INFORMATION TECHNOLOGY AND DEVELOPMENT CENTRE OF THE MINISTRY OF THE INTERIOR

Rental of Booths for Capturing Biometric Data

Annex 2. Technical description

Tallinn 2021

ABBREVIATIONS

Abbreviation	Description
HQ	*High Quality*
ICAO	*International Civil Aviation Organization*
IEC	*International Electrotechnical Commission*
ISO	*International Organization for Standardization*
JFIF	*JPEG File Interchange Format*
JPEG/JPG	*Joint Photographic Experts Group*
NFIQ	*NIST Fingerprint Image Quality*
PBGB	Police and Border Guard Board
SMIT	Information Technology and Development Center of the Ministry of the Interior
sRGB	*Standard Red Green Blue*
WCAG	*Web Content Accessibility Guidelines*
WSQ	*Wavelet Scalar Quantization*

DEFINITIONS

Definition	Description
Biometric data	In the context of this document and the procurement, only such types of biometric data will be considered - facial image, i.e. photo, fingerprints and signature image.
Contracting Authority	The term "Contracting Authority" is used to refer to SMIT which is responsible for the Tender procedure and is the Contracting Authority.
Contractor	The term "Contractor" / "Tenderer" is used to refer to the supplier of the requested solution, i.e. the winner of the procurement.
Booth / Kiosk	The term is used to refer to the solution which is the subject of the Contract.
Self-service Booth / Self-service Kiosk	The term is used to refer to the solution which is the subject of the Contract and to which additional requirements apply.
PBGB	Police and Border Guard Board

REFERENCES TO STANDARDS

#	Standard	Issuer	Date
[EN 62262]	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)	EN Standard	2002
[ISO / IEC 19794-4]	[ISO / IEC 19794-4: Information technology — Biometric data interchange formats — Part 4: Finger image data	ISO	December 2011
[ISO / IEC 19794-5]	[ISO / IEC 19794-5: Information technology — Biometric data interchange formats — Part 5: Face image data	ISO	November 2011

1. **Procurement scope**
    1.1. The subject of the framework agreement is the rental, transport, support and installation of Booths and self-service Booths for capturing biometric data (photo or facial image, fingerprints and signature image) required for the administrative procedure to the extent and locations specified in the Technical Specifications (Annex 2). The specifications of self-service Booths are described in clauses 1.16, 3.1, 3.2, 5.21, 6.3, 8.6, 9.4, otherwise all Booths must be identical. Booths will be installed in the following locations:
        1.1.1. 1 (one) test Booth to the Contracting Authority's premises in Tallinn, which allows testing the compliance of the Booth and the self-service Booth with the technical requirements. The test Booth must be of the same model as the other Booths and consist of the same components.
        1.1.2. 1 (one) self-service Booth to Sillamäe police station, with the aim of piloting the operation of this type of Booth in real life situations.
        1.1.3. 1 (one) Booth to the PBGB service point in Tallinn, with the aim of piloting the operation of this type of Booth in real life situations.
        1.1.4. 26 (twenty-six) Booths to PBGB service points all over Estonia. Information on the addresses of service points is available on the PBGB's website www.politsei.ee . The locations of the Booths and their number in a specific location are specified in the procurement contract.
        1.1.5. If the respective order is submitted during the validity of the framework agreement, then up to 20 (twenty) self-service Booths to the premises of an external service provider designated by the Contracting Authority or to the PBGB service points within the Republic of Estonia. The Contracting Authority decides on ordering the self-service Booths specified in this clause on the basis of the results of the implementation of the self-service Booth specified in clause 1.1.2.. The Contracting Authority may decide not to order the self-service Booths specified in this clause. The corresponding self-service Booths are installed in rooms where there is no representative of the PBGB. The availability of the necessary rooms is ensured by the PBGB. Testing of compliance with the technical requirements will be agreed with the Contractor after placing the respective order.
    1.2. Each of the Booths mentioned in clauses 1.1.1.-1.1.5. will be supplied and installed with the components listed in the following clauses:
        1.2.1. Covers required to block out external light and to ensure privacy, such as curtains that are easy to remove and clean, together with the structural elements needed to attach them. The Contractor will provide the Contracting Authority with a sufficient reserve of these covers and structural elements needed to attach them for the entire duration of the Contract. Adequate reserves will be agreed during the performance of the Contract.
        1.2.2. LED back panel that allows you to change the tone and intensity of the backlight.
        1.2.3. A height-adjustable seat that makes it easy to take a photo, suitable for both small children and adults. The construction and dimensions of the seat will be agreed during the performance of the Contract.
        1.2.4. If it is necessary to use an aid for photographing a small child in the accompanying person's lap, the aid being the background of the photo that hides the accompanying person in the frame, then the aid must be delivered to the

Contracting Authority together with the Booth and ensured its existance during the entire validity period of the Contract.

