FRONTEX
EUROPEAN BORDER AND COAST GUARD AGENCY

Annex II to the Invitation to Tender

Frontex/OP/796/2017/AH

Terms of Reference

Purchase of handheld equipment for border surveillance and border checks

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1. Acronyms

Acronym	Definition
CM	Contract Manager
DDP	Delivery Duty Paid (incoterms)
EU	European Union
FCM	Frontex Contract Manager
FWC	Framework Contract
MS	A Member State of the European Union
MTR	Minimal technical requirements
NVB	Nigh-Vision Binocular
NVG	Night-Vision Goggles
SAC	Schengen Associated Country
SO/SOs	Specific Order/Specific Orders
ToR	Terms of Reference
TS	Tender Specifications

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 handheld equipment for border surveillance and border checks. It describes the minimum requirements for the requested devices and it ensures that the offered and then delivered goods comply with Frontex requirements.

These terms of reference 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 avaialbility Frontex intends to establish a FWC for purchasing different types of handheld equipement to be used for border surveillance and border check purposes. The overall maximum duration of the FWC shall be limited to four (4) years.

The quantity of equipment to be ordered during the lifetime of the contract is estimated to be as follows:
Table 1.

	LOT-1	LOT-2	LOT-3	LOT-4	LOT-5
1st year:	20	40	20	20	5
2nd year:	10	20	10	10	5
3rd year:	10	20	10	10	5
4th year:	10	20	10	10	5

The forecast presented in the table above 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 framework contract 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 5 lots per type of equipment needed:

LOT-1: Handheld thermal cameras

LOT-2: Night Vision Goggles

LOT-3: Night Vision Binoculars

LOT-4: Carbon Dioxide (CO2) Detectors

LOT-5: Heart Beat Detectors (HBD)

5. Minimal Technical requirements

5.1. Lot - 1 Handheld thermal cameras

5.1.1. Basic description

- Required thermal cameras shall be handheld, non cooled thermal imagers having binocular output image projector used to generate image seen by two eyes of the user.
- The cameras should enable medium range surveillance capabilities during foot or vehicle patrols at European climatic conditions.
- The cameras shall be delivered in form of a set: camera body, two sets of batteries, battery power supply, service/cleaning set, transport case.
- Thermal cameras shall be of low mass and of ergonomic design for handheld operation.
- Estimated time of work during warranty period is about 4 hours per day.

5.1.2. Performance requirements

- Thermal cameras shall have horizontal field of view wider than 6° and ratio HFOV to VFOV in range from 1.25 to 1.33. It is assumed that 6° is minimal FOV that enables fast and effective search of panoramic semi-spherical scenery of interest.
- Requirements on ranges of effective surveillance (detection, recognition, identification) of human target are presented in Table 5.

Table 2. Requirements on ranges of effective surveillance (detection, recognition, identification) of human type target

No	Parameter	Value
1	Range calculation method	As in STANAG 4347
2	Atmospheric conditions	0.2 extinction coefficient
3	Target size	Human figure of shape dimensions 1.8x0.5m equivalent to square of 0.9m size.
4	Temperature difference of the target to background	2°C.
5	minimal detection range	2,3 km
6	minimal recognition range	0,92 km
7	minimal identification range	0,44 km

5.1.3. Functional requirements

- User shall be able to control focus, contrast (gain) and level (offset) in manual and automatic mode, and to change polarity of the image.
- Thermal cameras shall be battery powered. Battery should enable at least eight hours of work without recharging. Two sets of rechargeable batteries shall be delivered.
- Design of cameras should enable easy exchange of the battery, e.g. change performed in total darkness.
- Indication for low battery voltage shall be seen in the ocular of the camera.
- The cameras shall be protected against reversed power polarity and reversed battery insertion.
- Ability to record still images to internal digital memory of not less than 1MB.
- The camera shall be provided with a lens protection cover.
- Identification numbers should be easily seen and durable.
- Noise emitted by the binoculars should not be audible from distance longer than 5 m.
- Binoculars should be painted with matte paint of low contrast color comparing to typical EU outdoor scenery.
- All parts must be manufactured from material resistible to corrosion.
- The case and lenses of the cameras should be scratch resistant.
- It shall be possible to control camera switches by a user wearing gloves in any atmospheric conditions.
- The cameras shall be easy to clean using service set delivered as part of the accessories.

