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Information technology — Identification cards — On-card biometric comparison

Technologies de l'information — Identification des cartes — Comparaison biométrique sur cartes

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 www.iso.org/iso/foreword.html. This document was prepared by ISO/IEC JTC 1, *Information technology*, SC 17, *Cards and security devices for personal identification*.

This second edition cancels and replaces the first edition (ISO/IEC 24787:2010), which has been technically revised. It also incorporates the Technical Corrigendum ISO/IEC 24787:2010/Cor 1:2013.

The main changes compared to the previous edition are as follows:

— Clause 7 has been restructured; the subclauses have been relocated within the clause:

  — in 7.3.3 (previously 7.1.3), configuration data elements and biometric comparison algorithm parameters have been replaced with biometric functionality information and biometric comparison parameters respectively. Refer to 7.3.3.2 and 7.3.3.3 for more information;

  — in 7.3.4 (previously 7.1.4), the implementation of one biometric reference for multiple applications has been updated. Refer to Annex B for an example of the updated implementation;

— Clause 8 (previously Annex B) has been moved from a normative annex into the main body of the document;

— Clause 9 (previously Clause 8) has been replaced with an outline of the overall work-sharing process;

— previous Annexes A, D, F and H have been removed.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

On-card biometric comparison provides a more secure biometric verification method than one where a biometric comparison is carried outside a secure cryptographic device. Storing biometric reference data in a secure ICC means that the reference is not available at any external interface once it has been stored in the ICC, mitigating the risk of extraction and misuse by an unauthorised party.

ISO/IEC 7816-11 and ISO/IEC 19785-3 cover technologies for off-card and simple on-card biometric comparison. ISO/IEC 17839 covers biometric system-on-card.

This document provides requirements for a biometric comparison methodology suitable for the on-card environment. It also covers the on-card comparison work-sharing techniques that require an intensity exceeding the capabilities of ICCs.

The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning work-sharing given in Clause 9.

ISO and IEC take no position concerning the evidence, validity and scope of this patent right. The holder of this patent right has assured ISO and IEC that he/she is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with ISO and IEC. Information may be obtained from:

Exploit Technologies Pte Ltd.,
30 Biopolis Street,
#09-02 matrix,
Singapore 138671

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Information technology — Identification cards — On-card biometric comparison

1 Scope

This document establishes

— architectures of biometric comparison using an ICC,

— on-card biometric comparison, both in sensor-off-card systems and as part of biometric system-on-card,

— work-sharing on-card biometric comparison, and

— security policies for on-card biometric comparison.

This document does not establish

— requirements for off-card biometric comparison,

— requirements for biometric system-on-card (as defined in ISO/IEC 17839), or

— modality-specific requirements for storage and comparison.

2 Normative references

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 7816-4, *Identification cards — Integrated circuit cards — Part 4: Organization, security and commands for interchange*

ISO/IEC 7816-11, *Identification cards — Integrated circuit cards — Part 11: Personal verification through biometric methods*

ISO/IEC 19785-3, *Information technology — Common Biometric Exchange Formats Framework — Part 3: Patron format specifications*

ISO/IEC 19794 (all parts), *Information technology — Biometric data interchange formats*

ISO/IEC 24761, *Information technology — Security techniques — Authentication context for biometrics*

ISO/IEC 29794 (all parts), *Information technology — Biometric sample quality*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

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