



Annex “Specifications”

	Nordisk Sikkerhet AS
	Tender title: Multifunctional survey meters for the detection of RN materials
	Project title: “Post-detection equipment and training for Lisichansk unit of Luhansk border detachment, SBGS, Ukraine”

Specifications

Supply of multifunctional survey meters for the detection of radioactive and nuclear materials (dosimeter-radiometer)

Contracting Authority: Nordisk Sikkerhet AS

Recipient: Lisichansk unit of Luhansk border detachment of SBGS

Tenderer's name: _____

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NOTE

The Tenderer shall fill in the Annex “Specifications” in the format given below. The Tenderer’s proposed supplies should be manufactured and certified in accordance with the technical regulations and standards of Ukraine and/or EU 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. MULTIFUNCTIONAL SURVEY METER FOR THE DETECTION OF RADIOACTIVE AND NUCLEAR MATERIALS

	Contracting Authority’s Requirements	Tenderer’s Offer
Manufacturer	—	
Model	—	
Scope of supply	10 sets	
TECHNICAL SPECIFICATIONS		
Type	Handheld device	
Detection channels	Alpha, Beta, Gamma	
Detectors	Replaceable detectors attached to the carrying handle/telescopic arm	
Functions	Search, localization and evaluation of RN materials: - Measurement of ambient dose equivalent and ambient dose equivalent rate $H^*(10)$ (alternatively, personal dose equivalent and personal dose equivalent rate $H_p(10)$); - Measurement of flux density and surface activity of alpha and beta emitters; - Natural and intrinsic background suppression; - Indication of measured values on the LCD display; - Audible signalling of each registered particle in the search mode; - Audible and visual alarm when thresholds are exceeded; - Adjustable thresholds for alarm; - Recording the measurements in the non-volatile memory.	

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Equipment	The survey meter shall be equipped with the following: <ul style="list-style-type: none"> - set of radiation detectors, - data display and processing unit, - telescopic arm (of 1 m long or more), - rechargeable battery, - battery charger, - set of cables, - carrying case. 	
GAMMA MEASUREMENTS		
Energy range of detected gamma radiation	From 60 keV to 3 MeV or better	
Measurement range of ambient dose equivalent $H^*(10)$ (alternatively, personal dose equivalent $H_p(10)$)	From 0.1 μ Sv to 10 Sv or better	
Measurement range of ambient dose equivalent rate $H^*(10)$ (alternatively, personal dose equivalent rate $H_p(10)$)	From 0.1 μ Sv/h to 2 Sv/h or better	
Uncertainty of measuring ambient dose equivalent rate $H^*(10)$ when calibrated for ^{137}Cs , no more than	$\pm 35\%$	
ALPHA MEASUREMENTS		
Energy range of detected alpha radiation	From 4 MeV to 7 MeV or better	
Measurement range of alpha flux density	From 10 to $1 \cdot 10^5$ part./ (cm^2min) or better	
Relative measurement error, no more than	$\pm 20\%$	
BETA MEASUREMENTS		
Energy range of detected beta radiation	From 155 keV to 3 MeV or better	
Measurement range of beta flux density	From 10 to $1 \cdot 10^5$ part./ (cm^2min) or better	
Relative measurement error, no more than	$\pm 20\%$	
PERFORMANCE		
Setup time of operating mode, no more than	2 min	
Minimum measurement time, no more than	2 sec	
Alarm indication	Visual and audible alarms when thresholds are exceeded. Haptic alarm is an advantage.	

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Power supply	From integrated rechargeable battery	
Time of continuous operation at gamma background (not more than 0.5µSv/h) under non-alarm conditions, no less than	8 hours	
Weight	Smaller weight of components (less than 0.7 kg) is an advantage.	
Physical dimensions	Compact, portable, suitable for handheld use. Comfortable carrying handle and attachment to clothing is an advantage.	
Shockproof	Yes	
Waterproof	Protection grade of main components: - IP 5X or better - for gamma radiation detectors, - IP 2X or better - for alpha and beta radiation detectors.	
Mean time between failures, no less than	4000 hours	
Service life, no less than	6 years	
ENVIRONMENTAL REQUIREMENTS		
Ambient temperatures	From -20 to +45 °C	
Relative humidity	Up to 95% at ambient temperature of 35°C and lower, without condensation of moisture	
PRESERVATION AND PACKAGING		
Packaging	Protection for transportation, handling and reliable storage without re-preservation within 1 year upon delivery.	
OTHER REQUIREMENTS		
Certified for use	Yes. Certification of equipment in Ukraine and/or in EU countries in accordance with the Ukrainian Legislation in force	
Primary metrological verification	Yes, in Ukraine	
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	

