

Annex II to the Invitation to Tender

Frontex/OP/180/2018/AH

Terms of Reference

Framework Contract - Purchase of document inspection equipment for Frontex Joint Operations

Lot 1 - Compact magnifier with different light sources

Lot 2 - Portable hand-held/on-body document inspection system

Lot 3 - Portable desktop or mobile (in a suitcase) document inspection system

1. Acronyms and Definitions	3
2. Introduction to Frontex	4
3. General Information	5
3.1. Aim of the document	5
3.2. Target Situation	5
4. Scope of the FWC and Lots	6
5. Minimal technical requirements	7
5.1. Lot 1 - Compact magnifier with different light sources	7
5.1.1. Definition	7
5.1.2. Description of use	7
5.1.3. Requirements	7
5.2. Portable hand-held/on-body document inspection system	9
5.2.1. Definition	9
5.2.2. Description of use	9
5.2.3. Requirements	9
5.3. Portable desktop or mobile (in a suitcase) document inspection system	20
5.3.1. Definition	20
5.3.2. Description of use	20
5.3.3. Requirements - Document scanner/reader	21
6. Delivery, training, warranty and maintenance	31
6.1. Delivery	31
6.2. Training and manuals	31
6.3. Warranty and maintenance	31
7. Quality monitoring and acceptance procedures	32
7.1. Quality control procedure	32
7.2. Acceptance procedure	32
8. Implementation of FWC	33
8.1. Indicative implementation plan for the FWC	33
8.2. Specific Orders implementation process	33
8.3. Payment	33
8.4. Language	33
8.5. Contract management personnel	33
8.5.1. Contractor's personnel	33
8.5.2. Frontex personnel	33

1. Acronyms and Definitions

Acronym	Definition
BAC	Basic Access Control
CM	Contract Manager
DDP	Delivery Duty Paid (incoterms)
EAC	Extended Access Control
EU	European Union
FCM	Frontex Contract Manager
FWC	Framework Contract
IPI	Invisible Personal Information
IR	InfraRed
LED	Light Emitting Diode
M	Mandatory
MRZ	Machine Readable Zone
MS	A Member State of the European Union
NTWG	New Technologies Working Group
O	Optional
OCR	Optical Character Recognition
OVD	Optically Variable Device
RFID	Radio Frequency Identification
SAC	Schengen Associated Country
SO/SOs	Specific Order/Specific Orders
ToR	Terms of Reference
TS	Tender Specifications
UV	Ultra Violet
VIZ	Visual Inspection Zone

2. Introduction to Frontex

The European Border and Coast Guard Agency - Frontex (hereinafter referred to as “Frontex”) was established by the Council Regulation (EC) Regulation (EU) 2016/1624 with a view to improve the integrated management of the external borders of the Member States of the European Union.

In pursuit of this goal, Frontex plans, coordinates, implements and evaluates joint operations conducted using Member States’ staff and equipment at the external borders of European Union.

The Regulation (EU) 1624/2016 laid down in Article 8 that the Agency shall contribute to an efficient, high and uniform level of border control and return including by setting up a technical equipment pool to be deployed in joint operations, rapid border interventions and in the framework of migration management support teams, as well as in return operations and return interventions.

In addition, the Article 39 defines the composition of the technical equipment pool into equipment owned either by the Member States or by the Agency and equipment co-owned by the Member States and by the Agency for its operational activities. In the same time, the Article 38 of the abovementioned EU Regulation provisions, ensures the legal basis for Frontex to develop its own operational capacity by acquiring itself or in co-ownership with a Member State or to lease technical equipment for external border control in accordance with the financial rules applicable to the Agency.

Further information about Frontex origin, organisation, its mandate, fields of activities, strategy and planned activities can be read on the Agency’s web site: www.frontex.europa.eu

3. General Information

3.1. Aim of the document

This document defines terms and conditions to procure different types of document inspection equipment. It describes the minimum requirements for the requested devices and it ensures that the delivered goods comply with Frontex requirements.

These terms of references shall become an integral part of the contract that may be awarded as a result of this open tender procedure.

All the information delivered in this document, its annexes and other referred documents shall be taken into consideration by the Tenderers in preparation of the offer and by the Contractor during the contract's implementation.

3.2. Target Situation

In order to achieve the optimal technical equipment availability Frontex is looking to establish a FWC for purchasing of different types of document inspection equipment to be used in its joint operations. The overall duration of the FWC shall be limited to four (4) years.

The possible quantity of equipment to be ordered during the lifetime of the contract is estimated to be as follows:

	Lot 1	Lot 2	Lot 3
1st year:	285	65	35
2nd year:	125	30	20
3rd year:	70	20	15
4th year:	20	10	10

The information given in #3.2. of this document is indicative and cannot be considered as automatically constituting any form of commitment by Frontex.

4. Scope of the FWC and Lots

The objective of this FWC is to provide Frontex with the capacity to obtain different quantities of any type of equipment, as listed below each time the need arises according to the terms and conditions described here below.

The tender is divided into 3 lots per type of equipment needed, as follows:

- Lot 1 - Compact magnifier with different light sources;
- Lot 2 - Portable hand-held/on-body document inspection system;
- Lot 3 - Portable desktop or mobile (in a suitcase) document inspection system.

5. Minimal technical requirements

5.1. Lot 1 - Compact magnifier with different light sources

5.1.1. Definition

Compact hand-held magnifier with different light sources for quick authenticity verification of passports, ID cards, resident permits, visas, stamps and other security documents for document checks purposes at all types of borders.

