

ATTACHMENT 3: Minimum Essential Requirements

This Attachment contains the Minimum Essential Requirements for Biometric Capture Devices operating on Fingerprint, Facial, Iris and Palmprint biometric modalities. These requirements establish the minimum technical performance capabilities of equipment provided under this contract. Individual orders may specify more stringent requirements as required.

Fingerprint Minimum Essential Requirements

Requirement #	Sub Category	Requirement Description
FINGERPRINT-MER -1	Capability	The Device shall be capable of capturing fingerprint images for a complete spectrum of skin pigmentation.
FINGERPRINT-MER -2	Capability	The Device shall create fingerprint image metadata.
FINGERPRINT-MER -3	Image Quality	The device shall be certified to the FBI Appendix F Image Quality Specifications (IQS) of the Electronic Biometric Transmission Standard (EBTS)(EBTS) (11.X or above).
FINGERPRINT-MER -4	Image Quality	The device shall collect fingerprints in accordance with FBI Appendix F Image Quality Specifications (IQS) of the Electronic Biometric Transmission Standard (EBTS) (11.X or above).
FINGERPRINT-MER -5	Image Quality	The device shall provide, or shall support external system display of, a fingerprint quality score.
FINGERPRINT-MER -6	Image Quality	The device shall provide immediate feedback to the operator on the quality of collected fingerprint images. This shall include for low-quality images.
FINGERPRINT-MER -7	Image Quality	The device shall allow the operator to manually accept a fingerprint image regardless of its image quality score.
FINGERPRINT-MER -8	Image Quality	The device shall meet standard ANSI/NIST-ITL 1-2011 Special Publication 500-290 Edition 3 (2015) requirements for Type-14 fingerprints.
FINGERPRINT-MER -9	Certification	The Device shall meet at least FAP-45 FBI Appendix F certification.
FINGERPRINT-MER -10	Certification	The device shall be included in the Federal Bureau of Investigation's (FBI) Certified Product List (CPL), located at: https://www.fbibiospecs.cjis.gov/certifications .
FINGERPRINT-MER -11	Certification	The device will be UL Certified.
FINGERPRINT-MER -12	Data	The device shall accurately and automatically capture the DTG (Date Time Group), make, model and serial number when a file is developed.

FINGERPRINT-MER -13	Diagnostics	The Device shall include diagnostics tools and software testing application to determine its operational status.
FINGERPRINT-MER -14	Display	The device shall display, or shall support external system display, of fingerprints as they are being captured.
FINGERPRINT-MER -15	Display	If the device displays or supports the external system display of language, it shall have English available.
FINGERPRINT-MER -16	Display	The device shall indicate - either on the device or supporting external system display - the required digits when it is ready to obtain fingerprints.
FINGERPRINT-MER -17	Documentation	The vendor shall provide documentation for all device updates.
FINGERPRINT-MER -18	Documentation	The Device shall be provided with an English-language user manual.
FINGERPRINT-MER -19	Documentation	The Device User manual shall include Troubleshooting. If the troubleshooting is only available online, it should be noted by the vendor
FINGERPRINT-MER -20	Processing Time	The vendor shall provide the fingerprint capture time for the device and how they calculate fingerprint capture time.
FINGERPRINT-MER -21	Installation	The device shall be hardware agnostic with respect to the government system with which it is being interfaced.
FINGERPRINT-MER -22	Installation	The device shall be software agnostic with respect to the government system with which it is being interfaced.
FINGERPRINT-MER -23	Installation	The Device shall not require a vendor technician to install or set up.
FINGERPRINT-MER -24	Availability	The vendor shall provide information of the devices Operational Availability (Ao). $Ao = ((\text{Mean Time Before Critical Failure}) / ((\text{Mean Time Before Critical Failure}) \times (\text{Mean Time To Repair}))) \times 100$.
FINGERPRINT-MER -25	Maintainability	The vendor shall provide best practices documentation for regular maintenance and cleaning of the device.
FINGERPRINT-MER -26	Maintainability	The Vendor shall provide information on the devices Mean Time To Repair (MTTR). $MTTR = \text{Corrective Maintenance Time} / \text{Number of Failures}$.
FINGERPRINT-MER -27	Reliability	The vendor shall provide information on the devices Mean Time Before Critical Failure (MTBCF) in its operational environment, excluding user error. $MTBCF = \text{System Operating Time} / \text{Number of Critical Failures}$.
FINGERPRINT-MER -28	Physical	The vendor shall provide the full weight of their device and potential accessories.
FINGERPRINT-MER -29	Physical	The Vendor shall provide the dimensions of their device and potential accessories.
FINGERPRINT-MER -30	Power	The Vendor shall provide the power requirements of their Device and potential accessories.

FINGERPRINT-MER -31	Software	The Vendor shall indicate if a Software Development Kit (SDK) - and any additional software - is required for operation.
FINGERPRINT-MER -32	Software	The Vendor shall detail what Operating Systems the device is compatible with.
FINGERPRINT-MER -33	Software	The device shall include the necessary drivers for Operating System compatibility.
FINGERPRINT-MER -34	Standards	The device shall meet International Electrotechnical Commission (IEC) standard 60529.
FINGERPRINT-MER -35	Standards	The device shall meet DHS 4300A (IT Standard).
FINGERPRINT-MER -36	Standards	The device shall meet FIPS140-2.
FINGERPRINT-MER -37	Standards	The device shall meet DoDI 8500.01 Cybersecurity.
FINGERPRINT-MER -38	Standards	The device shall meet NIST SP 800-39, Managing Information Security Risk: Organization, Mission, and Information System View.
FINGERPRINT-MER -39	Security	The device shall not be manufactured by, or has parts that have been manufactured by, any company that is banned by statute or regulation from being purchased by a Federal Government agency or is suspended or debarred from Federal contracts. The vendor shall ensure compliance with all statues and regulations regarding the manufacturing of equipment or parts of equipment BACKGROUND: Compliance with all statues, regulation, including Section 889 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 and SAM
FINGERPRINT-MER -40	Security	The device supports the government data rights as per FAR 52.227-17 Rights in Data-Special Works (DEC 2007).
FINGERPRINT-MER -41	Security	The device shall not allow unauthorized connections or duplication of data, including unauthorized metrics collection or transmission. This authorization is solely the providence of the US Government. By default, no information or data should be shared externally from the US government.

Fingerprint SPECIFIC Requirements

Requirement #	Sub Category	Requirement Description
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FINGERPRINT-SPECIFIC-1	Annotation	The device shall enable a user to annotate fingers as ‘Amputation’ to denote a permanently missing digit or ‘temporarily unable to print’ for a bandaged or injured finger.)
FINGERPRINT-SPECIFIC-2	Anti-Spoofing	The device shall be able to identify fake fingerprint scans (anti-spoofing) and associated Software Development Kit (SDK) codes.
FINGERPRINT-SPECIFIC-3	Automation	The device shall provide automated guidance of the sample collection procedure.
FINGERPRINT-SPECIFIC-4	Availability	When powered on, the device shall be ready to operate within 10 seconds.
FINGERPRINT-SPECIFIC-5	Capability	The device shall provide the capability to collect flat fingerprints.
FINGERPRINT-SPECIFIC-6	Capability	The device shall provide the capability to collect flat and rolled fingerprints.
FINGERPRINT-SPECIFIC-7	Capability	The device shall capture fingerprints using 4x4x1x1 method where the right four finger plain impressions are captured followed by the left then the individual thumb images.
FINGERPRINT-SPECIFIC-8	Capability	The device shall capture fingerprints using 4x1x4x1 method where the right four finger plain impressions are captured followed by the right thumb. Then left four finger plain impression are captured followed by the left thumb.
FINGERPRINT-SPECIFIC-9	Capability	The device shall capture fingerprints using 1x2x2x1x2x2 method where the plain impressions are captured in the following order: right thumb, right index/middle, right ring/pinkie, left thumb, left index/middle, left ring/pinkie.
FINGERPRINT-SPECIFIC-10	Capability	The fingerprint device and associated software shall automatically segment slap impression into constituent fingers with automatic alignment and labeling
FINGERPRINT-SPECIFIC-11	Sequence Checking	The device shall conduct sequence checking between slapped fingerprints and rolled fingerprints and provide feedback to the operator on whether the finger sequence is correct
FINGERPRINT-SPECIFIC-12	Sequence Checking	The device shall provide biometric sequence error checking for fingerprints.
FINGERPRINT-SPECIFIC-13	Compatibility	The device shall have integration compatibility with CBP systems.
FINGERPRINT-SPECIFIC-14	Compatibility	The device shall have integration compatibility with DHS systems.
FINGERPRINT-SPECIFIC-15	Compatibility	The device shall have integration compatibility with DOD systems.

FINGERPRINT-SPECIFIC-16	Compatibility	The device shall have integration compatibility with DOS systems.
FINGERPRINT-SPECIFIC-17	Compatibility	The device shall have integration compatibility with DOJ systems.
FINGERPRINT-SPECIFIC-18	Enrollee Profile	The device shall have the ability to create an enrollee profile.
FINGERPRINT-SPECIFIC-19	Certification	The Device shall meet at least FAP-50 FBI Appendix F certification.
FINGERPRINT-SPECIFIC-20	Certification	The Device shall meet at least FAP-60 FBI Appendix F certification.
FINGERPRINT-SPECIFIC-21	Display	The device shall display, or shall support system display, of fingerprints as they are being captured.
FINGERPRINT-SPECIFIC-22	Display	The Device shall provide the capability to preview the number of fingers and fingerprints detected.
FINGERPRINT-SPECIFIC-23	Display	The fingerprint devices should clearly indicate when they are ready to take a print and when they are busy processing.
FINGERPRINT-SPECIFIC-24	Display	The fingerprint device shall not allow ghosting and halo effects.
FINGERPRINT-SPECIFIC-25	Documentation	The vendor shall provide manufacturer support for Web USB/USB Device or manufacturer-provided documentation enabling in-house development of web-hardware interface.
FINGERPRINT-SPECIFIC-26	Documentation	The device user manual shall be multi-lingual and the vendor will detail what languages are covered.
FINGERPRINT-SPECIFIC-27	Documentation	The device user manual shall be multi-lingual and include at least the following Languages: English, Spanish, Arabic, Tagalog, Portuguese, Serbo-Croatian (Bosnia), Bulgarian, Swahili, Somali, Polish, French, Italia, Haitian Creole, Maltese.
FINGERPRINT-SPECIFIC-28	Encryption	If the device stores data locally, the data shall be encrypted per NIST Standards.
FINGERPRINT-SPECIFIC-29	Export	The device shall be capable of exporting to include digital fingerprint images with associated metadata.
FINGERPRINT-SPECIFIC-30	Export	The device shall be capable of exporting to at least the following formats: IDENT IXM 6.0.9 FBI EBTS 9.X DOD EBTS 4.1
FINGERPRINT-SPECIFIC-31	Export	The device shall be capable of exporting to the following formats: Latest Version of IDENT IXM (6.0.9) Latest Version of FBI EBTS (11.X) Latest Version of DOD EBTS (4.1)

