



وزارة الطاقة والثروة المعدنية

عطاء رقم (9/ع/لوازم/2026)

شراء معدات الحفر الجيولوجية الخاصة بالميدان

2026

Terms of reference TOR

**Supply and Delivery of Geological Field Measurement Tools,
Handheld GNSS Positioning Equipment, Portable Radiation
Detectors, and Rugged Field Tablets (In four Independent
Packages/Lots)**

Tender No: 2026/ع/لوازم/9

Ministry of Energy and Mineral Resources MEMR

الشروط الخاصة لعطاء رقـم (9/ع/لوازم/2026)

1. يعتبر تقديم عرض المناقص بأنه مطلع ومتفهم وملتزم بجميع مواد وتعليمات نظام المشتريات الحكومية رقم (8) لسنة 2022 وتعليمات تنظيم إجراءات المشتريات الحكومية لسنة 2022 والوثيقة القياسية لشراء اللوازم لسنة 2024 و وثائق دعوة العطاء.
2. يرفق بالعرض تأمين للدخول في العطاء على شكل كفالة بنكية صادرة عن بنك محلي بقيمة (2000) دينار وسوف لن ينظر في أي عرض غير معزز بالتأمين المطلوب مذكور فيه اسم ورقم العطاء وخلافا لذلك سيتم استبعاد العرض المقدم .
3. يلتزم المناقص أن يبقى العرض المقدم منه نافذ المفعول لمدة لا تقل عن (120) يوماً من التاريخ المحدد كأخر موعد لتقديم العروض، وأن تكون مدة سريان الكفالة تغطي مدة سريان العرض وبخلاف ذلك للجنة الشراء الخاصة /لوازم الحق في استبعاد العرض المقدم .
4. يعتبر صدور قرار الإحالة المبدئي وإشعار المناقص به ملزماً له.
5. يجب أن تكون المواصفات الواردة في عرض المناقص واضحة ومبوبة بشكل جيد مع بيان السعر الافراي والإجمالي وفترة التسليم وبلد المنشأ والاسم التجاري والطرز (MODEL) واسم الشركة الصانعة وارفاف الكتالوجات مع العروض حسب متطلبات الحزم المدرجة في وثيقة العطاء .
6. يجب ان يكون المتعهد وكيل او موزع معتمد حسب متطلبات الحزم المدرجة في وثيقة العطاء .
7. يجب أن يكون المناقص من ذوي الاختصاص وإرفاق صورة عن رخصة المهن سارية المفعول والسجل التجاري وتبين وبشكل واضح عنوانها الدائم (الموقع البريد الالكتروني/ الهاتف/ الفاكس...) ومشارك بنظام الفوترة الالكتروني .
8. تقدم الأسعار بالدينار الأردني، بحيث تكون الأسعار شاملة التوريد والتشغيل والرسوم الجمركية والضريبة العامة على المبيعات والرسوم والضرائب الأخرى وأية عوائد حكومية أو غير حكومية.
9. يلتزم المتعهد بدفع رسوم الطوابع المستحقة بعد تبلغ قرار الإحالة و قبل توقيع أمر الشراء .
10. يلتزم المتعهد بتقديم تأمين حسن تنفيذ على شكل كفالة بنكية أو شيك مصدق صادرة / صادر عن بنك محلي بنسبة (10%) من قيمة اللوازم المحالة عليه بعد تبلغ قرار الإحالة و قبل توقيع أمر الشراء.
11. يلتزم المتعهد بان تكون اللوازم المورددة جديدة (100%) اصلية وخالية من أي عيوب في الصنع أو في المادة ومن طراز حديث .
12. يلتزم المتعهد بتقديم تعهد عدلي لسوء المصنعية وختمه حسب الاصول حال الاحالة بما قيمته 115% من قيمة اللوازم المحالة ووفق النموذج المرفق وحسب متطلبات الحزم الواردة في وثيقة العطاء .
13. يلتزم المتعهد بتقديم تأمين صيانة بنسبة لا تقل عن (5%) من قيمة اللوازم المحالة عليه حسب المدة المدرجة في الشروط الخاصة لكل حزمة في وثيقة العطاء من تاريخ الاستلام النهائي.
14. يلتزم المتعهد بالصيانة المجانية حسب المدة المدرجة في الشروط الخاصة لكل حزمة في وثيقة العطاء.
15. يلتزم المتعهد بتقديم جميع الضمانات باسم معالي وزير الطاقة والثروة المعدنية بالإضافة لوظيفته وتثبيت اسمه ورقم العطاء مع بيان نوع التأمين.
16. توريد اللوازم خلال 120 يوم تقويمي من تاريخ توقيع أمر الشراء أو الاتفاقية .

17. تفرض غرامات التأخير وفقاً لنظام المشتريات الحكومية رقم 8 لسنة 2022 عن كل يوم تأخير وبما لا يزيد عن (15%) من قيمة الاحالة.
18. يتم دفع ثمن اللوازم بعد التوريد والتشغيل و التدريب (حسب متطلبات الحزم الواردة في الشروط الخاصة) وتقديم مطالبة مالية والاستلام النهائي .
19. في حالة تقصير المتعهد أو عدم إيفائه بالالتزامات المترتبة عليه بموجب قرار الإحالة يحق للجنة الشراء الخاصة /لوازم مصادرة تأمين حسن التنفيذ كلياً أو جزئياً والشراء على حسابه وتحمله فروق الأسعار بالإضافة الى ما ورد في البند (17).
20. يحق للجنة الشراء الخاصة / لوازم إهمال أي عرض مخالفاً للشروط و/ أو المواصفات الواردة بدعوة العطاء .
21. يحق للجنة الشراء الخاصة / لوازم الغاء دعوة العطاء أو أي بند من بنوده أو قرار الاحالة أو اعادة الطرح في أي وقت أو أي مرحلة دون بيان الاسباب ما لم يكن المتعهد قد تبلغ امر الشراء وقرار الاحالة.
22. يحق للجنة الشراء الخاصة / لوازم زيادة أو انقاص الكميات المطلوبة قبل الاحالة دون الرجوع الى المناقص أو بعد الاحالة بموافقة المتعهد الخطية.
23. تطبق أحكام نظام المشتريات الحكومية رقم (8) لسنة 2022 وتعليمات تنظيم اجراءات المشتريات لسنة 2022 والوثيقة القياسية لشراء اللوازم لسنة 2024 والشروط العامة والخاصة وتكون ملزمة للمناقصين.
24. يجب ختم وتوقيع كافة وثائق العرض (فني ومالي) وخلافاً لذلك يتم استبعاد العرض المقدم.
25. الالتزام بالشروط الخاصة الواردة في وثيقة العطاء .
26. يقدم العرض الفني والمالي موقعة ومختومة وكفاله دخول العطاء ضمن مغلف واحد مكتوب عليه اسم ورقم العطاء واسم المناقص.
27. يحق للجنة الشراء الخاصة / لوازم تجزئة العطاء على اكثر من مناقص.