- The camera shall be equipped with a strap for hanging it over the shoulder or neck.
- The camera shall have a replaceable eye cover protecting eyes from ambient lighting.

5.1.4. Detail technical requirements for the handheld thermal cameras

Table 3. Detailed technical parameters

No	Parameter	Value
1	Field of view (FOV)	>6°
2	NETD	<50mK at 25FPS
3	Spectral band	8-14um or 3-5um or smaller subband
4	Operational ranges	As in Table 2
5	Pixel number of imaging sensor	At least 640x480
6	Internal display	Monochromatic, resolution at least 800x600
7	Electronic zoom	At least 2x
8	Collimation errors 1) convergence 2) divergence	 <1° ≤1/2°
9	Interpupillary adjustment	Distance regulation 55 mm to 71 mm or equivalent solutions
10	Diopter Adjustment	+2 to -4 diopters
11	Distortion	<=4%
12	Working period on well charged battery	> 4 hours
13	Mass (without battery and accessories)	<2.5 kg

5.1.5. Environmental requirements

The thermal cameras must be resistible to the environmental conditions listed in Table 4.

Table 4. Requirements on environmental conditions

No	Parameter	Value
1	Working temperature	-30°C to 45°C (water vapor on internal optical parts is forbidden)
2	Storage temperature	-30°C to 55°C
3	Sinusoidal vibrations	Amplitude up to 30m/s^2 at 1-80Hz
4	Drop test of non-active NVG in transport case	Height - 0.5 m; surface – concrete or steel; number of drops – 10
5	Relative humidity	Up to 95% at 35C
6	Leakage (immersion) test	Depth of immersion – 0.5 m; duration – 30 minutes, water – fresh clean water of temperature 20 °C ▫5 °C.

5.2. Lot - 2 Night Vision Goggles

5.2.1. Basic description

- Required night vision devices shall be the monocular night vision goggles of wide FOV over 38° having single optical objective, single image intensifier but two oculars. The goggles should enable short range surveillance capabilities during foot or vehicle patrols at European climatic conditions.
- The NVG shall provide the high quality image of scenery at typical EU night conditions comparable to image quality obtained by naked eye at day conditions.
- The NVG shall have built-in image intensifier tubes of standard mechanical dimensions and standard electrical power supply. Tubes of non standard dimensions/voltage are not accepted.
- The NGV shall be of low mass, ergonomic design with possibility to be attached to the head. Face mask is required.

5.2.2. Performance requirements

- Requirements on ranges of effective surveillance (detection, recognition, identification) of human target shall correspond to the values presented in Table 4.

- The image intensifier tubes shall not "remember" images from high intensity light sources. Negligible deterioration of image quality may be acceptable in case of short flares of high illumination up to 200lx.

Table. 5. Requirements on ranges of effective surveillance (detection, recognition, identification) of human target

No	Parameter	Value
1	Range calculation method	As in Stanag 4348
2	Atmospheric conditions	0.2 extinction coefficient (or transmittance 0.82/km) roughly equivalent to visibility 15km
3	Target size	Human figure of shape dimensions 1.8x0.5m equivalent to square of 0.9m size.
4	Contrast of the target to background	0.4.
5	Ratio of sky luminance to background luminance	2
6	Background reflectance	0.5
7	Required detection range at clear 1/2 moon conditions (background illumination 64 mlx)	>=850 x FOV/40 [m]
8	Required recognition range at clear 1/2 moon conditions (background illumination 64 mlx)	>=270 x FOV/40 [m]
9	Required identification range at clear 1/2 moon conditions	>=145 x FOV/40 [m]
10	Required detection range at clear 1/2 moon conditions (background illumination 2 mlx)	>=600 x FOV/40 [m]
11	Required recognition range at horizon moon conditions (background illumination 2 mlx)	>=200 x FOV/40 [m]
12	Required identification range horizon moon conditions (background illumination 2 mlx)	>=100 x FOV/40 [m]

5.2.3. Funtional requirements

- The NVG shall be equipped with internal infrared light source that enables the observation of short range targets at absolute darkness. There should be an indicator of work of this light source seen in ocular of the goggles.
- NVG shall be built using image intensifier tubes without any noticeable operational defects like shading, edge glow, flashing/flickering/intermittent operation, and emission points.
- The NVG shall provide provide Automatic Brightness Control and Automatic shut-off system;
- Identification numbers of both the goggles and the tube should be easily seen and durable;
- The external case of the goggle should be in black matte color;

- There should be an indicator of low voltage battery seen in ocular of the goggles;
- The NVG shall ensure reverse polarity protection for the batreies;
- Requirements on dark spots of image intensifier tubes shall correspond to the values presented in Table 5.

