



Autoridade Nacional dos Minerais, I. P.

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TERMS OF REFERENCE (ToR)

Development of National Mineral Data Repository (NMDR) System

1. Background

Autoridade Nacional dos Minerais, I.P. (ANM) as Timor-Leste Public Institution, established according to the Decree Law No. 63/2023 of 6 September, responsible for managing and regulating the Mineral Sector in the territory of Timor-Leste according to the Decree-Law of ANM establishment, the Law No. 12/2021 of 30 June, on the Mining Code, the Decree-Law No 39/2022 of 8 June, the first amendment of Decree-Law No. 5/2011 of 9 February, on the Environmental Licensing and other Applicable Laws in Timor-Leste.

ANM currently faces significant challenges, including the lack of a real-time geological and mineral data system, email-based submission of licensing documents, manual tracking of licence expiry dates in spreadsheets, and the absence of a structured dashboard for local content commitments and compliance. Data and documents are dispersed across shared folders and directorates, and the existing ArcGIS mineral tender portal operates in isolation from licensing and compliance workflows. In addition, Mineral Right Holders submit large volumes of technical and regulatory information to ANM through Quarterly, Annual Reports, Pre-Feasibility Reports, Mineral Resource and Reserve Reports, Project Documents, Simplified Environmental Impact Statement, Environmental Management Plan, Health and Safety Management Plan, Local Content Plan, Mining Plan and other statutory submissions. These are currently delivered mainly by email and stored in shared folders in inconsistent formats and structures, which makes it difficult to systematically search, analyse and reuse this information across concessions and over time. To strengthen ANM institutional capacity and improve data management, ANM intends to develop an integrated automatization Mineral Data Repository System that improves standardization of controlling and access mineral data within and across the Directorate.

The system will serve as a centralized platform to enhance data management, storage, security and accessibility within and across the Directorate.

The intended system development is expected to support:

- Centralized management of geological and mineral data.
- Integrating ArcGIS data visualization and analysis of associated data.
- Integrating Geosoft data visualization and analysis of associated data.
- Online statutory report submission by Mineral Right Holders.

The system is intended to improve operational efficiency, transparency, and evidence based in decision making across Technical Directorate. Therefore, to address these gaps, ANM seeks to engage a qualified consultant to design and develop a security data repository system.

2. Objectives

The objective of this consultancy is to analyse ANM's current data, system, workflows and infrastructure, subsequently, to design, develop, integrate, test, deploy and hand over the implementation a centralized mineral data repository system data to enable efficient data management within ANM.

The specific objectives are to:

- Provide a centralized repository for geological, mineral, regulatory, and operational data;
- Enable structured online submission and management of statutory reports and documents;
- Digitize and mineral reporting, and compliance workflows;
- Tracking of report validity submission;
- Enable interoperability with existing GIS and mineral tender systems;
- Improve data accessibility, transparency, and institutional efficiency.

3. Scope of Work

The consultant shall deliver the complete NMDR system as a single, integrated assignment and will undertake the following tasks.

3.1. Assessment of Existing Data System

- 3.1.1. Conduct a comprehensive inventory of ANM's existing data holdings (geological, geophysical, geochemical, reports, GIS etc).
- 3.1.2. Identify all geological and resource modelling software and platforms currently used with ANM data (e.g. Geosoft, Surpac or other tools), and describe how company-submitted data are imported, processed and stored in these tools.
- 3.1.3. Assess current infrastructure (servers, network, storage, security) and existing systems (ArcGIS mineral tender portal, shared folders, Excel tracking AND other tools) used by the Technical Directorate.
- 3.1.4. Review and document current workflows for application submission, document handling, compliance in the Technical Directorate.
- 3.1.5. Identify key gaps, duplication and risks in the current process.

3.2. System Architecture and Design

- 3.2.1. Define the overall architecture of the NMDR, covering, at a minimum:
 - 3.2.1.1. Secure online submission portal for reports.
 - 3.2.1.2. Centralised document and data repository with version control, metadata and audit trails.
 - 3.2.1.3. Expiry and compliance monitoring with configurable alerts and dashboards.
 - 3.2.1.4. Integration interfaces with ANM's ArcGIS environment.
- 3.2.2. Prepare detailed functional and technical specifications, including data models, user roles, access control, security and backup requirements.
- 3.2.3. Develop detailed functional and technical specifications, data models, user roles and access control model, security and backup requirements, and reporting/dashboard definitions.
- 3.2.4. Present and refine the design with ANM until it is endorsed in writing by designated ANM technical focal points.

