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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 41814.1-2022

**Information technology - Biometric calibration, augmentation
and fusion data - Part 1: Fusion information format**

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents" drafted.

This document is part 1 of GB/T 41814 "Information technology biometric calibration, enhancement and fusion data".

GB/T 41814 has released the following parts.

--- Part 1. Fusion information format.

This document is modified using ISO /IEC 29159-1.2010 "Information Technology Biometric Calibration, Enhancement and Fusion Data Part 1

Section. Fusion Information Format.

Compared with ISO /IEC 29159-1.2010, this document has made the following structural adjustments.

--- Chapter 2 corresponds to Chapter 3 in ISO /IEC 29159-1.2010;

--- Chapter 3 corresponds to Chapter 4 in ISO /IEC 29159-1.2010;

--- Chapter 4 corresponds to Chapter 5 in ISO /IEC 29159-1.2010;

--- Chapter 4 symbols and abbreviations are divided into 4.1 and 4.2, which describe symbols and abbreviations respectively;

--- Chapter 5 corresponds to Chapter 2 in ISO /IEC 29159-1.2010.

The technical differences between this document and ISO /IEC 29159-1.2010 and their reasons are as follows.

---Add the normative reference document GB/T 1988-1998 and replace it with the coded character set specified in GB/T 1988-1998

ASCII encoding (see 6.4.1, 6.4.2, 6.4.3) to adapt to the technical conditions of our country and increase operability.

The following editorial changes have been made to this document.

--- Table 3, Table 4, Table 7, Table 15, Table 17 added table notes.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

This document defines a biometric fusion information format that establishes a machine-readable data format to describe

Statistics of the alignment scores entered during the merge process. GB/T 41814 "Information Technology Biometric Calibration, Enhancement and Fusion Data"

It is intended to consist of the following parts.

--- Part 1. Fusion information format. The purpose is to specify the format of information fusion between biometric identification systems, which is suitable for biometric identification systems.

Design and use of a score-level fusion strategy for a signature recognition system.

This document defines the most common and easy-to-use fusion method. graded fusion. The method utilizes two or more systems to deal with an individual's

Biometric information and match the processed information with at least one registered sample, and then output a scalar alignment score. these have

The scores can be real scores (same person) or counterfeit scores (different people), and then design a fusion scheme to combine the scores for further

Define the class boundary between real and fake scores.

The distribution of alignment scores depends on the biometric alignment subsystem. The range of scores and the shape of the distribution can vary widely from system to system.

Two common fusion methods are as follows.

--- In the classification-based process, the existing alignment scores are directly combined to output a decision or score.

---In the normalization-based process, each score needs to be converted to a common interval before fusion. Based on mean and standard deviation

Simple normalization methods for statistical parameters such as differences are sometimes effective, while complex normalization methods require knowledge of the overall distribution

of scores.

Holds any of the common conversion forms. This document supports a

Modular approach to biometric system integration. In this method, the alignment and fusion algorithms are still protected by their respective intellectual property rights.

Therefore, this document envisages the possibility of an application that utilizes two or more basic acquisition and alignment techniques (e.g. hand shape and fingerprints) to generate a score each, which are then fed into a

Fusion module.

The logical role of each record in the conceptual multimodal fusion process is shown in Figure 1.

Figure 1 Schematic diagram of the application of the fusion information format

Information technology biometric calibration, enhancement and

Fusion Data Part 1. Fusion Information Format

1 Scope

This document specifies a machine-readable biometric fusion message format.

This document is suitable for describing the statistics of the alignment scores entered during the fusion process.

This document does not apply to the following.

- Standardization of the alignment score normalization process;
- Standardization or definition of the fusion process.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 1988-1998 Seven-bit coded character set for information technology information interchange (eqv ISO /IEC 646:1991)

GB/T 26237.1-2010 Information Technology Biometric Data Interchange Format Part 1. Framework 1) (ISO /IEC 19794-1.

2006, MOD)

Note. There is no technical difference between the quoted content of GB/T 26237.1-2010 and the quoted content of ISO /IEC 19794-1:2006.

GB/T 28826.1-2012 Information Technology Public Biometrics Exchange Format
Framework Part 1.Specification of Data Elements

(ISO /IEC 19785-1:2006, MOD)

Note. There is no technical difference between the quoted content of GB/T 28826.1-2012 and the quoted content of ISO /IEC 19785-1:2006.

3 Terms and Definitions

The terms and definitions defined in GB/T 26237.1-2010 and the following apply to this document.

3.1

biometric sample

An analog or digital representation of a biometric characteristic prior to biometric item extraction.

NOTE. A biometric acquisition device is a biometric acquisition subsystem equipped with a single component.

3.2

The probability that a variable takes a value less than or equal to a value.

1) The latest version of ISO /IEC 19794-1 is the revised version in 2011, and the relevant content involved in this document has no technical revision.

2) The latest version of IEEE 754 is the revised version in 2019, and the related content involved in this document has no technical revision.