    1.2.5. The Booth wall must be equipped with a mirror or the Booth screen must display the camera image directly or reflect the persons image in a mirror like manner.

    1.2.6. The inside of the Booth must have a possibility of hanging the customer's personal belongings or placing them above the floor in such a way that they do not interfere with the capturing process.

1.3. The Booths referred to in clause 1.1. and the accompanying components referred to in clause 1.2. must be new and unused.

1.4. The Booths referred to in clause 1.1. must have the capturing software adapted to the Contracting Authority's requirements. The capture software must run on a Windows 10 Enterprise platform installed and managed by the Contracting Authority.

1.5. The Booth software must be compatible with the Contracting Authority's REST API-based interfaces, the exact specification of which will be agreed with the Contracting Authority during the performance of the Contract.

1.6. If the REST API receiving the captured data set does not respond, the transmission of biometric data is aborted and not saved. A corresponding notification is displayed to the customer, instructing the customer to repeat the capturing session or directing the customer to an official at the counter.

1.7. Booths mentioned in clause 1.1. must have manufacturer provided management software that allows monitoring of Booth application workflows and statistics of workflow steps and also management of changes to the configuration of each Booth application, and real-time monitoring of Booth status. The installation of management software is performed by the Contracting Authority to the Contracting Authorities server. The Contractor provides The Contracting Authority with the necessary requirements and parameters for the server (operating system, amount of memory needed, processor speed, etc.).

1.8. The Contractor must provide a solution for monitoring the condition of the hardware and software components of the Booth that is compatible with the Contracting Authority's monitoring system. The Contracting Authority must be able to monitor the operational status of the Booths.

1.9. The Contractor ensures the transport and installation of the Booths on the premises specified by the Contracting Authority, in the prescribed place. Network connections, setup, and testing are performed by the Contracting Authority.

1.10. The Contracting Authority performs the first level administration and maintenance of the Booths. The Contractor ensures that the Contracting Authority has all the means and knowledge to do so. The Contractor provides the Contracting Authority with second level technical support in accordance with clauses 12.1. and 12.3.

1.11. The Contractor ensures the proper functioning and durability of the Booths throughout the validity of the Contract. If necessary, the Contractor replaces the Booth or part thereof free of charge in order to ensure that each Booth complies with all the requirements set out in this technical specification until the end of the validity of the procurement contract. If the cause of the malfunction is the Contracting Authority, the cost of remedying the fault will be borne by the Contracting Authority.

1.12. The Contracting Authority has the right to additionally order up to 5 (five) capturing Booths in addition to the quantity of the capturing Booths to be rented mentioned in clause 1.1.4. of the technical description.

1.13. The work processes and user interface texts of Booths mentioned in clause 1.1. must be agreed with the Contracting Authority no later than two (2) weeks before the

delivery of the Booths and the Contracting Authority must be able to request changes to the work processes and / or texts as necessary.

1.14. During the validity of the procurement contract, the Contracting Authority can demand changes free of charge to the Booths user interface (incl. text changes) from the Contractor four times a year in the first year of the Contract and twice a year in the following years.

1.15. The Contracting Authority can request functional changes to the Booth from the Contractor as separate development work each time. The Contractor will grant the right of use for the performed development work for the duration of the procurement contracts on the basis of the framework agreement.

1.16. For the Booths mentioned in clauses 1.1.2. and 1.1.3. The Contractor creates and provides to the Contracting Authority a short video introducing the Booths use and functionalities in Estonian, Russian and English, which the Contracting Authority can use to guide the customer in using the Booths. It must be possible to use the short video on the screens of service locations as well as on social media. The content of the short videos must be agreed with the Contracting Authority no later than two (2) weeks before the delivery of the Booths, and the Contracting Authority must have the opportunity to request the modification of the short videos.

