

## Annex "Specifications"

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|--|-----------------------------------------------------------------------------------------------------------------------------------|
|  | Nordisk Sikkerhet AS                                                                                                              |
|  | Tender title: "Turnkey supply of automated radiation portal monitor and personnel contamination monitor systems"                  |
|  | Project title: "Supply of monitoring and detection equipment for industrial site of Prydniprovsky chemical plant (PChP), Ukraine" |

### Specifications

Turnkey supply of  
automated radiation portal monitor and personnel  
contamination monitor systems

**Contracting Authority:** Nordisk Sikkerhet AS

**Recipient:** State Enterprise "Barrier"

**Tenderer's name:** \_\_\_\_\_

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## Annex “Specifications”

### BACKGROUND

The Tenderer shall fill in the Annex “Specifications” in the format given below. The Tenderer’s proposed supplies should be manufactured and certified, if applicable, in accordance with the technical regulations and standards of Ukraine or EU/EEA countries. The complete table should be submitted to the Contracting Authority along with the required tender documents. On the front page of the Annex “Specifications”, the Tenderer shall indicate its name. After the completion of this document, it should be signed and dated by the Tenderer-authorized person.

### 1. RADIATION PORTAL MONITOR SYSTEM

#### 1.1 VEHICAL RADIATION PORTAL MONITORS

|                                                         | The Contracting Authority’s Requirements                                                                                              | Tenderer’s Offer |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Manufacturer                                            | —                                                                                                                                     |                  |
| Model                                                   | —                                                                                                                                     |                  |
| Scope of supply                                         | 3 sets                                                                                                                                |                  |
| <b>TECHNICAL SPECIFICATIONS</b>                         |                                                                                                                                       |                  |
| Number of pillars                                       | 2                                                                                                                                     |                  |
| Detection channels                                      | Gamma                                                                                                                                 |                  |
| Gamma channel                                           | Organic plastic scintillator                                                                                                          |                  |
| Gamma-neutron discrimination                            | Not Required                                                                                                                          |                  |
| Energy range of detected gamma radiation                | From 50 keV to 3 MeV or better                                                                                                        |                  |
| Volume of plastic scintillation detector, no less than  | 100 liters in total                                                                                                                   |                  |
| Sensitivity to gamma radiation for Cs-137, no less than | 10 cps/kBq or better                                                                                                                  |                  |
| Detection zone, no less than                            | Vertical: 3.0 m<br>Horizontal: 3.5 m                                                                                                  |                  |
| Natural gamma background suppression                    | Required                                                                                                                              |                  |
| False alarm rate                                        | 1 per 1000 passages                                                                                                                   |                  |
| Occupancy sensors                                       | Required. Infra-red sensor or other type                                                                                              |                  |
| Tamper switch                                           | Required                                                                                                                              |                  |
| Alarm indication                                        | Audible and visual indication, both on the monitor pillar and at the operator’s workplaces.<br>[Ref. Annex A to these Specifications] |                  |

## Annex "Specifications"

|                                                                      | The Contracting Authority's Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                              | Tenderer's Offer |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Dry (relay) contact output                                           | Required. Control signal must be automatically generated to close the existing traffic booms, when a radioactive source is detected by RPM.                                                                                                                                                                                                                                                                                                                                           |                  |
| External connection to network                                       | TCP/IP protocol. RPMs shall be linked to the LAN (Ethernet).                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |
| Requirements to cable lines                                          | Cable must be laid outside in a corrugated pipe at an approximate distance to the operator's workplace (server) of no more than 1000 m.<br>[Ref. Annex A to these Specifications]<br>Elements of structured cable system (cable communication lines, cross connect panels cable connectors, info-sockets and other components) shall be included in the scope of this contract.                                                                                                       |                  |
| RPM' data processing unit                                            | RPM' data processing unit:<br>– Collection and processing of information from the RPM's detection units;<br>– Compensation of radiation background attenuation induced by the vehicle;<br>– Visual and audible alarms when radioactive source is detected;<br>– Issuance of control signals (relay contact) to existing traffic booms at the vehicle checkpoint;<br>– Communication with the operator's workstations (server) via Ethernet interface;<br>– Self-diagnosis of the RPM. |                  |
| Power supply                                                         | 220 ±10% V / 50±5 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |
| Offline work in the event of power supply interruption, no less than | 2 hours for the whole system. UPS and AC voltage stabilizers are required.                                                                                                                                                                                                                                                                                                                                                                                                            |                  |
| Regime of operation                                                  | 24/7 continuous operation                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| Physical dimensions, length x width x height                         | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |
| Weight, no more than                                                 | 450 kg per one pillar                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |

## Annex "Specifications"

|                                                              | The Contracting Authority's Requirements                                                                                                                                                                                                                                    | Tenderer's Offer |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Service life, no less than                                   | 10 years                                                                                                                                                                                                                                                                    |                  |
| Mean time between failures, no less than                     | 4000 hours                                                                                                                                                                                                                                                                  |                  |
| Protection against shocks from vehicles                      | Required. Metal pipe bollards, concrete bollards or other type are required to protect RPM from vehicle collisions                                                                                                                                                          |                  |
| Foundation                                                   | Required. Construction of appropriate concrete foundations for RPM, IP-camera pole and LED floodlight is required.                                                                                                                                                          |                  |
| Additional lighting                                          | Required. Additional LED floodlight shall be installed in the detection zone within the scope of this contract.                                                                                                                                                             |                  |
| Restoration works                                            | Restoration of road surfaces and backfilling of trenches are required.                                                                                                                                                                                                      |                  |
| <b>Environmental requirements</b>                            |                                                                                                                                                                                                                                                                             |                  |
| Ambient temperatures                                         | From -20 to +45 °C                                                                                                                                                                                                                                                          |                  |
| Relative humidity                                            | Up to 95% at ambient temperature of 35°C and lower, without condensation of moisture                                                                                                                                                                                        |                  |
| Protection degree, no less than                              | IP 54 (dust protection, solid bodies protection, antisplash)                                                                                                                                                                                                                |                  |
| <b>CONSUMABLES AND SPARE PARTS</b>                           |                                                                                                                                                                                                                                                                             |                  |
| Spare parts and accessories for three (3) years of operation | Yes                                                                                                                                                                                                                                                                         |                  |
| <b>OTHER REQUIREMENTS</b>                                    |                                                                                                                                                                                                                                                                             |                  |
| Certification                                                | Certification of RPMs in Ukraine and/or in EU/EEA countries in accordance with the Legislation in force                                                                                                                                                                     |                  |
| Primary metrological verification                            | N/A                                                                                                                                                                                                                                                                         |                  |
| Visibility of Norwegian financing                            | Any equipment delivered under the contract should be clearly identified and should have metallic plates or indelible labels containing the flag of Norway and the phrase "Provided with support from the Government of Norway" in the language of Recipient and in English. |                  |