Table 6 Requirements on dark spots of image intensifier tubes

Size of the spot [µm]	Area 1	Area 2	Area 3
> 380	0	0	0
300 – 380	0	0	0
230 – 300	0	0	0
150 – 230	0	0	1
75 – 150	0	1	2
<75	minimal	minimal	minimal

5.2.4. Detailed technical requirements for NVG

Table 7. Detail technical parameters of required night vision goggles

No	Parameter	Value
1	Field of view	>=38°
2	Resolution at low level illumination (about 5-50 mlx)	>=1.2 lp/mrad
3	Resolution at high level illumination (>=200 lx)	>=1 lp/mrad
4	Brightness gain	>2000
5	Collimation errors 1) convergence 2) divergence	 1°±1° ≤1/2°
	Operational defects	
6	Interpupillary adjustment	At least 55 mm to 71 mm
7	Diopter Adjustment	+2 to -6 diopters
8	Focus Range	40 cm to infinity
9	Magnification	1±0.03
10	Distortion	<=4%
11	Eye relief distance	>=15mm
12	Mass (without battery and accessories)	<=480g
13	Battery	Typical easy available batteries recommended AA alkaline
14	Working period on well charged battery	> 12 hours
	Image intensifier tube	not less than Gen 3
15	Center resolution	>= 64 lp/mm
16	High level resolution (at 200 lx)	>= 36 lp/mm
17	SNR (measured according to recommendations of MIL standards and results divided by phosphor coefficient)	>=22
18	MTF for 25 pl/mm	>=36%
19	Halo (measured according to MIL standards)	<=0.95mm
20	Luminance gain	>=40 000 lm/lm
21	Max number of dark spots	Table 3
22	Phosphor type	P43 or P45
23	Mechanical dimensions, photocathode location, screen curvature	Tube of typical parameters often met on market
24	Power	At least from 2V to 3.5 V
25	Replacements	Supplier will specify at least two image intensifier tubes produced by two different manufacturers that can be used in the goggles. (needed for alternative source of delivery after warranty)

5.2.5. Accessories

The devices shall be supplied with the following accessories:

- Soft carrying case;
- Head gear;

- Two sets of accumulator batteries;
- Charger for the accumulator batteries 220V/AC;
- Objective lens cover;
- Lens cleaning cloth;
- Operation manual.

5.2.6. Environmental requirements

The NVG shall be resistant to the environmental conditions listed in Table 7.
Table 8. Requirements on enviromental conditions

N	Parameter	Value
1	Working temperature	-30ºC do 45ºC (water vapor on internal optical parts is forbidden)
2	Storage temperature	-30ºC do 55ºC
3	Sinusoidal vibrations	Amplitude up to 30m/s^2 at 1-80Hz
4	Drop test of non-active NVG in transport case	Height - 0.5 m; surface – concrete or steel; number of drops – 10
5	Relative humidity	Up to 95% at 35C
6	Leakage (immersion) test	depth of immersion – 0.5 m; duration – 30 minutes, water – fresh clean water of temperature 20 ºC ¤5 ºC.

5.3. Lot – 3 Night Vision Binoculars

5.3.1. Basic description

- Required night vision binoculars shall be monocular night vision devices of having single optical objective, single image intensifier but two oculars. The binoculars should enable short to middle range surveillance capabilities during foot or vehicle patrols at European climatic conditions.
- The night vision binoculars shall provide the high quality image of scenery at typical EU night conditions comparable to image quality obtained by naked eye at day conditions.
- The night vision binoculars must be built using image intensifier tubes of standard mechanical dimensions and standard electrical power supply. Tubes of non standard dimensions/voltage are not accepted.
- The night vision binoculars shall be of low mass, ergonomic design with possibility to be attached to the head.
- Practically all the technical, functional and environmental protection requirements for the night vision goggles are applicable for the binoculars, however in addition, to the set of NVG the Tenderer is required to provide additional objective with magnification x3 to be included in the carring case.
- The objective x3 shall be quickly and easyly attachable to the body of the NVG in the field environment.
- The device with attached objective shall comply with the environmental protection asa stipulated in point 5.3.5 of this document.

