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# Information technology — Multimedia content description interface —

## Part 7: Conformance testing

## AMENDMENT 5: Conformance testing for image signature tools

*Technologies de l'information — Description de l'interface du contenu multimédia —*

*Partie 7: Essais de conformité*

*AMENDEMENT 5: Essai de conformité pour outils de signature d'image*

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## Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Amendment 5 to ISO/IEC 15938-7:2003 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

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*Page 23, Table 3*

Add the following row after “Face recognition”.

| | |
|---|---|
| Image Signature | ImageSignature |

*Page 23, immediately before 7.4*

Insert the following new subclauses.

### 7.3.5 Visual extraction methods

The extraction methods for most descriptors are not explicitly specified for tools defined in ISO/IEC 15938-3, therefore conformance testing of extraction methods is not required. The exception to this is the Image Signature descriptor for which the extraction method is explicitly defined in ISO/IEC 15938-3:2002/Amd.3:2009.

#### 7.3.5.1 Image Signature Conformance

This Subclause specifies the conformance test for the image signature descriptor. An implementation of the image signature extraction method shall be referred to as an image signature extractor. To be conformant an image signature extractor shall pass the conformance test.

The conformance test is conducted on a set of 625 images. These images are named 000.jpg, 001.jpg,…, 624.jpg and are in ImageSignatureConformanceTestset.zip. For all of the images in the conformance test reference image signature descriptors are provided. To verify conformance of an image signature extractor, test image signature descriptors shall be extracted from a set of images and compared to a set of reference image signature descriptors. In order for the image signature extractor being tested to pass the conformance test, each test image signature descriptor extracted shall match the corresponding reference image signature as specified in 7.3.5.1.1 and 7.3.5.1.2.

#### 7.3.5.1.1 Global Image Signature Components

No more than 16 out of 512 bits shall differ for each of the GlobalSignatureA and GlobalSignatureB elements.

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#### 7.3.5.1.2 Local Image Signature Components

A one-to-one correspondence shall be established between the LocalSignature elements in the test image signature descriptor and the LocalSignature elements in the reference image signature descriptor. That correspondence shall be determined by considering the spatial location of the LocalSignatures, as represented by the Xcoord and Ycoord syntax elements. That is each LocalSignature element in the test image signature descriptor shall correspond to the one LocalSignature element in the reference image signature descriptor with the minimum spatial distance. The spatial distance, $d$, between two local signature elements, $LS_t$ and $LS_r$ is given by:

$$d(LS_t, LS_r) = \sqrt{(x_t - x_r)^2 + (y_t - y_r)^2} ,$$

where

$x_t$ and $y_t$ are respectively the Xcoord and Ycoord components of $LS_t$ and

$x_r$ and $y_r$ are respectively the Xcoord and Ycoord components of $LS_r$.

Corresponding LocalSignature elements shall be considered to match if not more than 3 bits out of 60 differ. For each image signature descriptor at least 78 out of 80 corresponding LocalSignature components must match.

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