## Annex “Specifications”

### 1.2 PEDESTRIAN RADIATION PORTAL MONITORS

|                                                         | The Contracting Authority's Requirements                                                                                                            | Tenderer's Offer |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Manufacturer                                            | —                                                                                                                                                   |                  |
| Model                                                   | —                                                                                                                                                   |                  |
| Scope of supply                                         | 3 sets                                                                                                                                              |                  |
| <b>TECHNICAL SPECIFICATIONS</b>                         |                                                                                                                                                     |                  |
| Number of pillars                                       | 1 or 2 pillars                                                                                                                                      |                  |
| Detection channel                                       | Gamma                                                                                                                                               |                  |
| Gamma channel                                           | Organic plastic scintillator                                                                                                                        |                  |
| Gamma-neutron discrimination                            | Not required                                                                                                                                        |                  |
| Energy range of detected gamma radiation                | From 50 keV to 3 MeV or better                                                                                                                      |                  |
| Volume of plastic scintillation detector, no less than  | 2,5 liters in total                                                                                                                                 |                  |
| Sensitivity to gamma radiation for Cs-137, no less than | 2 cps/kBq or better                                                                                                                                 |                  |
| Detection zone, no less than                            | Vertical: 2 m<br>Horizontal: 0.8 m                                                                                                                  |                  |
| Natural gamma background suppression                    | Required                                                                                                                                            |                  |
| False alarm rate                                        | 1 per 1000 passages                                                                                                                                 |                  |
| Occupancy sensors                                       | Required. Infra-red sensor or other type                                                                                                            |                  |
| Tamper switch                                           | Required                                                                                                                                            |                  |
| Alarm indication                                        | Audible and visual indication, both on the monitor pillar and at the operator's workplaces.<br>[Ref. Annex A to these Specifications]               |                  |
| Remote alarm unit                                       | To be installed outdoor, within ~ 10 meters away from RPM.<br>[Ref. Annex A to these Specifications]                                                |                  |
| Dry (relay) contact output                              | N/A                                                                                                                                                 |                  |
| External connection to network                          | TCP/IP protocol.<br>RPMs shall be linked to the LAN (Ethernet).                                                                                     |                  |
| RPM' data processing unit                               | RPM' data processing unit:<br>– Collection and processing of information from the RPM's detection units;<br>– Compensation of radiation background; |                  |

## Annex "Specifications"

|                                                                      | The Contracting Authority's Requirements                                                                                                                                                                                                                                    | Tenderer's Offer |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                      | <ul style="list-style-type: none"> <li>– Visual and audible alarms when radioactive source is detected;</li> <li>– Communication with the operator's workstations (server) via Ethernet interface;</li> <li>– Self-diagnosis of the RPM.</li> </ul>                         |                  |
| Power supply                                                         | 220 ±10% V / 50±5 Hz                                                                                                                                                                                                                                                        |                  |
| Offline work in the event of power supply interruption, no less than | 2 hours for the whole system. UPS and AC voltage stabilizers are required.                                                                                                                                                                                                  |                  |
| Regime of operation                                                  | 24/7 continuous operation                                                                                                                                                                                                                                                   |                  |
| Physical dimensions, length x width x height                         | —                                                                                                                                                                                                                                                                           |                  |
| Weight, no more than                                                 | 150 kg per one pillar                                                                                                                                                                                                                                                       |                  |
| Service life, no less than                                           | 10 years                                                                                                                                                                                                                                                                    |                  |
| Mean time between failures, no less than                             | 4000 hours                                                                                                                                                                                                                                                                  |                  |
| <b>Environmental requirements</b>                                    |                                                                                                                                                                                                                                                                             |                  |
| Ambient temperatures                                                 | From 5 to +45 °C                                                                                                                                                                                                                                                            |                  |
| Relative humidity                                                    | Up to 75% at the ambient temperature of 30 °C and lower, without condensation of moisture                                                                                                                                                                                   |                  |
| Protection degree, no less than                                      | IP 54<br>(dust protection, solid bodies protection, antisplash)                                                                                                                                                                                                             |                  |
| <b>CONSUMABLES AND SPARE PARTS</b>                                   |                                                                                                                                                                                                                                                                             |                  |
| Spare parts and accessories for three (3) years of operation         | Yes                                                                                                                                                                                                                                                                         |                  |
| <b>OTHER REQUIREMENTS</b>                                            |                                                                                                                                                                                                                                                                             |                  |
| Certification                                                        | Certification of RPMs in Ukraine and/or in EU/EEA countries in accordance with the Legislation in force                                                                                                                                                                     |                  |
| Primary metrological verification                                    | N/A                                                                                                                                                                                                                                                                         |                  |
| Visibility of Norwegian financing                                    | Any equipment delivered under the contract should be clearly identified and should have metallic plates or indelible labels containing the flag of Norway and the phrase "Provided with support from the Government of Norway" in the language of Recipient and in English. |                  |