FINGERPRINT-SPECIFIC-32	Processing Time	The device shall be able process the fingerprints of at least eight (8) individuals within a minute. Vendors should provide their own definition on how they calculate processing time.
FINGERPRINT-SPECIFIC-33	Installation	The Device shall be plug and play. The vendor shall provide a definition of what they consider "plug and play."
FINGERPRINT-SPECIFIC-34	Latent	The device shall process scanned images of latent fingerprints.
FINGERPRINT-SPECIFIC-35	Match	For devices that support matching, the device shall match 10 rolled fingerprints with at least 98.2% accuracy.
FINGERPRINT-SPECIFIC-36	Match	For devices that support matching, the device shall be capable of matching 2 Flat Fingerprints within 45 SECONDS with a 4.5 million biometric template database and within 1 MINUTE with a 22.5 million biometric template database.
FINGERPRINT-SPECIFIC-37	Match	For devices that support matching, the device shall be capable of matching 10 Flat Fingerprints within 1 MINUTE with a 4.5 million biometric template database and within 2 MINUTES with a 22.5 million biometric template database.
FINGERPRINT-SPECIFIC-38	Match	For devices that support matching, the device shall have the capability to match fingerprints against a local data store.
FINGERPRINT-SPECIFIC-39	Match	For devices that support matching, the device shall have the capability to match fingerprint images against a local data store of up to 100,000 records in less than or equal to 1.0 minute.
FINGERPRINT-SPECIFIC-40	Match	For devices that support matching, fingerprints shall be automatically matched against the Unsolved Latent File (ULF) database; automated exploited biometric latent records and latent prints matches will consist of a candidates list in three minutes or less.
FINGERPRINT-SPECIFIC-41	Match	For devices that support matching, fingerprints shall be automatically matched against the Unresolved Latent Files database; automated exploited biometric latent records and latent prints matches will consist of a lights out match in two minutes or less.
FINGERPRINT-SPECIFIC-42	Match	For devices that support matching, the device shall have the capability to notify the operator of a fingerprint match against a local data store of fingerprints.

FINGERPRINT-SPECIFIC-43	Match	For devices that support matching, the device shall have a False Non-Match Rate (FNMR) less than or equal to 0.001 at a False Match Rate (FMR) less than or equal to 0.0001 for fingerprint verification (1:1).
FINGERPRINT-SPECIFIC-44	Match	For devices that support matching, the device shall have a False Negative Identification Rate (FNIR) less than or equal to 0.005 at a False Positive Identification Rate (FPIR) less than or equal to 0.0001 for fingerprint identification (1:N).
FINGERPRINT-SPECIFIC-45	Match	For devices that support matching, the device shall match for identification (one: many) on fingerprints.
FINGERPRINT-SPECIFIC-46	Match	For devices that support matching, the device shall match for verification (one: one) on fingerprints.
FINGERPRINT-SPECIFIC-47	Match	For devices that support matching, the device shall match in three minutes or less.
FINGERPRINT-SPECIFIC-48	Match	For devices that support matching, the device shall match in two minutes or less.
FINGERPRINT-SPECIFIC-49	Mounting	The device shall have the capability to be mounted.
FINGERPRINT-SPECIFIC-50	Operating Environment	The device shall meet the requirements of IP64.
FINGERPRINT-SPECIFIC-51	Operating Environment	The device shall meet the requirements of IP65.
FINGERPRINT-SPECIFIC-52	Operating Environment	The device shall meet the requirements of IP66.
FINGERPRINT-SPECIFIC-53	Operating Environment	The device shall be able to operate without degradation within a temperature range of 32 degrees and 95 degrees Fahrenheit.
FINGERPRINT-SPECIFIC-54	Operating Environment	The device shall be able to operate without degradation within a temperature range of 32 degrees and 122 degrees Fahrenheit.
FINGERPRINT-SPECIFIC-55	Operating Environment	The device shall be able to operate without degradation within a temperature range of 32 degrees and 130 degrees Fahrenheit.
FINGERPRINT-SPECIFIC-56	Operating Environment	The device shall be ruggedized for use in military/law enforcement settings on shore and at sea and meet the standards set forth in MIL-STD 810, MIL-STD 810G Change 1, and MIL-STD 1472H (Sections 4.7, 5.1.1.3, 5.1.3.11, 5.1.4, and 5.20.2.3.7.1)
FINGERPRINT-SPECIFIC-57	Hardware	The device shall have an independently replaceable fingerprint capture platen.
FINGERPRINT-SPECIFIC-58	Power	The device shall be compatible with power sources both US and international.
FINGERPRINT-SPECIFIC-59	Power	The device shall be able to utilize a vehicular power source.

FINGERPRINT-SPECIFIC-60	Power	The device shall have a rechargeable battery.
FINGERPRINT-SPECIFIC-61	Power	The device shall support a power supply of AC at 110 and 220 volts.
FINGERPRINT-SPECIFIC-62	Physical (MOBILE)	The device shall weight no more than 5 lbs.
FINGERPRINT-SPECIFIC-63	Physical (MOBILE)	The device shall weight no more than 4 lbs.
FINGERPRINT-SPECIFIC-64	Physical (MOBILE)	The device shall weight no more than 3 lbs.
FINGERPRINT-SPECIFIC-65	Physical (MOBILE)	The device shall weight no more than 2 lbs.
FINGERPRINT-SPECIFIC-66	Physical (MOBILE)	The device shall weight no more than 10 oz.
FINGERPRINT-SPECIFIC-67	Physical (STATIONARY)	The device shall weight no more than 5 lbs.
FINGERPRINT-SPECIFIC-68	Software	The Device shall include a Software Development Kit (SDK) for integration.
FINGERPRINT-SPECIFIC-69	Software	The device, if it includes a Software Development Kit (SDK), shall have a test application demonstrating basic 10-print rolled and flats operations.
FINGERPRINT-SPECIFIC-70	Software	The Software Development Kit (SDK) and documentation provides clear definitions of error states and error names and numbers associated in a programmer's guide.
FINGERPRINT-SPECIFIC-71	Software	The device shall be compatible with supported versions of Windows Operating System.
FINGERPRINT-SPECIFIC-72	Software	The device installation software shall follow standard Microsoft Windows Installer Best Practices, found at: https://learn.microsoft.com/en-us/windows/win32/msi/windows-installer-best-practices
FINGERPRINT-SPECIFIC-73	Software	When installing the device, its sample application executable must be able to be run without administrative permissions on the PC.
FINGERPRINT-SPECIFIC-74	Software	The device's driver installation shall not install custom software into the Microsoft Windows system directories. Ensure Runtime only installation is also available.
FINGERPRINT-SPECIFIC-75	Software	IF applicable, the device drivers shall have the option to be fully uninstalled.
FINGERPRINT-SPECIFIC-76	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (32 bit).

FINGERPRINT-SPECIFIC-77	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (64 bit).
FINGERPRINT-SPECIFIC-78	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 11 Operating System (64 bit).
FINGERPRINT-SPECIFIC-79	Software	The device shall provide Log files for Troubleshooting.
FINGERPRINT-SPECIFIC-80	Storage	The Device shall not hold any biometric data.
FINGERPRINT-SPECIFIC-81	Storage	The device shall be able to store at least 500 biometric fingerprint records.
FINGERPRINT-SPECIFIC-82	Storage	The device shall be able to store at least 500,000 biometric fingerprint records.
FINGERPRINT-SPECIFIC-83	USB	The device shall be powered through the USB connection and include an at least 6 foot USB Cable.
FINGERPRINT-SPECIFIC-84	USB	The device shall be USB 2.0 compatible.
FINGERPRINT-SPECIFIC-85	USB	The device shall be USB 3.0 compatible.

Facial Minimum Essential Requirements

Requirement #	Sub Category	Requirement Description
FACE-MER -1	Auto Focus	The device shall perform automatic focus of the image prior to image capture.
FACE-MER -2	Capability	The vendor shall provide specifications on how images are captured (still, streaming, etc.) with the device.
FACE-MER -3	Capability	The vendor shall know and provide a list of image data format(s) that can be generated by the device.
FACE-MER -4	Capability	The device shall capture image metadata.
FACE-MER -5	Capability	The device shall be able to use ambient lighting conditions when electronically capturing facial images. The vendor shall provide information about lighting conditions necessary for quality image capture.
FACE-MER -6	Image Quality	The device shall provide immediate feedback to the operator on the quality of collected Facial images. This shall include for low-quality images.
FACE-MER -7	Image Quality	The device shall capture facial images in accordance with: IXM 6.0.9 FBI EBTS 10.X DoD EBTS 4.1
FACE-MER -8	Image Quality	The device shall meet ANSI/NIST-ITL 1-2011 Special Publication 500-290 Edition 3 (2015) requirements for Type-10 Images.
FACE-MER -9	Image Quality	The vendor shall provide the information about the resolution of the Face Image(s).
FACE-MER -10	Certification	The device will be UL Certified.
FACE-MER -11	Data	The device shall accurately and automatically capture the DTG (Date Time Group), make, model and serial number when a file is developed.
FACE-MER -12	Diagnostics	The Device shall include diagnostics tools and software testing application to determine its operational status.
FACE-MER -13	Display	The device shall provide the user with a viewfinder, display, or have the ability to display to assist in the proper framing of the subject.
FACE-MER -14	Display	The device shall display, or shall support system display, of the Face(s) as they are being captured.
FACE-MER -15	Display	If the device displays or supports the display of language, it shall have English available.
FACE-MER -16	Documentation	The vendor shall provide documentation for all device updates.

