

## **X9 REGISTRY FOR CHECK IMAGE TESTS**

### **FSTC Front-Rear Image Dimension Mismatch #009.00**

#### **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W = Withdrawn (not for use)

S = Superseded (not for use - replaced by specified test)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:**

<b>Field/ Element</b>	<b>Defined Values</b>	<b>Recommended Value</b>	<b>Data Units</b>
<b>Image Test Name</b>	FSTC Front-Rear Image Dimension Mismatch		
<b>Image Test Number</b>	009.00		
<b>Image Test Version</b>	00		
<b><i>Image Test Results (Ref. #):</i></b>			
<b>Image Width Difference (R1)</b>	'0' through '255'		Tenths of inches
<b>Image Height Difference (R2)</b>	'0' through '255'		Tenths of inches
<b><i>Image Test Parameters (Ref #):</i></b>			
<b>Maximum Image Width Difference (P1)</b>	'0' through '255'	4	Tenths of inches
<b>Maximum Image Height Difference (P2)</b>	'0' through '255'	5	Tenths of inches

<b>1.0</b>	<b>Applicant Information</b>	
<b>1.1</b>	Organization Name:	<b>Financial Service Technology Consortium</b>
<b>1.2</b>	Organization Address:	<b>44 Wall St. 12<sup>th</sup> Floor New York, NY 10005</b>
<b>1.3</b>	Organization Web Site URL:	<a href="http://www.fstc.org">www.fstc.org</a>

<b>2.0</b>	<b>Image Test Description</b>	
<b>2.1</b>	<b>Image Test Name:</b>	FSTC Front-Rear Image Dimension Mismatch
<b>2.2</b>	<b>Image Test XML Name:</b>	FrontRearImageDimMismatch
<b>2.3</b>	<b>Image Test Definition:</b>	<p>An image defect that is due to a dimensional (width and/or height) mismatch between the front and rear images of the source document.</p> <p>This type of defect indicates that the image height and width do not match between the front and rear images of the source document.</p>
<b>2.4</b>	<b>Image Test Applicability:</b>	<input checked="" type="checkbox"/> <i>Front Image</i> <input checked="" type="checkbox"/> <i>Rear Image</i> <input checked="" type="checkbox"/> <i>B/W Image</i> <input checked="" type="checkbox"/> <i>Grayscale Image</i> <input checked="" type="checkbox"/> <i>Color Image</i>
<b>2.5</b>	<b>Intended Use:</b> Intended business use/ application, business context, and business impact when test fails.	<p>FSTC recommends this metric for use as part of a general system-health monitoring and image quality assurance program.</p> <p>In general, if the size dimensions of different image view renditions (front, rear, grayscale, black and white) of a document are different this can indicate an integrity problem with the images captured.</p> <p>Matching of the front image from document “n” and the rear image from document “n-1” will create an image rendition that has the wrong endorsement data or pay to information associated with the check image.</p>
<b>2.6</b>	<b>Possible Causes for Condition Being Tested:</b>	<p>A Front Rear Image Dimension Mismatch may be caused by:</p> <ul style="list-style-type: none"> <li>• The front image of document “n” being matched up with the rear image of document “n-1”.</li> <li>• Differences in document framing for the front and rear image renditions of the document which may indicated missing or unwanted extra information in the image.</li> </ul>

2.7	<b>Additional (or Repetitive) Information:</b>	<p><b>Multiple View Handling:</b> Typically only the front and rear image views are provided and compared, regardless of rendition.</p> <p>If multiple image views are present (black and white, grayscale or color) the image view under test will be compared to all the available views to detect the absolute difference in size dimensions between this view and all views of the other document “side” (e.g. this front and all rear views). Separate results will be reported for each view comparison using individual test instances.</p> <p><b>XML Names:</b> 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.</p> <p><b>Algorithms:</b> Image and height dimensions are typically recorded in the image file wrapper header information. No algorithm is required for calculating dimension differences.</p> <p><b>Rounding Rule:</b> Rounding to be applied should be applied separately to each image view dimensions prior to calculating any size differences. Therefore, no rounding rule is required for this calculation.</p> <p><b>Data Ranges:</b> 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.</p> <p><b>Data Range Exception Handling:</b> 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.</p> <p><b>Margin of Error:</b> 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.</p> <p><b>Value Reporting:</b> The value of the image metric(s) for this defect will be reported under all image quality flag conditions. If the defect condition is “not tested”, the value of the image metric(s) reported for this defect will be set to zero.</p>
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<b>2.8</b>	<p><b>Test Results Reported</b></p> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>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.</i></p>
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<b>2.8.1 First Image Test Result (R1)</b>				
<b>Test Result Name: Image Width Difference</b>				
<b>Test Result XML Name:</b>	<b>Data Type:</b>	<b>Data Units:</b>	<b>Data Range:</b>	<b>Margin of Error (in Data Units) (Where Applicable):</b>
ImageWidthDifference	Numeric	tenths of inches	0-255	0
<b>Description:</b>	The absolute value of the difference in width between the front and rear image views, expressed in tenths of an inch.			
<b>Formula and/ or Algorithm:</b>	Image Width Difference = ABSOLUTE VALUE(Front Image Width – Rear Image Width)			
<b>Additional Information:</b>	See section 2.7.			