Terms of reference (TOR)

For Package No.1 – Manual Geological & Field

Measurement Tools

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2. Objective
3. Scope of Work
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5. Tender condition
6. Specific Technical & Quality Requirements



1. Background

In line with the strategy of the Ministry of Energy and Mineral Resources (MEMR) to enhance field geological survey, rock sampling, and mineral exploration operations, MEMR intends to procure professional manual geological field tools.

These foundational tools are critical for daily field operations including rock outcrop sampling, mineral identification, and field note recording under variable weather conditions, micro-structural observation, and geological mapping.

2. Objectives

The objective of this tender is to supply professional geological field equipment in accordance with the technical specifications, quantities set out in this Terms of Reference.

3. Scope of Supply

The scope of work under this tender covers the complete supply, factory inspection, delivery, physical verification, and dynamic testing for the following package:

- **Package No.1: Geological Tools (Manual Geological Equipment – 8 Items / Total Quantity: 185 Units)**

- **Scope of Supply and Associated Deliverables Includes:**

1. **Physical Equipment Delivery:** Supply and delivery of all 8 item categories in their specified quantities to the Ministry of Energy and Mineral Resources (MEMR) Main Warehouses in Amman.
2. **Quality & Material Verification:** Inspection of material structural integrity, surface finishing, and compliance with high-grade steel forging standards (specifically for rock hammers and scribes) upon delivery.
3. **Optical & Precision Verification:** Factory/warehouse testing of hand lenses (30X triplet optics) and pocket microscopes (100X magnification) to ensure edge-to-edge optical clarity without chromatic distortion.
4. **Calibration & Functionality Testing:** Zero-point calibration verification for digital scales (5 kg / 0.1 g precision) and digital clinometers (0.1° accuracy) prior to official warehouse sign-off.

5. **Documentation & Technical Catalogues:** Provision of physical and digital original manufacturer datasheets, operation leaflets, and compliance certificates for tested electronic/precision components.
6. **Warranty & Defect Support:** Provision of a 1-year comprehensive warranty against manufacturing defects from the date of final acceptance sign-off, with direct replacement of defective items.



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4. Technical Specifications and Quantities

Strict compliance with the technical specifications set forth in the table below is required. Furthermore, please indicate whether or not the **eight (8) geological items**, featuring specific requirements for each and **totaling 185 units**, are fully complied with.

Geological Tools (185 Units):

No	Item	Quantity	Technical specification	Compliance	Non Compliance
1	Professional Geological Rock Hammer	25	- High-grade forged tool steel rock hammer, weight 22 – 24 Oz (approx. 600 – 700 g), hardened steel head with sharp pointed rock-pick tip, heavy-duty shock-reduction vinyl/rubber grip molded onto the forged steel body. Includes: protective belt holster and Individual heavy-duty leather sheath or holster.		
2	Geological Hand Lens	25	- Professional high-resolution geological triplet hand lens, 30X magnification, achromatic and aplanatic optical glass lens system with anti-scratch coating, durable metal/stainless steel folding housing with lanyard loop. Includes: Protective leather/pouch case with lanyard.		
3	Professional Geological Compass	25	- Precision geological compass (Brunton-type precision), accuracy $\pm 1^\circ$ or better, integrated adjustable clinometer, solid aluminum/alloy non-magnetic protective housing, adjustable declination, needle lock mechanism, and liquid-damped/induction-damped movement. Includes: Shock-resistant padded field pouch with belt loop.		
4	Digital Clinometer	25	Compact electronic digital clinometer/inclinometer, accuracy $\pm 0.1^\circ$ with high-resolution LCD/LED display, multi-		

No	Item	Quantity	Technical specification	Compliance	Non Compliance
			unit reading (degrees, slope %), holding/freeze measurement function, • Includes: rugged dust and water-resistant protective carrying casing.		
5	Portable Digital Precision Scale	10	• Heavy-duty portable field digital balance, maximum capacity 5 kg, high precision/accuracy 0.1 g, stainless steel weighing platform, backlit LCD display, tare function, powered by rechargeable/standard batteries, and auto shut-off. • Includes: Foam-lined hard-shell protective field travel case.		
6	Complete Mohs Hardness Testing Kit	25	• Comprehensive mineral Mohs hardness testing set, containing numbered hardness picks (typically levels 2 to 9/10 with standard mineral specimens or tipped styluses), streak plate (porcelain), magnet, and pocket scratcher. • Includes: Organized hard-shell protective storage carrying box.		
7	Pocket Precision Field Microscope (100x)	25	• Ultra-portable handheld field microscope, fixed/adjustable 100x magnification, high-resolution optical system providing clear field of view, transparent protective tip for ambient light specimen illumination, compact dimensions (Max. 15 mm diameter × 127 mm length), ultra-lightweight (Max. 20 g). • Includes: Protective rigid travel sleeve/case.		
8	Pocket Mineral Scribe	25	• Heavy-duty pocket scribe with hardened steel/tungsten carbide tip, durable pen-style metal casing with pocket clip, designed for field scratch-hardness testing on mineral specimens and rock faces.		