FACE-MER - 17	Export	The vendor shall know and provide the power and bandwidth requirements for the device.
FACE-MER - 18	Processing Time	The vendor shall provide the information about the Face Image capture time for the device and how they calculate this time.
FACE-MER - 19	Installation	The device shall be hardware agnostic with respect to the government system with which it is being interfaced.
FACE-MER - 20	Installation	The device shall be software agnostic with respect to the government system with which it is being interfaced.
FACE-MER - 21	Installation	The Device shall not require a vendor technician to install or set up.
FACE-MER - 22	Installation	The Device shall be plug and play. The vendor shall provide a definition of what they consider "plug and play."
FACE-MER - 23	Manual	The Device shall be provided with an English-language user manual.
FACE-MER - 24	Manual	The Device User manual shall include Troubleshooting. If the troubleshooting is only available online, it should be noted by the vendor.
FACE-MER - 25	Physical	The vendor shall provide the full weight of their device and potential accessories.
FACE-MER - 26	Physical	The Vendor shall provide the dimensions of their device and potential accessories.
FACE-MER - 27	Power	The Vendor shall provide the power requirements of their Device and potential accessories.
FACE-MER - 28	Range	The device shall electronically capture facial images at a minimum range of 1.0 foot.
FACE-MER - 29	Reliability	The vendor shall provide information on the devices Mean Time Before Critical Failure (MTBCF) in its operational environment, excluding user error. MTBCF = System Operating Time/ Number of Critical Failures.
FACE-MER - 30	Maintainability	The vendor shall provide best practices documentation for regular maintenance and cleaning of the device.
FACE-MER - 31	Maintainability	The Vendor shall provide information on the devices Mean Time To Repair (MTTR). MTTR = Corrective Maintenance Time/Number of Failures.
FACE-MER - 32	Availability	The vendor shall provide information of the devices Operational Availability (Ao). $Ao = ((\text{Mean Time Before Critical Failure}) / ((\text{Mean Time Before Critical Failure}) \times (\text{Mean Time To Repair}))) \times 100$.
FACE-MER - 33	Software	The Vendor shall indicate if a Software Development Kit (SDK) - and any additional software - is required for operation.
FACE-MER - 34	Software	The Vendor shall detail what Operating Systems the device is compatible with.

FACE-MER - 35	Software	The device shall include the necessary drivers for Operating System compatibility.
FACE-MER - 36	Standards	The device shall meet and comply with DHS Facial Recognition Directive 026-11.
FACE-MER - 37	Standards	The device shall meet International Electrotechnical Commission (IEC) standard 60529.
FACE-MER - 38	Standards	The device shall meet DHS 4300A (IT Standard).
FACE-MER - 39	Standards	The device shall meet FIPS140-2.
FACE-MER - 40	Standards	The device shall meet DoDI 8500.01 Cybersecurity.
FACE-MER - 41	Standards	The device shall meet NIST SP 800-39, Managing Information Security Risk: Organization, Mission, and Information System View.
FACE-MER - 42	Security	The device shall not be manufactured by, or has parts that have been manufactured by, any company that is banned by statute or regulation from being purchased by a Federal Government agency or is suspended or debarred from Federal contracts. The vendor shall ensure compliance with all statues and regulations regarding the manufacturing of equipment or parts of equipment BACKGROUND: Compliance with all statues, regulation, including Section 889 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 and SAM
FACE-MER - 43	Security	The device supports the government data rights as per FAR 52.227-17 Rights in Data-Special Works (DEC 2007).
FACE-MER - 44	Security	The device shall not allow unauthorized connections or duplication of data, including unauthorized metrics collection or transmission. This authorization is solely the providence of the US Government. By default, no information or data should be shared externally from the US government.

Face SPECIFIC Requirements

Requirement #	Sub Category	Requirement Description
FACE-SPECIFIC-1	Availability	When powered on, the device shall be ready to operate within 10 seconds.
FACE-SPECIFIC-2	Automation	The device shall automatically capture Face image(s).
FACE-SPECIFIC-3	Capability	The device shall support the capture and/or import and storage of 1 full frontal face image (Full Frontal Pose) as defined by the DoD EBTS 4.1.
FACE-SPECIFIC-4	Capability	The device shall support the capture and/or import and storage of 1 full frontal face image and multiple angles to include 90 degrees left side (left profile), 45 degrees left side, 90 degrees right side (right profile), 45 degrees right side (total for 5 different angles) as defined by the DoD EBTS 4.1.
FACE-SPECIFIC-5	Capability	Based on the pitch/yaw/roll variation of the captured image, the device shall automatically adjust the images for facial angles as defined by the DoD EBTS 4.1.
FACE-SPECIFIC-6	Capability	The device shall be able to capture a Facial Image with subject's eye roll of up to 30 degrees.
FACE-SPECIFIC-7	Capability	The device shall assess and optimize facial quality at the time of the capture per IAW International Committee for Information Technology Standards (INCITS).
FACE-SPECIFIC-8	Capability	The device shall be able to capture images in all light conditions and possess low light sensitivity (B/W, ≤ 0.01 lux).
FACE-SPECIFIC-9	Capability	The device shall check for pitch/yaw/roll variation of the captured image.
FACE-SPECIFIC-10	Capability	The device shall have the capability to digitally capture non-facial photographs related to a mission.
FACE-SPECIFIC-11	Image Quality	The device and its associated facial capture software shall ensure that the images captured for facial recognition are assessed for quality and contain proper pose, illumination, orientation, interocular distance (in pixels), contrast, blur and occlusion.
FACE-SPECIFIC-12	Image Quality	The device facial image quality shall conform to the DOD, National (FBI) and International quality specifications.
FACE-SPECIFIC-13	Image Quality	The device shall assess and optimize facial quality at the time of the capture per IAW International Committee for Information Technology Standards (INCITS).
FACE-SPECIFIC-14	Image Quality	The device shall be able to capture facial quality images as per the ANSI/NIST-ITL Type-10 ICAO 9303.
FACE-SPECIFIC-15	Image Quality	The device shall save facial images at a minimum resolution of 480 pixels by 760 pixels

FACE-SPECIFIC-16	Image Quality	The device shall be able to capture minimum of 10.0 megapixel photos or greater.
FACE-SPECIFIC-17	Image Quality	The device shall compress facial images using Joint Photographic Experts Group (JPEG).
FACE-SPECIFIC-18	Image Quality	The device shall have or support the ability to have face images size to be adjustable.
FACE-SPECIFIC-19	Compatibility	The device shall have integration compatibility with CBP systems.
FACE-SPECIFIC-20	Compatibility	The device shall have integration compatibility with DHS systems.
FACE-SPECIFIC-21	Compatibility	The device shall have integration compatibility with DOD systems.
FACE-SPECIFIC-22	Compatibility	The device shall have integration compatibility with DOS systems.
FACE-SPECIFIC-23	Compatibility	The device shall have integration compatibility with DOJ systems.
FACE-SPECIFIC-24	Enrollee Profile	The device and its associated facial capture software shall capture and annotate multiple images of subjects' Scars, Marks, and Tattoos (SMT) to be attached to an enrollee profile.
FACE-SPECIFIC-25	Enrollee Profile	The device shall have the ability to create an enrollee profile.
FACE-SPECIFIC-26	Enrollee Profile	The device shall have the capability to be able to attach any digitally captured photographs to an enrollee profile for evidence collection.
FACE-SPECIFIC-27	Documentation	The vendor shall provide manufacturer support for Web USB/USB Device or manufacturer-provided documentation enabling in-house development of web-hardware interface.
FACE-SPECIFIC-28	Documentation	The device user manual shall be multi-lingual and the vendor will detail what languages are covered.
FACE-SPECIFIC-29	Documentation	The device user manual shall be multi-lingual and include at least the following Languages: English Spanish, Arabic, Tagalog, Portuguese, Serbo-Croatian (Bosnia), Bulgarian, Swahili, Somali, Polish, French, Italia, Haitian Creole, Maltese,.
FACE-SPECIFIC-30	Encryption	If the device stores data locally, the data shall be encrypted per NIST Standards.
FACE-SPECIFIC-31	Export	The device shall be capable of exporting information that includes digital Face images with associated metadata.
FACE-SPECIFIC-32	Export	The device shall be capable of exporting information that include all digital photographs with associated metadata.

FACE-SPECIFIC-33	Export	The device shall be capable of exporting to at least the following formats: IDENT IXM 6.0.9 FBI EBTS 9.X DOD EBTS 4.1
FACE-SPECIFIC-34	Export	The device shall be capable of exporting face image(s) to the following formats: Latest Version of IDENT IXM (6.0.9) Latest Version of FBI EBTS (11.X) Latest Version of DOD EBTS (4.1)
FACE-SPECIFIC-35	Export	The device shall be capable of exporting to the following formats: Latest Version of IDENT IXM (6.0.9) Latest Version of FBI EBTS (11.X) Latest Version of DOD EBTS (4.1)
FACE-SPECIFIC-36	Processing Time	The device shall electronically capture digital facial images within 1.0 second. Vendors should provide their own definition on how they calculate processing time.
FACE-SPECIFIC-37	Processing Time	The device shall electronically capture digital facial images within 5.0 seconds. Vendors should provide their own definition on how they calculate processing time.
FACE-SPECIFIC-38	Lighting Capability	The device shall be capable of providing illumination during electronic facial image capture.
FACE-SPECIFIC-39	Lighting Capability	The device shall be compatible with an external illuminator. The vendor shall provide the guidance on the requirements for the external illuminator in various lighting conditions.
FACE-SPECIFIC-40	Lighting Capability	The device shall have an integrated Illuminator.
FACE-SPECIFIC-41	Match	For devices that support matching, the device shall capture facial recognition picture with 91.1% accuracy.
FACE-SPECIFIC-42	Match	For devices that support matching, the device shall capture facial recognition picture with 95% accuracy.
FACE-SPECIFIC-43	Match	For devices that support matching, the device shall notify the operator of local digital facial image match in less than 1.0 minutes.
FACE-SPECIFIC-44	Match	For devices that support matching, the device shall notify the operator of local digital facial image match in less than 6.0 seconds
FACE-SPECIFIC-45	Match	For devices that support matching, the device shall perform matching/comparison of collected facial images to locally stored facial images, in order to prevent duplicated enrollments.

FACE-SPECIFIC-46	Match	The device shall display or support the display of the face image of matching records and utilize facial recognition technology to assist in the verification of individual identities
FACE-SPECIFIC-47	Match	The device shall have or support the ability to match a subject's Scars, Marks, and Tattoos (SMT) against other images.
FACE-SPECIFIC-48	Mounting	The device shall have the capability to be mounted.
FACE-SPECIFIC-49	CBP Land Vehicle	The device and its capabilities shall be able to integrate with CBP's existing arrival inspection application, Simplified Arrival – Vehicle (SA-V).
FACE-SPECIFIC-50	CBP Land Vehicle	The device shall adhere to the following requirements to be seamlessly integrated with the CBP Lane equipment: 1. Provide HTTP(S) endpoints so that the lane equipment can send signals to start and stop
FACE-SPECIFIC-51	CBP Land Vehicle	The device shall adhere to the following requirements to be seamlessly integrated with the CBP Lane equipment: 2. Receive and send data messages as per the Interface Control Document. This document will be provided when applicable.
FACE-SPECIFIC-52	CBP Land Vehicle	The device shall adhere to the following requirements to be seamlessly integrated with the CBP Lane equipment: 3. Not exceed 6 amps.
FACE-SPECIFIC-53	CBP Land Vehicle	The device shall adhere to the following requirements to be seamlessly integrated with the CBP Lane equipment: 4. Have a fixed IP address and connected to the lane equipment via ethernet network connection.
FACE-SPECIFIC-54	CBP Land Vehicle	The device shall adhere to the following requirements to be seamlessly integrated with the CBP Lane equipment: 5. Be connected to the private network and not have Internet access.
FACE-SPECIFIC-55	CBP Land Vehicle	The device shall adhere to the following requirements to be seamlessly integrated with the CBP Lane equipment: 6. Be mounted on standard equipment bollards or other existing infrastructure.
FACE-SPECIFIC-56	CBP Land Vehicle	The device shall automatically capture live images of backseat and third row vehicle occupants, as vehicle enters Pre Primary Zone (PPZ). BACKGROUND: <i>At least 90% capture of back and second seat vehicle occupants is desired</i>
FACE-SPECIFIC-57	CBP Land Vehicle	The device shall automatically capture live images of front seat vehicle occupants, as vehicle enters Pre Primary Zone (PPZ).