5.1.2. Description of use

This magnifier is an essential tool for initial basic quick optical document authenticity checks especially on the go when very little time is available.

The tool can help the border guard visualize, among other things, micro-print, optical alterations to documents, intaglio and embossed print, UV security features, anti-stokes security features. It requires basic skills and knowledge of documents by the border guard in order to identify irregularities. This means the border guard should know how a genuine document should look like in order to spot inconsistencies in the inspected document.

5.1.3. Requirements

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-1	Lenses	Magnification	≥10X (15X better)	M
req-2	Lenses	Field of view (diameter), mm	≥ 20 mm	M
req-3	Lenses	Field of view	shielded from light outside	M
req-4	Lenses	Measuring Reticula	Linear scale	O
req-5	Lenses	Measuring Reticula	Angular, radial	O
req-6	Illumination - Light Sources	white	top/incident (min 250 lux)	M
req-7	Illumination - Light Sources	white incident light	torchlight mode	O
req-8	Illumination - Light Sources	white	oblique	M
req-9	Illumination - Light Sources	white	automatic rotating oblique light	O
req-10	Illumination - Light Sources	white	coaxial, detection of retroreflective protection	O
req-11	Illumination - Light Sources	white	for Optically Variable Device (OVD) visualisation, Holographic security elements examination ≥ 2 LED (min 250 lux) perpendicular	M
req-12	Illumination - Light Sources	Ultraviolet Lights	torchlight mode - UV 365nm, min 2 LED	O

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-13	Illumination - Light Sources	Ultraviolet Lights	365 nm	M
req-14	Illumination - Light Sources	Ultraviolet Lights	254, 313, 400 nm	O
req-15	Illumination - Light Sources	Ultraviolet Lights	polarized 365nm	O
req-16	Illumination - Light Sources	interchangeable white-UV light		O
req-17	Illumination - Light Sources	Infrared	980 nm for detection of anti-stokes luminiscence	O
req-18	Illumination - Light Sources	Infrared sidelight	≥ 850 nm	O
req-19	RFID Detector	Chip type	ICAO standard, Type A and Type B	O
req-20	RFID Detector	Indicator	signals whether chip is active	O
req-21	Camera		Functionality to capture the image	O
req-22	Hardware	Button - On/Off	steady light mode with automatic shut down for all type of lights for 1 minute active	M
req-23	Hardware	Buttons	big and spaced enough to be easy to operate with thumb (not pushing two buttons at a time)	M
req-24	Hardware	Dimensions	handheld, can be operated with 1 hand only, ergonomic	M
req-25	Hardware	Weight	≤ 200 gr	M
req-26	Hardware	Robustness	Drop safe from 1,5 m minimum	M
req-27	Hardware	Robustness	Water resistant	M
req-28	Power supply	Battery	rechargeable integrated and/or rechargeable battery	M
req-29	Power supply	Battery	Minimum operation time (switch on) with continuous use minimum 8 h	M
req-30	Power supply	Battery	Rechargeable via mini and/or Micro USB slot or direct from AC	M
req-31	Other features and accessories	Carry case	Special case for fixing the device on the waist belt	M
req-32	Other features and accessories	Strap	hand	O

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-33	Other features and accessories	Strap	neck	O
req-34	Other features and accessories	Warranty	minimum 2 years	M

5.2. Portable hand-held/on-body document inspection system

5.2.1. Definition

Portable on-body battery-operated document inspection system composed of a full-page document scanner/reader and a visualization device (tablet but also smartphone) capable to perform optical, electronic, and combined checks on the go for quick authenticity verification of passports, ID cards, resident permits, visas, stamps and other security documents for document checks purposes at all types of borders.

5.2.2. Description of use

This equipment is for use by border guards for quick document authentication tasks outside of a stationary first line booth at air, sea, and land borders for instance for checks at road BCPs, on trains, on ferries/ships, and gate checks at airports. It performs automatically electronic and combined checks and basic optical checks and highlights irregularities for border guard's attention. Once connected and integrated with automated search of background systems, it may also provide additional information on the document (validity) and the holder. Documents can be compared against a reference database either automatically or manually. Images and information extracted from the inspected document as well as metadata related to the inspection may be automatically anonymized and saved on the device for further processing (for instance in case the information on the questioned document needs to be forwarded to a remote second-line post for advice or for situation monitoring purposes).

5.2.3. Requirements

Functional requirements for machine-assisted optical, electronic, and combined checks are documented in the Technical Guidelines BSI TR-03135 on Machine Authentication of MRTDs for Public Sector Applications (part 1 and part 2) issued by the German Federal Office for Information Security with the Federal Criminal Police Office and the Federal Police (version 2.2, 2017, https://www.bsi.bund.de/SharedDocs/Downloads/EN/BSI/Publications/TechGuidelines/TR03135/BSI-TR-03135-1-v2-2.pdf?__blob=publicationFile&v=3). The BSI also certifies equipment compliant with its guidelines. In addition, the ICAO Best Practice Guidelines for Optical Machine Authentication authored by a Subgroup of the New Technologies Working Group (NTWG), Working group of the ICAO Technical Advisory Group on the Traveller Identification Programme (TAG/TRIP) and published in 2016 (<https://www.icao.int/Security/mrtd/Downloads/Guidance%20Material/Best%20Practice%20Guidelines%20for%20Optical%20Machine%20Authentication%20Part%201.pdf>) outlines functional requirements for optical checks.