1.17. In accordance with clause 11, the Contractor ensures the training of the Contracting Authority's staff for the use, management and maintenance of the Booth at the location specified by the Contracting Authority in Tallinn on the day of delivery of the Booth set forth in clause 1.1.1. or at a separately agreed time. The Contractor conducts the training in Estonian or English.

1.18. The Contractor hands over the instruction materials of the Booth to the Contracting Authority 2 (two) weeks before the installation of the first Booth referred to in each subclause of clause 1.1. The instructions for use must be in Estonian, the instructions for the management and maintenance of the Booth may also be in English.

2. General requirements for the Booths

2.1. The Booth must allow a customer of the PBGB, including customers with reduced mobility, to take a photo independently and provide fingerprints and a signature image to apply for an ID document and perform other administrative proceedings specified by the Contracting Authority, in accordance with the requirements for photos and fingerprints specified in the legislation of the Republic of Estonia.

2.2. The Booth must allow to choose for which specific procedure the data will be captured and will ensure that the set of biometric data required for each specific procedure is captured. The sets of biometric data to be captured are different in different procedures and depend on the age of the applicant. the sets are described in clauses 5.4-5.6. The data sets to be captured must be modifiable as necessary.

2.3. The Booth must allow data to be read tafrom the chip of a high-level authentication device (an ID card, a digital ID card or a residence permit card) issued by an authority of the Republic of Estonia for the purpose of electronic identification (authentication). If the user does not have a high-level authentication device issued by the Republic of Estonia, the Booth must allow entering the personal ID code, gender and date of birth in order to link the user's data with the application.

2.4. The Booth must guide the user through visual instructions, signs and voice commands throughout the biometric capture process. The user must be able to select one of the following languages to complete the process: Estonian, Russian and English. The

user's language selection is applied uniformly throughout the visual instructions, signs, and voice commands displayed by the Booth.

2.5. The Booth must ensure a secure processing of personal data, inter alia (the list is not exhaustive):

2.5.1. The Booth must transmit the captured biometric data in an encrypted form immediately via a secure connection (TLS 1.3) to the Contracting Authority's information system. The Booth application must ensure that the customer is informed that it is required to remain in the Booth during the process until the end of the session, i.e. until the customer receives notification from the Booth's system that the process has ended or has been interrupted; if the customer leaves before the end of the session, the ongoing process will be canceled after the session expires and no data will be transferred. The Booth always displays a notification to the customer whether the data transfer has been successful or not.

2.5.2. If the data transfer fails the first time, the system will try to transfer the data two more times. If the data transfer fails three times, a corresponding message will be displayed to the customer and the customer will be asked to repeat the process. The data will be deleted after a successful transfer as well as if the data transfer fails or the session is interrupted.

2.5.3. All personal data captured or entered in the Booth is stored only in the Booth's random-access memory, not on the hard drive.

2.5.4. it must not be possible to download temporarily stored personal data from the Booth. The Booth transmits data only through the channel specified by the Contracting Authority to the Contracting Authority's information system.

2.6. The Booth must check that the network connection is working before starting the capture process, otherwise the capture process will not be started and the corresponding error message will be displayed to the customer.

2.7. The audit log of the biometric captureprocess must be transaction-based. In other words, if the log entry fails to be saved, the biometric capture process will be aborted. The logs are forwarded to the Contracting Authority's log server.

2.8. All data processing activities must be recorded, including:

2.8.1. all authentication attempts must (regardless of the result) be recorded;

2.8.2. user-initiated activities must be recordedd;

2.8.3. background process activities must be recorded;

2.8.4. both successful and unsuccessful activities must be recorded.

2.9. The following activities are never recorded:

2.9.1. special categories of personal data;

2.9.2. users' passwords in plain text form;

2.9.3. private keys;

2.9.4. session key value (e.g. session tokens or cookies) - a hash or other irreversible derivative obtained from the session key may be recorded;

2.9.5. full answers to queries returned from databases in plain text form - the fact of data return and / or the length of the response may be recorded;

2.9.6. all possible secrets related to user authentication (security issues, authentication keys, etc.).

