Informationsteknologi – Biometrisk prøvekvalitet – Del 4: Fingerbilleddata

Information technology – Biometric sample quality – Part 4: Finger image data

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Information technology — Biometric sample quality —

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Finger image data

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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 ISO documents 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 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 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*.

This first edition cancels and replaces ISO/IEC/TR 29794-4:2010, which has been technically revised to become an International Standard.

A list of all parts in the ISO 29794 series can be found on the ISO website.

Introduction

This document specifies finger image quality metrics. A reference implementation of the normative metrics is available at https://github.com/usnistgov/NFIQ2.

The quality of finger image data is defined to be the degree to which the finger image data fulfils specified requirements for the targeted application. Thus, the quality information is useful in many applications. ISO/IEC 19784-1 allocates a quality field and specifies the allowable range for the scores, with a recommendation that the score be divided into four categories with a qualitative interpretation for each category. Image quality fields are also provided in the fingerprint data interchange formats standardized in ISO/IEC 19794-2, ISO/IEC 19794-3, ISO/IEC 19794-4, and ISO/IEC 19794-8. This document defines a standard way to calculate the finger image quality score that facilitates the interpretation and interchange of the finger image quality scores.

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1 Scope

This document establishes

— terms and definitions for quantifying finger image quality,

— methods used to quantify the quality of finger images, and

— standardized encoding of finger image quality,

for finger images at 196,85 px/cm spatial sampling rate scanned or captured using optical sensors with capture dimension (width, height) of at least 1,27 cm × 1,651 cm.

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 2382-37, *Information technology — Vocabulary — Part 37: Biometrics*

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

ISO/IEC 29794-1, *Information technology — Biometric sample quality — Part 1: Framework*

3 Terms, definitions, symbols and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 2382-37, ISO/IEC 29794-1 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/

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

3.1.1
foreground region
set of all pixels of a finger image that form valid finger image patterns

Note 1 to entry: The most evident structural characteristic of a valid finger image is a pattern of interleaved ridges and valleys.