The following requirements are compliant with these de-facto standards:

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-1	General	Compliance	When not otherwise specified, full compliance with BSI TR-03135	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-2	Scanning Module	Read Capabilities	ICAO 9303 and ISO 7501 defined machine readable passports (2 lines of 44 characters)	M
req-3	Scanning Module	Read Capabilities	Machine readable visas (2 lines of 36 characters), ID2	M
req-4	Scanning Module	Read Capabilities	Machine readable identification cards (2 lines of 36 characters, 3 lines of 30 characters), ID1	M
req-5	Scanning Module	Read Capabilities	chips compliant to ISO 14443 type A and B	M
req-6	Scanning Module	Read Capabilities	One-dimensional (Code 128, Code 39, EAN 8, EAN 13, ITF, etc.) bar-codes reading and de-coding	M
req-7	Scanning Module	Read Capabilities	two dimensional (PDF-417 etc.) bar-codes reading and de-coding	M
req-8	Scanning Module	Read Capabilities	Read and decode barcode on latest version of Syrian passports	M
req-9	Scanning Module	Read Capabilities	Travel documents which do not strictly comply with ICAO standards	O
req-10	Scanning Module	Hardware	Provide mechanism to press the document flat onto the capture area	M
req-11	Scanning Area	Scanning Area size	≥ 130 x 90 mm	M
req-12	Scanning Area	Initialisation and recycling time for reading MRZ	≤ 2ss	M
req-13	Scanning Area	Initialisation and recycling time for reading biometric data (facial data)	≤10ss	M
req-14	Scanning Area	Scanning multiple pages/sides		O
req-15	Scanning Area	ID1 scanner (both sides simultaneously)		O
req-16	Scanning Area	Image quality	Capture all areas with the same quality	M
req-17	Illumination - Light sources	UV light	365 nm	M
req-18	Illumination - Light sources	UV light	transmitted	O
req-19	Illumination - Light sources	IR light	≥ 850nm, incident	M
req-20	Illumination - Light sources	IR light	spot	O

REQ NR	Component	Parameter	Requirement (describe functionality)	M/ O
req-21	Illumination - Light sources	Visible (white) light	400-650 nm, incident	M
req-22	Illumination - Light sources	Visible (white) light	transmitted	O
req-23	Illumination - Light sources	Visible (white) light	Sidelight/Oblique light	M
req-24	Illumination - Light sources	Coaxial light		O
req-25	Illumination - Light sources		Adjustable exposure for UV	O
req-26	Camera		Colour	M
req-27	Camera	Image resolution	≥ 350 ppi	M
req-28	Camera	Magnification under all light sources	≥ 12x (15x preferred)	M
req-29	Camera	Display resolution	≥ 750x512	M
req-30	Camera		Possibility to manually adjust exposure	O
req-31	Camera	Colour depth	24 bits/pixels RGB	M
req-32	Camera	Image formats	BMP, JPEG, JPEG2000,PNG	M
req-33	Camera	Image quality	constant - uniform	M
req-34	Camera	UV images	possibility to capture multiple UV images	O
req-35	Radio Frequency Identification (RFID)/Chip module	Chip type	ISO 14443 type A and B	M
req-36	Radio Frequency Identification (RFID)/Chip module	Chip type	Supports ther chip types (non-ISO 14443 conformant)	O
req-37	Radio Frequency Identification (RFID)/Chip module	Chip type	ISO 7816 (contact chip on smart cards)	M
req-38	Radio Frequency Identification (RFID)/Chip module	Access Mode	Plain/Direct	M
req-39	Radio Frequency	Access Mode	Basic Access Control (BAC) + Secure Messaging	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/ O
	Identification (RFID)/Chip module			
req-40	Radio Frequency Identification (RFID)/Chip module	Access Mode	PACE / SAC	M
req-41	Radio Frequency Identification (RFID)/Chip module	Access Mode	Extended Access Control (EAC)	M
req-42	Radio Frequency Identification (RFID)/Chip module	Authentication	Active	M
req-43	Radio Frequency Identification (RFID)/Chip module	Authentication	Passive	M
req-44	Radio Frequency Identification (RFID)/Chip module	Authentication	Chip-Authentication	M
req-45	Radio Frequency Identification (RFID)/Chip module	Certificate Management	local storage	O
req-46	Radio Frequency Identification (RFID)/Chip module	Certificate Management	program interface for certificates management	M
req-47	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 1: Personal Data	M
req-48	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 2: Facial Image	M
req-49	Radio Frequency Identification	Reading of Information	Data Group 3: Finger Images	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/ O
	(RFID)/Chip module			
req-50	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 7: Displayed Signature or Mark	O
req-51	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 11: Additional Information on Holder	O
req-52	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 12: Additional Information on Document	O
req-53	Radio Frequency Identification (RFID)/Chip module	Reading of Information	DATA GROUP 14: CHIP AUTHENTICATION	M
req-54	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 15: Active Authentication	M
req-55	Radio Frequency Identification (RFID)/Chip module	Reading of Information	All OTHER groups	O
req-56	Radio Frequency Identification (RFID)/Chip module	Baud rate (speed)	ISO 14443 A/B 848Kbps	M
req-57	Radio Frequency Identification (RFID)/Chip module	Baud rate (speed)	Supports asymmetrical communication speeds	M
req-58	Software features	Document detection	Automatic detection of ICAO 9303/ISO7501/ISO14443 compliant passports, visa, ID cards	M
req-59	Software features	Document detection	Detection independent of orientation and compensate rotation	M
req-60	Software features	Document identification	Identification of document model and series based on Machine Readable Zone (MRZ	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-61	Software features	Document identification	Identification of document model series based on pattern matching	O
req-62	Software features	Document identification	Provide fallback if MRZ is not readable under IR light	M
req-63	Software features	Document identification	Enable manual identification	M
req-64	Software features	Document identification	Identify ID cards on both sides	M
req-65	Software features	Automatic examination of MRZ lines:	Digit check/sum calculation	M
req-66	Software features	Automatic examination of MRZ lines:	Validity of document	M
req-67	Software features	Automatic examination of MRZ lines:	MRZ printing quality checking	M
req-68	Software features	Automatic examination of MRZ lines:	MRZ Optical Character Recognition (OCR) reading	M
req-69	Software features	Automatic examination of document features	UV features	O
req-70	Software features	Automatic examination of document features	IR features	O
req-71	Software features	Automatic examination of document features	VIS features	O
req-72	Software features	Automatic examination of document features	Pattern	O
req-73	Software features	Automatic examination of document features	UV dull paper control (security paper)	M
req-74	Software features	Automatic examination of document features	Text alignment	M
req-75	Software features	Automatic examination of document features	Laminate presence and wrinkles	O
req-76	Software features	Automatic examination of document features	B900 ink check	O

