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GA

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

GA/T 1325-2017

**Security protection--Face recognition
applications--Specifications for acquisition of video and image**

安全防范 人脸识别应用 视频图像采集规范

(English Translation)

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4.3 Acquiring images
- 5 Test method
- 5.1 Collection environment
- 5.2 Acquisition equipment
- 5.3 Acquiring images

1 Scope

This standard specifies the technical requirements and test methods for video or image acquisition for face recognition in security applications.

This standard is applicable to the scheme design, equipment selection, construction and installation of video or image acquisition for face recognition in security applications.

Engineering acceptance. Face recognition application systems in other fields can be used as reference.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 25724-2010 Security and surveillance digital video and audio coding and decoding technical requirements
GB 50396-2007 Code for design of entrance and exit control system engineering
GA/T 367-2001 Technical requirements for video security monitoring system
GA 461-2004 Technical requirements for digital photos used in resident ID card preparation
GA/T 706-2007 Technical requirements and collection specifications for digital photographs of suspects
GA/T 893-2010 Application terminology of security biometric identification
GA/T 922.2-2011 Security Face Recognition Application System Part 2: Face Image Data
GA/T 1126-2013 Technical requirements for near-infrared face recognition equipment
GA/T 1127-2013 General technical requirements for security video surveillance cameras
GA/T 1180-2014 Technical Requirements for Entry and Exit Digital Photos
GA/T 1326-2017 Security Protection Face Recognition Application Program Interface Specification

3 Terms and definitions

The following terms and definitions defined in GA/T 893-2010 are suitable for this document.

Face recognition application video image acquisition

videoandimageacquisitionforfacerecognitionapplications the process of obtaining videos or images that may contain facial information for face recognition.

Face recognition video image acquisition equipment

deviceofvideoandimageacquisitionforfacerecognition Various devices for face recognition video or image capture.

Note: Including facial recognition cameras and cameras.

Acquisitions subject

A sample of people whose face images meet certain requirements in the field of view.

a) Number of pixels. 1.3 million pixels or more, no less than 1280 pixels horizontally, no less than 720 pixels vertical, the larger the field of view, the image the more prime numbers;

b) Shutter adjustment. the lowest speed is less than 1/100s;

c) Sampling frame rate. the camera is not less than 10 frames/s, and the camera should have continuous shooting function;

d) The camera/camera with face detection should be able to automatically select the best face image between frames, and it should be combined with portrait index face image output Features.

4.2.2 Lens

The lens used for dynamic capture selection should meet the following requirements.

a) The maximum aperture of the auto iris lens is not less than $F=1.4$;

b) The optional lens makes the field of view space XYZ of the collected object's face area as follows, to meet the requirements of 4.1.1 and GA/T 922.2-2011

4.2.1 Requirements.

--- $600\text{mm} \leq X \leq 2800\text{mm}$;

--- $450\text{mm} \leq Y \leq 2100\text{mm}$;

--- $Z \geq 800\text{mm}$.

c) Refer to formula (A.3) for the selection of lens focal length f . See Appendix C for design examples.

4.2.3 Interface

The physical and command interface should meet the following requirements.

- a) Physical interface. meet the requirements of 5.1.2 in GA/T 1127-2013;
- b) Command interface. meet the interface requirements of face acquisition equipment in 5.1.4 of GA/T 1326-2017.

4.3.1 File format

The output file format should meet the following requirements.

- a) Video compression coding. H.264, H.265, MPEG4, MJPEG or SVAC;
- b) Image file format. BMP, RAW, JPEG or JPEG2000, the compression ratio of JPEG and JPEG2000 files should not be greater than 25 times.

4.3.2 Image quality

The quality of the output face image is determined by 5.1 in GA/T 1344-2016. According to the different face image library deployed, it conforms to GA 461-the frontal photograph requirements of Chapter 4 in 2004, 4.2 in GA/T 1180-2014 and 6.1 in GA/T 706-2007.

- a) The distance between the two eyes. the registered face image should meet the 60 pixel requirement of 4.1.1 in GA/T 922.2-2011, and the face image should be recognized Meet the 30 pixel requirements of 4.2.1 in GA/T 922.2-2011;
- b) Face pitch angle. The registered face image should meet the requirements of GA/T 922.2-2011 4.1.3 not greater than $\pm 10^\circ$, and recognize the face the image should meet the requirements of GA/T 922.2-2011 in 4.2.2 not greater than $\pm 20^\circ$, and there should be auxiliary measures to ensure that the face angle meets the requirements Claim;
- c) Distortion rate η . not more than 1%;
- d) Grayscale. the dynamic grayscale range is not less than 180 levels;
- e) Clarity. The face is clear, without obvious tailing, jitter and other motion blur;
- f) Noise. The image has no obvious noise;
- g) Others. Other requirements specified in Chapter 4 of GA/T 922.2-2011.

4.3.3 Image processing

The post-processing of the captured image in terms of color and brightness is in accordance with the following requirements.

- a) Color adjustment. The color of the image can be adjusted appropriately until the skin

color of the face is natural and true. When the image is seriously color cast, it should not be forcibly adjusted its color should be recollected after adjusting the white balance;

b) Brightness and highlight processing. The brightness can be adjusted appropriately until the skin color of the face is natural and true, and the image is seriously underexposed or overexposed at this time, the brightness should not be forcibly adjusted, and the exposure parameters of the equipment should be adjusted and then collected again.

5.1.1 Installation location

The installation locations of different dynamic acquisition equipment for testing are as follows.

- a) Measure the measured distance L, installation height H1 and pitch angle A of the dynamic collection device from the collection object, refer to Table A.2 and Table A.3 and Table A.4, judge whether it meets the requirements of a) and b) in 4.1.1;
- b) Observe the installation height H1 of the dynamic acquisition equipment in the entrance and exit control scene from the ground, and judge whether it meets the requirements in 4.1.1 c).

5.1.2 Ambient lighting

Observe the lighting conditions of the area around the collection object and the face area, and use a visible light meter to test the area around the collection object and the face Area light intensity, judge whether it meets the requirements of 4.1.2.

5.2.1 Video/Camera

View the camera/camera inspection report installed on site for dynamic acquisition, check the consistency of the acquisition equipment model and the inspection report, Verify the number of pixels of the image sensor, shutter adjustment speed, and sampling frame rate indicators, identify the optimal selection of face images between frames and index face images with both portraits Like output function, judge whether it meets the requirements of a), b), c) and d) in 4.2.1.

5.2.2 Lens

View the inspection report of the lens equipped with the dynamic acquisition equipment installed on the site, check the consistency of the lens model and the inspection report, and verify the largest lens Aperture and focal length indicators, to determine whether they meet the requirements of a), b) and c) in 4.2.2.