		BACKGROUND: 100% capture of front seat vehicle passengers is desired for biometric matching
FACE-SPECIFIC-58	CBP Land Vehicle	The device shall automatically eliminate duplicate images.
FACE-SPECIFIC-59	CBP Land Vehicle	The device shall be able to biometrically confirm 1 or more occupants using Facial Recognition.
FACE-SPECIFIC-60	CBP Land Vehicle	The device shall be able to capture all facial images of unobstructed occupants in a privately-owned vehicle (POV) in the Pre-Primary Zone (PPZ), as the vehicle approaches the Primary booth at a port of entry (POE)
FACE-SPECIFIC-61	CBP Land Vehicle	The device shall be able to capture facial images of sufficient quality for biometric matching/confirmation. BACKGROUND: Can biometrically confirm travelers' identity by comparing encounter (live photo) to photo in Government holdings and meet TVS standards for biometric matching; see TVS requirements
FACE-SPECIFIC-62	CBP Land Vehicle	The device shall be able to capture facial images through the windshield of a vehicle moving at between 5 and 20 mph and capture facial images in the Pre Primary Zone (PPZ) as the vehicle approaches the Primary booth BACKGROUND: Capture 100% of front seat vehicle passengers and 90% of backseat and third row seat passengers (and beyond 3rd row, based on vehicle design) through the windshield of a vehicle moving at between 5 and 20 mph
FACE-SPECIFIC-63	CBP Land Vehicle	The device shall be able to capture multiple unique images of the vehicle occupants.
FACE-SPECIFIC-64	CBP Land Vehicle	The device shall be able to ensures the best quality, unique images are sent to CBP's Traveler Verification Service's (TVS).
FACE-SPECIFIC-65	CBP Land Vehicle	The device shall be able to function with and accommodate non-standard lane sizes / field of view. BACKGROUND: Can capture facial images of occupants traveling in varying vehicle sizes (e.g., standard sedan, mid-size SUV, pickup truck) or if the lanes are of non- standard width/length.100% capture of front seat passengers and 90% capture of all other vehicle occupants, is desired
FACE-SPECIFIC-66	CBP Land Vehicle	The device shall capture a front-facing photograph with: a. Tilt, no more than +/- 5% b. Roll, no more than +/- 15% c. Pan, no more than +/- 15%

FACE-SPECIFIC-67	CBP Land Vehicle	The device shall capture facial images with minimal blur (Photos with defocus blur approximating Gaussian blur must have a radius of less than 4 sigma).
FACE-SPECIFIC-68	CBP Land Vehicle	The device shall capture facial images with minimal blur (Photos with motion blur must have a measured displacement of less than 9 pixels).
FACE-SPECIFIC-69	CBP Land Vehicle	The device shall capture facial images with minimal image noise (a Peak Signal to Noise Ratio must be greater than or equal to 53 dB).
FACE-SPECIFIC-70	CBP Land Vehicle	The device shall capture facial images with uniform illumination: a. Exposure i. The average of 8-bit RGB components within each area shall fall between 105 and 125 with a standard deviation of ± 10 . Furthermore, for every area examined, the maximum difference between the means of any two of the RGB components shall not exceed 10.
FACE-SPECIFIC-71	CBP Land Vehicle	The device shall capture facial images with uniform illumination: a. Exposure ii. By examining the histogram of the image, the RGB code value for a minimum of six gray patches should fall within range from 0.5 to 1.5 neutral density.
FACE-SPECIFIC-72	CBP Land Vehicle	The device shall capture facial images with uniform illumination: b. Saturation i. For each patch of skin on the person's face, the gradations in texture shall be clearly visible. There shall be no saturation (over or under exposure) on the face.
FACE-SPECIFIC-73	CBP Land Vehicle	The device shall capture facial images with uniform illumination: b. Saturation ii. The ΔE 1976 of each color for the sRGB color space is to be less than 10 with CIE Lab values
FACE-SPECIFIC-74	CBP Land Vehicle	The device shall comply with procedures for capturing and retaining photos of United States Citizens.
FACE-SPECIFIC-75	CBP Land Vehicle	The device shall ensure facial images meet CBP's Traveler Verification Service's (TVS) photo quality threshold required for biometric comparison. TVS threshold for 1:1 is 4776 and for 1:N is 7821.
FACE-SPECIFIC-76	CBP Land Vehicle	The device shall have the ability to automatically select best quality images from all images captured.
FACE-SPECIFIC-77	CBP Land Vehicle	The device shall meet established CBP security requirements, directives, and guidelines.

FACE-SPECIFIC-78	CBP Land Vehicle	The device shall NOT capture facial images using grayscale photos. Grayscale photos have been found to reduce the success of matching.
FACE-SPECIFIC-79	CBP Land Vehicle	The device shall save facial images a JPEG or JPEG 2000 file of no more than 150 KB.
FACE-SPECIFIC-80	CBP Land Vehicle	The device shall save facial images with a minimum of at least 80 Pixels between the eyes.
FACE-SPECIFIC-81	CBP Land Vehicle	The vendor shall detail if the device can capture facial images without vehicle occupants looking directly at the device. BACKGROUND: When vehicle occupants look down/away, are asleep, etc. • Despite occlusions such as masks, visors, hats, sunglasses, vehicle T-bar, stickers, cell phone mounts, dirty windshields or other obstructions • By adjusting for sun glare and cloud cover • Of live occupants, filtering for non- human passengers (i.e., graphics on a t-shirt, animals, etc.)
FACE-SPECIFIC-82	CBP Land Vehicle	The vendor shall provide a diagram on the device's image capture capability.
FACE-SPECIFIC-83	CBP Land Vehicle	The vendor shall provide list of optional products that would enhance the device's image capture ability of vehicle occupants in the lane.
FACE-SPECIFIC-84	CBP Land Vehicle	The vendor shall provide specifications whether the device's photo transmit occurs within 500 milliseconds to 1000 milliseconds when the vehicle reaches mid-lane.
FACE-SPECIFIC-85	Operating Environment	The device shall be able to operate without degradation within a temperature range of -22 degrees and 122 degrees Fahrenheit.
FACE-SPECIFIC-86	Operating Environment	The device shall be able to operate without degradation within a temperature range of 32 degrees and 122 degrees Fahrenheit.
FACE-SPECIFIC-87	Operating Environment	The device shall be able to operate without degradation within a temperature range of 32 degrees and 130 degrees Fahrenheit.
FACE-SPECIFIC-88	Operating Environment	The device shall be able to operate without degradation within a temperature range of 32 degrees and 95 degrees Fahrenheit.
FACE-SPECIFIC-89	Operating Environment	The device shall be ruggedized for use in military/law enforcement settings on shore and at sea and meet the standards set forth in MIL-STD 810, MIL-STD 810G Change 1, and MIL-STD 1472H (Sections 4.7, 5.1.1.3, 5.1.3.11, 5.1.4, and 5.20.2.3.7.1)
FACE-SPECIFIC-90	Operating Environment	The device shall meet the requirements of IP64.

FACE-SPECIFIC-91	Operating Environment	The device shall meet the requirements of IP65.
FACE-SPECIFIC-92	Operating Environment	The device shall meet the requirements of IP66.
FACE-SPECIFIC-93	Override	The device shall allow the operator to manually accept a facial image of insufficient image quality.
FACE-SPECIFIC-94	Override	The device shall have the togglable option to either allow the operator to manually accept a facial image of insufficient image quality or not allow the operator to manually accept a facial image of insufficient image quality.
FACE-SPECIFIC-95	Override	The device shall not allow the operator to manually accept a facial image of insufficient image quality.
FACE-SPECIFIC-96	Physical (MOBILE)	The device shall weight no more than 10 oz.
FACE-SPECIFIC-97	Physical (MOBILE)	The device shall weight no more than 2 lbs.
FACE-SPECIFIC-98	Physical (MOBILE)	The device shall weight no more than 3 lbs.
FACE-SPECIFIC-99	Physical (MOBILE)	The device shall weight no more than 4 lbs.
FACE-SPECIFIC-100	Physical (MOBILE)	The device shall weight no more than 5 lbs.
FACE-SPECIFIC-101	Physical (STATIONARY)	The device shall weight no more than 5 lbs.
FACE-SPECIFIC-102	Power	The device shall be compatible with power sources both US and international.
FACE-SPECIFIC-103	Power	The device shall be able to utilize a vehicular power source.
FACE-SPECIFIC-104	Power	The device shall have a rechargeable battery.
FACE-SPECIFIC-105	Power	The device shall support a power supply of AC at 110 and 220 volts.
FACE-SPECIFIC-106	Range	The device shall electronically capture facial images at a minimum range of 2 feet.
FACE-SPECIFIC-107	Range	The device shall electronically capture facial images at a minimum range of 3 Feet.
FACE-SPECIFIC-108	Range	The device shall electronically capture facial images at a minimum range of 2 meters.
FACE-SPECIFIC-109	Range	The device shall be able to capture facial images at a range between 5 to 10 meters.
FACE-SPECIFIC-110	Range	The device shall be able to capture facial images at a range between 2 to 200 meters.
FACE-SPECIFIC-111	Range	The device shall be able to capture facial images at a range between 2 to 400 meters.