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-77	Software features	Automatic examination of document features	MRZ consistency check - analysis (e.g. Font; alignment)	M
req-78	Software features	Automatic examination of document features	Verify chip presence	M
req-79	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	Document number of MRZ with visual data (Visual Inspection Zone VIZ)	M
req-80	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	Other data of MRZ with visual data (VIZ)	O
req-81	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	Data of MRZ with personal data on chip (DG1)	M
req-82	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	MRZ-Barcode	O
req-83	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	VIZ-Chip,	O
req-84	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	VIZ-Barcode	O
req-85	Software features	Automatic comparison of machine readable information with embedded and	Barcode-chip	O

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
		biometric readable data		
req-86	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	Passport photo in VIZ with chip photo (DG2) (with scoring match)	O
req-87	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	Passport data with visa data	M
req-88	Software features	Extraction	Photo image of document	O
req-89	Software features	Extraction	Passport photo	M
req-90	Software features	Extraction	Invisible Personal Information (IPI) decoding	O
req-91	Software features	Extraction	Kinegrams	O
req-92	Software features	Extraction	Other graphical fields	O
req-93	Software features	Reference document database	integrated	O
req-94	Software features	Reference document database	update every 2 months	O
req-95	Software features	Reference document database	Possibility to connect to an external database	M
req-96	Software features	Reference document database	Possibility to connect a USB drive via micro/mini/normal USB (Reference Manual/QCCs)	M
req-97	Software features	Reference document database	Possibility to create own database	O
req-98	Software features	Operating software support/compatibility	Windows 7 or higher,	M
req-99	Software features	Operating software support/compatibility	Android, iOS, etc.	O
req-100	Software features	Saving	Possibility to save images and information on separate encrypted storage device	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-101	Software features	Saving	Possibility to save all images and information	M
req-102	Software features	Saving	Possibility to programme and save default settings/parameters for automatic or manual use	M
req-103	Software features	Logging	XML-scheme established in BSI TR-03135	O
req-104	Software features	Format of logs	XML export	M
req-105	Software features	Type of information logged	Scanner model with serial number, software version, list of images captured, OCR, barcode and RFID data values with field description, confidence values for security checks including automatic face portrait comparison.	O
req-106	Software features	Logging	Provide anonymization capabilities	M
req-107	Software features		Source code accessible	M
req-108	Software features		Possibility to run check routines based on transferred data (independent of document reader)	M
req-109	Software features	Update	routine software updates for at least 2 years, within warranty period	M
req-110	Display of information	Communication protocol between PC and reader	Compliance with ISO 7816 (T=1,T=0)	O
req-111	Display of information	Communication protocol between PC and reader	Possibility of integrated messaging (Email, Sms, etc.)	M
req-112	Display of information	Communication protocol between PC and reader	Capability to export data and images	M
req-113	Display of information	Connection interface with result visualization device (tablet/phone)	Wifi	M
req-114	Display of information	All checks	Display all document checks in one GUI	M
req-115	Display of information	Images	Document images shown under UV, IR, white, coaxial light modes	M
req-116	Display of information	Images	Extracted photo (DG2) next to photo from VIZ for comparison	M
req-117	Display of information	Images	Kinegram visualization	O