## Annex "Specifications"

### 1.3 OPERATOR'S WORKPLACE EQUIPMENT AND SOFTWARE

|                                                                       | The Contracting Authority's Requirements                                                                                                                                                                                                                                                                                                                                                              | Tenderer's Offer |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Manufacturer                                                          | —                                                                                                                                                                                                                                                                                                                                                                                                     |                  |
| Model                                                                 | —                                                                                                                                                                                                                                                                                                                                                                                                     |                  |
| Scope of supply                                                       | 1. Operator's workstations (2 pcs),<br>2. Software,<br>3. Network equipment,<br>4. Elements of structured cable system.                                                                                                                                                                                                                                                                               |                  |
| <b>TECHNICAL SPECIFICATIONS</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                       |                  |
| <b>Operator's workplace. PC general specifications</b>                |                                                                                                                                                                                                                                                                                                                                                                                                       |                  |
| PC type                                                               | PC                                                                                                                                                                                                                                                                                                                                                                                                    |                  |
| Processor                                                             | Quad Core i5 or equivalent                                                                                                                                                                                                                                                                                                                                                                            |                  |
| RAM                                                                   | ≥ 8GB                                                                                                                                                                                                                                                                                                                                                                                                 |                  |
| Hard disk volume                                                      | ≥ 1TB                                                                                                                                                                                                                                                                                                                                                                                                 |                  |
| Number of external connections:                                       |                                                                                                                                                                                                                                                                                                                                                                                                       |                  |
| -Ethernet 100/1000 Mbit                                               | ≥ 2                                                                                                                                                                                                                                                                                                                                                                                                   |                  |
| -USB 2.0 or higher                                                    | ≥ 2                                                                                                                                                                                                                                                                                                                                                                                                   |                  |
| Display                                                               | LCD monitor ≥ 22"                                                                                                                                                                                                                                                                                                                                                                                     |                  |
| Operating system                                                      | Windows 7 or higher                                                                                                                                                                                                                                                                                                                                                                                   |                  |
| Functions                                                             | Operator's workplace:<br>– Collection, storage and visualization of information from the RPMs;<br>– Visual and audible alarms when radioactive source is detected;<br>– Registration of all detection events and a database of these events;<br>– Detection protocol creation and periodic reports;<br>– Diagnosis of RPMs.<br>One of PCs to be supplied shall be used as a database server for RPMs. |                  |
| Power supply                                                          | 220 ±10% V / 50±5 Hz                                                                                                                                                                                                                                                                                                                                                                                  |                  |
| Off-line work in the event of power supply interruption, no less than | 2 hours for the whole system. UPS and AC voltage stabilizers are required.                                                                                                                                                                                                                                                                                                                            |                  |
| Regime of operation                                                   | 24/7 continuous operation                                                                                                                                                                                                                                                                                                                                                                             |                  |
| Service life, no less than                                            | 7 years                                                                                                                                                                                                                                                                                                                                                                                               |                  |
| <b>Software requirements</b>                                          |                                                                                                                                                                                                                                                                                                                                                                                                       |                  |
| Multilevel access                                                     | At least 2 level access: operator and administrator                                                                                                                                                                                                                                                                                                                                                   |                  |



## Annex “Specifications”

|                                                                  | The Contracting Authority's Requirements                                                                                                                                                                                                                    | Tenderer's Offer |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| In normal (no alarm) state the operator must be able to monitor: | - RPMs status;<br>- UPSs status (if there is no main power);                                                                                                                                                                                                |                  |
| Alarm window                                                     | - Displays count rate histogram of the alarm;<br>- Displays gamma radiation background histogram;                                                                                                                                                           |                  |
| User's interface                                                 | In Ukrainian                                                                                                                                                                                                                                                |                  |
| Database                                                         | Stores all collected data for at least 180 days                                                                                                                                                                                                             |                  |
| <b>Environmental requirements</b>                                |                                                                                                                                                                                                                                                             |                  |
| Ambient temperatures                                             | From 5 to +45 °C                                                                                                                                                                                                                                            |                  |
| Relative humidity                                                | Up to 75% at the ambient temperature of 30 °C and lower, without condensation of moisture                                                                                                                                                                   |                  |
| Protection degree, no less than                                  | IP20 for operator's workstations (server) (dust protection, solid bodies protection).                                                                                                                                                                       |                  |
| <b>CONSUMABLES AND SPARE PARTS</b>                               |                                                                                                                                                                                                                                                             |                  |
| Spare parts and accessories for three (3) years of operation     | Yes                                                                                                                                                                                                                                                         |                  |
| <b>OTHER REQUIREMENTS</b>                                        |                                                                                                                                                                                                                                                             |                  |
| Visibility of Norwegian financing                                | Any equipment delivered under the contract should be clearly identified and should have metallic plates or indelible labels containing the flag of Norway and the phrase “Provided with support from the Government of Norway” in Ukrainian and in English. |                  |

## 2. PERSONNEL CONTAMINATION MONITOR SYSTEM

### 2.1 PERSONNEL CONTAMINATION MONITORS

|                                 | Contracting Authority's Requirements | Tenderer's Offer |
|---------------------------------|--------------------------------------|------------------|
| Manufacturer                    | —                                    |                  |
| Model                           | —                                    |                  |
| Scope of supply                 | 4 sets                               |                  |
| <b>TECHNICAL SPECIFICATIONS</b> |                                      |                  |

## Annex "Specifications"

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
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| Type               | Whole body surface contamination monitor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| Detection channels | <ul style="list-style-type: none"> <li>- Beta,</li> <li>- Alpha (alpha channel is to be envisaged for the remote detector).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Detectors          | <p>The contamination monitor shall be equipped with stationary beta radiation detectors to monitor the following areas:</p> <ul style="list-style-type: none"> <li>- upper part of head,</li> <li>- shoulders,</li> <li>- palms,</li> <li>- backs of hands,</li> <li>- side surface of legs,</li> <li>- feet.</li> </ul> <p>The contamination monitor shall be additionally equipped with the remote detector(s) of alpha and beta radiation (with discrimination capability) to monitor the following:</p> <ul style="list-style-type: none"> <li>- small items and parts of the body/clothes that cannot be covered by the stationary beta detectors.</li> </ul> |  |
| Functions          | <p>Detection, localization, and evaluation of radiological contamination of personnel:</p> <ul style="list-style-type: none"> <li>- Control of personnel passage;</li> <li>- Measurement of flux density/surface activity of beta and alpha particles;</li> <li>- Natural and intrinsic background suppression;</li> <li>- Indication of measured values on the display;</li> <li>- Audible and visual alarm when thresholds are exceeded;</li> <li>- Adjustable thresholds for alarm;</li> <li>- Displaying the location of the contamination found, depending on which detector(s) is in the alarm state;</li> </ul>                                             |  |