2.10. When the Booth is restarted, all hardware and software components must start automatically.

3. Additional requirements in clauses 1.1.1 to 1.1.2. and 1.1.5. for the self-service Booths

3.1. The self-service Booth must enable the submission of an application for an ID document in online self-service environments and the payment of a state fee via the same environments. The state fee is paid via a bank link. The online self-service environments must allow the use of a stand-alone network connection. The mentioned self-service environments are: https://etaotlus.politsei.ee/ekpid/login and https://etaotlus.politsei.ee/vid/login . In addition, access to the agreed bank link URLs, which will be specified during the procurement, is allowed. Access to other URLs must be denied.

3.2. The self-service Booth does not collect nor store data related to applications and state fee payments submitted in online self-service environments.

4. Requirements for Booth hardware

4.1. The Booth structure forms a load-bearing part of the system.

4.2. The external dimensions of the installed structure do not preferably exceed 1,700x2,500x1,500 mm (length x height x width).

4.3. In order to create a secure data communication channel, the Contracting Authority must be able to instal the corresponding network (overall dimensions 45 x 40 x 45cm) and power supply devices 220V + sockets (3 pcs.) CEE7 / 3 (Schuko) in the Booth. The sockets must cover the general electricity demand of the mains equipment which is on average 100W. The fixing mechanism must be specified by the Contractor during the performance of the Contract with the Contracting Authority.

4.4. The Booth must function in the temperature range between + 10 °C and + 30 °C.

4.5. The Booth must function in the relative humidity range between 40 and 85%

4.6. The Booth must include a cooling solution that takes into account the accessories installed in the Booth described in clause 4.3 of the Technical Specifications and their cooling requirements. The cooling system must ensure that the ambient temperature of the equipment is at no time lower than 10 °C and higher than 40 °C. The cooling solution is supplied by the Contractor.

4.7. An UPS system must be installed in the Booth which ensures that the Booth operates for up to 20 minutes in the absence of 220V power.

4.8. The construction of the Booth and all its components (including cable connections) must be vandalism proof (standard EN 62262) and resistant to active use.

4.9. The Booth and its components must be secured in such a manner that their components cannot be moved nor removed by customers, i.e. customers must not have access to sockets and wiring. The access must be possible only by using special tools.

4.10. Booths must be freestanding, without any wall or floor mountings.

4.11. It must be possible to transport the Booth with all its components via standard doors and stairs.

4.12. The Booth screen must be tactile, comfortable to use for the customer and protected from prying eyes .

4.13. The resolution of the touch screen must be at least 1,024x768.

4.14. The resolution of the Booth camera must be at least 12MPx.

4.15. Coordinates resolution for kiosks signature capture must be at least 2500 lpi.

4.16. The Booth's integrated fingerprint scanner must support the capture of both *flat* and *rolled* fingerprints.

4.17. The material of the Booth's structure and all of its parts, including the fingerprint scanner, must allow the entire Booth and its parts to be cleaned and disinfected, either as a whole or in parts. The Contractor provides the Contracting Authority with a cleaning instruction together with the Booth, which describes, inter alia, the most common means by which the Booth may be cleaned and disinfected and names the means by which the Booth may not be cleaned and disinfected.

4.18. It is not necessary to clean the fingerprint scanner and the Booth screen more than once a day. The scanner type must be selected according to the above requirement.

4.19. The capture height must be adjusted automatically and it must be adjustable to the extent that it can be used by a child from the height of 120 cm independently as well as sitting in the lap of an accompanying person, as well as by a disabled customer sitting in a wheelchair. In the case of adults, the adjustment of the capture height must be between 120 and 190 cm.

4.20. The Booth must prevent the session left by the previous customer to be resumed upon the arrival of a next customer, determining the presence of a customer in the Booth by the Booth's detection system. The period during which the session is terminated after the customer leaves must be configurable by the Contracting Authority.

5. Requirements for the Booth user interface

5.1. The Booth must allow a customer of the PBGB to give commands to the device and receive feedback on the capture session.

5.2. The Booth must allow a customer of the PBGB to choose between three languages - Estonian, English and Russian, which are shown on the screen with the words "Estonian", "English" and "Русский язык".