5. Tender Conditions

1. The bidder shall be an authorized representative or agent of the manufacturer within Jordan, with proof of this provided, and must have a qualified maintenance team.
2. All equipment and devices must be new, unused, and of recent manufacture (2026 or newer).
3. The contractor shall provide a warranty against manufacturing defects for a period of one (1) year from the date of final acceptance. This condition applies to **all Items**
4. In case of any manufacturing defect during the free maintenance period, the equipment shall be replaced directly, and repair shall not be accepted, this condition applies to **all items**.
5. The free maintenance shall cover a period of not less than one (1) year and shall include all faults, spare parts, consumables, and all maintenance works at no additional cost, this condition applies to **item 4 and 5**.
6. The contractor shall provide a comprehensive maintenance warranty for a period of five (5) years commencing from the date of completion of the free maintenance period. This shall include ensuring the availability of spare parts and technical support for the equipment. Furthermore, the contractor shall submit a list of primary spare parts along with their prices, commit to these prices for the specified duration, and provide a clear mechanism for subsequent price adjustments. This condition applies strictly to Items 4 and 5.
7. All associated software (if any) must be licensed permanently under the name of the Ministry of Energy and Mineral Resources.
8. The bidder shall provide operation and maintenance manuals in both electronic and hard copy formats.
9. The place of delivery shall be the Ministry of Energy and Mineral Resources – Main Warehouses.
10. The price shall include all costs including equipment, software, taxes, and fees.
11. The delivery period shall not exceed (120) calendar days from the date of award.

6. Specific Technical & Quality Requirements

1. Material Integrity & Impact Safety:

Rock hammers must be manufactured from a single continuous piece of forged tool steel to prevent head-detachment hazards during heavy rock sampling. Cast or welded hammers will be strictly rejected.

2. Optical Standard Verification:

Hand lenses must feature true optical glass triplet lenses (achromatic/aplanatic) that eliminate chromatic aberration and distortion around outer edges during mineral specimen examination.

3. Visual Inspection & Quality Verification:

Final acceptance for all items will be conducted at MEMR Main Warehouses through physical inspection to confirm material compliance, structural integrity, and defect-free manufacturing of all delivered items prior to sign-off.

4. Bulk Shipment & Protection Standards:

- All items must be packed in heavy-duty, moisture-resistant master cartons labeled clearly with MEMR tender details, package numbers, item names, and quantities.
- Optical components (hand lenses, microscopes) must include desiccant silica gel packets inside their individual packaging to prevent internal fogging or fungal growth during warehouse storage.



Terms of reference (TOR)

For Package No.2 – Navigation & Positioning

Equipment (Professional Handheld GNSS)

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1. Background

In line with the strategy of the Ministry of Energy and Mineral Resources (MEMR) to support geological fieldwork and enhance the technical capacity of field exploration teams, MEMR intends to procure professional handheld GNSS/GPS positioning devices.

These rugged handheld devices are critical for field navigation, accurate geological mapping, outcrop and sample location tagging, boundary surveying, and real-time spatial data integration under demanding desert and mountainous environments.

2. Objectives

The objective of this tender is to supply professional geological field equipment in accordance with the technical specifications, quantities set out in this Terms of Reference.

3. Scope of Supply

The scope of work under this tender is dedicated to the supply, delivery, and configuration, dynamic field acceptance testing, and training for the following package:

- **Package No.2: Navigation and Positioning Equipment (Professional Handheld GNSS - Quantity: 25 units)**

- **Scope of Services includes:**

1. Supply and delivery of 25 professional handheld GNSS units with all standard field accessories to MEMR Main Warehouses in Amman.
2. Pre-installation and permanent licensing of field spatial data collection and mapping software.
3. Factory configuration and testing of multi-constellation signal reception and RTK/SBAS differential correction protocols.
4. Conducting dynamic field acceptance testing and spatial synchronization with MEMR GIS databases prior to final sign-off.



5. Provision of operation and maintenance manuals (hard and soft copies) and a five (5) day comprehensive practical field-training program for five (5) MEMR geologists at a field site designated by MEMR.

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4. Technical Specifications and Quantities

Strict compliance with the technical specifications set forth in the table below is required. Furthermore, please indicate whether or not the **four (4) technical specifications** for the Professional Handheld GNSS Unit (**Quantity: 25 Units**) are fully met.

Professional Handheld GNSS Unit (Quantity: 25 Units)

Item No.	Category	Technical Specifications	Compliance	Non Compliance
1.	GNSS Engine & Accuracy	- Receiver Engine :High-sensitivity Dual/Multi-Frequency GNSS Engine (Multi-Band supporting L1/L2 or L1/L2/L5 signals). - Constellation Tracking :Simultaneous multi-constellation signal tracking: GPS, GLONASS, Galileo, and BeiDou (NavIC support optional). - Positioning Accuracy :Real-time sub-meter accuracy (< 1.0 m RMS) under challenging operational environments (e.g., deep canyons, dense cover, and rugged field terrain). - Differential Corrections :Native support for real-time differential corrections via SBAS, NTRIP (via internal cellular/Wi-Fi), and RTK capability (via internal or external correction sources).		
2.	Display & Screen Interface	- Screen Size: Minimum 5.0-inch high-definition touch display. - Outdoor Readability: Sunlight-readable Transflective/Anti-Glare technology (Min. 800 nits brightness). - Protective Glass: High-durability scratch-resistant and impact-resistant glass. - Multi-touch interface fully operable with wet fingers or heavy-duty field gloves.		
3.	Processing, OS & Connectivity	High-performance Multi-Core Processor with dedicated GNSS co-processor.		

