Description:	This threshold represents the minimum width allowed for the image			
Additional Information:	See section 2.7			

2.10	**Image Test Flag Pass/Fail Criteria (Mandatory):** *The Image Test Flag (see ANS X9.100-40-1-2006 for details) will convey one of the following four test conditions:* • *Condition not tested* • *Condition tested and result = fail* • *Condition tested and result = pass* • *Condition tested and result=indeterminate*	Results are reported independently for the Front and Rear image renditions. Selection of the threshold value corresponding to the image view (front or rear) is the responsibility of the implementer. The numbers in the parentheses in the formulae below refer to the section of this document where each result and parameter is defined. If condition not tested then **flag=not tested** If condition tested then **flag = fail** if one or more of the following conditions is present: **Image Height** (2.8.1) $<$ **Minimum Image Height Threshold** (2.9.1) **Image Width** (2.8.2) $<$ **Minimum Image Width Threshold** (2.9.2) If condition tested and none of the fail conditions is present then **flag=pass**

3.0	Restrictions & Intellectual Property (Mandatory)	
3.1	Are there any known restrictions in the use of the submitted check image test and related technology (technical, performance, legal, business, platform, etc.)?	☒ No ☐ Yes - *please provide details:*
3.2	Are proprietary Intellectual Property (IP) rights in the form of Patents associated with the description and use of the submitted check image test?	☒ No ☐ Yes – *Please provide patent and/or patent application numbers and indicate who owns the IP. Also provide evidence that the patent holder agrees to comply with the X9 Procedures including the X9 patent policy:*
3.3	Are proprietary Intellectual Property (IP) rights in the form of proprietary material and/or other intellectual property (e.g. specific to a vendor tool, device, or product) associated with the description and use of the submitted check image test?	☒ No ☐ Yes – *Please provide evidence that the owner agrees to provide the Proprietary IP Holder Statement contained in Annex B of ANS X9.100-40-2006 Part 2:*

Notice: By accepting a check image test for registration, ASC X9 is not endorsing, certifying validity, certifying performance, nor providing any warranty for the registered check image test. The organization using the test shall determine which test(s) to use based on their own business needs, perceived benefit, and validation/ assessment of any test results provided by the check image test supplier, their own testing, or a third party