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|  | <ul style="list-style-type: none"><li>- Generation of control signal to open the exit gate of the monitor when thresholds are not exceeded;</li><li>- Recording the measurements in the non-volatile memory;</li><li>- Self-diagnostics;</li><li>- Communication with the operator's workstations (server) via Ethernet interface.</li></ul> <p>[Ref. Annex A to these Specifications]</p> |  |
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|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Equipment                                  | <p>The contamination monitor shall be equipped with the following:</p> <ul style="list-style-type: none"> <li>- set of stationary beta radiation detectors,</li> <li>- remote detector(s) (alpha-probe and beta-probe/alternatively, alpha&amp;beta probe),</li> <li>- frame with one entrance gate and one exit gate,</li> <li>- data display and processing unit,</li> <li>- alarm units,</li> <li>- set of cables.</li> </ul> |  |
| Entrance gate                              | <p>The contamination monitor shall be equipped with the two gates:</p> <ul style="list-style-type: none"> <li>- entrance gate (to be locked when the monitor is occupied prior to beginning of the measurements),</li> <li>- exit gate (to be unlocked after the end of measurements).</li> </ul>                                                                                                                                |  |
| Regime of operation                        | 24/7 continuous operation                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| Setup time of operating mode, no more than | 10 min                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| Measurement time, no more than             | 10 sec                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| Alarm indication                           | <p>Visual and audible alarms both on the monitor and at the operator’s workplaces. Contaminated area(s) shall be indicated.</p> <p>[Ref. Annex A to these Specifications]</p>                                                                                                                                                                                                                                                    |  |
| Additional remote alarm unit               | <p>To be installed outdoor, within ~ 10 meters away from the monitor.</p> <p>[Ref. Annex A to these Specifications]</p>                                                                                                                                                                                                                                                                                                          |  |
| Dry (relay) contact output                 | N/A                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| External connection to network             | <p>TCP/IP protocol.</p> <p>All the contamination monitors shall be linked to the LAN (Ethernet).</p>                                                                                                                                                                                                                                                                                                                             |  |

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| Power supply                                                         | 220 $\pm$ 10% V / 50 $\pm$ 5 Hz                                                                                              |  |
| Offline work in the event of power supply interruption, no less than | 2 hours for the whole system. UPS and AC voltage stabilizers are required.                                                   |  |
| Physical dimensions, length x width x height                         | 1000 $\times$ 1200 $\times$ 2650 mm                                                                                          |  |
| Weight, no more than                                                 | 400 kg                                                                                                                       |  |
| Mean time between failures, no less than                             | 10 000 hours                                                                                                                 |  |
| Service life, no less than                                           | 10 years                                                                                                                     |  |
| <b>ALPHA MEASUREMENTS</b>                                            |                                                                                                                              |  |
| Energy range of detected alpha radiation                             | From 4,5 MeV to 5,6 MeV or better                                                                                            |  |
| Measurement range of alpha flux density                              | From 0,1 to 1 $\cdot$ 10 <sup>4</sup> part./ (cm <sup>2</sup> min) or better                                                 |  |
| Relative measurement error, no more than                             | $\pm$ 30%                                                                                                                    |  |
| <b>BETA MEASUREMENTS</b>                                             |                                                                                                                              |  |
| Energy range of detected beta radiation                              | From 150 keV to 2,5 MeV or better                                                                                            |  |
| Measurement range of beta flux density                               | From 5 to 1 $\cdot$ 10 <sup>4</sup> part./ (cm <sup>2</sup> min) or better                                                   |  |
| Relative measurement error, no more than                             | $\pm$ 30%                                                                                                                    |  |
| <b>ENVIRONMENTAL REQUIREMENTS</b>                                    |                                                                                                                              |  |
| Ambient temperatures                                                 | From 5 to +45 °C                                                                                                             |  |
| Relative humidity                                                    | Up to 75% at the ambient temperature of 30 °C and lower, without condensation of moisture                                    |  |
| Protection degree, no less than                                      | IP 20 or better - for alpha and beta radiation detectors. (dust protection, solid bodies protection).                        |  |
| <b>OTHER REQUIREMENTS</b>                                            |                                                                                                                              |  |
| Certification                                                        | Certification of the contamination monitor in Ukraine and/or in EU/EEA countries in accordance with the Legislation in force |  |
| Primary metrological verification                                    | Yes                                                                                                                          |  |

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|                                   |                                                                                                                                                                                                                                                                             |  |
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| Visibility of Norwegian financing | Any equipment delivered under the contract should be clearly identified and should have metallic plates or indelible labels containing the flag of Norway and the phrase "Provided with support from the Government of Norway" in the language of Recipient and in English. |  |
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### 2.2 OPERATOR'S WORKPLACE EQUIPMENT AND SOFTWARE