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Item No.	Category	Technical Specifications	Compliance	Non Compliance
		• Open OS supporting full desktop-grade field GIS, CAD, and remote survey applications. • Memory & Fast Storage: min. 8 GB RAM with 128 GB storage expandable via high-speed Micro-SDXC up to one (1) TB. • Pre-installed Software: Supplied pre-installed, fully configured, and activated with genuine, original field GIS software under a standalone perpetual (lifetime) license. Seamlessly compatible with ESRI ArcGIS suite (ArcGIS Field Maps, Survey123, ArcGIS Pro) and QGIS. • Data Formats & Native Export: Native support and direct spatial data export for ESRI Shapefile (.shp), File Geodatabase (.gdb), GeoTIFF, DXF/DWG, Point Cloud (LAS/LAZ), CSV, and KML/KMZ. • Advanced Wireless & Cellular Connectivity: Integrated Dual-Band Wi-Fi 6 / 6E (802.11ax), Bluetooth v5.2 / v5.3 (Class 1.5), and built-in global 5G Sub-6 GHz / Multi-band 4G LTE-Advanced Cellular module (supporting Dual SIM / eSIM) for ultra-low latency real-time NTRIP / RTK differential correction streaming and instant field-to-cloud synchronization.		
4.	Imaging & Smart Data Capture	• Integrated Rear Camera: Minimum 13 MP with Auto-Focus and LED Flash. • Automatic Geotagging: Links photos directly with precise coordinates, elevation, timestamp, and heading direction.		
5.	Ruggedness & Battery System	• Military Standard Compliance: MIL-STD-810H certified for shock, drop (1.2m to 1.5m), vibration, and thermal extremes. • Ingress Protection: IP68 rated (Dust-tight and continuous water immersion). • Battery System: High-capacity rechargeable Li-Ion battery system		

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Item No.	Category	Technical Specifications	Compliance	Non Compliance
		supporting Hot-Swappable operation, delivering a continuous operational runtime of at least 10 – 12 hours under active field conditions. Includes: one (1) primary battery pre-installed, plus one (1) additional spare high-capacity battery per device, along with an AC wall charger and a heavy-duty 12V DC vehicle field charger.		
6.	Included Field Accessories	Heavy-duty hand strap, lanyard/belt clip, screen protector, AC power adapter, 12V vehicle charging adapter, and USB-C data communication cables.		

5. Tender Conditions

1. The bidder shall be an authorized representative or agent of the manufacturer within Jordan, with proof of this provided, and must have a qualified maintenance team.
2. All equipment and devices must be new, unused, and of recent manufacture (2026 or newer).
3. The contractor shall provide a warranty against manufacturing defects for a period of one (1) year from the date of final acceptance.
4. In case of any manufacturing defect during the free maintenance period, the equipment shall be replaced directly, and repair shall not be accepted.
5. The free maintenance shall cover a period of not less than three (3) years and shall include all faults, spare parts, consumables, and all maintenance works at no additional cost.
6. The contractor shall provide a comprehensive maintenance warranty for a period of five (5) years commencing from the date of completion of the free maintenance period. This shall include ensuring the availability of spare parts and technical support for the equipment. Furthermore, the contractor shall submit a list of primary spare parts along with their prices, commit to these prices for the specified duration, and provide a clear mechanism for subsequent price adjustments.
7. All associated software must be licensed permanently with no annual subscription fees under the name of the Ministry of Energy and Mineral Resources.
8. The bidder shall provide operation and maintenance manuals in both electronic and hard copy formats.
9. The bidder shall commit to providing a comprehensive technical training after the delivery period, covering operation and working procedures in accordance with the Ministry's requirements for five (5) staff for five working days, at the field work site upon which final acceptance shall be based without any additional cost to the Ministry of Energy and Mineral Resources.

10. The place of delivery shall be the Ministry of Energy and Mineral Resources – Main Warehouses.
11. The price shall include all costs including equipment, software, training, taxes, and fees.
12. The delivery period shall not exceed one hundred and twenty (120) days from the date of award.

6. Specific Technical & Field Performance Requirements

1. Geodetic Coordinate Systems & Datum Support:

The software and GNSS engine must natively support local Jordanian Coordinate Systems (JTM - Jordan Transverse Mercator and Palestine Belt / Cassini) as well as global systems (WGS84, UTM), with user-customizable ellipsoid and projection parameters.

2. NTRIP / Differential Correction Capability:

The handheld units must be natively capable of receiving real-time differential corrections via NTRIP protocol over cellular network (4G LTE/5G) to achieve sub-meter to decimeter positional accuracy without needing post-processing.

3. Offline Field Mapping, Software Interoperability & Perpetual Licensing:

- The devices must come **pre-installed, pre-configured**, fully activated, and licensed with genuine field GIS software under a **standalone perpetual (lifetime) license** - with **no recurring or annual subscription or maintenance fees** - registered officially under the name of the **Ministry of Energy and Mineral Resources (MEMR)**.
- The software must deliver **100% full offline functionality** without cellular coverage or internet connectivity, enabling direct field creation, editing, and export of spatial data. It must support importing offline raster base maps (e.g., GeoTIFF, Satellite Imagery, Topographic maps) and vector layers, and guarantee full operational compatibility with industry-standard GIS applications, specifically including the **ESRI ArcGIS suite (ArcGIS Field Maps, Survey123, and ArcGIS Pro)**.



4. Multi-Device Data Exchange Consistency:

The contractor must guarantee that data collected across all 25 units is fully standardized in structure and attribute fields, enabling single-click batch import into MEMR's enterprise GIS system.

5. Field Verification & Dynamic Acceptance Test:

Final acceptance is subject to a field test on established survey benchmarks designated by MEMR to verify:

- Real-time horizontal and vertical accuracy under open sky and obstructed canopy conditions.
- Instant camera geotagging accuracy and image orientation mapping.
- Export compatibility of Shapefiles and CSV data into MEMR GIS servers.



Terms of reference (TOR)

For Package No. 3 – Rock & Mineral Analysis Tools

(Handheld Gamma Radiation Detectors)

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1. Background

In line with the Ministry of Energy and Mineral Resources (MEMR) strategy to strengthen geological exploration, mineral assessment, and radiological field survey capabilities, MEMR intends to procure high-precision handheld Gamma Radiation Detectors / Spectrometers.

These instruments are essential for field detection, mineral exploration (including uranium and thorium potential evaluation), natural background radiation mapping, lithological correlation, and environmental radiological monitoring under demanding desert and mountainous field conditions.

2. Objectives

The objective of this tender is to supply professional geological field equipment in accordance with the technical specifications, quantities set out in this Terms of Reference.