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	the Government of Norway” in Ukrainian and in English.	
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2. DOCUMENTATION

	Contracting Authority's Requirements	Tenderer's Offer
DOCUMENTATION		
Technical specifications/ conditions	In Ukrainian	
Operator's manual	In Ukrainian	
Passports for technical means	In Ukrainian	
Documents attesting certification of equipment in Ukraine and/or in EU countries	In Ukrainian and English	
Declaration of compliance as per Technical Regulations on “Legally regulated measuring means”	In Ukrainian and English	
Certificate of primary metrological verification	In Ukrainian	
Training documentation	In Ukrainian	
Transportation documentation	In Ukrainian and English	

3. DELIVERY TERMS AND CONDITIONS

	Contracting Authority's Requirements	Tenderer's Offer
DELIVERY TERMS AND CONDITIONS		
Terms of Delivery	DDP, Incoterms 2010	
Place of Delivery	Pr. Peremohy 58, 93120, Lisichansk, Luhansk region, Ukraine	
Delivery Time	≤ 120 calendar days after the date of contract signature	

4. TRAINING COURSE: OPERATION, MAINTENANCE AND REPAIR

	Contracting Authority's Requirements	Tenderer's Offer
Place of training (training room to be provided by the Recipient)	Lisichansk unit of Luhansk border detachment of SBGS: Pr. Peremohy 58, 93120, Lisichansk, Luhansk region, Ukraine	
Duration of training course	2 days	
Language of training course	Ukrainian	

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Number of trainees, up to	30 persons	
Themes to be covered	<ul style="list-style-type: none"> - Nature of ionizing radiation, - Interaction of ionizing radiation with matter, - Radioactive sources and nuclear materials to be detected using the survey meter, - Operating principles of measuring instruments, - Detailed analysis of algorithms and features of operation, - Use of measuring instrument, - Setting-up procedures, - Procedures of calibration and measurements, - Maintenance, - Minor repairs. 	
Theoretical part duration, no less than	1 day	
Practical part duration, no less than	1 day: practical training at Recipient’s training room	
Instructional video	Optional	
Verification	Test, written form	
TRAINING COURSE DOCUMENTATION		
One certificate per trainee	In Ukrainian and English	
List of materials to provide per trainee	<ul style="list-style-type: none"> - Set of training materials; - User’s documentation; - Training materials on one CD/DVD. 	
Training materials language	In Ukrainian	
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
WARRANTY AND POST-WARRANTY SERVICES		
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	<ul style="list-style-type: none"> - Technical support by email or telephone in Ukrainian/English to solve any technical problems (software failure, anomalous behaviour, minor improvements concerning process, functional capabilities of data processing, etc.) and rectify any system-disabled state; - Consultancy support in relation to the annual metrological verification by email or telephone in Ukrainian/English. 	
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"> - 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: <ul style="list-style-type: none"> - Technical specifications/conditions. 	Within 45 calendar days after the signing of Contract	
2.	Submission of documents: <ul style="list-style-type: none"> - Operator's manual, - Passports/logbooks for technical means, - Documents attesting certification of equipment in Ukraine and/or in EU countries, - Declaration of compliance as per Technical Regulations on “Legally regulated measuring means”, - Certificate of primary metrological verification, - Transportation documentation. 	2 weeks before the scheduled shipment and supplied with equipment	
3.	Submission of documents: <ul style="list-style-type: none"> - Training course documentation. 	2 weeks before the scheduled training	
4.	Equipment delivery	Within 120 calendar days after the signing of Contract	
5.	Training of personnel	Within 120* calendar days after the signing of Contract	

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

Authorized person on behalf of the Tenderer:

Name: _____

Title: _____

Signature: _____

Date: _____