FACE-SPECIFIC-112	Software	The Device shall include a Software Development Kit (SDK) for integration.
FACE-SPECIFIC-113	Software	The Software Development Kit (SDK) and documentation provides clear definitions of error states and error names and numbers associated in a programmer's guide.
FACE-SPECIFIC-114	Software	IF applicable, the device drivers shall have the option to be fully uninstalled.
FACE-SPECIFIC-115	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (32 bit).
FACE-SPECIFIC-116	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (64 bit).
FACE-SPECIFIC-117	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 11 Operating System (64 bit).
FACE-SPECIFIC-118	Software	The device installation software shall follow standard Microsoft Windows Installer Best Practices, found at: https://learn.microsoft.com/en-us/windows/win32/msi/windows-installer-best-practices
FACE-SPECIFIC-119	Software	The device shall be compatible with supported versions of Windows Operating System.
FACE-SPECIFIC-120	Software	The device shall provide Log files for Troubleshooting.
FACE-SPECIFIC-121	Software	The device's driver installation shall not install custom software into the Microsoft Windows system directories. Ensure Runtime only installation is also available.
FACE-SPECIFIC-122	Software	When installing the device, its sample application executable must be able to be run without administrative permissions on the PC.
FACE-SPECIFIC-123	Standards	The device shall meet applicable DOD, DOS, DOJ Standards.
FACE-SPECIFIC-124	Standoff	The vendor shall provide information on if the device is capable of remote adjustment, directional, and zoom control (i.e., ability to pan/tilt/zoom) for Facial Image capture. BACKGROUND: <i>Determine whether the image device can be operated/adjusted remotely and include the capture devices' ability for remote adjustment to correct for image clarity</i>
FACE-SPECIFIC-125	Storage	The Device shall not hold any biometric data.
FACE-SPECIFIC-126	Storage	The device shall locally store the image metadata.

FACE-SPECIFIC-127	Storage	The device shall locally store the metadata recorded for up to 500 facial images
FACE-SPECIFIC-128	Storage	The device shall locally store the metadata recorded for up to 500,000 facial images
FACE-SPECIFIC-129	Storage	The device shall record and locally store all image(s).
FACE-SPECIFIC-130	Storage	The device shall record and locally store up to 500 facial images
FACE-SPECIFIC-131	Storage	The device shall record and locally store up to 500,000 facial images
FACE-SPECIFIC-132	USB	The device shall be powered through the USB connection and include an at least 6 foot USB Cable.
FACE-SPECIFIC-133	USB	The device shall be USB 2.0 compatible.
FACE-SPECIFIC-134	USB	The device shall be USB 3.0 compatible.

Iris Minimum Essential Requirements

Requirement #	Sub Category	Requirement Language
IRIS-MER -1	Anti-Spoofing	The vendor shall provide information on if the device can determine "liveness"/spoofing/ cosmetic lenses in the eyes.
IRIS-MER -2	Processing Time	The vendor shall provide the Iris Image capture time for the device and how they calculate this time.
IRIS-MER -3	Capability	The device shall be able to detail and confirm Iris image orientation.
IRIS-MER -4	Capability	The device shall be able to capture Iris(es) images.
IRIS-MER -5	Capability	The device shall be able to document if the captured Iris image is Left, Right, or Both.
IRIS-MER -6	Capability	The device shall capture Iris image metadata
IRIS-MER -7	Capability	The device shall have the ability to detect if an IRIS is inverted.
IRIS-MER -8	Capability	The device shall mitigate effects of direct sunlight while collecting iris images.
IRIS-MER -9	Capability	The device shall mitigate effects of low light conditions while collecting iris images. The vendor should provide a definition of what the systems considers as low-light.
IRIS-MER -10	Capability	The device shall mitigate effects of bright light conditions while collecting iris images. The vendor should provide a definition of what the systems considers as bright light.
IRIS-MER -11	Capability	The device shall provide immediate feedback to the operator on the quality of collected Iris images. This shall include for low-quality images.
IRIS-MER -12	Capability	The vendor shall provide if the device captures Iris images sequentially or both iris images (e.g. left and right irises) concurrently.
IRIS-MER -13	Image Quality	The device iris recognition capabilities shall be compliant to ANSI/NIST-ITL 1-2011 Special Publication 500-290 Edition 3 (2015), Type 17.
IRIS-MER -14	Image Quality	The device iris recognition capabilities shall be compliant to ISO/IEC 19794-6: 2011, Part 6 Iris Image Data.
IRIS-MER -15	Image Quality	The device iris recognition capabilities shall meet the requirements in the latest version of the NIST Iris Exchange (IREX-X).
IRIS-MER -16	Image Quality	The device shall capture Iris images in accordance with: IXM 6.0.9 FBI EBTS 10.X (Type 17) DoD EBTS 4.1 (Type 17)
IRIS-MER -17	Image Quality	The device shall incorporate approved quality metrics on electronically captured iris images.

IRIS-MER - 18	Image Quality	The device shall provide image stabilization features during iris image capture.
IRIS-MER - 19	Image Quality	The vendor shall provide the information about the resolution of Iris Images.
IRIS-MER - 20	Certification	The device will be UL Certified.
IRIS-MER - 21	Data	The device shall accurately and automatically capture the DTG (Date Time Group), make, model and serial number when a file is developed.
IRIS-MER - 22	Diagnostics	The Device shall include diagnostics tools and software testing application to determine its operational status.
IRIS-MER - 23	Display	The device shall display, or shall support system display, of the Iris(es) as they are being captured.
IRIS-MER - 24	Display	If the device displays or supports the display of language, it shall have English available.
IRIS-MER - 25	Documentation	The vendor shall provide documentation for all device updates.
IRIS-MER - 26	Documentation	The Device shall be provided with an English-language user manual.
IRIS-MER - 27	Documentation	The Device User manual shall include Troubleshooting. If the troubleshooting is only available online, it should be noted by the vendor
IRIS-MER - 28	Export	The vendor shall know and provide the power and bandwidth requirements for the device.
IRIS-MER - 29	Installation	The device shall be hardware agnostic with respect to the government system with which it is being interfaced.
IRIS-MER - 30	Installation	The Device shall be plug and play. The vendor shall provide a definition of what they consider "plug and play."
IRIS-MER - 31	Installation	The device shall be software agnostic with respect to the government system with which it is being interfaced.
IRIS-MER - 32	Installation	The Device shall not require a vendor technician to install or set up.
IRIS-MER - 33	Lighting Capability	The device illumination source shall not create a reflection on the iris
IRIS-MER - 34	Lighting Capability	The device shall provide adequate illumination for iris image capture and meet U.S. and international eye safety standards in ANSI/IESNA RP27.1-96 (Photobiological Safety of Lamps and Lighting Systems) and IEC 60825-1.2-2001.
IRIS-MER - 35	Physical	The vendor shall provide the full weight of their device and potential accessories.
IRIS-MER - 36	Physical	The Vendor shall provide the dimensions of their device and potential accessories.

IRIS-MER - 37	Power	The Vendor shall provide the power requirements of their Device and potential accessories.
IRIS-MER - 38	Range	The vendor shall provide the optimal range for the device to capture a subject's Iris(es).
IRIS-MER - 39	Reliability	The vendor shall provide information on the devices Mean Time Before Critical Failure (MTBCF) in its operational environment, excluding user error. MTBCF = System Operating Time/ Number of Critical Failures.
IRIS-MER - 40	Maintainability	The vendor shall provide best practices documentation for regular maintenance and cleaning of the device.
IRIS-MER - 41	Maintainability	The Vendor shall provide information on the devices Mean Time To Repair (MTTR). MTTR = Corrective Maintenance Time/Number of Failures.
IRIS-MER - 42	Availability	The vendor shall provide information of the devices Operational Availability (Ao). $Ao = ((\text{Mean Time Before Critical Failure}) / ((\text{Mean Time Before Critical Failure}) \times (\text{Mean Time To Repair}))) \times 100$.
IRIS-MER - 43	Software	The Vendor shall indicate if a Software Development Kit (SDK) - and any additional software - is required for operation.
IRIS-MER - 44	Software	The device shall include the necessary drivers for Operating System compatibility.
IRIS-MER - 45	Software	The Vendor shall detail what Operating Systems the device is compatible with.
IRIS-MER - 46	Standards	The device shall meet DHS 4300A (IT Standard).
IRIS-MER - 47	Standards	The device shall meet DoDI 8500.01 Cybersecurity.
IRIS-MER - 48	Standards	The device shall meet FIPS140-2.
IRIS-MER - 49	Standards	The device shall meet International Electrotechnical Commission (IEC) standard 60529.
IRIS-MER - 50	Standards	The device shall meet NIST SP 800-39, Managing Information Security Risk: Organization, Mission, and Information System View.
IRIS-MER - 51	Security	The device shall not be manufactured by, or has parts that have been manufactured by, any company that is banned by statute or regulation from being purchased by a Federal Government agency or is suspended or debarred from Federal contracts. The vendor shall ensure compliance with all statues and regulations regarding the manufacturing of equipment or parts of equipment BACKGROUND: Compliance with all statues, regulation, including Section 889 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 and SAM

IRIS-MER - 52	Security	The device supports the government data rights as per FAR 52.227-17 Rights in Data-Special Works (DEC 2007).
IRIS-MER - 53	Security	The device shall not allow unauthorized connections or duplication of data, including unauthorized metrics collection or transmission. This authorization is solely the providence of the US Government. By default, no information or data should be shared externally from the US government.

Iris SPECIFIC Requirements

Requirement #	Sub Category	Requirement Language
IRIS-SPECIFIC-1	Anti-Spoofing	The device shall be able to determine "liveness"/spoofing/cosmetic lenses in the eyes.
IRIS-SPECIFIC-2	Automation	The device shall automatically capture Iris image(s).
IRIS-SPECIFIC-3	Availability	When powered on, the device shall be ready to operate within 10 seconds.
IRIS-SPECIFIC-4	Capability	The device shall electronically capture both iris images (e.g. left and right irises concurrently) at once.
IRIS-SPECIFIC-5	Image Quality	The device shall be able to capture 5 megapixel photos or greater for dual-iris photos.
IRIS-SPECIFIC-6	Image Quality	The device shall be able to capture 1 megapixel photos or greater for single-iris photos.
IRIS-SPECIFIC-7	Image Quality	The device shall comply with OSAC 2024-N-0004, Standard Guide for Capturing Iris Images for Use with Iris Recognition Systems.
IRIS-SPECIFIC-8	Compatibility	The device shall have integration compatibility with CBP systems.
IRIS-SPECIFIC-9	Compatibility	The device shall have integration compatibility with DHS systems.
IRIS-SPECIFIC-10	Compatibility	The device shall have integration compatibility with DOD systems.
IRIS-SPECIFIC-11	Compatibility	The device shall have integration compatibility with DOS systems.
IRIS-SPECIFIC-12	Compatibility	The device shall have integration compatibility with DOJ systems.
IRIS-SPECIFIC-13	Processing Time	The device shall electronically capture an iris image(s) within 1.0 second.
IRIS-SPECIFIC-14	Processing Time	The device shall electronically capture an iris image(s) within 2.0 seconds.
IRIS-SPECIFIC-15	Processing Time	The device shall electronically capture an iris image(s) within 5.0 seconds.
IRIS-SPECIFIC-16	Export	The device shall be capable of exporting information that include digital Iris images with associated metadata.
IRIS-SPECIFIC-17	Export	The device shall be capable of exporting to at least the following formats: IDENT IXM 6.0.9 FBI EBTS 10.X DOD EBTS 4.1