5.3.2. Performance requirements

- The image intensifier tubes shall not “remember” images from high intensity light sources. Negligible deterioration of image quality may be acceptable in case of short flares of high illumination up to 200lx.

5.3.3. Funtional requirements

- Night vision binoculars shall have built-in image intensifier tubes without any noticeable operational defects like shading, edge glow, flashing/flickering/intermittent operation, and emission points.
- Identification numbers of both the binoculars and the tube should be easily seen and durable.

- The external case of the binoculars should be in black matte color.
- There should be an indicator of low voltage battery seen in ocular of the binocurar.
- Requirements on dark spots of image intensifier tubes shall correspond to the values presented in Table 9.

Table 9. Requirements on dark spots of image intensifier tubes

Size of the spot [µm]	Area 1	Area 2	Area 3
> 380	0	0	0
300 – 380	0	0	0
230 – 300	0	0	0
150 – 230	0	0	1
75 – 150	0	1	2
<75	minimal	minimal	minimal

5.3.4. Detailed technical requirements

Table 10. Detailed technical parameters of required night vision binoculars.

No	Parameter	Value
1	Field of view	>=38°
2	Resolution at low level illumination (about 5-50 mlx)	>=1.2 lp/mrad
3	Resolution at high level illumination (>=200 lx)	>=1 lp/mrad
4	Brightness gain	>2000
5	Collimation errors 1) convergence 2) divergence	 1°±1° ≤1/2°
	Operational defects	
6	Interpupillary adjustment	At least 55 mm to 71 mm
7	Diopter Adjustment	+2 to -6 diopters
8	Focus Range	40 cm to infinity
9	Magnification	1±0.03
10	Distortion	<=4%
11	Eye relief distance	>=15mm
12	Mass (without battery, objective and accessories)	<=480g
13	Mass of the objective x3	<=220g
14	Battery	Typical easy available batteries recommended AA alkaline
15	Working period on well charged battery	> 12 hours
16	Image intensifier tube	
17	Center resolution	>= 64 lp/mm
18	High level resolution (at 200 lx)	>= 36 lp/mm
19	SNR (measured according to recommendations of MIL standards and results divided by phosphor coefficient	>=22
20	MTF dla 25 pl/mm	>=36%
21	Halo (measured according to MIL standards)	<=0.95mm
22	Luminance gain	>=40 000 lm/lm
23	Max number of dark spots	Table 3
24	Phosphor type	P43 or P45
25	Mechanical dimensions, photocathode location, screen curvature	Tube of typical parameters often met on market
26	Power	At least from 2V to 3.5 V
27	Replacements	Supplier will specify at least two image intensifier tubes produced by two different manufacturers that can be used in the goggles. (needed for alternative source of delivery after warranty)

5.3.5. Environmental requirements

The night vision binoculars shall be resistant to the environmental conditions listed in Table 11.

Table 11 Requirements on enviromental conditions

No	Parameter	Value
1	Working temperature	-30ºC do 45ºC (water vapor on internal optical parts is forbidden)
2	Storage temperature	-30ºC do 55ºC
3	Sinusoidal vibrations	Amplitude up to 30m/s^2 at 1-80Hz
4	Drop test of non-active NVG in transport case	Height - 0.5 m; surface – concrete or steel; number of drops – 10
5	Relative humidity	Up to 95% at 35C
6	Leakage (immersion) test	depth of immersion – 0.5 m; duration – 30 minutes, water – fresh clean water of temperature 20 ºC ▫5 ºC.

5.4. Lot – 4 Carbon Dioxide (CO_2) Detectors

5.4.1. Basic description

The Carbon Dioxide (CO_2) detectors shall be used for the measurement of the existing CO_2 concentration in a closed volume for the detection of people hiding in confined spaces such as trailers, rooms and vehicles (monitoring the CO_2 concentration of human exhaled air).