5.3. After selecting the language of communication, the customer will be presented with the options „Eesti kodanik"/„Estonian citizen"/„Гражданин Эстонии"; „Euroopa Liidu kodanik"/ „Citizen of the European Union"/„ Гражданин Европейского

Союза"; „Muu"/ „Other"/„Другой". Depending on the selection made, the Booth displays the types of procedures and then compiles a set of biometric data to be captured.

5.4. A photo, a signature image and fingerprints of an Estonian citizen will be captured.

5.5. The following options are displayed to a citizen of the European Union:

    5.5.1. "Right of residence and / or ID card" - a photo, signature image and fingerprints are captured.

    5.5.2. "E-resident's digital ID" - a photo is captured.

    5.5.3. "Estonian citizenship" - a photo is captured.

    5.5.4. "Alien's passport" - a photo, a signature image and fingerprints are captured.

5.6. The following options are displayed to the foreign national or stateless person:

    5.6.1. "Travel document" - a photo, a signature image and fingerprints are captured.

    5.6.2. "Residence permit/right of residence and / or card of the right of residence" - a photo, a signature image and fingerprints are captured.

    5.6.3. "Residence permit/right of residence and / or card of the right of residence and a travel document" - a photo, a signature image and fingerprints are captured.

    5.6.4. "Registration of short-term employment" - a photo is captured.

    5.6.5. "E-resident's digital ID" - a photo is captured.

    5.6.6. "Estonian citizenship" - a photo is captured.

    5.6.7. "Visa operations" - a photo and fingerprints are captured.

    5.6.8. "International protection operations" - a photo, a signature image, fingerprints are captured.

5.7. If necessary, a PBGB official must be able to conduct the capturing session in such a manner that only a photo, a signature or fingerprints are captured from the customer. The process of managing the capturing session will be specified in cooperation with the Contracting Authority during the performance of the Contract.

5.8. The Booth must display written and pictorial (pictograms) instructions to the customer during the session on how to take a proper photo, capture the signature image and fingerprints, and provide voice instructions in the language previously selected by the customer.

5.9. The volume of the voice instructions must be adjustable (incl. also switched off by the customer) according to the characteristics of a specific installation site.

5.10. The text of the voice instructions must be in all three languages in accordance with the grammar rules of each language and the text must be easy and logical for the native

speaker to understand. The text of the voice instructions must be read by a person who speaks the language as their mother tongue.

5.11. It must be possible to read the personal data entered on the chip of the Estonian ID card and residence permit card using a smart card reader and to link them with the biometric data to be captured.

5.12. If the customer does not have an Estonian ID card or a residence permit card, it must be possible to enter the personal ID code manually in the system or, in the absence thereof, gender and date of birth.

5.13. The system must validate the correctness of the data entered by the customer according to the Estonian personal ID code standard and / or date format.

5.14. The signature image is captured from a customer who is at least 15 years old. A customer between 7 to 14 years must be able to choose whether or not to provide a signature image. The age must be configurable by the Contracting Authority.

5.15. In the case set forth in clause 5.4, the fingerprints will be captured from a customer who is at least 12 years old. The age must be configurable.

5.16. In the cases set forth in clauses 5.6.2. and 5.6.3, fingerprints will be captured from a customer who is at least 6 years old. The age must be configurable.

5.17. In the cases set forth in clauses 5.5.1, 5.5.4, 5.6.1. and 5.6.7. fingerprints will be captured from a customer who is at least 12 years old. The age must be configurable.

5.18. In the case set forth in clause 5.6.8., the fingerprints will be captured from a customer who is at least 14 years old. The age must be configurable.

5.19. The Booth must provide the customer with clear feedback on the termination of the data capturing process.

5.20. The Booth must allow the user to repeat the capturing of the photo and the signature image up to 3 times during the same session.

5.21. A problem-free session (from language selection to the submission of the data set) in the Booths specified in clauses 1.1.3. and 1.1.4. the total amount of time may not exceed 5 (five) minutes per customer. In the self-service Booths specified in clauses 1.1.1., 1.1.2. and 1.1.5 the length of the session will be agreed separately.

5.22. The customer must always be able to cancel the session. If the session is interrupted, the Booth does not save the session data, all data captured and entered before the session is interrupted will be deleted.

6. General requirements for Booth software

6.1. Software components must be centrally managed, remotely updatable (*remote management*), and covered with active manufacturer support. Only the Contracting Authority must be allowed remote access to the Booth.

