

ICS 07.140
CCS A92



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

GB/T 45433-2025

**Forensic sciences - Forged video and image of a person -
Explainable feature set for examination**

法庭科学伪造人像可解释性检验特征集

Issued on: February 28, 2025

Implemented on: June 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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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. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document is issued by the Ministry of Public Security of the People's Republic of China. This document is under the jurisdiction of the National Technical Committee on Criminal Technology Standardization (SAC/TC179). This document was drafted by: Nanjing University of Science and Technology, the Public Security Bureau's Identification Center, the Supreme People's Procuratorate's Procuratorial Technology Information Research Center, the Ministry of Public Security The Third Research Institute, the Institute of Automation of the Chinese Academy of Sciences, the Public Security Department of Guangdong Province, the Public Security Department of Sichuan Province, the Public Security Department of Jiangsu Province, the State Security Department of Beijing Bureau's Forensic Identification Center, Forensic Identification Science Research Institute, Beijing Multi-Dimensional Vision Technology Co., Ltd., and Shandong Provincial Public Security Department's Physical Evidence Identification Research Center. The main drafters of this document are. Hu Xiyuan, Zhang Ning, Du Wenyu, Zhou Yichao, Yang Ming, Zhai Wanfeng, Chen Chen, Lin Jing, Wang Yelin, Zhou Haijiao, Junshuai Zheng, Hongjian Song, Lan Jiang, Kui Wang, Songdong Zhou, Feng Chao, Jiancheng Lin, Shaopei Shi, Jinhua Zeng, Junjie Yu. Forensic Science. Forged Portraits, Explainability Test feature set

1 Scope

GB/T 45433-2025 defines the set of explainable features used in the forensic examination

of forged images and video of a person. Deepfake detectors that report only a probability are of limited use in court, because an expert must be able to say what in the image supports the conclusion and a tribunal must be able to weigh it; a black box score cannot be cross-examined. The standard therefore fixes a vocabulary of features that a human examiner can point to and describe - the categories of interpretable examination feature, and within each category the subclasses, their descriptions and the rules for describing them consistently in a report. Informative annexes cover the feature extraction methods and give worked examples of the feature description diagrams. It takes effect on 1 June 2025.

This document establishes the general principles for feature extraction and description in forensic image interpretability testing and defines the The categories of inspection features are specified, and the description rules of each type of features are specified. This document is applicable to the extraction and description of interpretability inspection features for forged portraits in the field of forensic science.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 45429 General principles for forensic science forged portrait inspection

3 Terms and definitions

The terms and definitions defined in GB/T 45429 apply to this document.

4 General Principles

4.1 Feature extraction is performed based on the specimen, sample conditions and feature formation principle. An example of the extraction method is shown in Appendix A.

4.2 Explanability test of forged portraits Feature descriptions include text, pictures and other forms. The categories of the genus (see Chapter 5), pictures and other forms are supplements to the text form. See Appendix B for examples of feature description display diagrams.

4.3 The textual description should indicate the subclass to which the characteristic belongs (see Chapter 6).

5.Explanability Test Feature Categories The categories of interpretability test features for forged portraits in the field of forensic science include but are not limited to. statistical features, splicing features, noise Features, light response non-uniformity features,

illumination features, portrait depth of field features, portrait geometry features, portrait attribute features, head posture features, blinking Eye characteristics, mouth change characteristics, heart rate characteristics, and human body movement characteristics.

6.1 Statistical characteristics

6.1.1 Feature Overview Statistical features reflect the inconsistency of pixel statistical information or the reduction of correlation between video frames after image splicing and synthesis. Pixels are statistically analyzed by histogram statistics, grayscale standard deviation calculation, image similarity calculation and other statistical methods to extract statistical features, and then compared with human