INTERNATIONAL ISO/IEC

Second edition
2016-01-15

Corrected version
2016-09-15

Information technology — Biometric sample quality —

Part 1: Framework

Technologies de l'information — Qualité d'échantillon biométrique —

Partie 1: Cadre

Reference number
ISO/IEC 29794-1:2016(E)

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

Contents

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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information.

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

This second edition cancels and replaces the first edition (ISO/IEC 29794-1:2009), which has been technically revised to revise Clause 8 and Table 2, which describes the structure of quality record.

ISO/IEC 29794 consists of the following parts, under the general title *Information technology — Biometric sample quality*:

— *Part 1: Framework*

— *Part 4: Finger image data*

— *Part 5: Facial image data* [Technical Report]

— *Part 6: Iris image data*

ISO/IEC 29794 series is prepared to accommodate new, additional parts that address other modalities specified by ISO/IEC 19794, with part numbers and titles aligning appropriately. However, as Part 1 is intended for use by all modalities, a modality does not necessarily need a modality-specific part in order to make use of quality scores.

It is anticipated that a future version of each part of the ISO/IEC 19794 series will reference this part of ISO/IEC 29794 normatively, and their respective data fields will be updated as required.

This corrected version of ISO/IEC 29794:2016 incorporates the following corrections.

1. "as given in Formula (C.1)" has been deleted from C.2 a).

2. Table 2, row: 5-byte Quality Block, column: Governing Section + Description + Notes:

QAID values of 0 to 32767

is changed to

QAID values of 1 to 32767

3. A.2, table, row: 5, column: Block 1 Byte 4+5 (QAID)

0

is changed to

10

Introduction

Quality metrics are useful for several applications in the field of biometrics. While ISO/IEC 19784-1 specifies a structure and gives guidelines for quality score categorization, ISO/IEC 29794 defines and specifies methodologies for objective, quantitative quality score expression, interpretation, and interchange. This International Standard is intended to add value to a broad spectrum of applications in a manner that encourages competition, innovation, interoperability and performance improvements, and avoids bias towards particular applications, modalities, or techniques.

This International Standard presents several biometric sample quality scoring tools, the use of which is generally optional but can be determined as mandatory by particular Application Profiles or specific implementations.

A number of applications can benefit from the use of biometric sample quality data; an example is the use of real-time quality feedback upon enrolment to improve the operational efficiency and performance of a biometric system. The association of quality data with biometric samples is an important component of quality metric standardization. Quality fields as specified in 7.1 and 7.2 will be incorporated into data interchange formats. If a CBEFF header is present, then CBEFF_BDB_quality may additionally be used to express quality data. Useful analyses can be performed using quality data along with other data in order to improve the performance of a biometric system. For example, correlating quality data to other system metrics can be used to diagnose problems and highlight potential areas of performance improvement.

This edition introduces encoding of a vector of quality metrics.