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-118	Display of information	Images	IPI visualization	O
req-119	Display of information	Charts	Machine Readable Zone (MRZ)	O
req-120	Display of information	Charts	Visual Zone (VIZ)	O
req-121	Display of information	Charts	RFID (personal data)	O
req-122	Display of information	Charts	Barcode, Security paper checks	O
req-123	Display of information	Charts	Text comparison	O
req-124	Display of information	Comparison	Data from MRZ and VIZ	O
req-125	Display of information	Comparison	Data from MRZ and RFID (DG1)	M
req-126	Display of information	Comparison	Data from EF.SOD and EF.COM	M
req-127	Display of information	Comparison	VIZ-Chip, VIZ Barcode, Barcode-Chip	O
req-128	Display of information	Comparison	Automatic comparison with reference database with images side by side	O
req-129	Display of information	Comparison	Possibility to manually select document type, retrieve reference information, and display side by side	M
req-130	Display of information	Results	Proceeded check overall result (Optical/electronic checks)	M
req-131	Display of information	Results	Result indication of all proceeded checks in one page	M
req-132	Display of information	Results	Select more details via one click	M
req-133	Display of information	Results	Highlight only Irregularities	M
req-134	Display of information	Terminology used for results	It should be straightforward and understandable (no codes)	M
req-135	Display of information	Color code	show results with traffic lights	O
req-136	Display of information	Errors	Display and describe type of (Document/Chip) Errors	M
req-137	Hardware	Device size	max 9"	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-138	Hardware	Device (Reader) Weight	max 2 kg	M
req-139	Hardware	Resistency	Water resistant	O
req-140	Hardware	Resistency	Dust resistant	O
req-141	Hardware	Robustness	Drop from min 1.5m	M
req-142	Power Supply	Battery	integrated, rechargeable via USB or AC	M
req-143	Power Supply	Battery	min. 7.5 hrs	M
req-144	Network		connectivity (intranet or any LAN)	M
req-145	Storage	Hard-disk	able to store at least 1000 full scans (including all images from all light sources)	M
req-146	Storage	Hard-disk	Encryption	M
req-147	Other features and accessories		Provide mechanism to press the document flat onto the capture area	M
req-148	Other features and accessories		Possibility to add a fingerprint scanner	O
req-149	Other features and accessories		Possibility to add a camera to capture photos of the person	O
req-150	Other features and accessories	Input mode	Touch screen tablet	M
req-151	Other features and accessories	Tablet Display size	min 7" max 9" (tablet)	M
req-152	Other features and accessories	Tablet Display Weight	max 500 grm (tablet)	M
req-153	Other features and accessories	Input Mode	Stylus	O
req-154	Other features and accessories	USB port	USB connection 2.0 or higher ensuring speed data transfer	M
req-155	Other features and accessories	Usability	simple and straightforward to operate without extensive technical training	M
req-156	Other features and accessories	Usability	Allow single-handed operation	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-157	Other features and accessories	Usability	Provide interactive user-guidance	M
req-158	Other features and accessories	Usability	Guide operators through multi-page verification	M
req-159	Other features and accessories	Maintenance	Service level agreement on minimum maintenance (hardware and software), max 24 hrs to react, 1 week to fix or replace	M
req-160	Other features and accessories	Warranty	Full replacement [within a week] if DOA, warranty for at least 3 years	M
req-161	Other features and accessories	Training	1/2 day train the trainer course	M
req-162	Other features and accessories	Training	Training materials (tutorials and manuals) for trainers (in pdf)	M
req-163	Other features and accessories	Manual for operation	min English	M
req-164	Other features and accessories	cover/protection		M
req-165	Other features and accessories	Belt/strap	To carry device on body	M
req-166	Other features and accessories	carry-case	for international transport	M

5.3. Portable desktop or mobile (in a suitcase) document inspection system

5.3.1. Definition

Portable desk-top document inspection system composed of:

- a full-page document scanner/reader and software capable to perform optical, electronic, and combined checks for authenticity verification of passports, ID cards, resident permits, visas, stamps and other security documents for document checks purposes at all types of borders;

5.3.2. Description of use

This equipment has the same functionalities of the portable on-body document inspection system described above with the difference that it is used preferably with a computer/laptop.

Although portable and capable to be powered by battery for some time, the equipment is for use in a stationary mode on a desk where access to AC is generally available for instance for checks in first line booths, in temporary offices/containers such as at hotspots and checkpoints for first or second line indoor comprehensive optical, electronic, and combined checks.

Images and information extracted from the inspected document as well as metadata related to the inspection may be automatically anonymized and saved for further processing for instance for producing alerts or forwarding information to other posts and experts, for situation monitoring etc. Documents can be compared against a reference database either automatically or manually.

The use of a computer together with the equipment offers additional options for processing of the information and images captured.

5.3.3. Requirements - Document scanner/reader

The functional requirements are compliant with BSI TR-03135 and the 2016 ICAO Best Practice Guidelines on Machine-Assisted Optical Authentication.

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-1	General	Compliance	When not otherwise specified, full compliance with BSI TR-03135	M
req-2	Scanning Module	Read Capabilities	ICAO 9303 and ISO 7501 defined machine readable passports (2 lines of 44 characters)	M
req-3	Scanning Module	Read Capabilities	Machine readable visas (2 lines of 36 characters), ID2	M
req-4	Scanning Module	Read Capabilities	Machine readable identification cards (2 lines of 36 characters, 3 lines of 30 characters), ID1	M
req-5	Scanning Module	Read Capabilities	chips compliant to ISO 14443 type A and B	M
req-6	Scanning Module	Read Capabilities	One-dimensional (Code 128, Code 39, EAN 8, EAN 13, ITF, etc.) bar-codes reading and de-coding	M
req-7	Scanning Module	Read Capabilities	two dimensional (PDF-417 etc.) bar-codes reading and de-coding	M
req-8	Scanning Module	Read Capabilities	Read and decode barcode on latest version of Syrian passports	M
req-9	Scanning Module	Read Capabilities	Travel documents which do not strictly comply with ICAO standards	O
req-10	Scanning Module	Hardware	Provide mechanism to press the document flat onto the capture area	M
req-11	Scanning Area	Scanning Area size	≥ 130 x 90 mm	M
req-12	Scanning Area	Initialisation and recycling time for reading MRZ	≤ 2ss	M
req-13	Scanning Area	Initialisation and recycling time for reading biometric data (facial data)	≤ 10ss	M
req-14	Scanning Area	Scanning multiple pages/sides		O