6.2. When capturing facial images and fingerprints, the Booth must perform automatic checks to ensure the authenticity of the biometric data being captured and to minimise the risks associated with presentation attack (so-called *liveness detection* and *presentation attack* checks). The rate of the false positive *presentation attack* checks must be less than 3%. Appropriate controls must be compatible with the normal operation of the Booth and must not significantly reduce user comfort or the speed of the capturing session.

6.3. If a fingerprint, facial image or signature image of the required quality cannot be captured, the Booth must display a message to the customer stating that a customer service representative must be contacted. The self-service Booth described in clauses 1.1.2 and 1.1.5. must display the message specified by the Contracting Authority to the customer in an equivalent situation. The Contracting Authority will send the text

of the corresponding message to the Contractor during the development phase of the user interface.

6.4. If the customer is inactive for 2 minutes in a row when using the Booth, the Booth's system will interrupt the session by displaying a corresponding message to the customer in advance. If the session is interrupted, the Booth does not save the session data, all data captured and entered before the session is interrupted will be deleted. It must be possible to make the session interruption time longer or shorter.

6.5. The Booths software must not run with administrator rights, but rather it must run with rights of a normal user.

7. Requirements for capturing a photo i.e. a facial image

7.1. The photo captured in the Booth must comply with Chapters 2-3 of Regulation No. 62 of the Minister of the Interior of 1/12/2015 "Requirements established for photos upon application for issue of documents". In the case of visas, paragraph 3 section 5 clauses 3 and 5 of Regulation No. 82 of the Minister of the Interior of 18/12/2015 "Order to issue long-stay visas, deadlines for issue and renew long-stay visas, minimum sums for sufficient financial resources and health insurance Contract, and forms for long-term visas application and extension form" apply.

7.2. The photo to be captured at the Booth and its processing must comply with the ISO / IEC 19794-5 standard or a later version.

7.3. The photo to be captured at the Booth must be in colour.

7.4. If necessary, the Booth software must perform automatic dynamic cropping of the photo (*dynamic cropping*) to ensure that the photo complies with the Technical Specifications of the requirements provided for in the regulation of the said Minister of the Interior set forth in clause 7.1 and to the standard set forth in clause 7.2.

7.5. If the customer of the PBGB wears glasses, the Booth must instruct the user to remove the glasses before capturing the photo.

7.6. When capturing a photo of infants (children under the age of 3), the Booth must ensure, as far as possible, that the photo is captured primarily of the face of the infant and not of the face of the adult holding him or her or of the image on his or her clothing.

7.7. The Booth must transmit the photo to the Contracting Authority's information system as an output in four different formats (the output includes all four formats):

   7.7.1. *High-resolution photo*: 1,200x1,600 px, JPEG / JFIF compression, size 600-1,000 KB, aspect ratio 1:1.33;

   7.7.2. *Token photo*: 480x640 px, ISO / IEC 19794-5 set out in Annex A § 4 JPEG / JFIF RGB, maximum size 18 KB, aspect ratio 1: 1.33;

   7.7.3. *Document photo for Passport*: 1,200x1,476 px, JPEG / JFIF sRGB, size 500-900 KB, aspect ratio 1: 1.23;

   7.7.4. *Document photo for ID card*: 1,200x1,476 px, JPEG / JFIF sRGB, size 500-900 KB, aspect ratio 1:1.23.

7.8. *Photo for Visa*: 1,200x1,476 px, JPEG / JFIF sRGB, quality> 90, size 500-900 KB, ratio 1: 1.23.

7.9. *Photo for International Protection application:* 1,200x1,476 px, JPEG / JFIF sRGB, quality> 90, size 500-900 KB, ratio 1:1.23.

7.10. A token photo, a document photo for a passport, and a document photo for an ID card are created from a high-resolution photo.

7.11. The formats and individual parameters set forth in clauses 7.7.-7.9. must be changeable free of charge at the request of the Contracting Authority throughout the duration of the Contract.

8. Requirements for fingerprinting

8.1. Fingerprints captured at the Booth must comply with Regulation No. 56 of the Minister of the Interior of 30/11/2015 "Procedure for taking fingerprints in the procedure for a residence permit and right of residence and in the procedure for issuing an identity document".