The Carbor Dioxide Detector kit shall contain the following accessories:

- Durable carrying case;
- Carrying strap;
- Rubber shock protection sleeve;
- Set audio headphones;
- Car charging cable (12V/ DC only);
- Adapter 220 V/AC.
- IR computer interface and data transfer cable;
- PM-COM software for viewing stored data, including CD
- Sampling probe (hose): possible variants: a) rigid rod with connector or b) hose protected by rigid detachable segments (the segments must be threaded together to prevent them from being loosened or blocked during use); length: min. 1.5 m;
- Filter with dust and water hose;
- Reading stand and mounting clip;
- Calibration / sampling adapter.

5.4.2. Performance requirements

- Other Standard Features:
  - Automatic compensation for barometric pressure, altitude and temperature
  - Compensated pressure: 1,000 ± 280 mbar
  - Light background

5.4.3. Funtional requirements

- Measured data storage and viewing - data memory with digital illumination display with min. English operating menu;
- Warning system: optical, acoustic and vibration alarm, in alarm steps.
- Response time:
  - T90 <40 seconds, 0 - 50,000 ppm radius;
  - T90 <60 seconds, 0-5% radius.
- Sensor lifetime: min. 5 years

- Power:
    - Power Source: 2 units of rechargeable batteries;
    - Charging time of the battery: max. 2 hours;
    - Battery charging / discharge monitoring: with load level indicator;
    - Detector working autonomy: min. 8 hours of continuous use with a single charge of the battery;
- Detector mass, with battery: max. 1.5 Kg.

5.4.4. Detailed technical requirements

- Measuring range:
    - 0 - 50,000 ppm, with resolution: 50 ppm;
    - 0 to 5% by volume of CO2 with a resolution of 0.01% to 0.05% by volume of CO2;
- Sampling mode:
    - with internal pump, including sampling adapter;
    - Maximum sampling: 40 m

5.4.5. Environmental requirements

Table 12 Requirements on enviromental conditions

No	Parameter	Value
1	Temperature range	from -20°C to + 40°C
2	Pressure	700 to 1300 hPa
3	Humidity	20 - 85%
4	Protection	IP67

5.5. Lot - 5 Heart Beat Detectors (HBD)

5.5.1. Basic description

The heartbeat detector needs to enable precise detection of human beings hidden in stationary vehicles (regardless their tonnage) under border crossing conditions where constant frequency of vehicles is present (vibrations of the base due to vehicles crossing) which will not affect the operation and the accuracy of the results produced by the heartbeat detector.

Heartbeat detector kit (system) shall contain:

- Ruggedized laptop (resistant to mechanical shocks), with pre-installed specialized applications (software for heartbeat detection) with colour touch screen, size diagonally minimum 12" (inches);
- Laptop carrying case and rechargeable cable;
- System sensors (protected to environmental factors – frost, rain, hail etc) and related accessories for mounting on metallic or plastic elements of the vehicle;
- Related cables, 2 USB connectors and suitable connectors for 4 sensors (including sensor control module, if necessary) as well as a possibility to connect keyboard and mouse;
- Rechargeable accumulators device;
- System carrying case, with partitioned housing for storing and transporting system components. The carrying case shall be impact and humidity resistant and large enough to store the heartbeat kit and all of its components;
- Complete documentation and manual for use, media and print, in English as a minimum.
- 4 vibration (seismic) sensors and 1 additional spare sensor:
    - Minimum IP 54 protection
    - Waterproof electric connectors (minimum IP 5 for water protection)
    - Sensor – computer connecting cables that are suitable for the outside work. Minimum 15 m length.

5.5.2. Performance requirements

The system shall comply to the following caracteristics and be:

- portable and must be constructed of robust materials so that it tolerates transport and use in different environments;
- able to detect whether there are persons hiding in vehicles by registering heartbeats;
- suitable both indoors and outdoors use;

5.5.3. Funtional requirements

- designed in a way to alow a quick installation (installation time max. 20 minutes);
- after the system is switched on, it shall enable the heartbeat detection within a period not longer than two (2) minutes;
- capable to operate connected to a to the standard 220/230V F socket, 12V car jack or accumulators;
- capable to indicate the sensor/sensors that generated a positive detection result;
- easy to maintain with a view to replacing sensors and similar items.

5.5.4. Detailed technical requirements

- the false alarms rate (closed space) shall be maximum 10%;
- the false alarms rate related to the negative result of the detection – maximum 2%;
- The system shall allow register of events to be kept for all vehicles that have been scanned, their subsequent consultation, and backups;
- The system should have a drum for winding of the cables when not in use;
- The system software shall have a intuitive graphic interface, in English as minimum,with quick acces by mouse and keyboard.

