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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 41815.2-2022

Information technology - Biometric presentation attack detection - Part 2: Data formats

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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 2 of GB/T 41815 "Information Technology Biometrics Presenting Attack Detection". GB/T 41815 has

The following sections were published.

--- Part 1.Framework;

--- Part 2.Data format;

--- Part 3.Testing and reporting.

This document is modified to adopt ISO /IEC 30107-2.2017 "Information Technology Biometric Presence Attack Detection Part 2.Data

Format".

The technical differences between this document and ISO /IEC 30107-2.2017 and their reasons are as follows.

--- Replaced ISO /IEC 2382-37 (see Chapter 3) with the normatively cited GB/T 5271.37, increasing operability;

--- Replaced ISO /IEC 30107-1 (see Chapter 3) with the normatively cited GB/T 41815.1 to adapt to my country's technical regulations

parts to increase operability;

--- Replaced ISO /IEC 8824-1 (see Appendix A.1.1) with the normatively cited GB/T 16262.1 to adapt to my country's technical regulations

parts to increase operability;

--- Replaced ISO /IEC 8825-1 (see Appendix A.1.1, Appendix A.1.3) with the normatively cited GB/T 16263.1 to adapt to the

The technical conditions of the country increase the operability.

The following editorial changes have been made to this document.

--- Added the notes of 5.2.2, 5.2.3, 5.2.5, 5.2.6, 5.3.8.

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

Introduction

The process of presenting prosthetic or human features to the biometric acquisition subsystem in a manner that may interfere with the intended strategy of the biometric system.

This process is called a presentation attack. GB/T 41815 focuses on automatic detection mechanisms for presentation attacks. These mechanisms are called presence attack detection

(PAD) mechanism.

This document constructs a common data format for conveying the type of attack detection method and the results of the attack detection method. this document

Specifies the meaning of the data elements in the presentation attack detection data format, see clause 5.These include an extensible specification based on ASN.1

Tagged binary PAD data format, see A.1 in Appendix A; text PAD data format defined based on XML schema, see Appendix

A.2 in A. Normative Appendix A includes formal coding specifications, and informative Appendix B gives coding examples.

GB/T 41815 "Information Technology Biometric Recognition Present Attack Detection" stipulates the present attack detection phase in the field of biometric identification.

The relevant framework, data format, and test-related content are used to facilitate the evaluation of the design of the attack detection function and its ability.

GB/T 41815 is intended to consist of three parts.

--- Part 1.Framework. The purpose is to establish an overall framework related to attack detection in biometric identification systems.

--- Part 2.Data format. The purpose is to standardize the data format for presenting attack detection.

--- Part 3.Testing and reporting. The purpose is to clearly present the various factors that need to be considered in the assessment of attack detection capabilities and the evaluation

Evaluation principles and methods.

To standardize the objects related to attack detection, it is necessary to first clearly present the attack detection framework as a whole to guide the attack detection.

The definition of classification and tools, secondly, in order to exchange and share related data elements, it is necessary to define a clear and unified data format, and finally in the

When evaluating the presentation attack detection capability, it is necessary to clarify the test object, test environment and test indicators to guide the presentation attack detection capability.

Conduct scientific and objective assessments.

Information Technology Biometrics Presentation

Attack Detection Part 2.Data Format

1 Scope

This document specifies the use of binary format and Extensible Markup Language (XML) representation in biometric identification to present attack detection methods.

Use specific mechanisms and a common data format for the exchange of detection results.

This document is intended to regulate the presence of attack detection related to sensor acquisition of biometric identification characteristics in different application fields.

data.

This document does not apply to specifications presenting attack detection data in relation to authenticity, integrity and confidentiality during storage and transmission

information.

NOTE. Although addressing security issues is beyond the scope of this document, see GB/T 28826.1, by encoding PAD data as raw materials containing optional security blocks

Object feature information records to protect PAD data.

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 5271.37 Information Technology Vocabulary Part 37.Biometric Identification (GB/T 5271.37-2021, ISO /

IEC 2382-37.2017, MOD)

GB/T 16262.1 Information Technology Abstract Syntax Notation One (ASN.1) Part 1.Basic Notation Specification (GB/T 16262.1-

2006, ISO /IEC 8824-1.2002, IDT)

GB/T 16263.1 Information Technology ASN.1 Coding Rules Part 1.Basic Coding Rules (BER), Regular Coding Rules

(CER) and Atypical Encoding Rules (DER) specification (GB/T 16263.1-2006, ISO /IEC 8825-1.2002, IDT)

GB/T 41815.1 Information Technology Biometrics Presentation Attack Detection Part 1.Framework (GB/T 41815.1-2022,

ISO /IEC 30107-1.2016, IDT)

ISO /IEC 19785-1 Information Technology Common Biometric Exchange Format Framework Part 1.Specification of Data Elements (Infor-

cation)

Note. GB/T 28826.1-2012 Information Technology Common Biometrics Exchange Format Framework Part 1.Data Element Specification (ISO /

IEC 19785-1.2006, MOD)

ISO 80000 (all parts) Quantities and units

Terms and definitions defined in GB/T 5271.37 and GB/T 41815.1 apply to this document.

4 Compliance

A Presence Attack Detection (PAD) data block complies with this document if it meets the relevant requirements of Clause 5 and Annex A, A.1 or A.2, respectively