|                                                        | The Contracting Authority's Requirements                                                                                                                                                                                                                                                                                     | Tenderer's Offer |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Manufacturer                                           | —                                                                                                                                                                                                                                                                                                                            |                  |
| Model                                                  | —                                                                                                                                                                                                                                                                                                                            |                  |
| Scope of supply                                        | 1. Operator's workstations (2 pcs),<br>2. Software,<br>3. Network equipment,<br>4. Elements of structured cable system                                                                                                                                                                                                       |                  |
| <b>TECHNICAL SPECIFICATIONS</b>                        |                                                                                                                                                                                                                                                                                                                              |                  |
| <b>Operator's workplace. PC general specifications</b> |                                                                                                                                                                                                                                                                                                                              |                  |
| PC type                                                | PC                                                                                                                                                                                                                                                                                                                           |                  |
| Processor                                              | Quad Core i5 or equivalent                                                                                                                                                                                                                                                                                                   |                  |
| RAM                                                    | ≥ 8GB                                                                                                                                                                                                                                                                                                                        |                  |
| Hard disk volume                                       | ≥ 1TB                                                                                                                                                                                                                                                                                                                        |                  |
| Number of external connections:                        |                                                                                                                                                                                                                                                                                                                              |                  |
| - Ethernet 100/1000 Mbit                               | ≥ 2                                                                                                                                                                                                                                                                                                                          |                  |
| - USB 2.0 or higher                                    | ≥ 2                                                                                                                                                                                                                                                                                                                          |                  |
| Display                                                | LCD monitor ≥ 22"                                                                                                                                                                                                                                                                                                            |                  |
| Operating system                                       | Windows 7 or higher                                                                                                                                                                                                                                                                                                          |                  |
| Functions                                              | Operator's workplace:<br>- Collection, storage and visualization of information from the contamination monitors;<br>- Visual and audible alarms when radioactive contamination is detected;<br>- Registration of all detection events and a database of these events;<br>- Detection protocol creation and periodic reports; |                  |

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|                                                                       | The Contracting Authority's Requirements                                                                                                                                                                                                                    | Tenderer's Offer |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                       | – Diagnosis of the contamination monitors.<br>One of PCs to be supplied shall be used as a database server for the contamination monitors.                                                                                                                  |                  |
| Power supply                                                          | 220 ±10% V / 50±5 Hz                                                                                                                                                                                                                                        |                  |
| Off-line work in the event of power supply interruption, no less than | 2 hours for the whole system. UPS and AC voltage stabilizers are required.                                                                                                                                                                                  |                  |
| Regime of operation                                                   | 24/7 continuous operation                                                                                                                                                                                                                                   |                  |
| Service life, no less than                                            | 7 years                                                                                                                                                                                                                                                     |                  |
| <b>Software requirements</b>                                          |                                                                                                                                                                                                                                                             |                  |
| Multilevel access                                                     | At least 2 level access: operator and administrator                                                                                                                                                                                                         |                  |
| In normal (no alarm) state the operator must be able to monitor:      | - Status of contamination monitors;<br>- UPSs status (if there is no main power).                                                                                                                                                                           |                  |
| Alarm window                                                          | - Visual and audible alarms when thresholds are exceeded.                                                                                                                                                                                                   |                  |
| User's interface                                                      | In Ukrainian                                                                                                                                                                                                                                                |                  |
| Database                                                              | Stores all collected data for at least 180 days                                                                                                                                                                                                             |                  |
| <b>Environmental requirements</b>                                     |                                                                                                                                                                                                                                                             |                  |
| Ambient temperatures                                                  | From 5 to +45 °C                                                                                                                                                                                                                                            |                  |
| Relative humidity                                                     | Up to 75% at the ambient temperature of 30 °C and lower, without condensation of moisture                                                                                                                                                                   |                  |
| Protection degree, no less than                                       | IP20 for operator's workstations (server) (dust protection, solid bodies protection).                                                                                                                                                                       |                  |
| <b>CONSUMABLES AND SPARE PARTS</b>                                    |                                                                                                                                                                                                                                                             |                  |
| Spare parts and accessories for three (3) years of operation          | Yes                                                                                                                                                                                                                                                         |                  |
| <b>OTHER REQUIREMENTS</b>                                             |                                                                                                                                                                                                                                                             |                  |
| Visibility of Norwegian financing                                     | Any equipment delivered under the contract should be clearly identified and should have metallic plates or indelible labels containing the flag of Norway and the phrase "Provided with support from the Government of Norway" in Ukrainian and in English. |                  |

## Annex "Specifications"

### 3. VIDEO SURVEILLANCE SYSTEM

|                                                                       | The Contracting Authority's Requirements                                                                                                                                                                             | Tenderer's Offer |
|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Manufacturer                                                          | —                                                                                                                                                                                                                    |                  |
| Model                                                                 | —                                                                                                                                                                                                                    |                  |
| Scope of supply                                                       | 1. IP video cameras (11 pcs),<br>2. Video recorder/server with monitor (1 pc),<br>3. Operator's workstation with monitor (1 pc),<br>4. Software,<br>5. Network equipment,<br>6. Elements of structured cable system. |                  |
| <b>TECHNICAL SPECIFICATIONS</b>                                       |                                                                                                                                                                                                                      |                  |
| <b>Video cameras. General specifications</b>                          |                                                                                                                                                                                                                      |                  |
| Type of video camera                                                  | IP-video camera with IR-illuminator                                                                                                                                                                                  |                  |
| Functions                                                             | Image of alarm-causing objects;<br>Detection of vehicles and people;<br>24/7 video and audio recording;                                                                                                              |                  |
| Resolutions                                                           | - $\geq 4$ megapixel,<br>- $\geq 2688 \times 1520$ pixels at 20 fps,<br>- $\geq 2560 \times 1440$ pixels at 25/30 fps or better characteristics                                                                      |                  |
| Power supply                                                          | $220 \pm 10\% \text{ V} / 50 \pm 5 \text{ Hz}$                                                                                                                                                                       |                  |
| Off-line work in the event of power supply interruption, no less than | 2 hours for the whole system. UPS and AC voltage stabilizers are required.                                                                                                                                           |                  |
| Regime of operation                                                   | 24/7 continuous operation                                                                                                                                                                                            |                  |
| Service life, no less than                                            | 7 years                                                                                                                                                                                                              |                  |
| <b>Environmental requirements</b>                                     |                                                                                                                                                                                                                      |                  |
| Ambient temperatures                                                  | From -20 to +45 °C                                                                                                                                                                                                   |                  |
| Relative humidity                                                     | Up to 95% at ambient temperature of 35°C and lower, without condensation of moisture                                                                                                                                 |                  |
| Protection degree, no less than                                       | IP 66 for IP-video cameras (dust tight and protected against powerful waterjets)                                                                                                                                     |                  |



