



## Annex "Specifications"

	<b>Nordisk Sikkerhet AS (NS)</b>
	<b>Ref.: Avtale med Statens Strålevern nr. 742, 07/07/2015</b>
	<b>Project title: "RN Material Detection, Protection, and Dosimetry Equipment for Mukachyvskiy Border Detachment, SBGS"</b>

## Specifications

Supply of Mobile Automated Complex for  
the detection of radioactive and nuclear materials

**Contracting Authority:** Nordisk Sikkerhet AS

**Recipient:** Mukachyvskiy Border Detachment of SBGS

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



## **Annex “Specifications”**

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## Annex “Specifications”

### NOTE

The Tenderer shall fill in the Annex “Specifications” in the format given below. The Tenderer’s proposed supplies should be manufactured in accordance with the technical regulations and standards of Ukraine. 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. TECHNICAL SPECIFICATIONS

	Contracting Authority’s Requirements	Tenderer’s Offer
Manufacturer	—	
Model	—	
Scope of supply	1 complex	
<b>TECHNICAL SPECIFICATIONS</b>		
<b>VEHICLE</b>		
Type	Van	
Number of personnel including driver	≥5	
Front seat capacity	Driver + 2 passengers	
Sliding door	1	
Rear doors	2	
Length, m	≤ 6	
Drive	2x4	
Gearbox	Manual	
Gears	≥ 5	
Motor	Diesel	
Compartment for a car radio (car radio is not included in the scope of this contract)	Yes	
Colour	White	
Climate control system (air conditioner) and heater	Yes	
Service life, no less than	10 years	
<b>BUILT-IN HARDWARE AND SOFTWARE</b>		
Built-in radiation/nuclear detection system for automated screening of vehicles (cars, trucks) passing through the detection area	Yes	
Automated workplace of the radiation/nuclear detection system	On the base of industrial type PC having the following or better characteristics: - Intel Core 2 Duo 2,5 GHz; - RAM 2048 MB; - HD 500 GB; - DVD-RW; - Mouse.	

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Software for radiation/nuclear detection system and data processing	Yes, installed on PC	
System software for automated workplace	Yes, installed on PC	
Built-in video surveillance, including a built-in infrared illuminator	Yes	
Diesel power generator	Diesel generator shall provide off-line operation within at least 12 hours	
Service life, no less than	10 years	
<b>LABORATORY COMPARTMENT</b>		
Wall between the driver’s cabinet and the laboratory	Not required	
Wall between the laboratory and the rear compartment	Yes	
Safety belts at operator’s workplace	≥ 2	
Operators’ desk	Yes	
Cupboard and one rack with shelves to store and charge equipment and accessories, including fasteners to fix the instruments on the shelves and shock protection of the equipment	Yes	
Operation from external power supply	AC current, 220 ±10% V, 50±5 Hz	
<b>TECHNICAL COMPARTMENT EQUIPPED WITH RADIATION/NUCLEAR DETECTION SYSTEM</b>		
Detection channels	Gamma, neutron	
Gamma channel	Plastic scintillator	
Neutron channel	Alternatives to <sup>3</sup> He counters are an advantage	
Functions	<ul style="list-style-type: none"> <li>- Continuous detection of gamma and neutron sources in both modes: (i) during the motion of the mobile complex and (ii) during the stationary mode;</li> <li>- Video surveillance, imaging and recording of alarm-causing objects;</li> <li>- Natural gamma background suppression;</li> <li>- Audible and visual alarm at the operator’s workplace when thresholds are exceeded (different for neutron and gamma alarms);</li> <li>- Adjustable thresholds for alarm.</li> </ul>	
Detection zone, no less than	Vertical: 3.0 m Horizontal: 3.0 m	
<b>PERFORMANCE</b>		

