



Procurement of Consultancy Services as Systems Integrator for the  
Supply, Delivery, Installation, and Maintenance of the Philippine  
Identification System (PhilSys)

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# ANNEX C - Minimum Requirements for Biometric Authentication Scanners and MDS

## MOSIP Device Specification (MDS)

All devices that collect biometric information data for MOSIP should operate within the required specifications stated in this section. MDS provides compliance guidelines to devices for them to work with MOSIP. It is based on the capability of the device, trust and communication protocols. A MOSIP compliant device shall follow the standards established in this section. It is expected that the devices are compliant to the target specifications, tested and validated.

The MOSIP compliant device is expected to perform the following:

- Ability to collect one or more biometric information.
- Ability to sign the captured biometric image or template.
- Ability to protect secret keys
- No mechanism to inject the biometric.

### A. Authentication Devices Minimum Requirements

#### A.1 Minimum Requirements for FINGERPRINT Authentication Scanner

Factor	Authentication Devices
Minimum Resolution	> 500 native dpi. Bare minimum recommended. Higher densities are preferred
FRR **	< 2% FRR in respective country
FAR **	0.01%
DPI	500
Image Specification	ISO 19794-4 and ISO 19794-B.2 Personal Verification
ESD	>= 8kv

<b>EMC compliance</b>	FCC class A or equivalent
<b>Operating Temperature**</b>	0 -to 50 C
<b>Liveness detection***</b>	As per IEEE 2790
<b>Preview</b>	None
<b>Image Format</b>	JPEG2000 lossless
<b>Quality Score</b>	NFIQ 1
<b>FTM</b>	L1- FTM supported security or above, L2- with tamper protection

\* Sufficiency to be validated for registration

\*\* PhilSys Authentication quality parameters can change this if needed

\*\*\* PhilSys Authentication quality parameters to decide on the availability of this feature (optional)

## A.2 Minimum Requirements for IRIS Authentication Scanner

Refer ISO 19796-6:2011 Part 6 Specifications.

<b>Factor</b>	<b>Authentication Devices</b>
<b>Minimum Diameter</b>	As per ISO 19794-6:2011 medium and higher quality images are only acceptable. Hence for this Standard, minimum acceptable Iris diameter will be 150 pixels
<b>Image Format</b>	JPEG 2000 lossless
<b>Image Quality</b>	ISO/IEC 29794-6
<b>Operation Temperature*</b>	0 C to +50 C
<b>EMC compliance</b>	FCC Class A or equivalent
<b>Image Specification</b>	ISO 19794-6
<b>ISO Format</b>	K7
<b>FTM</b>	L1 - FTM supported security (or above), L2 - with tamper protection.

\* PhilSys Authentication quality parameters for decision and finalization



### A.3 Minimum Requirements for FACE CAPTURE Authentication Scanner

Refer ISO 19794-5:2011

<b>Factor</b>	<b>Authentication Devices</b>
<b>Minimum Resolution</b>	1080 Pixels at 2.8 mm
<b>Skin Tone</b>	All
<b>Operation Temperature*</b>	0 C to +50 C
<b>EMC compliance</b>	FCC Class A or equivalent
<b>Image Specification</b>	ISO/IEC 19794 - 5
<b>Image format</b>	JPEG 2000 lossless
<b>FTM</b>	L1 - FTM supported security (or above), L2 - with tamper protection.

## B. Registration Devices Minimum Requirements

### B.1 Base Specifications for Registration Devices

The following details shown in the table below is the base-specifications accepted by MOSIP:

#### **Fingerprint Capture**

<b>FACTOR</b>	<b>REGISTRATION DEVICES</b>
<b>Minimum Resolution</b>	> 500 native dpi. Bare minimum recommended. Higher densities are preferred
<b>FRR**</b>	< 2% FRR in respective country
<b>FAR**</b>	0.01%
<b>DPI</b>	500*
<b>Image Specification</b>	ISO 19794-4 B.1. AFIS Normative
<b>ESD</b>	>=8kv
<b>EMC Compliance</b>	FCC class A or equivalent
<b>Operating Temperature**</b>	0-50 C
<b>Liveness detection***</b>	As per IEEE 2790
<b>Preview</b>	> 3 FPS Jpeg lossless frames with NFIQ 2 score superimposed
<b>Image Format</b>	JPEG 2000 lossless
<b>Quality Score</b>	NFIQ2

\* Sufficiency to be validated for registration

\*\* PhilSys Registration quality parameters can change this if needed

\*\*\* PhilSys Registration quality parameters to decide on the availability of this feature (optional)

## Iris Capture

Refer ISO 19796-6:2011 Part 6 Specifications

<b>FACTOR</b>	<b>REGISTRATION DEVICES</b>
<b>Rotation Angle</b>	Before compression, the Iris image will have to be pre-processed to calculate rotation angle. Refer section 6.3.1 of ISO 19794-6 for rotation angle calculation for rectilinear images.
<b>Rotation Uncertainty</b>	Refer to ISO 19794-6
<b>Minimum Diameter</b>	As per ISO 19794-6:2011 medium and higher quality images are only acceptable. Hence for this Standard, minimum acceptable Iris diameter will be 150 pixels
<b>Margin</b>	Same as ISO 19794-6
<b>Color</b>	The iris image shall be captured and stored in grayscale with pixel depth of 8 bits/pixel
<b>Illumination</b>	The eye should be illuminated using infrared or any other source that could produce high quality grayscale image
<b>Image Format</b>	JPEG 2000 lossless
<b>Aspect Ration</b>	1:1
<b>Image Quality</b>	ISO/IEC 29794-6
<b>Operation Temperature*</b>	0 C to 50 C
<b>EMC Compliance</b>	FCC Class A or equivalent
<b>Preview</b>	>3 FPS Jpeg lossless frames with quality score superimposed
<b>Image Specification</b>	ISO 17994-6
<b>ISO Format</b>	K3
<b>FTM</b>	L0 – Use host based security (or above), L1- FTM supported security

\* PhilSys Registration quality parameters for decision and finalization

## **Face Capture**

Refer ISO 19794-5:2011

<b>FACTOR</b>	<b>REGISTRATION DEVICES</b>
<b>Minimum Resolution</b>	1080 Pixels at 2.8 mm with 110-degree view
<b>Skin Tone</b>	All
<b>Operation Temperature*</b>	0 C to +50 C
<b>EMC Compliance</b>	FCC Class A or equivalent
<b>Image Specification</b>	ISO/IEC 19794-5
<b>Exception Image Specification</b>	Full Frontal with FACE features, two palms next to the face, waist up photo. 6x4 mm
<b>Image Quality</b>	ICAO – full-frontal image, +/-5 degrees rotation, 24-bit RGB, white background, 35 mm width, 45 mm height.
<b>Image Format</b>	JPEG 2000 lossless
<b>FTM</b>	L0 – Use host based security (or above), L1- FTM supported security