## Annex "Specifications"

|                                                                       | The Contracting Authority's Requirements                                                                                                                                                                                                                                                          | Tenderer's Offer |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Video server/recorder. General specifications</b>                  |                                                                                                                                                                                                                                                                                                   |                  |
| Type                                                                  | Digital network recorder                                                                                                                                                                                                                                                                          |                  |
| Processor                                                             | to be defined by the tenderer                                                                                                                                                                                                                                                                     |                  |
| Operating system                                                      | to be defined by the tenderer                                                                                                                                                                                                                                                                     |                  |
| RAM                                                                   | to be defined by the tenderer                                                                                                                                                                                                                                                                     |                  |
| Hard drives number, type, and volume                                  | to be defined by the tenderer                                                                                                                                                                                                                                                                     |                  |
| Hot swappable drive                                                   | Yes                                                                                                                                                                                                                                                                                               |                  |
| Number of video and audio channels:                                   | ≥16                                                                                                                                                                                                                                                                                               |                  |
| Number of external connections:                                       |                                                                                                                                                                                                                                                                                                   |                  |
| - HDMI                                                                | ≥ 2                                                                                                                                                                                                                                                                                               |                  |
| - Ethernet 100/1000 Mbit                                              | ≥ 2                                                                                                                                                                                                                                                                                               |                  |
| - USB 2.0 or higher                                                   | ≥ 2                                                                                                                                                                                                                                                                                               |                  |
| - eSATA                                                               | ≥ 1                                                                                                                                                                                                                                                                                               |                  |
| - audio output                                                        | ≥ 1                                                                                                                                                                                                                                                                                               |                  |
| Display                                                               | - LCD monitor ≥32", 4K<br>- Displaying video from 11 associated IP-video cameras real-time and in the past.                                                                                                                                                                                       |                  |
| Functions                                                             | - Connecting 11 IP-video cameras;<br>- Collection (24/7), storage and visualization of data from the associated IP-video cameras (audio and video);<br>- Signal transmission via LAN (Ethernet) to monitor the situation at the checkpoints in real-time;<br>- Data backup copying and archiving. |                  |
| Multilevel access                                                     | At least 2 level access: operator and administrator                                                                                                                                                                                                                                               |                  |
| Database                                                              | Stores all collected data including 24/7 video and audio recording from 11 video cameras with resolution of at least 2560 x 1440 pixels for at least 7 days.                                                                                                                                      |                  |
| Power supply                                                          | 220 ±10% V / 50±5 Hz                                                                                                                                                                                                                                                                              |                  |
| Off-line work in the event of power supply interruption, no less than | 2 hours for the whole system. UPS and AC voltage stabilizers are required.                                                                                                                                                                                                                        |                  |
| Regime of operation                                                   | 24/7 continuous operation                                                                                                                                                                                                                                                                         |                  |
| Service life, no less than                                            | 7 years                                                                                                                                                                                                                                                                                           |                  |
| <b>Operator's workplace. PC general specifications</b>                |                                                                                                                                                                                                                                                                                                   |                  |

## Annex "Specifications"

|                                                                       | The Contracting Authority's Requirements                                                                                                                                                                                       | Tenderer's Offer |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| PC type                                                               | PC                                                                                                                                                                                                                             |                  |
| Processor                                                             | Quad Core i5 or equivalent                                                                                                                                                                                                     |                  |
| RAM                                                                   | ≥ 8GB                                                                                                                                                                                                                          |                  |
| Hard disk volume                                                      | ≥ 1TB                                                                                                                                                                                                                          |                  |
| Number of external connections:                                       |                                                                                                                                                                                                                                |                  |
| - Ethernet 100/1000 Mbit                                              | ≥ 2                                                                                                                                                                                                                            |                  |
| - USB 2.0 or higher                                                   | ≥ 2                                                                                                                                                                                                                            |                  |
| Display                                                               | - LCD monitor ≥32", 4K<br>- Displaying real-time video from 11 associated cameras.                                                                                                                                             |                  |
| Operating system                                                      | Windows 7 or higher                                                                                                                                                                                                            |                  |
| Functions                                                             | Operator's workplace:<br>- Receiving data from video recorder/server to monitor the situation at the checkpoints in the real time and in the past                                                                              |                  |
| Power supply                                                          | 220 ±10% V / 50±5 Hz                                                                                                                                                                                                           |                  |
| Off-line work in the event of power supply interruption, no less than | 2 hours for the whole system. UPS and AC voltage stabilizers are required.                                                                                                                                                     |                  |
| Regime of operation                                                   | 24/7 continuous operation                                                                                                                                                                                                      |                  |
| Service life, no less than                                            | 7 years                                                                                                                                                                                                                        |                  |
| <b>Environmental requirements</b>                                     |                                                                                                                                                                                                                                |                  |
| Ambient temperatures                                                  | From +5 to +45 °C                                                                                                                                                                                                              |                  |
| Relative humidity                                                     | Up to 75% at the ambient temperature of 30 °C and lower, without condensation of moisture                                                                                                                                      |                  |
| Protection degree, no less than                                       | IP20 for operator's workstation, video recorder/server and other equipment (dust protection, solid bodies protection).                                                                                                         |                  |
| <b>CONSUMABLES AND SPARE PARTS</b>                                    |                                                                                                                                                                                                                                |                  |
| Spare parts and accessories for three (3) years of operation          | Yes                                                                                                                                                                                                                            |                  |
| <b>OTHER REQUIREMENTS</b>                                             |                                                                                                                                                                                                                                |                  |
| Visibility of Norwegian financing                                     | Any equipment delivered under the contract should be clearly identified and should have metallic plates or indelible labels containing the flag of Norway and the phrase "Provided with support from the Government of Norway" |                  |