IRIS-SPECIFIC-18	Export	The device shall be capable of exporting to the following formats: Latest Version of IDENT IXM (6.0.9) Latest Version of FBI EBTS (11.X) Latest Version of DOD EBTS (4.1)
IRIS-SPECIFIC-19	Export	The device shall be capable of exporting Iris image(s) to the following formats: Latest Version of IDENT IXM (6.0.9) Latest Version of FBI EBTS (11.X) Latest Version of DOD EBTS (4.1)
IRIS-SPECIFIC-20	Enrollee Profile	The device shall have the ability to create an enrollee profile.
IRIS-SPECIFIC-21	Documentation	The vendor shall provide manufacturer support for Web USB/USB Device or manufacturer-provided documentation enabling in-house development of web-hardware interface.
IRIS-SPECIFIC-22	Documentation	The device user manual shall be multi-lingual and the vendor will detail what languages are covered.
IRIS-SPECIFIC-23	Documentation	The device user manual shall be multi-lingual and include at least the following Languages: English Spanish, Arabic, Tagalog, Portuguese, Serbo-Croatian (Bosnia), Bulgarian, Swahili, Somali, Polish, French, Italia, Haitian Creole, Maltese,.
IRIS-SPECIFIC-24	Encryption	If the device stores data locally, the data shall be encrypted per NIST Standards.
IRIS-SPECIFIC-25	Match	For devices that support matching, it shall have a False Non-Match Rate (FNMR) less than or equal to 0.0001 at a False Match Rate (FMR) less than or equal to 0.0001 for iris image verification (1:1).
IRIS-SPECIFIC-26	Match	For devices that support matching, it shall have a False Non-Match Rate (FNMR) less than or equal to 0.001 at a False Match Rate (FMR) less than or equal to 0.0001 for iris image verification (1:1).
IRIS-SPECIFIC-27	Match	For devices that support matching, it shall have a False Negative Identification Rate (FNIR) less than or equal to 0.001 at a False Positive Identification Rate (FPIR) less than or equal to 0.0001 for iris image identification (1:N).
IRIS-SPECIFIC-28	Match	For devices that support matching, it shall have a False Negative Identification Rate (FNIR) less than or equal to 0.005 at a False Positive Identification Rate (FPIR) less than or equal to 0.0001 for iris image identification (1:N).
IRIS-SPECIFIC-29	Match	For devices that support matching, it shall match 1 IRIS within 15 SECONDS with a 4.5 million biometric template database and within 30 SECONDS with a 22.5 million biometric template database.

IRIS-SPECIFIC-30	Match	For devices that support matching, it shall match 1 IRIS within 30 SECONDS with a 4.5 million biometric template database and within 45 SECONDS with a 22.5 million biometric template database.
IRIS-SPECIFIC-31	Match	For devices that support matching, it shall match 2 IRISES within 17 SECONDS with a 4.5 million biometric template database and within 32 SECONDS with a 22.5 million biometric template database.
IRIS-SPECIFIC-32	Match	For devices that support matching, it shall match 2 IRISES within 32 SECONDS with a 4.5 million biometric template database and within 47 SECONDS with a 22.5 million biometric template database.
IRIS-SPECIFIC-33	Match	For devices that support matching, the device shall notify the operator of a local iris match in less than 1.0 minute.
IRIS-SPECIFIC-34	Match	For devices that support matching, the device shall notify the operator of a local iris match in less than 6.0 seconds.
IRIS-SPECIFIC-35	Match	For devices that support matching, the device shall notify the operator of an iris match.
IRIS-SPECIFIC-36	Match	For devices that support matching, the device shall perform matching/comparison of collected iris images to locally stored iris images, in order to prevent duplicated enrollments.
IRIS-SPECIFIC-37	Match	For devices that support matching, the vendor shall provide how long it takes the device to Match Iris(es)
IRIS-SPECIFIC-38	Mounting	The device shall have the capability to be mounted.
IRIS-SPECIFIC-39	Operating Environment	The device shall be able to operate without degradation within a temperature range of -22 degrees and 122 degrees Fahrenheit.
IRIS-SPECIFIC-40	Operating Environment	The device shall be able to operate without degradation within a temperature range of 32 degrees and 122 degrees Fahrenheit.
IRIS-SPECIFIC-41	Operating Environment	The device shall be able to operate without degradation within a temperature range of 32 degrees and 130 degrees Fahrenheit.
IRIS-SPECIFIC-42	Operating Environment	The device shall be able to operate without degradation within a temperature range of 32 degrees and 95 degrees Fahrenheit.
IRIS-SPECIFIC-43	Operating Environment	The device shall be ruggedized for use in military/law enforcement settings on shore and at sea and meet the standards set forth in MIL-STD 810, MIL-STD 810G Change 1, and MIL-STD 1472H (Sections 4.7, 5.1.1.3, 5.1.3.11, 5.1.4, and 5.20.2.3.7.1)
IRIS-SPECIFIC-44	Operating Environment	The device shall meet the requirements of IP64.

IRIS-SPECIFIC-45	Operating Environment	The device shall meet the requirements of IP65.
IRIS-SPECIFIC-46	Operating Environment	The device shall meet the requirements of IP66.
IRIS-SPECIFIC-47	Override	The device shall allow the operator to manually accept an Iris image(s) regardless of image quality.
IRIS-SPECIFIC-48	Override	The device shall have the togglable option to either allow the operator to manually accept a Iris image(s) of insufficient image quality or not allow the operator to manually accept a Iris image(s) of insufficient image quality .
IRIS-SPECIFIC-49	Override	The device shall not allow the operator to manually accept a Iris image(s) of insufficient image quality.
IRIS-SPECIFIC-50	Physical (MOBILE)	The device shall weight no more than 10 oz.
IRIS-SPECIFIC-51	Physical (MOBILE)	The device shall weight no more than 2 lbs.
IRIS-SPECIFIC-52	Physical (MOBILE)	The device shall weight no more than 3 lbs.
IRIS-SPECIFIC-53	Physical (MOBILE)	The device shall weight no more than 4 lbs.
IRIS-SPECIFIC-54	Physical (MOBILE)	The device shall weight no more than 5 lbs.
IRIS-SPECIFIC-55	Physical (STATIONARY)	The device shall weight no more than 5 lbs.
IRIS-SPECIFIC-56	Power	The device shall be compatible with power sources both US and international.
IRIS-SPECIFIC-57	Power	The device shall be able to utilize a vehicular power source.
IRIS-SPECIFIC-58	Power	The device shall have a rechargeable battery.
IRIS-SPECIFIC-59	Power	The device shall support a power supply of AC at 110 and 220 volts.
IRIS-SPECIFIC-60	Range	The device shall have the ability to capture an image of both irises, or a single iris, when positioned no closer than 12”.
IRIS-SPECIFIC-61	Range	The device shall not require positioning closer than 12” to the subject’s face to capture a useable double or single iris image.
IRIS-SPECIFIC-62	Software	The Device shall include a Software Development Kit (SDK) for integration.
IRIS-SPECIFIC-63	Software	The Software Development Kit (SDK) and documentation provides clear definitions of error states and error names and numbers associated in a programmer's guide.

IRIS-SPECIFIC-64	Software	IF applicable, the device drivers shall have the option to be fully uninstalled.
IRIS-SPECIFIC-65	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (32 bit).
IRIS-SPECIFIC-66	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (64 bit).
IRIS-SPECIFIC-67	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 11 Operating System (64 bit).
IRIS-SPECIFIC-68	Software	The device installation software shall follow standard Microsoft Windows Installer Best Practices, found at: https://learn.microsoft.com/en-us/windows/win32/msi/windows-installer-best-practices
IRIS-SPECIFIC-69	Software	The device shall be compatible with supported versions of Windows Operating System.
IRIS-SPECIFIC-70	Software	The device shall provide Log files for Troubleshooting.
IRIS-SPECIFIC-71	Software	The device's driver installation shall not install custom software into the Microsoft Windows system directories. Ensure Runtime only installation is also available.
IRIS-SPECIFIC-72	Software	When installing the device, its sample application executable must be able to be run without administrative permissions on the PC.
IRIS-SPECIFIC-73	Standards	The device shall meet applicable DOD, DOS, DOJ Standards.
IRIS-SPECIFIC-74	Storage	The device shall locally store the image metadata.
IRIS-SPECIFIC-75	Storage	The device shall locally store the metadata recorded for up to 500 pairs of Iris images
IRIS-SPECIFIC-76	Storage	The device shall locally store the metadata recorded for up to 500,000 pairs of Iris images
IRIS-SPECIFIC-77	Storage	The Device shall not hold any biometric data.
IRIS-SPECIFIC-78	Storage	The device shall record and locally store the image.
IRIS-SPECIFIC-79	Storage	The device shall record and locally store up to 500 pairs of Iris images
IRIS-SPECIFIC-80	Storage	The device shall record and locally store up to 500,000 pairs of Iris images
IRIS-SPECIFIC-81	USB	The device shall be powered through the USB connection and include an at least 6 foot USB Cable.
IRIS-SPECIFIC-82	USB	The device shall be USB 2.0 compatible.

