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

GB/T 45284.1-2025

**Information technology - Extensible biometric data interchange
formats - Part 1: Framework
(English Translation)**

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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 for standardization documents" Drafting.

This document is Part 1 of GB/T 45284 "Information technology - Extensible biometric identification data exchange format".

GB/T 45284 has published the following parts.

- Part 1: Framework;
- Part 4: Fingerprint image data;
- Part 5: Face image data;
- Part 6: Iris image data;

- Part 9: Vascular image data;
- Part 16: Full body image data;
- Part 17: Gait image sequence data.

This document is equivalent to ISO/IEC 39794-1:2019 "Information technology - Extensible biometric data exchange format Part 1 Section. Framework.

Introduction

GB/T 45284 establishes an extensible biometric data exchange format and defines the basic rules, Common data elements and data structures, basic test methods; for different biometric recognition modalities, scalable the data element definitions, data formats, test methods, and application guidelines for typical application scenarios of the data exchange format are provided.

GB/T 45284 "Information Technology Extensible Biometric Identification Data Exchange Format" is planned to consist of 17 parts.

- Part 1: Framework. The purpose is to establish rules, guidelines, common data elements, Common data structures and compliance testing methods.
- Part 2: Fingerprint detail point data. The purpose is to establish an extensible fingerprint detail point data record exchange format and Compliance test methods.
- Part 3: Fingerprint data. The purpose is to establish an extensible fingerprint data record exchange format and conform to Sex testing method.
- Part 4: Fingerprint image data. The purpose is to establish an extensible fingerprint image data record exchange format and conform to Sex testing method.
- Part 5: Face image data. The purpose is to establish an extensible face image data record exchange format and conformity Sex testing method.
- Part 6: Iris image data. The purpose is to establish an extensible iris image data record exchange format and conformity Sex testing method.
- Part 7: Signature/signature time series data. The purpose is to establish an extensible signature/signature data record Interchange formats and conformance testing methods.
- Part 8: Fingerprint skeleton data. The purpose is to establish an extensible fingerprint skeleton data record exchange format and conform to Sex testing method.
- Part 9: Vascular image data. The purpose is to establish an extensible data record exchange format for vascular image data and Compliance test methods.
- Part 10: Hand shape contour data. The purpose is to establish an extensible data record exchange format for hand shape contour data and Compliance test methods.

--- Part 11: Processed signature/signature dynamic data. The purpose is to establish an extensible processed signature/signature dynamic Data record exchange format and compliance test method for dynamic data.

--- Part 12: Facial feature data. The purpose is to establish an extensible facial feature data record exchange format and conformity Sex testing method.

--- Part 13: Sound data. The purpose is to establish an extensible sound data record exchange format and conformity test method.

--- Part 14: DNA data. The purpose is to establish an extensible DNA data record exchange format and conformance test Try method.

--- Part 15: Palmprint image data. The purpose is to establish an extensible data record exchange format for human palmprint images and Compliance test methods.

--- Part 16: Whole body image data. The purpose is to establish an extensible whole body image data record exchange format and conformity Test method.

--- Part 17: Gait image sequence data. The purpose is to establish an extensible data record exchange format for gait image sequences.

format and compliance test methods.

The biometric data exchange format supports interoperability between different biometric systems.

The format was published in the first edition of the ISO/IEC 19794 series from 2005 to 2007.

The second generation biometric data interchange format was published in the second edition of the established parts of the 19794 series and the first edition of some new parts.

In the second generation biometric data exchange format, new useful data elements are added, such as data related to the quality of the biometric sample.

elements, unified the header structure in all parts of the ISO/IEC 19794 series, and added XML-encoded binary encoding.

The second generation of biometric data exchange format is not syntactically compatible with the first generation. Because the first generation has been widely adopted, the second generation the first generation does not replace the first generation. For example, biometric data used to be stored in machine-readable travel documents will be the first edition of the ISO/IEC 19794 series will therefore remain in the catalogue of standards at the same time as the second edition.

As the biometric data exchange format is expected to require additional data elements, in order to avoid future compatibility issues GB/T 45284 (all parts) provides a standard biometric data exchange format based on the ISO/IEC 19794 series and can the ability to

extend the defined format. ASN.1 (Abstract Syntax Notation One) is extensible the Distinguished Encoding Rules of the ASN.1 extension specification form the basis for encoding biometric data in binary tag-length-value format.

XSD (XML Schema Definition) forms the basis for encoding biometric data in XML (Extensible Markup Language) format.

This document defines the common points of the scalable biometric identification data exchange format considered in the specific parts of GB/T 45284, namely the common content, meaning and representation of object characteristics identification data exchange formats.

GB/T 45284 (all parts) supports interoperability and data exchange between biometric recognition applications and systems, and specifies the requirements of various biometric applications, whether they are running in an open system environment or in a single closed system.

The system is built on standards-based, publicly defined data formats, interfaces, and protocols to facilitate data exchange and interoperability with other systems.

Closed systems can also be built on publicly defined standards and may Includes components of different design or manufacture, but does not inherently require data exchange and interoperability with any other system.

The ISO/IEC JTC1/SC37 biometric identification standard series includes a set of standards at different levels, including biometric identification data Interchange formats and biometric interfaces, as well as biometric profiles that describe the use of these standards in specific application areas.

Figure 1 shows the interrelationship of standardization areas related to biometrics.

Biometric data exchange formats defined in (all parts) represent the biometric interoperability the formats defined in the ISO/IEC 19785 series can be used as wrappers for biometric data.

Identification data is sensitive and vulnerable to attack, so it needs to be encrypted when it is exchanged.

Biometric interfaces are important for facilitating the lightweight deployment of biometric components.

Easy integration and use are critical. It is recommended to use a unified biometric vocabulary when describing biometric technology.

The deployment of applications requiring verification or identity recognition occurs in the context of societal and cross-jurisdictional requirements.

The ISO/IEC 19794 series and GB/T 45284 (all parts) specify biometric identification data