The Contractor should agree on free updating of the system software.

4. GUARANTEE:

The warranty period shall be at least 24 months and will start as of the date of signing of the final receipt of the product.

5. QUALITY ASSURANCE OF THE PRODUCT:

According to international standards, ISO 9001.

5.5.5. Environmental requirements

- capable of operating in temperatures ranges between -25 to +35 degrees and be moisture resistant;

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 ordered batches of equipment shall be delivered the soonest possible but not later than:

LOT-1: 4 months after the specific order signature.
LOT-2: 2 months after the specific order signature.
LOT-3: 2 months after the specific order signature
LOT-4: 1 months after the specific order signature.
LOT 5: 2 months after the specific order signature.

The equipement shall be transported (DDP) and delivered to Frontex Headquarters together with all corresponding documentation and, where applicable, certifcates.

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

6.2.1. Training Manuals – All Lots

For all products delivered under all Lots the respective contractors shall also provide detailed technical and training manuals which shall be available (both in paper and electronic form) at least in the following languagues: English, German, French, Spanish, Italian and Greek.

6.2.2. Hands-on training – Lots 1 and 5

For products delivered under Lot 1 (termal cameras) and Lot 5 (heart beat detectors) the Contractor may also be asked to provide the necessary hands-on training to the staff identified by Frontex on the handling of the purchased equipment. Frontex reserves the right to request such training either together with the delivery of the equipment or at any other moment during the contract duration.

The training location shall be at Frontex HQ premises in Warsaw. The costs of Frontex staff participation will be covered by Frontex. The training shall be carried out in English language. All training related documents (manuals, presentations, etc.) shall be in electronic and paper format in English language, one copy for each participant.

The training shall be subject to a Specific Order. Therefore the financial proposal shall outline the cost of a 1 day training delivery, all contractor costs included.

6.3. Warranty and maintenance

The purchased equipment shall be covered by at least 2 years warranty.
The warrantly shall include all required regular maintenance services, including the re-filling/re-furbishing of disposables if required.

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. The certificates shall be accompanied by the results of the testing that confirm the requirements set in art. 5 of this ToR.

All tests should be carried out and certificates issued by an organization that fulfills the following conditions:

- is independent from contractor or manufacturers of provided equipment;
- posses test equipment needed to carry out required tests;
- it has already carried out commercially required test services for other organizations;
- is internationally considered is competent in electro-optical metrology.

Frontex will monitor the quality of the products provided by the Contractor. Elements that will be monitored include:

- Compliance of the product to the Minimum Technical Requirements as described in art.5 of this ToR;
- Speed and agility of responding to requests and adherence to deadlines;
- Communication skills and ability to cooperate with users.

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 immediatly.

In addition, Frontex reserves the right to contract an idependent testing, including in the field conditions, on any of the delivered equipment at any moment during the contract duration for the purpose of verification of quality of the equipment and its compliance to the MTR described in art 5 of this ToR. Such tests shall be executed by an independent internationally recognised European organisation.

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 SCs Frontex shall within 30 calendar days to 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 discretion, 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.

For Lots 1, 2 and 3 the acceptance procedure shall also consist of:

1. Acceptance test (test of all delivered equipment done immediately after the delivery performed by an expert laboratory and specialists delegated by Frontex).

2. End warranty tests (test of all delivered equipment done before end of warranty period performed by an expert laboratory and specialists delegated by Frontex).

Minimal test range:

1. Operational surveillance ranges as in Tables 2, 5

2. Checking for any defects in general workmanship that reduce performance of surveillance devices.

Tests can be carried out in any country of EU.

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 SCs for each lot are scheduled to start upon the signature of the FWC;
- Estimated number of SCs per year – 2 for each lot;

8.2. Specific Orders implementation process

The FWC shall be implemented by means of specific orders (see the draft contract in Annex V).

8.3. Payment

All prices shall be in Euro, excluding VAT.

Pre-payment:

- Upon signature of the specific order, the contractor may issue a pro-forma invoice for an advance payment corresponding to 30% of its overall value. Frontex shall pay the pro-forma invoice within 30 days after its receipt;

Final payment:

- 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 SCs 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 SCs) will be addressed to him.

8.5.2. Frontex personnel

For the proper implementation of the FWC and its SCs 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 SCs.