2.8.2 Second Image Test Result (R2)				
Test Result Name: Image Height Difference				
Test Result XML Name:	Data Type:	Data Units:	Data Range:	Margin of Error in Data Units (Where Applicable):
ImageHeightDifference	Numeric	tenths of inches	0-255	0
<b>Description:</b>	The absolute value of the difference in height between the front and rear image views, expressed in tenths of an inch.			
<b>Formula and/ or Algorithm:</b>	Image Height Difference = ABSOLUTE VALUE(Front Image Height – Rear Image Height)			
<b>Additional Information:</b>	See section 2.7.			

<b>2.9</b>	<p><b>Test Parameters Reported</b></p> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>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.</i></p>
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2.9.1 First Test Parameter (P1)				
Test Parameter Name: Maximum Image Width Difference				
Test Parameter XML Name:	Data Type:	Data Units:	Data Range:	Recommended Value(s) (Where Applicable):
MaxImageWidthDifference	Numeric	tenths of inches	0-255	4
<b>Description:</b>	The threshold number used to compare against the following results as part of the logic for setting the Image Test Flag: Image Width Difference			
<b>Additional Information:</b>	Based on the results of the FSTC Image Quality and Usability Phase 2 study with images from Viewpointe.			

2.9.2 Second Test Parameter (P2)				
Test Parameter Name: Maximum Image Height Difference				
Test Parameter XML Name:	Data Type:	Data Units:	Data Range:	Recommended Value(s) (Where Applicable):
MaxImageHeightDifference	integer	tenths of inches	0-255	5
<b>Description:</b>	The threshold number used to compare against the following results as part of the logic for setting the Image Test Flag: Image Height Difference			
<b>Additional Information:</b>	Based on the results of the FSTC Image Quality and Usability Phase 2 study with images from Viewpointe.			

<p><b>2.10</b></p>	<p><b>Image Test Flag Pass/Fail Criteria:</b></p> <p><i>The Image Test Flag (see ANS X9.100-40-1-2006 for details) will convey one of the following four test conditions:</i></p> <ul style="list-style-type: none"> <li>• <i>Condition not tested</i></li> <li>• <i>Condition tested and result = fail</i></li> <li>• <i>Condition tested and result = pass</i></li> <li>• <i>Condition tested and result=indeterminate</i></li> </ul>	<p>If condition not tested then <b>flag = not tested.</b></p> <p>If condition tested then <b>flag = fail</b> if either of the following conditions is present:</p> <p style="text-align: center;"><b>Image Width Difference (2.8.1) &gt; Maximum Image Width Difference (2.9.1)    OR</b></p> <p style="text-align: center;"><b>Image Height (2.8.2) &gt; Maximum Image Height Difference (2.9.2)</b></p> <p>If condition tested and none of the fail conditions is present then <b>flag=pass.</b></p> <p>If condition tested but could not determine pass or fail for any reason then <b>flag=indeterminate.</b></p>
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<b>3.0</b>	<b>Restrictions &amp; Intellectual Property</b>	
<b>3.1</b>	Are there any known restrictions in the use of the submitted check image test and related technology (technical, performance, legal, business, platform, etc.)?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - <i>please provide details:</i>
<b>3.2</b>	Are proprietary Intellectual Property (IP) rights in the form of Patents associated with the description and use of the submitted check image test?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes – <i>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:</i>
<b>3.3</b>	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?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes – <i>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:</i>

**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.