3. Scope of Supply

The scope of work under this tender is focused on the supply, delivery, and setup, dynamic field acceptance testing, and training for the following item:

- **Package No. 3: Rock and Mineral Analysis Tools (Gamma Radiation Detectors - Quantity: 5 units)**
 - **Scope of Services includes:**
 1. Supply and delivery of 5 high-precision handheld Gamma Radiation Detectors / Spectrometers complete with all field accessories to MEMR Main Warehouses in Amman.
 2. Pre-installation and permanent licensing of desktop/mobile analysis and mapping software.
 3. Provision of factory calibration certificates (**TRACEABLE TO IAEA / INTERNATIONAL RADIOLOGICAL STANDARDS**).
 4. Conducting dynamic field acceptance testing and integration with MEMR GIS spatial databases prior to final sign-off.

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5. Provision of operation manuals (hard and soft copies) and a 5-day comprehensive practical field training program for 5 MEMR geologists at a field site designated by MEMR.

○ **Bidding & Submission Rules:**

1. **Vendor-Neutral Compliance:** Bidders must offer devices that fully meet or exceed the technical criteria specified in Section 4. Equivalent or superior industrial solutions will be accepted.
2. **Completeness of Offer:** Bidders must submit a complete proposal covering the required units, accessories, software licenses, warranty terms, and field training as detailed in the technical specifications and special conditions. Partial submissions will be rejected.

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4. Technical Specifications and Quantities:

Strict compliance with the technical specifications set forth in the table below is required. Furthermore, please indicate whether or not the **nine (9) technical specifications** for the **Handheld Precision Gamma Radiation Detector / Spectrometer (Quantity: 5 Units)** are fully met.

Handheld Precision Gamma Radiation Detector / Spectrometer (Quantity: 5 Units)

Item No.	Category	Technical Specifications	Compliance	Non Compliance
1.	Detector Type & Crystal	• High-density, high-sensitivity digital Scintillation Detector crystal using either: • Sodium Iodide NaI(Tl): Minimum volume of at least 4.0 to 6.0 cu. in. (65 to 100 cc), OR • Bismuth Germanate (BGO): Minimum volume of at least 2.0 to 3.0 cu. in. (30 to 50 cc). • An equivalent high-resolution digital scintillation technology delivering equivalent field count rates and energy resolution $\leq 8.5\%$ at 662 keV (Cs-137).		
2.	Measurement Modes & Capabilities	• Total Count Rate Mode: Real-time counts per second (CPS) or dose rate ($\mu\text{Sv/h}$, nGy/h). • Assay / Spectrometry Mode: Direct assay measurement displaying element concentrations: Potassium (% K), Uranium (ppm eU), and Thorium (ppm eTh). • Automatic gain stabilization (Calibration-free field operation without needing radioactive sources).		
3.	Energy Range & Channels	• Energy Range: Minimum 30 keV to 3.0 MeV. • Multi-Channel Analyzer (MCA): Minimum 1024 channels (or higher) for accurate energy spectrum resolution.		
4.	Display & User Interface	• High-contrast, sunlight-readable graphic color display (Anti-glare, IP65/67 protection).		

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Item No.	Category	Technical Specifications	Compliance	Non Compliance
		One-button field operation with audio alert / threshold alarm settings for anomalous radiation zones.		
5.	Positioning & Data Logging	- Integrated internal multi-constellation GNSS receiver (GPS/GLONASS) for automatic georeferencing of every radiation reading. - Internal Memory: High-capacity storage for at least 100,000 measurements and full energy spectrum files.		
6.	Environmental & Enclosure	- Heavy-duty fully rugged field casing (IP65/IP67 rated). - Shock-resistant design capable of withstanding field drops and vibration. - Operating Temperature: -10°C to +50°C.		
7.	Power Management	- Rechargeable High-Capacity Li-Ion / LiFePO4 battery pack (Min. 10–12 hours continuous field operation). - Supplied with AC charger, 12V vehicle charging adapter, and spare battery pack.		
8.	Software & Connectivity	- Bluetooth / USB-C connectivity for rapid data export. - Comprehensive PC/Desktop software for data visualization, spectral evaluation, background subtraction, and direct export to GIS formats (Shapefile, CSV, and KML).		
9.	Included Accessories	- Heavy-duty waterproof transit hard case (Pelican type). - Protective field leather/nylon carrying pouch with shoulder harness. - USB data cables, power adapters, and wrist straps.		

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5. Tender Conditions

1. The bidder shall be an authorized representative or agent of the manufacturer within Jordan, with proof of this provided, and must have a qualified maintenance team.
2. All equipment and devices must be new, unused, and of recent manufacture (2026 or newer).
3. The contractor shall provide a warranty against manufacturing defects for a period of one (1) year from the date of final acceptance.
4. In case of any manufacturing defect during the free maintenance period, the equipment shall be replaced directly, and repair shall not be accepted.
5. The free maintenance shall cover a period of not less than three (3) years and shall include all faults, spare parts, consumables, and all maintenance works at no additional cost.
6. The contractor shall provide a comprehensive maintenance warranty for a period of five (5) years commencing from the date of completion of the free maintenance period. This shall include ensuring the availability of spare parts and technical support for the equipment. Furthermore, the contractor shall submit a list of primary spare parts along with their prices, commit to these prices for the specified duration, and provide a clear mechanism for subsequent price adjustments.
7. All associated software must be licensed permanently with no annual subscription fees under the name of the Ministry of Energy and Mineral Resources.
8. The bidder shall provide operation and maintenance manuals in both electronic and hard copy formats.
9. The bidder shall commit to providing a comprehensive technical training program after the delivery period, covering operation and working procedures in accordance with the Ministry's requirements for five (5) staff for five (5) working days, at the field work site upon which final acceptance shall be based without any additional cost to the Ministry of Energy and Mineral Resources.

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10. The place of delivery shall be the Ministry of Energy and Mineral Resources – Main Warehouses.
11. The price shall include all costs including equipment, software, training, taxes, and fees.
12. The delivery period shall not exceed one hundred and twenty (120) days from the date of award.

6. Special Technical & Field Performance Requirements

1. Radiological Calibration & Traceability:

- **Initial Delivery:** The bidder must submit a valid, original **Factory Calibration Certificate** for each unit upon delivery. Calibration procedures must be strictly traceable to **IAEA (International Atomic Energy Agency)** or equivalent international standards to guarantee accurate baseline assays of **Potassium (% K), Uranium (ppm eU), and Thorium (ppm eTh)**.
- **Annual Recalibration (3 Years):** The contractor shall further provide **mandatory annual recalibration, spectrum validation, and health-check services free of charge for a period of three (3) consecutive years** starting from the official date of final acceptance. This includes annual re-verification against IAEA-traceable reference standards and the issuance of official accredited **Annual Calibration Certificates** for each unit, at no additional cost to the Ministry of Energy and Mineral Resources (MEMR).