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-15	Scanning Area	ID1 scanner (both sides simultaneously)		O
req-16	Scanning Area	Image quality	Capture all areas with the same quality	M
req-17	Illumination - Light sources	UV light	365 nm	M
req-18	Illumination - Light sources	UV light	transmitted	O
req-19	Illumination - Light sources	IR light	≥ 850nm, incident	M
req-20	Illumination - Light sources	IR light	spot	O
req-21	Illumination - Light sources	Visible (white) light	400-650 nm, incident	M
req-22	Illumination - Light sources	Visible (white) light	transmitted	O
req-23	Illumination - Light sources	Visible (white) light	Sidelight/Oblique light	M
req-24	Illumination - Light sources	Coaxial light		O
req-25	Illumination - Light sources		Adjustable exposure for UV	O
req-26	Camera		Colour	M
req-27	Camera	Image resolution	≥ 350 dpi (500 preferred)	M
req-28	Camera	Magnification under all light sources	≥ 12x (15x preferred)	M
req-29	Camera	Display resolution	≥ 1280 x 768	M
req-30	Camera		Possibility to manually adjust exposure	O
req-31	Camera	Colour depth	24 bits/pixels RGB	M
req-32	Camera	Image formats	BMP, JPEG, JPEG2000,PNG	M
req-33	Camera	Image quality	constant - uniform	M
req-34	Camera	UV images	possibility to capture multiple UV images	O
req-35	Radio Frequency Identification (RFID)/Chip module	Chip type	ISO 14443 type A and B	M
req-36	Radio Frequency Identification (RFID)/Chip module	Chip type	Other chip types (non-ISO 14443 conformant)	O

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-37	Radio Frequency Identification (RFID)/Chip module	Chip type	ISO 7816 (contact chip on smart cards)	M
req-38	Radio Frequency Identification (RFID)/Chip module	Access Mode	Plain/Direct	M
req-39	Radio Frequency Identification (RFID)/Chip module	Access Mode	Basic Access Control (BAC) + Secure Messaging	M
req-40	Radio Frequency Identification (RFID)/Chip module	Access Mode	PACE / SAC	M
req-41	Radio Frequency Identification (RFID)/Chip module	Access Mode	Extended Access Control (EAC)	M
req-42	Radio Frequency Identification (RFID)/Chip module	Authentication	Active	M
req-43	Radio Frequency Identification (RFID)/Chip module	Authentication	Passive	M
req-44	Radio Frequency Identification (RFID)/Chip module	Authentication	Chip-Authentication	M
req-45	Radio Frequency Identification (RFID)/Chip module	Certificate Management	local storage	O
req-46	Radio Frequency Identification (RFID)/Chip module	Certificate Management	program interface for certificates management	M
req-47	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 1: Personal Data	M
req-48	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 2: Facial Image	M
req-49	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 3: Finger Images	M
req-50	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 7: Displayed Signature or Mark	O
req-51	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 11: Additional Information on Holder	O

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-52	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 12: Additional Information on Document	O
req-53	Radio Frequency Identification (RFID)/Chip module	Reading of Information	DATA GROUP 14: CHIP AUTHENTICATION	M
req-54	Radio Frequency Identification (RFID)/Chip module	Reading of Information	Data Group 15: Active Authentication	M
req-55	Radio Frequency Identification (RFID)/Chip module	Reading of Information	All OTHER groups	O
req-56	Radio Frequency Identification (RFID)/Chip module	Baud rate (speed)	ISO 14443 A/B 848Kbps	M
req-57	Radio Frequency Identification (RFID)/Chip module	Baud rate (speed)	Supports asymmetrical communication speeds	M
req-58	Software features	Document detection	Automatic detection of ICAO 9303/ISO7501/ISO14443 compliant passports, visa, ID cards	M
req-59	Software features	Document detection	Detection independent of orientation and compensate rotation	M
req-60	Software features	Document identification	Identification of document model and series based on MRZ	M
req-61	Software features	Document identification	Identification of document model series based on pattern matching	O
req-62	Software features	Document identification	Provide fallback if MRZ is not readable under IR light	M
req-63	Software features	Document identification	Enable manual identification	M
req-64		Document identification	Identify ID cards on both sides	M
req-65	Software features	Automatic examination of MRZ lines:	Digit check/sum calculation	M
req-66	Software features	Automatic examination of MRZ lines:	Validity of document	M
req-67	Software features	Automatic examination of MRZ lines:	MRZ printing quality checking	M
req-68	Software features	Automatic examination of MRZ lines:	MRZ OCR reading	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-69	Software features	Automatic examination of document features	UV features	O
req-70	Software features	Automatic examination of document features	IR features	O
req-71	Software features	Automatic examination of document features	VIS features	O
req-72	Software features	Automatic examination of document features	Pattern	O
req-73	Software features	Automatic examination of document features	UV dull paper control (security paper)	M
req-74	Software features	Automatic examination of document features	Text alignment	M
req-75	Software features	Automatic examination of document features	Laminate presence and wrinkles	O
req-76	Software features	Automatic examination of document features	B900 ink check	O
req-77	Software features	Automatic examination of document features	MRZ consistency check - analysis (e.g. Font; alignment)	M
req-78	Software features	Automatic examination of document features	Verify chip presence	M
req-79	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	Document number of MRZ with visual data (VIZ)	M
req-80	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	Other data of MRZ with visual data (VIZ)	O
req-81	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	Data of MRZ with personal data on chip (DG1)	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-82	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	MRZ-Barcode	O
req-83	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	VIZ-Chip,	O
req-84	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	VIZ-Barcode	O
req-85	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	Barcode-chip	O
req-86	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	Passport photo in VIZ with chip photo (DG2) (with scoring match)	O
req-87	Software features	Automatic comparison of machine readable information with embedded and biometric readable data	Passport data with visa data	O
req-88	Software features	Extraction	Photo image of document	O
req-89	Software features	Extraction	Passport photo	M
req-90	Software features	Extraction	IPI decoding	O
req-91	Software features	Extraction	Kinegrams	O
req-92	Software features	Extraction	Other graphical fields	O
req-93	Software features	Reference document database	integrated	O
req-94	Software features	Reference document database	update every 2 months	O

