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

**GB/T 33767.4-2018**

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**Information technology -- Biometric sample quality -- Part 4:  
Finger image data**

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### Foreword

GB/T 33767 "Information Technology Biometric Sample Quality" is intended to be divided into the following sections.

--- Part 1. Frameworks;

--- Part 4. Fingerprint image data;

--- Part 5. Face image data;

--- Part 6. Iris image data.

This part is part 4 of GB/T 33767.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

This section uses the translation method equivalent to the use of ISO /IEC TR29794-4:2010 "Information Technology Biometric Sample Quality Part 4

Points. Fingerprint Image Data.

The Chinese documents that have a consistent correspondence with the normatively quoted international documents in this section are as follows.

--- GB/T 33767.1-2017 Quality of Information Technology Biometric Samples Part 1. Framework (ISO /IEC 29794-1.

2009, IDT)

### Introduction

The quality of the fingerprint image data is defined as the predicted behavior of the image in a matching environment. So in many applications quality information is crucial

important. GB/T 30267.1-2013 and GB/T 28826.1-2012 assign a quality domain to the quality score and specify the allowable

Range of scores. According to the recommendations in these criteria, the quality score will be subdivided into four categories, each corresponding to a qualitative interpretation. in

The same definition in the standardized fingerprint data exchange format of GB/T 26237.2, GB/T 26237.3, GB/T 26237.4, GB/T 26237.8

Image quality domain. However, at present, there is no standard quality score definition method that helps explain and exchange fingerprint image scores.

This section is a recommended standard for a guiding method that seeks to express and interpret the fingerprint image quality in an objective and quantitative manner.

The number method; at the same time, it supplements ISO /IEC 29794-1 in the development of reference fingerprint image data sample libraries. This reference sample

The library is based on the availability of public fingerprint images and can subsequently be used to regularize the quality scores.

Information Technology Biometric Sample Quality

Part 4. Fingerprint Image Data

## 1 Scope

For the quality aspects of fingerprint image modality, this part of GB/T 33767.

--- Established terms, definitions and definitions that help the quality measurement of fingerprint images;

--- Defines the fingerprint image quality score;

--- Identify or define a fingerprint image sample library to provide information for algorithm developers and users;

--- In order to describe the characteristics of quality metrics, a special statistical method has been developed for the fingerprint image database to help understand the quality score and its

Relationship with matching performance.

This section does not include the following.

--- Performance evaluation and standardization of quality algorithms.

## 2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article

Pieces. For undated references, the latest version (including all amendments) applies to

this document.

ISO /IEC 29794-1 Quality of Information Technology Biometric Samples Part 1. Frameworks  
(Information technology-

Biometricssamplequality-Part 1.Framework)

### 3 Terms and definitions

The terms and definitions defined by ISO /IEC 29794-1 and the following apply to this document.

#### 3.1

Foreground area foregroundregion

The area of the fingerprint image that contains the features of the valid fingerprint image.

Note. The most obvious structural feature of effective fingerprint images is the intersection of ridge lines and valley lines.

#### 3.2

Local area localregion

An image block of  $m \times n$  pixels in the foreground area of the fingerprint image, where  $m$  and  $n$  are both smaller than the width and height of the fingerprint image.

#### 3.3

Fingerprint image quality evaluation algorithm fingerimagequalityassessmentalgorithm

The algorithm used to calculate the sample quality score for a given fingerprint image.

#### 3.4

Fingerprint image database fingerimagecorpus

Fingerprint image sample set.

#### 3.5

Fingerprint image quality classification fingerimagequalitycategory

The common attributes of a set of fingerprint images. For a type of fingerprint matcher, the fingerprint image with the same common attributes is expressed or