2. Thermal & Spectrum Gain Stabilization:

The detector system must feature automatic real-time gain stabilization to eliminate energy spectrum drift caused by extreme ambient temperature fluctuations (-10°C to +50°C) during desert operations, without requiring external radioactive calibration sources.

3. Operational Safety:

The devices must operate safely without containing active radioisotope check sources that would pose radiation hazards to technical personnel during transport, field operation, or storage.

  

4. Geospatial & Data Integration:

The device software must seamlessly combine internal GNSS positioning data with spectral readings. The system must allow direct raw data export into open GIS-compatible formats (CSV, Shapefile, KML, and GeoTIFF) without needing proprietary format conversions.

5. Field Acceptance Verification:

Final acceptance sign-off is subject to a practical field test at a geological outcrop designated by MEMR to verify detector response time, inter-device calibration consistency across all 5 units, and real-time GIS spatial mapping capabilities.

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Terms of reference TOR

For Package No. 4 – Advanced Digital Equipment

(Rugged Field Tablets)

Table of Contents

1. Background
2. Objective
3. Scope of Work
4. Technical Specifications and Quantities
5. Tender condition
6. Specific Technical & Software Requirements

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1. Background

In line with the strategy of the Ministry of Energy and Mineral Resources (MEMR) to digitalize geological exploration and field mapping operations, MEMR intends to procure specialized, high-performance, and fully rugged field tablets.

The purpose of this tender is to supply geological field teams with robust digital devices capable of operating under harsh desert and mountainous field conditions. These tablets will serve as the primary platform for field spatial data collection, digital outcrop photo-logging, structural data recording, and offline GIS mapping.

2. Objectives

The objective of this tender is to supply professional geological field equipment in accordance with the technical specifications, quantities set out in this Terms of Reference.

3. Scope of Supply

The scope of work under this tender is dedicated to the supply, delivery, testing, software integration, dynamic field acceptance, and training for the following digital device package:

- **Package No. 4: Advanced Digital Devices (Rugged Field Tablets - Quantity: 10 units)**

- **Scope of Services includes:**

1. Supply and delivery of 10 fully rugged geological field tablets with all standard field accessories including one (1) spare battery and external charger per unit to MEMR Main Warehouses in Amman.
2. Pre-installation and licensing of offline GIS data collection software and georeferenced photo-sketching applications.
3. Conducting a field integration test to ensure dynamic data synchronization with MEMR's spatial database prior to final acceptance.
4. Provision of operation manuals, calibration certificates, and a 5-day practical field training program for MEMR geologists at a designated field site.

○ **Bidding & Submission Rules:**

1. **Vendor-Neutral Compliance:** Bidders must offer devices that fully meet or exceed the technical criteria specified in Section 4. Equivalent or superior industrial solutions will be accepted.
2. **Completeness of Offer:** Bidders must submit a complete proposal covering the required units, accessories, software licenses, warranty terms, and field training as detailed in the technical specifications and special conditions. Partial submissions will be rejected.



4. Technical Specifications and Quantities

Strict compliance with the technical specifications set forth in the table below is required. Furthermore, please indicate whether or not the **eight (8) technical specifications** for the **Rugged Geological Field Tablet (Quantity: 10 Units)** are fully met.

Rugged Geological Field Tablet (Quantity: 10 units)

Item No.	Category	Technical Specifications	Compliance	Non Compliance
1.	Durability & Environment	- Fully Rugged Industrial Design. - Ingress Protection: Minimum IP67 rated (Dust-tight and water immersion protection). - Standard Compliance: Certified MIL-STD-810H (or MIL-STD-810G) for drop resistance (minimum 1.2 m), vibration, operational temperature range (-20°C to +60°C), and high humidity.		
2.	Display & Screen Interface	- Screen Size: 10.0" to 11.6" High-Definition display. - Outdoor Readability: Sunlight-readable screen with Anti-Glare/Anti-Reflective coating (Minimum 1000 nits brightness). - Multi-touch Capacitive Screen: Fully operable with field gloves and under wet/rain conditions. - Includes dedicated Stylus Pen with tether and protective screen cover.		
3.	Processing, Operating System & Performance	- Operating System: Genuine, pre-installed, fully activated full 64-bit Desktop-grade Operating System: Windows 11 Pro 64-bit. (Note: Android or iOS platforms are strictly non-compliant). - Processor: Latest Generation High-Performance Multi-Core Industrial Processor (Intel Core i7 / Intel Core Ultra 7 or top-tier equivalent) optimized for heavy desktop-grade spatial computation and multi-threaded GIS rendering. - RAM (System Memory): Minimum 16 GB High-Speed LPDDR5 / DDR5 RAM (32 GB option preferred) to support heavy spatial datasets and multi-tasking. - Internal High-Speed Storage: Minimum 1 TB NVMe PCIe SSD primary storage for operating		

Item No.	Category	Technical Specifications	Compliance	Non Compliance
		system, field geodatabases, and large raster base maps. Storage Expansion: Integrated Micro-SDXC expansion slot (supporting up to one (1) TB / two (2) TB external card) for offline field data exchange.		
4.	Positioning & Mapping	- GNSS Receiver: Integrated Multi-Constellation GNSS Receiver (supporting GPS and GLONASS at minimum). - RTK Capability: Real-time positioning capability with full support for external GNSS/RTK receiver integration via Bluetooth. - Positional Accuracy: Delivers real-time positioning accuracy of Sub-Meter (standalone/SBAS) and supports Centimeter-level accuracy when integrated with an external RTK receiver.		
5.	Power Management	- Battery System: Equipped with a dual / hot-swappable rechargeable Lithium-ion battery system, allowing seamless battery replacement in the field without powering down the device. - Battery Capacity & Spare Unit: High-capacity battery providing a minimum of 10–12 hours of continuous active operation under outdoor/field conditions (with GPS and high screen brightness active). Must include one (1) additional spare high-capacity battery per tablet unit. - Included Charging Accessories: Main AC Power Adapter, 12V DC Vehicle Charging Kit, and an External Battery Charger (for charging the spare battery independently outside the tablet).		
6.	Imaging & Field Sensors	- Rear Camera: Minimum 13 MP with Auto-Focus and LED Flash for high-resolution geology/outcrop photography. - Front Camera: Integrated camera for video conferencing. - Sensors: Integrated Digital Compass/Magnetometer, 3-Axis Gyroscope, Accelerometer, and Ambient Light Sensor.		
7.	Connectivity & Ports	Wireless: Wi-Fi, Bluetooth (v5.0 or higher), Integrated Mobile Data Broadband (4G LTE / 5G).		