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-95	Software features	Reference document database	Possibility to connect to an external database	M
req-96	Software features	Reference document database	Possibility to connect a USB drive via micro/mini/normal USB (Reference Manual/QCCs)	M
req-97	Software features	Reference document database	Possibility to create own database	M
req-98	Software features	Operating software support/compatibility	Windows 7 or higher,	M
req-99	Software features	Operating software support/compatibility	Mac OS, Linux (or Android, iOS)	O
req-100	Software features	Saving	Possibility to save images and information on separate encrypted storage device	M
req-101	Software features	Saving	Possibility to save all images and information	M
req-102	Software features	Saving	Possibility to programme and save default settings/parameters for automatic or manual use	M
req-103	Software features	Logging	XML-scheme established in BSI TR-03135	O
req-104	Software features	Format of logs	XML export	M
req-105	Software features	Type of information logged	Scanner model with serial number, software version, list of images captured, OCR, barcode and RFID data values with field description, confidence values for security checks including automatic face portrait comparison.	O
req-106	Software features	Logging	Provide anonymization capabilities	M
req-107	Software features		Source code accessible	M
req-108	Software features		Possibility to run check routines based on transferred data (independent of document reader)	M
req-109	Software features	Update	routine software updates for at least 2 years, within warranty period	M
req-110	Display of information	Communication protocol between PC and reader	Compliance with ISO 7816 (T=1,T=0)	O
req-111	Display of information	Communication protocol between PC and reader	Possibility of integrated messaging (Email, Sms, etc.)	M
req-112	Display of information	Communication protocol between PC and reader	Capability to export data and images	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-113	Display of information	All checks	Display all document checks in one GUI	M
req-114	Display of information	Images	Document images shown under UV, IR, white, coaxial light modes	M
req-115	Display of information	Images	Extracted photo (DG2) next to photo from VIZ for comparison	M
req-116	Display of information	Images	Kinegram visualization	O
req-117	Display of information	Images	IPI visualization	O
req-118	Display of information	Charts	Machine Readable Zone (MRZ)	O
req-119	Display of information	Charts	Visual Zone (VIZ)	O
req-120	Display of information	Charts	RFID (personal data)	O
req-121	Display of information	Charts	Barcode, Security paper checks	O
req-122	Display of information	Charts	Text comparison	O
req-123	Display of information	Comparison	Data from MRZ and VIZ	O
req-124	Display of information	Comparison	Data from MRZ and RFID (DG1)	M
req-125	Display of information	Comparison	Data from EF.SOD and EF.COM	M
req-126	Display of information	Comparison	VIZ-Chip, VIZ Barcode, Barcode-Chip	O
req-127	Display of information	Comparison	Automatic comparison with reference database with images side by side	O
req-128	Display of information	Comparison	Possibility to manually select document type, retrieve reference information, and display side by side	M
req-129	Display of information	Results	Proceeded check overall result (Optical/electronic checks)	M
req-130	Display of information	Results	Result indication of all proceeded checks in one page	M
req-131	Display of information	Results	Select more details via one click	M
req-132	Display of information	Results	Highlight only Irregularities	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-133	Display of information	Terminology used for results	It should be straightforward and understandable (no codes)	M
req-134	Display of information	Color code	show results with traffic lights	O
req-135	Display of information	Errors	Display and describe type of (Document/Chip) Errors	M
req-136	Hardware	Device size	portable by one person in a suitcase	M
req-137	Hardware	Device (Reader) Weight	max 3 kg	M
req-138	Hardware	Resistency	Water resistant	O
req-139	Hardware	Resistency	Dust resistant	O
req-140	Hardware	Robustness	Drop from min 1m	M
req-141	Power Supply		AC (100-240V)	M
req-142	Power Supply	Battery	integrated - rechargeable via USB or AC	M
req-143	Network		connectivity (intranet or any LAN)	M
req-144	Other features and accessories		Provide mechanism to press the document flat onto the capture area	M
req-145	Other features and accessories		Possibility to add a fingerprint scanner	O
req-146	Other features and accessories		Possibility to add a camera to capture photos of the person	O
req-147	Other features and accessories	Input mode	controlled by touch screen tablet, or computer through mouse operation	M
req-148	Other features and accessories	USB port	USB connection 2.0 or higher ensuring speed data transfer	M
req-149	Other features and accessories	Usability	simple and straightforward to operate without extensive technical training	M
req-150	Other features and accessories	Usability	Allow single-handed operation	M
req-151	Other features and accessories	Usability	Provide interactive user-guidance	M
req-152	Other features and accessories	Usability	Guide operators through multi-page verification	M
req-153	Other features and accessories	Maintenance	Service level agreement on minimum maintenance (hardware and software), max 24 hrs to react, 1 week to fix or replace	M