IRIS-SPECIFIC-83	USB	The device shall be USB 3.0 compatible.
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Palmprint Minimum Essential Requirements

Requirement #	Sub Category	Requirement Description
PALMPRINT-MER -1	Capability	The Device shall be capable of capturing fingerprint and palmprint images for a complete spectrum of skin pigmentation.
PALMPRINT-MER -2	Capability	The Device shall create fingerprint and palmprint image metadata.
PALMPRINT-MER -3	Capability	The device shall provide the capability to collect palmprints.
PALMPRINT-MER -4	Capability	The device shall provide the capability to collect flat and rolled fingerprints.
PALMPRINT-MER -5	Image Quality	The device shall be certified to the FBI Appendix F Image Quality Specifications (IQS) of the Electronic Biometric Transmission Standard (EBTS)(EBTS) (11.X or above).
PALMPRINT-MER -6	Image Quality	The device shall be compliant to the FBI Appendix P Image Quality Specifications (IQS) of the Electronic Biometric Transmission Standard (EBTS)(EBTS) (11.X or above).
PALMPRINT-MER -7	Image Quality	The device shall collect fingerprints and palmprints in accordance with FBI Appendix F Image Quality Specifications (IQS) of the Electronic Biometric Transmission Standard (EBTS) (11.X or above).
PALMPRINT-MER -8	Image Quality	The device shall collect fingerprints and palmprints in accordance with FBI Appendix P Image Quality Specifications (IQS) of the Electronic Biometric Transmission Standard (EBTS) (11.X or above).
PALMPRINT-MER -9	Image Quality	The device shall provide, or shall support external system display of, a fingerprint quality score.
PALMPRINT-MER -10	Image Quality	The device shall provide immediate feedback to the operator on the quality of collected fingerprint or palmprint images. This shall include for low-quality images.
PALMPRINT-MER -11	Image Quality	The device shall allow the operator to manually accept a fingerprint image regardless of its image quality score.
PALMPRINT-MER -12	Image Quality	The device shall meet standard ANSI/NIST-ITL 1-2011 Special Publication 500-290 Edition 3 (2015) requirements for Type-14 fingerprints.
PALMPRINT-MER -13	Image Quality	The device shall meet standard ANSI/NIST-ITL 1-2011 Special Publication 500-290 Edition 3 (2015) requirements for Type-13 palmprint records (latent friction-ridge images).
PALMPRINT-MER -14	Image Quality	The device shall have a image capture resolution of at least 500 ppi.
PALMPRINT-MER -15	Certification	The device shall be included in the Federal Bureau of Investigation's (FBI) Certified Product List (CPL), located at: https://www.fbibiospecs.cjis.gov/certifications .
PALMPRINT-MER -16	Data	The device shall accurately and automatically capture the DTG (Date Time Group), make, model and serial number when a file is developed.
PALMPRINT-MER -17	Diagnostics	The Device shall include diagnostics tools and software testing application to determine its operational status.
PALMPRINT-MER -18	Display	The device shall display, or shall support external system display, of fingerprints and palmprints as they are being captured.

PALMPRINT-MER -19	Display	If the device displays or supports the external system display of language, it shall have English available.
PALMPRINT-MER -20	Display	The device shall indicate - either on the device or supporting external system display - the required digits when it is ready to obtain fingerprints.
PALMPRINT-MER -21	Documentation	The vendor shall provide documentation for all device updates.
PALMPRINT-MER -22	Documentation	The Device shall be provided with an English-language user manual.
PALMPRINT-MER -23	Documentation	The Device User manual shall include Troubleshooting. If the troubleshooting is only available online, it should be noted by the vendor
PALMPRINT-MER -24	Processing Time	The vendor shall provide the fingerprint capture time for the device and how they calculate fingerprint capture time.
PALMPRINT-MER -25	Processing Time	The vendor shall provide the palmprint capture time for the device and how they calculate palmprint capture time.
PALMPRINT-MER -26	Installation	The device shall be hardware agnostic with respect to the government system with which it is being interfaced.
PALMPRINT-MER -27	Installation	The device shall be software agnostic with respect to the government system with which it is being interfaced.
PALMPRINT-MER -28	Installation	The Device shall not require a vendor technician to install or set up.
PALMPRINT-MER -29	Availability	The vendor shall provide information of the devices Operational Availability (Ao). $Ao = ((\text{Mean Time Before Critical Failure}) / ((\text{Mean Time Before Critical Failure}) \times (\text{Mean Time To Repair}))) \times 100$.
PALMPRINT-MER -30	Maintainability	The vendor shall provide best practices documentation for regular maintenance and cleaning of the device.
PALMPRINT-MER -31	Maintainability	The Vendor shall provide information on the devices Mean Time To Repair (MTTR). $MTTR = \text{Corrective Maintenance Time} / \text{Number of Failures}$.
PALMPRINT-MER -32	Reliability	The vendor shall provide information on the devices Mean Time Before Critical Failure (MTBCF) in its operational environment, excluding user error. $MTBCF = \text{System Operating Time} / \text{Number of Critical Failures}$.
PALMPRINT-MER -33	Physical	The vendor shall provide the full weight of their device and potential accessories.
PALMPRINT-MER -34	Physical	The Vendor shall provide the dimensions of their device and potential accessories.
PALMPRINT-MER -35	Power	The Vendor shall provide the power requirements of their Device and potential accessories.
PALMPRINT-MER -36	Software	The Vendor shall indicate if a Software Development Kit (SDK) - and any additional software - is required for operation.
PALMPRINT-MER -37	Software	The Vendor shall detail what Operating Systems the device is compatible with.
PALMPRINT-MER -38	Software	The device shall include the necessary drivers for Operating System compatibility.
PALMPRINT-MER -39	Standards	The device shall meet International Electrotechnical Commission (IEC) standard 60529.
PALMPRINT-MER -40	Standards	The device shall meet DHS 4300A (IT Standard).
PALMPRINT-MER -41	Standards	The device shall meet FIPS140-2.

PALMPRINT-MER -42	Standards	The device shall meet DoDI 8500.01 Cybersecurity.
PALMPRINT-MER -43	Standards	The device shall meet NIST SP 800-39, Managing Information Security Risk: Organization, Mission, and Information System View.
PALMPRINT-MER -44	Security	The device shall not be manufactured by, or has parts that have been manufactured by, any company that is banned by statute or regulation from being purchased by a Federal Government agency or is suspended or debarred from Federal contracts. The vendor shall ensure compliance with all statutes and regulations regarding the manufacturing of equipment or parts of equipment. BACKGROUND: Compliance with all statutes, regulation, including Section 889 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 and SAM
PALMPRINT-MER -45	Security	The device supports the government data rights as per FAR 52.227-17 Rights in Data-Special Works (DEC 2007).
PALMPRINT-MER -46	Security	The device shall not allow unauthorized connections or duplication of data, including unauthorized metrics collection or transmission. This authorization is solely the providence of the US Government. By default, no information or data should be shared externally from the US government.

Palmprint SPECIFIC Requirements Requirement #	Sub Category	Requirement Description
PALMPRINT-SPECIFIC -1	Anti-Spoofing	The device shall be able to identify fake fingerprint and palmprint scans (anti-spoofing) and associated Software Development Kit (SDK) codes.
PALMPRINT-SPECIFIC -2	Automation	The device shall provide automated guidance of the sample collection procedure.
PALMPRINT-SPECIFIC -3	Capability	The device shall meet standard ANSI/NIST-ITL 1-2011 Special Publication 500-290 Edition 3 (2015) requirements for Type-15 palmprint records.
PALMPRINT-SPECIFIC -4	Capability	The device shall provide the capability to collect upper, lower, and writer's palmprints.
PALMPRINT-SPECIFIC -5	Capability	The device shall support the following image formats: RAW, JPEG2000, BMP, PNG, WSQ (FBI-approved)
PALMPRINT-SPECIFIC -6	Scanning Area	The device shall provide a scanning area of at least 5" x 5".
PALMPRINT-SPECIFIC -7	Scanning Area	The device shall provide a scanning area of at least 5.9" x 5.5"
PALMPRINT-SPECIFIC -8	Image Quality	The device shall be certified to the FBI Appendix P Image Quality Specifications (IQS) of the Electronic Biometric Transmission Standard (EBTS)(EBTS) (11.X or above).
PALMPRINT-SPECIFIC -9	Image Quality	The device shall meet standard ANSI/NIST-ITL 1-2011 Special Publication 500-290 Edition 3 (2015) requirements for Type-14 fingerprints.
PALMPRINT-SPECIFIC -10	Certification	The Device shall meet at least FAP-60 FBI Appendix F certification.
PALMPRINT-SPECIFIC -11	Certification	The device will be UL Certified.
PALMPRINT-SPECIFIC -12	Certification	The device will be UL Certified.
PALMPRINT-SPECIFIC -13	Certification	The device will be compliant to IEC 62368-1.
PALMPRINT-SPECIFIC -14	Certification	The device will be compliant to FCC Part 15 (per ANSI C63.4:2014) Class B, CE Emissions.
PALMPRINT-SPECIFIC -15	Certification	The device will be compliant to RoHS Directive 2011/65/EU with amendment 2017/2102.
PALMPRINT-SPECIFIC -16	Display	The Device shall provide the capability to preview the number of fingers and fingerprints detected.

PALMPRINT-SPECIFIC - 17	Display	The fingerprint devices should clearly indicate when they are ready to take a print and when they are busy processing.
PALMPRINT-SPECIFIC - 18	Documentation	The vendor shall provide manufacturer support for Web USB/USB Device or manufacturer-provided documentation enabling in-house development of web-hardware interface.
PALMPRINT-SPECIFIC - 19	Documentation	The device user manual shall be multi-lingual and the vendor will detail what languages are covered.
PALMPRINT-SPECIFIC - 20	Documentation	The device user manual shall be multi-lingual and include at least the following Languages: English, Spanish, Arabic, Tagalog, Portuguese, Serbo-Croatian (Bosnia), Bulgarian, Swahili, Somali, Polish, French, Italia, Haitian Creole, Maltese.
PALMPRINT-SPECIFIC - 21	Installation	The Device shall be plug and play. The vendor shall provide a definition of what they consider "plug and play."
PALMPRINT-SPECIFIC - 22	Availability	When powered on, the device shall be ready to operate within 10 seconds.
PALMPRINT-SPECIFIC - 23	Availability	When powered on, the device shall be ready to operate within 10 seconds.
PALMPRINT-SPECIFIC - 24	Power	The device shall be compatible with power sources both US and international.
PALMPRINT-SPECIFIC - 25	Power	The device shall have a rechargeable battery.
PALMPRINT-SPECIFIC - 26	Power	The device shall support a power supply of AC at 110 and 220 volts.
PALMPRINT-SPECIFIC - 27	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (32 bit).
PALMPRINT-SPECIFIC - 28	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (64 bit).
PALMPRINT-SPECIFIC - 29	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 11 Operating System (64 bit).
PALMPRINT-SPECIFIC - 30	Software	The Device shall include a Software Development Kit (SDK) for integration.
PALMPRINT-SPECIFIC - 31	Software	The Software Development Kit (SDK) and documentation shall provide clear definitions of error states and error names and numbers associated in a programmer's guide.