Item No.	Category	Technical Specifications	Compliance	Non Compliance
		Physical Ports: Minimum (1) USB 3.0/USB-C, External Display Interface, Audio Jack.		
8.	Field Accessories	Heavy-duty hand strap and shoulder harness for safe handling in rugged terrain for each unit.		

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5. Tender Conditions

1. The bidder shall be an authorized representative or agent of the manufacturer within Jordan, with proof of this provided, and must have a qualified maintenance team.
2. All equipment and devices must be new, unused, and of recent manufacture (2026 or newer).
3. The contractor shall provide a warranty against manufacturing defects for a period of one (1) year from the date of final acceptance.
4. In case of any manufacturing defect during the free maintenance period, the equipment shall be replaced directly, and repair shall not be accepted.
5. The free maintenance shall cover a period of not less than three (3) years and shall include all faults, spare parts, consumables, and all maintenance works at no additional cost.
6. The contractor shall provide a comprehensive maintenance warranty for a period of five (5) years commencing from the date of completion of the free maintenance period. This shall include ensuring the availability of spare parts and technical support for the equipment. Furthermore, the contractor shall submit a list of primary spare parts along with their prices, commit to these prices for the specified duration, and provide a clear mechanism for subsequent price adjustments.
7. All associated software must be licensed permanently with no annual subscription fees under the name of the Ministry of Energy and Mineral Resources.
8. The bidder shall provide operation and maintenance manuals in both electronic and hard copy formats.
9. The bidder shall commit to providing a comprehensive technical training program after the delivery period, covering operation and working procedures in accordance with the Ministry's requirements for five (5) staff for five (5) working days, at the field work site upon which final acceptance shall be based without any additional cost to the Ministry of Energy and Mineral Resources.



10. The place of delivery shall be the Ministry of Energy and Mineral Resources
- Main Warehouses.
11. The price shall include all costs including equipment, software, training, taxes, and fees.
12. The delivery period shall not exceed one hundred and twenty (120) days from the date of award.

6. Specific Technical & Software Requirements

1. Geographic Information Systems & Field Data Collection Software:

- The bidder shall supply the devices fully configured and equipped with permanent, perpetual licenses for field-ready GIS and spatial data collection software.
- The software must support full offline functionality (Offline Mapping) without requiring active cellular or internet connectivity.
- The system must ensure seamless interoperability with MEMR's central GIS databases and support data export/import in standard open formats, including but not limited to Shapefile (.shp), GeoTIFF (.tif), and GeoPackage (.gpkg).

2. Field Image Logging & Outcrop Sketching Capability:

- The bidder shall provide pre-installed field logging software/applications designed to capture high-resolution images of rock outcrops and core boxes.
- The software must enable real-time digital sketching, structural orientation tagging (e.g., dip and dip direction overlay), geological annotating, and automatic georeferencing directly onto the captured images.

3. Field Integration & Dynamic Acceptance Testing:

- Final acceptance of the equipment is strictly contingent upon delivering fully configured devices loaded with all necessary drivers and protocols for direct communication with MEMR's field surveying and positioning instruments.

- Prior to signing the final acceptance certificate, the contractor must successfully conduct a practical field demonstration - covering field data collection, image logging, and data synchronization - at a field site designated by MEMR.

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نموذج تأمين دخول العطاء

السادة: [أدخل اسم الجهة المشترية].

التاريخ: [أدخل التاريخ].

تاريخ الاستحقاق: [أدخل تاريخ الاستحقاق].

رقم الكفالة: [أدخل رقم الكفالة].

تحية طيبة وبعد،،،

يكفل البنك [أدخل اسم البنك]، فرع [أدخل اسم الفرع] السادة / المناقص [أدخل اسم المناقص] بمبلغ [أدخل المبلغ بالأرقام / ديناراً، فقط [أدخل المبلغ بالكلمات]، حتى تاريخ [أدخل تاريخ انتهاء الكفالة].

وذلك تأميناً لدخول العطاء رقم [أدخل رقم العملية الشرائية]، والخاص بشراء [أدخل وصفا موجزا للوازم].

ويتعهد البنك بدفع قيمة الكفالة إليكم أو أي جزء منها عند أول مطالبة خطية منكم بالدفع، وذلك خلال فترة سريانها، علماً بأن أي مطالبة ترد إلى البنك يجب أن تكون في/أو قبل موعد استحقاقها وتصبح الكفالة ملغاة بعد انتهاء مدتها.

اسم الممثل المفوض للبنك: [أدخل اسم الممثل المفوض للبنك].

توقيع الممثل المفوض: [أدخل توقيع الممثل المفوض للبنك].

وظيفة الممثل المفوض: [أدخل وظيفة الممثل المفوض للبنك].

[ملاحظة: لا تقبل الجهة المشترية أي شرط يعيق الدفع، ولن تقبل الكفالة التي تتضمن مثل هذا الشرط]

نموذج تأمين حسن التنفيذ

[ترويسة البنك]

السادة: [أدخل اسم الجهة المستفيدة].

التاريخ: [أدخل تاريخ إصدار الكفالة].

تاريخ الاستحقاق: [أدخل تاريخ الاستحقاق].

رقم الكفالة: [أدخل رقم الكفالة].