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<i>Minimal identified activity of gamma source, no more than: (for the speed of <math>10 \pm 5\%</math> km/h, background dose rate <math>\leq 0.22 \mu\text{Sv/h}</math> and the width of detection zone of 3.0 m)</i>		
$^{133}\text{Ba}$	380 kBq	
$^{137}\text{Cs}$	420 kBq	
$^{60}\text{Co}$	230 kBq	
<i>Minimal identified neutron flux, no more than (for the speed of <math>10 \pm 5\%</math> km/h, background dose rate <math>\leq 0.22 \mu\text{Sv/h}</math> and the width of detection zone of 3.0 m)</i>		
$^{252}\text{Cf}$	$1.2 \cdot 10^4$ neutron/s	
<b>ENVIRONMENTAL REQUIREMENTS</b>		
Ambient temperatures	From -30 to +45 °C	
Relative humidity	Up to 95% at ambient temperature of 35°C and lower, without condensation of moisture	
<b>OTHER REQUIREMENTS</b>		
Certified for use in Ukraine and/or in other countries	Yes	
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. DOCUMENTATION

	Contracting Authority's Requirements	Tenderer's Offer
<b>DOCUMENTATION</b>		
Technical specifications	In English and Ukrainian	
Conceptual design of Mobile Automated Complex	In Ukrainian	
Programme and procedures of factory acceptance test	In English and Ukrainian	
Vehicle documentation	In Ukrainian	
Operator's manual, including procedure for periodical verification	In Ukrainian	
Passports/logbooks for technical means	In Ukrainian	
Certificate of conformity or equivalent document attesting certification in Ukraine and/or in other countries	In Ukrainian	
Certificate of primary metrological verification for gamma and neutron detectors	In Ukrainian	
Transportation documentation	In English and Ukrainian	

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### 3. 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	Mukachevo, Ukraine	
Delivery Time	≤ 150 calendar days after the date of contract signature	

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

	Contracting Authority's Requirements	Tenderer's Offer
<b>TRAINING</b>		
Training location (to be named by the Recipient)	Mukachyivskiy Border Detachment of SBGS, Ukraine	
Duration of training course	3 days	
Language of training course	Ukrainian	
Number of trainees, up to	5 persons	
Themes to be covered	<ul style="list-style-type: none"> <li>- The nature of gamma and neutron radiation. Radioactive sources and nuclear materials;</li> <li>- The interaction of radiation with matter;</li> <li>- Operating principles of radiation/nuclear detection complex and its units. Gamma / neutron detectors;</li> <li>- Detailed analysis of algorithms and features of operation;</li> <li>- Use of radiation/nuclear detection complex;</li> <li>- Maintenance;</li> <li>- Minor repairs;</li> <li>- Specialized software: installation and operation.</li> </ul>	
Theoretical part duration, no less than	15 hours	
Practical part duration, no less than	9 hours	
Instructional video	Optional	
Verification	Test, written form	
<b>TRAINING COURSE DOCUMENTATION</b>		
One certificate per trainee	In Ukrainian and 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 CD/DVD.</li> </ul>	
Training materials language	In Ukrainian	

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Theoretical part duration, no less than	15 hours	
Practical part duration, no less than	9 hours	
Instructional video	Optional	
Verification	Test, written form	
Results of test after training should be delivered to the Contracting Authority and Recipient	Yes	

### 5. WARRANTY AND POST-WARRANTY SERVICES

	Contracting Authority's Requirements	Tenderer's Offer
<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	

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Technical support during warranty and post-warranty period	Technical support by email or telephone in Ukrainian/English to solve any technical problems (software failure, anomalous behavior, minor improvements concerning process, functional capabilities of data processing, etc.) and rectify any system-disabled state	
After-sales service	Compulsory after-sales service to be provided under a separate agreement with the Recipient shall include the following: - Maintenance and post warranty repair of the Equipment on the territory of Ukraine; - Rapid provision of spare parts and consumables.	

### 6. TIME SCHEDULE

No.	Action	Period of completion	Tenderer's Offer
1.	Submission of documents: - Equipment specifications, - Conceptual design.	Within 45 calendar days after the signing of Contract	
2.	Submission of documents: - Programme and procedures of factory acceptance test.	2 weeks before factory acceptance tests	
3.	Submission of documents: - Operator's manual, including procedure for periodical verification, - Vehicle documents, passports/logbooks for technical means, - Certificate of conformity or equivalent document attesting certification in Ukraine and/or in other countries, - Transportation documentation.	2 weeks before the scheduled shipment and supplied with equipment	
4.	Equipment delivery	Within 150 calendar days after the signing of Contract	
5.	Training of personnel	Within 150 calendar days after the signing of Contract	

**Authorized person on behalf of the Tenderer:**

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_