REQ NR	Component	Parameter	Requirement (describe functionality)	M/O
req-154	Other features and accessories	Warranty	Full replacement [within a week] if DOA, warranty for at least 3 years	M
req-155	Other features and accessories	Training	1/2 day train the trainer course	M
req-156	Other features and accessories	Training	Training materials (tutorials and manuals) for trainers (in pdf)	M
req-157	Other features and accessories	Manual for operation	min English	M
req-158	Other features and accessories	cover/protection		M
req-159	Other features and accessories	carry-case	for international transport	M

6. Delivery, training, warranty and maintenance

6.1. Delivery

The Contractor will be responsible for the timely delivery of requested products. The Contractor will also be responsible to address customs and all import related issues if any.

The equipment shall be :

- delivered the soonest possible but not later than 2 months after the specific contract signature;
- transported (DDP) and delivered to Frontex headquarters.

The delivery address is Frontex, Plac Europejski 6, 00-844 Warsaw - Poland.

The delivery shall take place during working hours (Monday - Friday 09:00-17:00 excluding holidays).

6.2. Training and manuals

The products delivered under the FWC shall fulfil the training and manuals requirements as they are stipulated under #5 of the ToR, respectively:

LOT	TOR REQUIREMENTS	
	Training	Manuals
LOT 2 - Portable hand-held/on-body document inspection system	Req-161 Req-162	Req-163
LOT 3 - Portable desktop or mobile (in a suitcase) document inspection system	Req-155 Req-156	Req-157

6.3. Warranty and maintenance

The purchased equipment shall be cover the warranty period and maintenance activities as they are requested under #5 of the ToR, respectively:

LOT	TOR REQUIREMENTS	
	Warranty	Maintenance
LOT 1 - Compact magnifier with different light sources	Req-34	
LOT 2 - Portable hand-held/on-body document inspection system	Req-160	Req-159
LOT 3 - Portable desktop or mobile (in a suitcase) document inspection system	Req-154	

7. Quality monitoring and acceptance procedures

7.1. Quality control procedure

For all products delivered by this contract, the Contractor(s) shall provide the quality certificates. Frontex will monitor the quality of the products provided by the Contractor. Elements that will be monitored include:

- Compliance of the product with the Minimum Technical Requirements as described in # 5 of this ToR;
- Quick response to delivery requests and adherence to deadlines and terms stipulated in point 6 of This ToR ;

The Contractor will be immediately informed in case the quality is not up to expectations in any of the criteria and will be requested to remedy to the identified failure immediately.

7.2. Acceptance procedure

Based on quality monitoring and control, all products delivered under the FWC will be subject to the Frontex acceptance.

Upon delivery of the products which are part of the SOs Frontex shall evaluate them and provide the Contractor with written notice of Acceptance, Partial Acceptance or Non-acceptance.

In the event Frontex provided notice of partial or non-acceptance to Contractor, it shall have the continuing right, at its sole option, to:

- refuse to pay any fees or other amounts associated with such products;
- accept such products on the condition that any fees or other amounts payable with respect thereto shall be reduced or discounted to reflect, to Frontex' satisfaction, the deficiencies present therein or the costs likely to be incurred by Frontex to correct such deficiencies; or
- terminate the contract and/or seek any and all available remedies, including damages.

In case of non-acceptance or partial acceptance of the delivered equipment by Frontex the Contractor shall be obliged to recover it at his expense from Frontex premises within an indicated deadline, which as a rule shall not exceed 5 working days.

8. Implementation of FWC

8.1. Indicative implementation plan for the FWC

The list below presents the indicative plan of the implementation of the FWC, which is not binding on Frontex and may be adapted during the contractual period.

- First Specific Orders for each lot are scheduled to start upon the signature of the FWC;
- Estimated number of SOs per year - 2 for each lot;
- Occasionally, more than one SO may run at the same time.

8.2. Specific Orders implementation process

The FWC shall be implemented by means of Specific Orders. Model Specific Order is in Appendix 1 to Annex II - Terms of Reference.

8.3. Payment

All prices shall be in Euro, excluding VAT.

The contractor (or leader in case of a joint tender) may claim the payment after successful implementation of each Specific Order. The Contractor (or leader in case of a joint tender) must send an invoice in electronic or paper format for payment of the amount due under the Specific Order.

After acceptance of all products delivered and upon reception of the final invoice, Frontex will execute the final payment within 30 days.

8.4. Language

All the documentation delivered within the contract shall be in English. Moreover all communication, whether written or spoken, shall be in English.

8.5. Contract management personnel

8.5.1. Contractor's personnel

The Contractor shall be responsible for providing all necessary personnel to ensure the satisfactory performance of its obligations under the FWC and shall supervise and be fully responsible and liable for all the services performed by its personnel and for their compliance with the terms and conditions of the FWC.

During the implementation of the FWC and its SOs the Contractor shall nominate a Contract Manager (CM) for all contractual matters. CM will act as a single contractual contact point. All the correspondence related to the FWC (including the implementation of the SOs) will be addressed to him.

8.5.2. Frontex personnel

For the proper implementation of the FWC and its SOs Frontex will nominate a Frontex Contract Manager (FCM), who will act as a single contact point for all the matters related to the FWC implementation, including the implementation of the SOs.