تحية وبعد،،،

يكفل بنك [أدخل اسم الجهة البنك]، فرع [أدخل اسم الفرع] السادة / المتعهد: [أدخل اسم المتعهد] بمبلغ [أدخل المبلغ بالأرقام] ديناراً أردنياً فقط [أدخل المبلغ بالكلمات]. وذلك ضماناً لحسن تنفيذ قرار الاحالة رقم: [أدخل رقم العقد]، الخاص بالمناقصة رقم: [أدخل اسم المناقصة]، والمتعلق بتوريد: [أدخل وصفا موجزا للوالم].

هذه الكفالة غير مشروطة وغير قابلة للنقض وسارية المفعول لغاية: [أدخل التاريخ].

ويتعهد البنك بتمديد سريان هذه الكفالة أو بدفع قيمتها اليكم أو أي جزء منها عند أول مطالبة خطية منكم بالتمديد أو الدفع، وذلك خلال فترة سريانها، ولا تلغى هذه الكفالة خلال فترة سريانها إلا بكتاب رسمي من [أدخل اسم الجهة المستفيدة].

وفي حال تخلف البنك عن دفع قيمة هذه الكفالة أو أي جزء منها [أدخل اسم الجهة المستفيدة] عند الطلب، فإن البنك يفوض محافظ البنك المركزي بناءً على طلب [أدخل اسم الجهة المستفيدة] قيدها على حسابه الجاري لدى البنك المركزي ولحساب الخزينة.

اسم الممثل المفوض للبنك: [أدخل اسم الممثل المفوض للبنك].

توقيع الممثل المفوض: [أدخل توقيع الممثل المفوض للبنك].

وظيفة الممثل المفوض: [أدخل وظيفة الممثل المفوض للبنك].

[ملاحظة: لا يقبل أي شرط يعيق التمديد والدفع، ولن تقبل الكفالة التي تتضمن مثل هذا الشرط]

نموذج تأمين الصيانة (كفالة بنكية)

[ترويسة البنك]

السادة: [أدخل اسم الجهة المستفيدة].
التاريخ: [أدخل تاريخ إصدار الكفالة].
تاريخ الاستحقاق: [أدخل تاريخ الاستحقاق].
رقم الكفالة: [أدخل رقم الكفالة].

تحية وبعد،،،

يكفل بنك [أدخل اسم الجهة البنك]، فرع [أدخل اسم الفرع] السادة / المتعهد: [أدخل اسم المتعهد].
بمبلغ [أدخل المبلغ بالأرقام]. ديناراً أردنياً فقط [أدخل المبلغ بالكلمات].
وذلك تأميناً لصيانة اللوازم المتعاقد عليها مع المتعهد المذكور بموجب عقد [أدخل اسم ورقم العقد]، والمتعلق
بتوريد: [أدخل وصفاً موجزاً للوازم المحالة].

هذه الكفالة غير مشروطة وغير قابلة للنقض وسارية المفعول لغاية: [أدخل التاريخ]. وتجدد تلقائياً ولا تلغى

إلا بكتاب رسمي من [أدخل اسم الجهة المستفيدة].

ويتعهد البنك بتمديد سريان هذه الكفالة أو بدفع قيمتها إليكم أو أي جزء منها عند أول مطالبة خطية منكم بالتمديد أو
الدفع رغم أية معارضة من قبل المتعهد، وذلك خلال فترة سريانها، ولا تلغى هذه الكفالة خلال فترة سريانها إلا بكتاب
رسمي من [أدخل اسم الجهة المستفيدة].

اسم الممثل المفوض للبنك: [أدخل اسم الممثل المفوض للبنك].

توقيع الممثل المفوض: [أدخل توقيع الممثل المفوض للبنك].

وظيفة الممثل المفوض: [أدخل وظيفة الممثل المفوض للبنك].

[ملاحظة: لا يقبل أي شرط يعيق التمديد والدفع، ولن تقبل الكفالة التي تتضمن مثل هذا الشرط]

نموذج كفالة سوء المصنعية

اسم العقد: [أدخل اسم العقد].

رقم العقد: [أدخل رقم العقد]

التاريخ: [أدخل اسم الجهة المستفيدة وعنوانها]

نتعهد نحن [أدخل اسم المتعهد] الموقعين أدناه:

بضمان كافة اللوازم التي سنقوم بتوريدها للجهة المستفيدة [أدخل اسم الجهة المستفيدة] والواردة في قرارات الإحالة وأية ملاحق لها و/أو أية قرارات معدلة لها والصادرة عن لجنة [أدخل اسم لجنة الشراء] التي نتبلغها خلال عام [أدخل الفترة] وفقا للشروط الواردة في العقد وقرارات الإحالة والصادرة بموجب نظام المشتريات الحكومية رقم (8) لسنة 2022 وتعليماته وتعديلاته.

يبقى هذا الضمان ساري المفعول لمدة سنة ميلادية (في حال كانت المدة أكثر من سنة يتم ذكر ذلك) من تاريخ [أدخل بداية فترة الضمان].

ويشمل هذا التعهد ضمان كافة اللوازم المذكورة في القرارات أعلاه من سوء المصنعية وبكامل قيمتها مضافاً إليها نسبة 15% خمسة عشر بالمائة من قيمتها.

ونتعهد باستبدال كافة اللوازم التي ثبت سوء مصنعتها بأخرى جديدة خلال شهرين من تاريخ الإشعار بذلك من قبل الجهة المستفيدة وفي حال عدم قيامنا أو عدم قدرتنا على استبدال تلك اللوازم مع نهاية المدة المقررة للاستبدال، فإننا نتعهد بدفع كامل قيمة تلك اللوازم مضافاً إليها (15%) خمسة عشر بالمائة من قيمتها دون الحاجة للأنذار أو اللجوء إلى القضاء، مع ضمان أي عطل أو ضرر أو مصاريف تلحق بالجهة المشتريّة و/أو الجهة مستفيدة.

وعليه نوقع،،

اسم الممثل المفوض: [أدخل اسم الممثل المفوض للمتعهد].

توقيع الممثل المفوض: [أدخل توقيع الممثل المفوض].

وظيفة الممثل المفوض: [أدخل وظيفة الممثل المفوض].

[ملاحظة: يجب ان تكون الكفالة من سوء المصنعية موقعة اصوليا من كاتب العدل].