



**GENERAL TECHNICAL REQUIREMENTS  
FOR STATIONARY AND MOBILE BIOMETRIC STATIONS FOR THE  
CONSULAR OFFICES OF THE REPUBLIC OF BULGARIA ABROAD, FOR  
WORKING WITH THE NATIONAL VISA INFORMATION SYSTEM**

**Specification – minimum requirements**

**General information:**

**Functional requirements:**

1. Creation of conditions for automated enrollment and processing of personal signature and biometric data (digital photo and fingerprints) from the persons making applications for visas, certificates for foreign citizens to return to Bulgaria and issuing of Bulgarian identity documents.

2. Achieving quality of the biometric data enrolled and processed in the system, in line with the international standards and, in particular, the requirements of the ISO/IEC 19794 and ISO/IEC 15444 standards and the recommendations of ICAO DOC 9303.

**Stations (stationary and mobile) for enrollment (entering) of biometric data should be in line with the following technical requirements:**

1. To allow “live” enrollment of biometric data.  
2. To represent a comprehensive integrated solution consisting of hardware and software components.

3. To include built-in software for comprehensive management of the process of entering biometric data. To include a user interface in the Bulgarian language.

4. To include an application program interface connecting to the workplace application software for biometric data enrollment of the National Visa Information System developed in a MS Windows operating system environment.

5. Each biometric data enrollment station should include a digital camera to capture the images of the persons making applications for visas, certificates for foreign citizens to return to Bulgaria and the issuing of Bulgarian identity documents.

6. The digital camera should have a capturing matrix of a minimum of 8 megapixels and should include autofocus. Images taken with a digital camera should have a minimum of 24-bit color and should be in line with the quality requirements, in accordance with the requirements of the ISO/IEC 19794-5 standards and the recommendations of ICAO DOC 9303.

7. The digital camera software should ensure the quality requirements as per the ISO/IEC 19794-5 standards and the ICAO DOC 9303 recommendations.

8. The digital camera software should include software for managing the face capture, for quality control of the digital images, for standardization of the images (full frontal face image and token image format) and for verification under ICAO DOC 9303.

9. The software for processing of photographs, including a module for automatic

localization of the eyes (eye catcher) should fulfill the requirements of ICAO DOC 9303 with respect to the quality of the digital facial photography introduced into the electronic carrier.

10. The digital camera software should ensure automatic improvement of parameters such as contrast, brightness, color balance, sharpness in order to achieve the best possible printing quality.

11. The biometric data enrollment station should provide the data on the facial image in JPEG format (full frontal face image) and JPEG2000 (token image format).

12. Each biometric data enrollment station should dispose of a fingerprint scanner. There should be an option to manage and sequentially take:

- for attachment to applications for Bulgarian identity documents – 1x1 and 1x4, by automatically selecting in accordance with the ICAO DOC 9303 rules, two images for saving fingerprints from the left and/or right hand.

- for attachment to visa applications – by automatically selecting in accordance with the ICAO DOC 9303 rules, images for saving 4 fingerprints from the left and right hand, as well as images for saving 2 fingerprints from the thumbs of the left and right hand.

13. The resolution of the fingerprint scanner should be no less than 500 ppi.

It should include built-in software to manage the entering of fingerprints:

- in case of applications for Bulgarian identity documents – one finger respectively from the left and right hand of the person;

- in case of visa applications – four fingers respectively from the left and right hand of the person, as well as the two thumbs.

To control their quality, including visualization of the quality rating on a scale of 1 to 100, for standardization of the images in line with the ISO/IEC 19794-4 standards and the ICAO DOC 9303 recommendations.

14. The fingerprint files should be compressed using a WSQ algorithm certified by NIST.

15. Each station for entering of biometric data should include a device to enter the image of the person's signature, including a min 5" LCD display, touch sensitive and with a high resolution, on which the signature is placed by using a pen and which shall serve for visual comparison.

16. The device for entering of the image of the person's signature should include built-in software for signature entry management, for control of the quality of the digital images and for image standardization.

17. The biometric data entry station should provide the data on the images of the person's signature in JPEG format.

18. The device for entering an image of the person's signature should include a pen for signing.

19. Each biometric data enrollment station should include a background ensuring quality capturing of the images of the persons, as per ISO/IEC FCD 19794-5: Biometric Data Interchange Formats - Part 5: Face Image Data.

20. The biometric data enrollment station should have its own lighting system in line with the ICAO DOC 9303 requirements for quality capturing of the persons' images with the available digital camera, eliminating the impact of the light environment where the station is situated, allowing reduction of glare on polished surfaces (glass, etc.),

shadows and red eyes.

**The stationary biometric data enrollment station should fulfill the following additional requirements:**

1. The station should be set up as a single module (kiosk) with a built-in digital camera, a fingerprint scanner, a device for enrollment of the image of the person's signature and independent lighting. The station should also include a color LCD display for visual control of the enrolled biometric data by the person whose biometric data is enrolled.

2. The station should ensure independent management of the process of biometric data capture with the option to switch to manual control by an operator or the station should be controlled from the workplace with a computer.

3. The station should allow convenient biometric data enrollment for disabled persons, including persons using a wheelchair and capturing arrangements for children should be provided.

4. It should include a technical solution for capturing children from the age of 0 to 3.

5. It should dispose of technical means ensuring quality lighting in the process of image capturing.

6. It should provide a user interface in the Bulgarian language.

7. Training on how to operate the stationary biometric stations should be provided.

**The mobile biometric data enrollment station should be in line with the following additional requirements:**

1. To ensure convenient and reliable transfer of the station components, also fitting into the "cabin size" measurements if transported by airplane.

2. To include a built-in/portable computer for biometric data capturing, also for data saving, and means of connection to the MFA data transmission network. The portable computer should be suitably configured and run on a MS Windows operating system. It should allow autonomous work on built-in batteries.

3. To ensure a user interface in the Bulgarian language.

4. Training on how to operate the mobile biometric stations should be provided.