8.2. The fingerprints to be taken at the Booth and their processing must comply with the ISO / IEC 19794-4 standard or a later version.

8.3. The Booth must allow the capture of one (1) fingerprint (the so-called 1 + 1 capturing, usually in procedures where the index fingerprints of both hands are captured) and four (4) fingerprints (so-called 4 or 4 + 4 + 1 + 1 capturing, usually in procedures where either 4 or 10 fingerprints are captured). The Booth must ensure the segmentation and storage of the fingerprints as separate fingerprints.

8.4. The Booth must ensure that in the case of 1 + 1 fingerprint capturing process, the fingerprint of both index fingers of the data set is captured. If the fingerprint image obtained from the index finger still does not meet the requirements after repeated attempts to capture the fingerprint, the fingerprint will be taken from the middle finger, the fourth finger or the thumb. No fingerprint is taken from the little finger. If fingerprints from no finger of one hand cannot be taken or the fingerprint images obtained do not meet the requirements, the fingerprint images will be taken from two fingers of the other hand. If a fingerprint can be taken from only one finger, one fingerprint will be taken.

8.5. The Booth must ensure that the customer cannot make mistakes when placing the correct finger on the scanner.

8.6. The Booth must allow the customer to indicate that he or she is unable to provide fingerprints, in which case fingerprinting is not required during the session. If it is not possible to provide fingerprints, the system must display a message to the customer that the customer service representative must be contacted. The self-service Booth described in clauses 1.1.2 and 1.1.5. must display the message specified by the Contracting Authority to the customer in an equivalent situation. The text of the respective notice will be agreed with the Contracting Authority prior to the commissioning of the respective self-service Booth.

8.7. The Booth must ensure that the quality of the fingerprint image is evaluated according to the NFIQ 2.0 quality assessment algorithm and that the level of adequacy of the fingerprint image quality is configurable.

8.8. The Booth assesses the quality of the captured fingerprints in accordance with the requirements set forth in clause 8.7. If the quality of the fingerprint is not sufficient,

the Booth's system instructs the customer to repeat the capturing process, accepting the fingerprints of the required quality.

8.9. The Booth must transmit fingerprint images as an output to the Contracting Authority's information system in the following formats (the output includes all formats):

8.9.1. Fingerprints applied to the document chip (1 + 1 fingerprints) will be: 480x480 px, 8bit grayscale, resolution 500 dpi (+/– 5 dpi), WSQ compression ratio 1:15, maximum file size 15.36 KB.

8.9.2. HQ fingerprints (1 + 1 fingerprints with different parameters mentioned in clause 8.9.1): 512x512 px, 8-bit grayscale, resolution 500 dpi (+/– 5 dpi), WSQ compression ratio 1:6.

8.10. In the case of the Visa Information System, the Booth transmits the fingerprint images as output to the Contracting Authority's information system in the following formats (the output contains one format):

8.10.1. *Flat* (4 + 4 + 2): 512x512 px, resolution 500 dpi (+/- 5 dpi), 256 shades of gray. In a segmented form.

8.11. In the case of international protection process, the Booth must transmit fingerprint images as an output to the Contracting Authority's information system in the following formats (the output includes all formats):

8.11.1. *Flat* (4 + 4 + 2): 500x500 px, resolution 500 dpi (+/- 5 dpi), 256 shades of gray. In a segmented form.

8.11.2. *Rolled*: 10 images, 500x500 - 500x798 px, resolution 500 dpi (+/- 5 dpi), 256 shades of gray.

8.12. The formats and individual parameters set forth in clauses 8.9.-8.11. must be changeable free of charge at the request of the Contracting Authority throughout the validity of the Contract.

9. Requirements for capturing a signature image

9.1. The Booth must transmit a signature image to the Contracting Authority's information system with the following parameters: 576x192 px, 8-bit grayscale, JPEG, high contrast, maximum file size 15 KB.

9.2. Signature image must be captured with a stylus pen.

9.3. The dimensions of the surface for the capture of signature image must be at least 96x60mm.

9.4. The Booth must allow the customer to declare that he or she is incapable of signing, in which case a signature image will not be required during the session and the Booth will display a message to the customer that the customer service representative must be contacted. The self-service Booth described in clauses 1.1.2 and 1.1.5. must display the message specified by the Contracting Authority to the customer in an equivalent situation. The text of the respective message will be submitted by the Contracting Authority to the Contractor prior to the commissioning of the respective self-service Booth.