## Annex "Specifications"

|  | <b>The Contracting Authority's Requirements</b> | <b>Tenderer's Offer</b> |
|--|-------------------------------------------------|-------------------------|
|  | in the language of Recipient and in English.    |                         |

### 4. LOCAL AREA NETWORK AND NETWORK EQUIPMENT

|                                 | <b>The Contracting Authority's Requirements</b>                                                                                                                                                                                                                                                                                                                                                      | <b>Tenderer's Offer</b> |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Manufacturer                    | —                                                                                                                                                                                                                                                                                                                                                                                                    |                         |
| Model                           | —                                                                                                                                                                                                                                                                                                                                                                                                    |                         |
| Scope of supply                 | 1. Network equipment,<br>2. Elements of structured cable system.                                                                                                                                                                                                                                                                                                                                     |                         |
| <b>Local Area Network (LAN)</b> |                                                                                                                                                                                                                                                                                                                                                                                                      |                         |
| Network type                    | Ethernet network based on the fiber optic line with a transmission rate of $\geq 1$ Gbps. Systems of radiation portal monitors, personnel contamination monitors and video surveillance shall use one common high-speed optical-fiber cable line for data networking.<br>[Ref. Annex A to these Specifications]                                                                                      |                         |
| Network equipment               | Network switches, routers, multiplexors, and other network equipment, as necessary. Lightning protection for all network equipment is required.                                                                                                                                                                                                                                                      |                         |
| Scope of supply                 | The scope of the contract includes the design and establishment of cable network:<br>- for the system of RPMs,<br>- for the system of personnel contamination monitors,<br>- for the system of video surveillance.<br><br>Elements of structured cable system (cable communication lines, cross connect panels, cable connectors, info-sockets and other components), fasteners and cable protective |                         |

## Annex “Specifications”

|                                                                       | The Contracting Authority's Requirements                                                                      | Tenderer's Offer                  |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------|
|                                                                       | elements (for indoor and outdoor use), and relevant network equipment shall be delivered under this contract. |                                   |
| Power supply                                                          | 220 ±10% V / 50±5 Hz                                                                                          |                                   |
| Off-line work in the event of power supply interruption, no less than | 2 hours for the whole system. UPS and AC voltage stabilizers are required.                                    |                                   |
| Regime of operation                                                   | 24/7 continuous operation                                                                                     |                                   |
| Service life, no less than                                            | 7 years                                                                                                       |                                   |
| <b>CONSUMABLES AND SPARE PARTS</b>                                    |                                                                                                               |                                   |
| Spare parts and accessories for three (3) years of operation          | Yes                                                                                                           |                                   |
| <b>OTHER REQUIREMENTS</b>                                             |                                                                                                               |                                   |
| Visibility of Norwegian financing                                     | Visibility of Norwegian financing                                                                             | Visibility of Norwegian financing |

### 5. DOCUMENTATION

|                                                                                                                                                                                                | Contracting Authority's Requirements | Tenderer's Offer |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------|
| <b>DOCUMENTATION</b>                                                                                                                                                                           |                                      |                  |
| Terms of reference (TOR) for systems and software to be developed                                                                                                                              | In Ukrainian and English             |                  |
| Design documentation for cable installation, including the following documents:<br>-Chart of external points connection,<br>-Cable log,<br>-Mounting drawings,<br>-Power supply drawings, etc. | In Ukrainian                         |                  |
| Passports for technical means                                                                                                                                                                  | In Ukrainian                         |                  |
| Operator's manual for technical means, including procedure for periodical checks                                                                                                               | In Ukrainian                         |                  |
| Operator's manual for application software, including installation guide                                                                                                                       | In Ukrainian                         |                  |
| Documents attesting certification of equipment                                                                                                                                                 | In Ukrainian and/or English          |                  |
| Certificate of primary metrological verification (for personnel contamination monitors)                                                                                                        | In Ukrainian                         |                  |
| Programme and procedure of factory tests                                                                                                                                                       | In Ukrainian and English             |                  |
| Programme and procedure of site acceptance tests                                                                                                                                               | In Ukrainian and English             |                  |
| Training documentation                                                                                                                                                                         | In Ukrainian                         |                  |

## Annex “Specifications”

|                              |                          |  |
|------------------------------|--------------------------|--|
| Transportation documentation | In Ukrainian and English |  |
|------------------------------|--------------------------|--|

### 6. DELIVERY TERMS AND CONDITIONS

|                                      | Contracting Authority's Requirements                                                                              | Tenderer's Offer |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------|
| <b>DELIVERY TERMS AND CONDITIONS</b> |                                                                                                                   |                  |
| Terms of delivery                    | DDP, Incoterms 2010                                                                                               |                  |
| Place of delivery and installation   | STE “Barrier”. Anoshkina Avenue 179B, Kamianske, Ukraine                                                          |                  |
| Unloading at the place of delivery   | By Contractor                                                                                                     |                  |
| Delivery Time                        | ≤ 250 calendar days after the date of contract signature                                                          |                  |
| <b>PRESERVATION AND PACKAGING</b>    |                                                                                                                   |                  |
| Packaging                            | Protection for transportation, handling and reliable storage without re-preservation within 1 year upon delivery. |                  |

### 7. TRAINING COURSE: OPERATION, MAINTENANCE AND REPAIR

|                                                                   | Contracting Authority's Requirements                                                                                                                                                                                                                                                                                                                                                               | Tenderer's Offer |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>TRAINING</b>                                                   |                                                                                                                                                                                                                                                                                                                                                                                                    |                  |
| <b>TRAINING COURSE</b>                                            |                                                                                                                                                                                                                                                                                                                                                                                                    |                  |
| Place of training (training room to be provided by the Recipient) | STE “Barrier”. Anoshkina Avenue 179B, Kamianske, Ukraine                                                                                                                                                                                                                                                                                                                                           |                  |
| Duration of training course                                       | 4 days                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| Language of training course                                       | In Ukrainian                                                                                                                                                                                                                                                                                                                                                                                       |                  |
| Number of trainees, up to                                         | 15 persons                                                                                                                                                                                                                                                                                                                                                                                         |                  |
| Themes to be covered                                              | <ul style="list-style-type: none"> <li>- Nature of ionizing radiation,</li> <li>- Interaction of ionizing radiation with matter,</li> <li>- Radioactive sources and nuclear materials to be detected using the radiation portal monitors,</li> <li>- Radiological contamination to be detected using the personnel contamination monitor,</li> <li>- Operating principles of operation,</li> </ul> |                  |

