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**GB/T 29268.7-2023**

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**Information technology - Biometric performance testing and  
reporting - Part 7: Testing of on-card biometric comparison  
algorithms**

信息技术 生物特征识别性能测试和报告 第7部分：卡上生物特征识别比对算法测试

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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 7 of GB/T 29268 "Information Technology Biometric Recognition Performance Test and Report": GB/T 29268 has The following parts have been published:

- Part 1: Principles and framework;
- Part 2: Test methods for technology and scenario evaluation;
- Part 3: Mode specificity test;
- Part 4: Interoperability performance testing;
- Part 5: Access control scenarios and classification mechanisms;
- Part 6: Test methods for operational evaluation;
- Part 7: On-card biometric comparison algorithm test: This document is equivalent to ISO /IEC 19795-7:2011 "Information Technology Biometric Performance Testing and Reporting Part 7: On-Card Biometric Verification Algorithm Test": This document has made the following permitted structural adjustments:

--- Adjust Chapter 2 "Conformity" to Chapter 5: Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents: This document is under the jurisdiction of the National Information Technology Standardization Technical Committee (SAC/TC28): This document was drafted by: Guangzhou Radio and Television Express Financial Electronics Co., Ltd., East China Branch of China Electronics Standardization Institute, Xin Continental Digital

Technology Co., Ltd., Xiamen Meiya Pico Information Co., Ltd., China Electronics Standardization Institute, Guangzhou Guang Dianzhuoshi Intelligent Technology Co., Ltd., Shanghai Shangtang Intelligent Technology Co., Ltd., Xiamen Ruiwei Information Technology Co., Ltd., Beijing University of Civil Engineering and Architecture, Beijing Jingdeyi Yintong Technology Co., Ltd., Entropy Technology Co., Ltd., Beijing Megvii Technology Co., Ltd., Shenzhen Wanjiaan IoT Technology Co., Ltd. Technology Co., Ltd., Zhejiang Bangsheng Technology Co., Ltd., Tianjin 754 Photoelectric Technology Co., Ltd., Jiangxi Zhixin Intelligent Technology Co., Ltd. Company, Beijing Bird Technology Co., Ltd., Hangzhou Qizhi Internet Technology Co., Ltd., Huizhou University, Shenzhen Mingtu Innovation Technology Co., Ltd. Division, Xiamen Entropy Technology Co., Ltd. The main drafters of this document: Yang Xu, Song Jiwei, Zhong Chen, Zhang Wei, Wang Wenfeng, Cai Chunshui, Wu Hongwei, Wang Haibin, Jiang Hui, Jia Baozhi, Tian Qichuan, Zhang Liepao, Liu Qianying, Lang Junqi, Li Lin, Sun Jing, Wang Xiaoliang, Huang Xiaoni, Song Fangfang, Zhan Donghui, Su Liwei, Lin Xiaoqing, Mei Jingqing, Zhang Nengfeng, Wang Xinyu, Li Jianming, Yi Haiping, Huang Jianfeng, Li Houpeng, Chen Guodong, Li Qingshun, Chen Guang, Li Ying, Chen Shukai, Fu Yingbo:

This document establishes a mechanism that can be used to measure the achievable accuracy and speed: The mechanism includes the data structures required to match the on-card minutiae templates conforming to ISO /IEC 19794-2:2005 and command example: GB/T 29268 "Information Technology Biometric Recognition Performance Test and Report" is proposed to be composed of seven parts:

- Part 1: Principles and framework: The purpose is to specify common principles and frameworks for performance testing and reporting of biometric systems:
- Part 2: Test methods for technology and scenario evaluation: The purpose is to specify the technical evaluation and Test method for scene evaluation:
- Part 3: Modal specificity test: The purpose is to specify performance measures for specific differences between modalities in biometric systems: try method:
- Part 4: Interoperability performance testing: The purpose is to specify the interoperability requirements related to the exchange format of biometric data Test Methods:

## 1 Scope

GB/T 29268.7-2023 is Part 7 of the Chinese series on biometric performance testing and reporting, and covers on-card comparison algorithms. On-card comparison is what lets a smart card verify a fingerprint without the template ever leaving it, which is the strongest privacy property a biometric system can offer; the price is that the matching runs on a processor with kilobytes of memory and a fraction of a second of power, so the algorithm is a compromise that has to be measured on the card rather than on a workstation. The standard sets the test plan requirements - the basic testing concepts, the hardware and

software interface specification, the data format specification, the biometric information template analysis, the combination of card and comparison subsystem, the phased testing, the participation options, the metrics and the comparison results - and the test execution and reporting requirements. It took effect on 1 December 2023.

This document establishes a mechanism for measuring the performance of biometric comparison algorithms running on ISO /IEC 7816 integrated circuit cards: Core Algorithmic Capabilities: Specifically, this document includes:

- Instantiated a mechanism of on-card biometric comparison test;
- Standardize the accuracy measurement procedure of the on-card biometric comparison implemented in the object-based test special sample card;
- Standardize the measurement procedures for various operation durations;
- Provides an example of matching the ISO /IEC 19794-2:2005 compact card detail point template: The following are outside the scope of this document:
- Communication channel guarantee procedures, including encryption protection of biometric templates;
- Procedures for protecting the integrity of samples or templates using digital signatures;
- Card and card reader authentication;
- Selection or use of transmission protocol (such as contactless);
- Configuration files for specific data exchange standards;
- Card reader evaluation program, including performance, compliance and interoperability;
- card durability or durability evaluation procedure;
- on-card template generation (such as extracting minutiae points from images);
- Template update or adaptation;

## 2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document:

GB/T 16649:4-2010 Identification card integrated circuit card Part 4: Structure, security and commands for switching (ISO / IEC 7816-4:2005, IDT)

GB/T 16649:11-2019 Identification card integrated circuit card Part 11: Authentication by

biometric method (ISO / IEC 7816-11:2017, MOD)

Note: The original international document refers to ISO /

IEC 7816-11:2004, and the quoted content of

GB/T 16649:11-2019 is the same as ISO /

IEC 7816-11:2004 There is no technical difference in what is being referenced:

GB/T 29268:1-2012 Information Technology Biometric Recognition Performance Testing and Reporting Part 1: Principles and Framework (ISO / IEC 19795-1:2006, IDT)