9.5. The formats and individual parameters set forth in clauses 9.1. must be changeable free of charge at the request of the Contracting Authority throughout the validity of the Contract.

10. Booth documentation

10.1. The Contractor hands over the following instruction materials of the Booth to the Contracting Authority 2 (two) weeks prior to the installation of the first Booth referred to in each subclause of clause 1.1:

10.1.1. specifications of the subject of the Contract to be delivered;

10.1.2. instructions for use in Estonian;

10.1.3. installation and maintenance instructions of the Booth;

10.1.4. other documents relevant to the use and management of the system;

11. Customer staff training

11.1. The Contractor performs a staff training at the location specified by the Contracting Authority in Tallinn on the day of delivery of the said Booth set forth in clause 1.1.1. or at a time separately agreed upon. The staff training must cover at least the following topics:

11.1.1. a comprehensive overview of the capture process;

11.1.2. user rights;

11.1.3. organisation of the capture process, use of equipment, various error situations, response and remedying of the said situations, quality control, etc.;

11.1.4. regular maintenance procedures, including replacement of accessories, testing.

11.2. The Contractor hands over the training materials to the Contracting Authority no later than 2 (two) working days prior to the respective training.

12. Maintenance and technical support

12.1. The Contractor will act as a second level technical support, including:

12.1.1. performs the installation of the Booth;

12.1.2. performs initial training and instruction of the Contracting Authority's staff and provides instruction materials for the Booth;

12.1.3. supports / consults the Contracting Authority on technical issues that are not within the scope of the Contracting Authority to resolve and cooperates with the Contracting Authority in resolving the issues;

12.1.4. updates the Booth's software to ensure the prevention or correction of software errors and the smooth operation and adherence to Booth's operating speed parameters throughout the validity of the Contract. The performed software updates are coordinated by the Contractor with the Contracting Authority and submitted to the Contracting Authority for testing and installation. The methods and environments for the secure delivery of software updates will be agreed with the Contracting Authority during the performance of the Contract.

12.1.5. in the event of a hardware failure, provides a new Booth or a part thereof at no additional charge.

12.1.6. if access to the Contracting Authority's systems is required to perform maintenance work, to provide technical support or to conduct hardware and software testing, allows background checks by the Contracting Authority of the specialists who need access.

12.1.7. undertakes to inform the Contracting Authority of its own security vulnerabilities and data leaks regarding the Booths within 3 working days.

12.2. The Contracting Authority acts as a first level technical support, including:

12.2.1. performs the configuration and operational setups of the Booth in accordance with the instructions and guidance received from the Contractor.

12.2.2. performs the monitoring of the operational condition of the Booth and daily maintenance of the Booths in order to prevent the deterioration of the quality of

the captured data and in case of failures, transmits the information to the Contractor;

12.2.3. manages user complaints and error messages, including instruction and training of users;

12.2.4. updates Booth software centrally, provided that the Contractor provides the Contracting Authority with a new version of the software.

12.3. Troubleshooting:

12.3.1. the Contractor forwards his or her technical support contacts to the Contracting Authority in the form of an e-mail address and a telephone number. The Contractor's technical support must be available on working days from 9:00 to 17:00 (CET + 1) in Estonian or English. If, for any reason, it becomes necessary to call a representative of the Contractor to Estonia, the conditions will be agreed upon during the performance of the Contract.

12.3.2. In case of incidents and problems sent to the Booth's second level support (e.g. an error in the Booth's software), the Contractor must immediately take the actions necessary to eliminate the error and, if the solution requires a version upgrade, provide a change list and release notes together with the upgrade.

12.3.3. the Contractor provides automatic error message descriptions and instructions on how to fix them. The Contractor undertakes to find out the reasons for the automatic error messages sent by the Booth's system and to ensure a situation where such messages do not occur when using correct working methods.

12.4. During the replacement of material data carriers during the elimination of errors, the respective material data carriers remain with the Contracting Authority, their disposal will be organised by the Contracting Authority.

12.5. the Contractor provides the Contracting Authority with replacement parts / equipment for one Booth on the spot. If a replacement part is used to replace a non-functioning component, the Contractor must replace it within 7 days.