## Annex "Specifications"

|                                                                                                   |                                                                                                                                                                                                                                                                                                                                          |  |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                                                                                   | <ul style="list-style-type: none"> <li>- Detailed analysis of algorithms and features of operation,</li> <li>- Use of equipment,</li> <li>- Setting-up procedures,</li> <li>- Procedures of periodical checks,</li> <li>- Maintenance,</li> <li>- Minor repairs,</li> <li>- Specialized software: installation and operation.</li> </ul> |  |
| Theoretical part duration, no less than                                                           | 2 days                                                                                                                                                                                                                                                                                                                                   |  |
| Practical part duration, no less than                                                             | 2 days                                                                                                                                                                                                                                                                                                                                   |  |
| Instructional video                                                                               | Optional                                                                                                                                                                                                                                                                                                                                 |  |
| Verification                                                                                      | Test, written form                                                                                                                                                                                                                                                                                                                       |  |
| <b>TRAINING COURSE DOCUMENTATION</b>                                                              |                                                                                                                                                                                                                                                                                                                                          |  |
| One certificate per trainee                                                                       | In Ukrainian and/or English                                                                                                                                                                                                                                                                                                              |  |
| List of materials to provide per trainee                                                          | <ul style="list-style-type: none"> <li>- Set of training materials;</li> <li>- User's documentation;</li> <li>- Training materials on one USB drive.</li> </ul>                                                                                                                                                                          |  |
| Training materials language                                                                       | In Ukrainian                                                                                                                                                                                                                                                                                                                             |  |
| Results of test after training should be delivered to the Contracting Authority and the Recipient | Yes                                                                                                                                                                                                                                                                                                                                      |  |

## 8. WARRANTY AND POST-WARRANTY SERVICES

|                                                                                                 | <b>Contracting Authority's Requirements</b>                                                               | <b>Tenderer's Offer</b> |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------|
| <b>WARRANTY AND POST-WARRANTY SERVICES</b>                                                      |                                                                                                           |                         |
| Duration of warranty period                                                                     | ≥ 24 months                                                                                               |                         |
| Place of warranty repairs and maintenance                                                       | Ukraine                                                                                                   |                         |
| Presence of official representative of the manufacturer or authorised service centre in Ukraine | Yes                                                                                                       |                         |
| Technical support during warranty and post-warranty period                                      | - Technical support by email or telephone in Ukrainian /English to solve any technical problems (software |                         |

## Annex “Specifications”

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                     | <p>failure, anomalous behaviour, minor improvements concerning process, functional capabilities of data processing, etc.) and rectify any system-disabled state,</p> <ul style="list-style-type: none"> <li>- free-of-charge troubleshooting of software failure at the Recipient's site during the warranty period,</li> <li>- Consultancy support in relation to the metrological verification by email or telephone in Ukrainian/English.</li> </ul> |  |
| After-sales service | <p>Compulsory after-sales service to be provided under a separate agreement with the Recipient shall include the following:</p> <ul style="list-style-type: none"> <li>- Maintenance and post warranty repair of the equipment on the territory of the Recipient;</li> <li>- Rapid provision of spare parts and consumables.</li> </ul>                                                                                                                 |  |

### 9. TIME SCHEDULE

|   | Action                                                                                                                                                                                                                                                                                                                                 | Period of completion                                              | Tenderer's Offer |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------|
| 1 | <p>Submission of documents:</p> <ul style="list-style-type: none"> <li>- Terms of reference (TOR) for systems and software to be developed.</li> </ul>                                                                                                                                                                                 | Within 60 calendar days after the signing of Contract             |                  |
| 2 | <p>Submission of documents:</p> <ul style="list-style-type: none"> <li>- Design documentation for cables installation.</li> </ul>                                                                                                                                                                                                      | Within 120 calendar days after the signing of Contract            |                  |
| 3 | <p>Submission of documents:</p> <ul style="list-style-type: none"> <li>- Passports for technical means,</li> <li>- Operator's manual for technical means, including procedure for periodical checks,</li> <li>- Documents attesting certification of equipment,</li> <li>- Certificate of primary metrological verification</li> </ul> | 2 weeks before the scheduled shipment and supplied with equipment |                  |

## Annex “Specifications”

|   |                                                                                                                                                                                                                                            |                                                               |  |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--|
|   | (for personnel contamination monitor),<br>- Operator’s manual for application software, including installation guide,<br>- Software licenses,<br>- Transportation documentation.                                                           |                                                               |  |
| 4 | Submission of documents:<br>- Training programme,<br>- Training course documentation.                                                                                                                                                      | 3 weeks before the scheduled training                         |  |
| 5 | Submission of documents:<br>- Programme and procedure of factory acceptance tests;<br>- Programme and procedure of site acceptance tests.                                                                                                  | 3 weeks before the scheduled factory/on-site acceptance tests |  |
| 6 | Delivery                                                                                                                                                                                                                                   | Within 250 calendar days after the signing of Contract        |  |
| 7 | Turn-key installation and commissioning (including construction of concrete foundations, <b>restoration of road surfaces</b> , arrangement of cable lines, mounting, starting-up and adjustment of equipment, site-acceptance tests, etc.) | Within 270 calendar days after the signing of Contract        |  |
| 8 | Training of personnel                                                                                                                                                                                                                      | Within 290* calendar days after the signing of Contract       |  |

Note: \*) The personnel training must be carried out not later than 20\* calendar days after the installation and startup of equipment. The actual dates of training shall be confirmed by the Recipient and Contracting Authority no later than 10 days before the training course.

### Authorized person on behalf of the Tenderer:

Name: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_