PALMPRINT-SPECIFIC - 32	Software	The device installation software shall follow standard Microsoft Windows Installer Best Practices, found at: https://learn.microsoft.com/en-us/windows/win32/msi/windows-installer-best-practices
PALMPRINT-SPECIFIC - 33	Software	When installing the device, its sample application executable must be able to be run without administrative permissions on the PC.
PALMPRINT-SPECIFIC - 34	Software	The device's driver installation shall not install custom software into the Microsoft Windows system directories. Ensure Runtime only installation is also available.
PALMPRINT-SPECIFIC - 35	Software	IF applicable, the device drivers shall have the option to be fully uninstalled.
PALMPRINT-SPECIFIC - 36	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (32 bit).
PALMPRINT-SPECIFIC - 37	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (64 bit).
PALMPRINT-SPECIFIC - 38	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 11 Operating System (64 bit).
PALMPRINT-SPECIFIC - 39	Software	The device shall support Windows Desktop Editions 10, 11; Linux Kernel 4.0 or newer (64bit, ARMv8); Ubuntu 18.04LTS or newer; Debian 10, 11, or newer; Android 10, 11, 12 or higher. 1
PALMPRINT-SPECIFIC - 40	Compatibility	The device shall have integration compatibility with CBP systems.
PALMPRINT-SPECIFIC - 41	Compatibility	The device shall have integration compatibility with DHS systems.
PALMPRINT-SPECIFIC - 42	Compatibility	The device shall have integration compatibility with DOD systems.
PALMPRINT-SPECIFIC - 43	Compatibility	The device shall have integration compatibility with DOS systems.
PALMPRINT-SPECIFIC - 44	Compatibility	The device shall have integration compatibility with DOJ systems.
PALMPRINT-SPECIFIC - 45	Encryption	If the device stores data locally, the data shall be encrypted per NIST Standards.
PALMPRINT-SPECIFIC - 46	Export	The device shall be capable of exporting to include digital fingerprint and palmpoint images with associated metadata.

PALMPRINT-SPECIFIC - 47	Export	The device shall be capable of exporting to at least the following formats: IDENT IXM 6.0.9 FBI EBTS 9.X DOD EBTS 4.1
PALMPRINT-SPECIFIC - 48	Hardware	The device shall have an independently replaceable capture platen.
PALMPRINT-SPECIFIC - 49	Operating Environment	The device shall meet the requirements of IP54.
PALMPRINT-SPECIFIC - 50	Operating Environment	The device shall meet the requirements of IP65.
PALMPRINT-SPECIFIC - 51	Operating Environment	The device shall be ruggedized for use in military/law enforcement settings on shore and at sea and meet the standards set forth in MIL-STD 810, MIL-STD 810G Change 1, and MIL-STD 1472H (Sections 4.7, 5.1.1.3, 5.1.3.11, 5.1.4, and 5.20.2.3.7.1)
PALMPRINT-SPECIFIC - 52	Operating Environment	The device shall be able to operate without degradation within a temperature range of 14 degrees and 131 degrees Fahrenheit.
PALMPRINT-SPECIFIC - 53	Operating Environment	The device shall be able to operate without degradation within a temperature range of 32 degrees and 122 degrees Fahrenheit.
PALMPRINT-SPECIFIC - 54	Physical (MOBILE)	The device shall weigh no more than 2 lbs.
PALMPRINT-SPECIFIC - 55	Physical (STATIONARY)	The device shall weigh no more than 17 lbs.
PALMPRINT-SPECIFIC - 56	USB	The device shall be USB 3.0 compatible.

Palmprint SPECIFIC Requirements

Requirement #	Sub Category	Requirement Description
PALMPRINT-SPECIFIC -1	Anti-Spoofing	The device shall be able to identify fake fingerprint and palmprint scans (anti-spoofing) and associated Software Development Kit (SDK) codes.
PALMPRINT-SPECIFIC -2	Automation	The device shall provide automated guidance of the sample collection procedure.
PALMPRINT-SPECIFIC -3	Capability	The device shall meet standard ANSI/NIST-ITL 1-2011 Special Publication 500-290 Edition 3 (2015) requirements for Type-15 palmprint records.
PALMPRINT-SPECIFIC -4	Capability	The device shall provide the capability to collect upper, lower, and writer's palmprints.
PALMPRINT-SPECIFIC -5	Capability	The device shall support the following image formats: RAW, JPEG2000, BMP, PNG, WSQ (FBI-approved)
PALMPRINT-SPECIFIC -6	Scanning Area	The device shall provide a scanning area of at least 5" x 5".
PALMPRINT-SPECIFIC -7	Scanning Area	The device shall provide a scanning area of at least 5.9" x 5.5"
PALMPRINT-SPECIFIC -8	Image Quality	The device shall be certified to the FBI Appendix P Image Quality Specifications (IQS) of the Electronic Biometric Transmission Standard (EBTS)(EBTS) (11.X or above).
PALMPRINT-SPECIFIC -9	Image Quality	The device shall meet standard ANSI/NIST-ITL 1-2011 Special Publication 500-290 Edition 3 (2015) requirements for Type-14 fingerprints.
PALMPRINT-SPECIFIC -10	Certification	The Device shall meet at least FAP-60 FBI Appendix F certification.
PALMPRINT-SPECIFIC -11	Certification	The device will be UL Certified.
PALMPRINT-SPECIFIC -12	Certification	The device will be compliant to IEC 62368-1.
PALMPRINT-SPECIFIC -13	Certification	The device will be compliant to FCC Part 15 (per ANSI C63.4:2014) Class B, CE Emissions.
PALMPRINT-SPECIFIC -14	Certification	The device will be compliant to RoHS Directive 2011/65/EU with amendment 2017/2102.
PALMPRINT-SPECIFIC -15	Display	The Device shall provide the capability to preview the number of fingers and fingerprints detected.
PALMPRINT-SPECIFIC -16	Display	The fingerprint devices should clearly indicate when they are ready to take a print and when they are busy processing.
PALMPRINT-SPECIFIC -17	Documentation	The vendor shall provide manufacturer support for Web USB/USB Device or manufacturer-provided documentation enabling in-house development of web-hardware interface.
PALMPRINT-SPECIFIC -18	Documentation	The device user manual shall be multi-lingual and the vendor will detail what languages are covered.

PALMPRINT-SPECIFIC -19	Documentation	The device user manual shall be multi-lingual and include at least the following Languages: English, Spanish, Arabic, Tagalog, Portuguese, Serbo-Croatian (Bosnia), Bulgarian, Swahili, Somali, Polish, French, Italia, Haitian Creole, Maltese.
PALMPRINT-SPECIFIC -20	Installation	The Device shall be plug and play. The vendor shall provide a definition of what they consider "plug and play."
PALMPRINT-SPECIFIC -21	Availability	When powered on, the device shall be ready to operate within 10 seconds.
PALMPRINT-SPECIFIC -22	Availability	When powered on, the device shall be ready to operate within 10 seconds.
PALMPRINT-SPECIFIC -23	Power	The device shall be compatible with power sources both US and international.
PALMPRINT-SPECIFIC -24	Power	The device shall have a rechargeable battery.
PALMPRINT-SPECIFIC -25	Power	The device shall support a power supply of AC at 110 and 220 volts.
PALMPRINT-SPECIFIC -26	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (32 bit).
PALMPRINT-SPECIFIC -27	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (64 bit).
PALMPRINT-SPECIFIC -28	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 11 Operating System (64 bit).
PALMPRINT-SPECIFIC -29	Software	The Device shall include a Software Development Kit (SDK) for integration.
PALMPRINT-SPECIFIC -30	Software	The Software Development Kit (SDK) and documentation shall provide clear definitions of error states and error names and numbers associated in a programmer's guide.
PALMPRINT-SPECIFIC -31	Software	The device installation software shall follow standard Microsoft Windows Installer Best Practices, found at: https://learn.microsoft.com/en-us/windows/win32/msi/windows-installer-best-practices
PALMPRINT-SPECIFIC -32	Software	When installing the device, its sample application executable must be able to be run without administrative permissions on the PC.
PALMPRINT-SPECIFIC -33	Software	The device's driver installation shall not install custom software into the Microsoft Windows system directories. Ensure Runtime only installation is also available.
PALMPRINT-SPECIFIC -34	Software	IF applicable, the device drivers shall have the option to be fully uninstalled.

PALMPRINT-SPECIFIC -35	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (32 bit).
PALMPRINT-SPECIFIC -36	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 10 Operating System (64 bit).
PALMPRINT-SPECIFIC -37	Software	The device and associated Software Development Kit (SDK) shall be compatible with the Windows 11 Operating System (64 bit).
PALMPRINT-SPECIFIC -38	Software	The device shall support Windows Desktop Editions 10, 11; Linux Kernel 4.0 or newer (64bit, ARMv8); Ubuntu 18.04LTS or newer; Debian 10, 11, or newer; Android 10, 11, 12 or higher. 1
PALMPRINT-SPECIFIC -39	Compatibility	The device shall have integration compatibility with CBP systems.
PALMPRINT-SPECIFIC -40	Compatibility	The device shall have integration compatibility with DHS systems.
PALMPRINT-SPECIFIC -41	Compatibility	The device shall have integration compatibility with DOD systems.
PALMPRINT-SPECIFIC -42	Compatibility	The device shall have integration compatibility with DOS systems.
PALMPRINT-SPECIFIC -43	Compatibility	The device shall have integration compatibility with DOJ systems.
PALMPRINT-SPECIFIC -44	Encryption	If the device stores data locally, the data shall be encrypted per NIST Standards.
PALMPRINT-SPECIFIC -45	Export	The device shall be capable of exporting to include digital fingerprint and palmpoint images with associated metadata.
PALMPRINT-SPECIFIC -46	Export	The device shall be capable of exporting to at least the following formats: IDENT IXM 6.0.9 FBI EBTS 9.X DOD EBTS 4.1
PALMPRINT-SPECIFIC -47	Hardware	The device shall have an independently replaceable capture platen.
PALMPRINT-SPECIFIC -48	Operating Environment	The device shall meet the requirements of IP54.
PALMPRINT-SPECIFIC -49	Operating Environment	The device shall meet the requirements of IP65.
PALMPRINT-SPECIFIC -50	Operating Environment	The device shall be ruggedized for use in military/law enforcement settings on shore and at sea and meet the standards set forth in MIL-STD 810, MIL-STD 810G Change 1, and MIL-STD 1472H (Sections 4.7, 5.1.1.3, 5.1.3.11, 5.1.4, and 5.20.2.3.7.1)

PALMPRINT-SPECIFIC -51	Operating Environment	The device shall be able to operate without degradation within a temperature range of 14 degrees and 131 degrees Fahrenheit.
PALMPRINT-SPECIFIC -52	Operating Environment	The device shall be able to operate without degradation within a temperature range of 32 degrees and 122 degrees Fahrenheit.
PALMPRINT-SPECIFIC -53	Physical (MOBILE)	The device shall weigh no more than 2 lbs.
PALMPRINT-SPECIFIC 54	Physical (STATIONARY)	The device shall weigh no more than 17 lbs.
PALMPRINT-SPECIFIC -55	USB	The device shall be USB 3.0 compatible.

Multi-Modal Minimum Essential Requirements

The multi-modal devices would need to meet the Minimum Essential Requirements for each mode that the multi-modal device features.