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Part 15: Palm crease image data

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Partie 15: Données relatives à l'image des lignes de la main

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

A list of all parts in the ISO/IEC 19794 series can be found on the ISO website.

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Introduction

Palm crease biometric technologies have existed for many years. Additionally, new technologies employing palm crease images obtained from hands are emerging or under continuous improvement as a result of new, state-of-the-art imaging devices for mobile applications or web services.

Currently however, palm crease biometric image information is being exchanged between the equipment and devices from different vendors without standardized format is the problem. This is due in part to the lack of standardized formats for information exchange that would ensure interoperability among the various vendors.

The purpose of this document is to define a standard for the exchange of human palm crease biometric image information. The standard defines specific attributes, a data record format for storing and transmitting palm crease biometric images and certain attributes, a sample record, and conformance criteria.

This document is intended for applications requiring the exchange of raw or processed palm crease biometric images. It is intended for applications not limited by the amount of storage required. It is a compromise or a trade-off between storage and quality and can be resolved by standardized format. It enables various algorithms to identify or verify the palm crease biometric image data transferred from other image sources. Currently, available palm crease biometric technologies that may utilize this document for image exchange are technologies that use palm for mobile applications for identify verification or web services.

The use of captured source images can provide interoperability among and between vendors relying on various different recognition or verification algorithms. Accordingly, data from the captured palm crease biometric image offers the developer more freedom in choosing or combining a comparison subsystem

In this document, Annex A contains the conformance testing methodology and Annex B contains the XML schema. Annex C contains the XML sample program.

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Information technology — Biometric data interchange format —

Part 15: Palm crease image data

1 Scope

This document specifies an image interchange format for biometric person identification or verification technologies that utilize human palm crease biometric images and can be used for the exchange and comparison of palm crease image data. It specifies a data record interchange format for storing, recording, and transmitting palm crease biometric information from palm crease imaging. It defines the contents, format, and units of measurement for the image exchange. The format consists of mandatory and optional items, including scanning parameters, compressed or uncompressed image specifications and vendor-specific information. Information compiled and formatted in accordance with this document can be recorded on machine-readable media or may be transmitted by data communication facilities.

2 Normative reference

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 10918 (all parts), *Information technology — Digital compression and coding of continuous-tone still images: JPEG File Interchange Format (JFIF)*

ISO/IEC 15444 (all parts), *Information technology — JPEG 2000 image coding system: Core coding system*

ISO/IEC 14495 (all parts), *Information technology — Lossless and near-lossless compression of continuous-tone still images: Extensions*

ISO/IEC 19785-1, *Information technology — Common Biometric Exchange Formats Framework — Part 1: Data element specification*

ISO/IEC 19794-1:2011, *Information technology — Biometric data interchange formats — Part 1: Framework*

ISO/IEC 19794-1:2011/Amd 1:2013, *Conformance testing methodology*

ISO/IEC 19794-1:2011/Amd 2:2015, *Framework for XML encoding*

XML Schema Definition, W3C Recommendation, 2 May 2001[1)]

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19794-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

1) http://www.w3.org/XML/Schema

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— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
palm crease biometric image
captured raw or processed image that represents physical characteristics or traits of palm crease pattern used to recognize the identity or verify the claimed identity of an individual

4 Abbreviated terms

RGB	Red, green, blue color model
XML	eXtensible Markup Language
CBEFF	Common Biometric Exchange Formats Framework
BDIR	Biometric Data Interchange Record
BDB	Biometric Data Block
BIR	Biometric Information Record
ppcm	pixels per centimetre
ppi	pixels per inch

5 Conformance

A biometric data record conforms to this document if it satisfies all of the normative requirements related to:

a) its data structure, data values, and the relationships between its data elements, as specified throughout Clause 8 for the palm crease image record format of this document;

b) the relationship between its data values and the input biometric data from which the biometric data record was generated, as specified throughout Clause 8 for the palm crease image record format of this document.

A system that produces biometric data records is conformant to this document if all biometric data records that it outputs conform to this document (as defined above) as claimed in the implementation conformance statement associated with that system. A system does not need to be capable of producing biometric data records that cover all possible aspects of this document, but only those that are claimed to be supported by the system in the implementation conformance statement (ICS).

A system that uses biometric data records is conformant to this document if it can read, and use for the purpose intended by that system, all biometric data records that conform to this document (as defined above) as claimed in the implementation conformance statement associated with that system. A system does not need to be capable of using biometric data records that cover all possible aspects of this document, but only those that are claimed to be supported by the system in an implementation conformance statement (ICS).

6 Data conventions

6.1 General

The format specified in this document is a structural definition used to exchange palm crease image data. In conformance with the rules described in ISO/IEC 19794-1, a palm crease image data should be specified upon the definition of the BDIR or may be wrapped in the biometric data block (BDB) of a CBEFF compliant structure (BIR) which is specified in ISO/IEC 19785-1.

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