3.3.Development and Configuration

3.3.1.Develop, configure and unit-test the core NMDR components in line with the approved design, including:

- 3.3.1.1. Secure web-based submission portal with template-enforced submissions and automatic registration with the correct license/concession.
- 3.3.1.2. Automatic acknowledgement of submissions and routing/notification to the appropriate directorates and responsible officers.
- 3.3.1.3. Centralised repository for all mining documents and associated data, with search by permit, proponent, document type, date, status and keywords.
- 3.3.1.4. Configurable application and permit lifecycle workflows with full history and audit trail.
- 3.3.1.5. System-based tracking of permit and activity expiry dates, replacing central Excel workbooks, with dashboards and configurable automated alerts.

3.4.Integration and Data Migration

- 3.4.1. Implement integration with ANM's ArcGIS portal (and other agreed systems e.g Mineral Tender Portal), ensuring that spatial data (permit boundaries, blocks etc) is linked to corresponding documents and datasets in the NMDR.
- 3.4.2. Execute the migration plan and validate that agreed legacy datasets are successfully migrated into the NMDR system, including, at a minimum, selected historical company reports (quarterly and annual reports, feasibility studies) and their associated technical data, as defined in the migration plan approved by ANM.
- 3.4.3. Confirm with ANM that migrated data are complete, readable and correctly tagged with relevant metadata.

3.5. Security, Access Control and Performance

- 3.5.1. Implement role-based access control aligned to ANM's directorate structure and user categories (including appropriate access for company users).

- 3.5.2. Ensure appropriate authentication, authorisation, logging and encryption mechanisms to protect sensitive data.
- 3.5.3. Apply security hardening and appropriate vulnerability/penetration testing to ensure the system is safe and secure and deployable over the public internet, where required.
- 3.5.4. Ensure performance (response times, capacity) is consistent with the parameters defined in the approved design.

3.6.Capacity Building and Knowledge Transfer

- 3.6.1. Prepare and execute a comprehensive testing plan covering system testing, integration testing and User Acceptance Testing (UAT) with ANM users.
- 3.6.2. Ensure that functionality is demonstrated in UAT with no critical or high-severity defects outstanding.
- 3.6.3. Deliver training sessions for system administrators, data managers, inspectors, licensing officers and other end-users, including specific coverage of:
 - 3.6.3.1.Company submission and reporting workflows.
- 3.6.4. Provide user and administrator manuals in agreed languages, covering configuration, daily operation, and security functions.
- 3.6.5. Support production go-live and an agreed stabilisation period, and provide a complete handover package (configuration, deployment instructions, environment details and recommendations for future enhancements).

3.7.Testing and Quality Assurance

- 3.7.1. Prepare and execute a comprehensive testing plan covering system testing, integration testing and User Acceptance Testing (UAT) with ANM users.
- 3.7.2. Ensure that functionality is demonstrated in UAT with no critical or high-severity defects outstanding.
- 3.7.3. Prepare and execute a comprehensive testing against vulnerability.

4. Timeline

Total duration: **6–7 months**

5. Deliverables Acceptance Criteria

The following criteria will be used by ANM to review and formally accept each key deliverable.

5.1. Assessment Report

- 5.1.1 Provides a clear inventory and classification of existing ANM mineral sector data (licensing, technical, GIS, reports).
- 5.1.2 Accurately documents current workflows, systems and gaps for Technical Directorate.
- 5.1.3 Includes actionable recommendations that are consistent with the objectives and scope of this ToR.

5.2. System Architecture and Design

- 5.2.1. Describes a clear NMDR architecture covering:
 - 5.2.1.1. Online submission portal for mining companies (submission of drilling plans, etc).
 - 5.2.1.2. Centralised repository, workflows, dashboards, security and ArcGIS integration.
- 5.2.2. Clearly defines standardised electronic reporting workflows for mining companies (quarterly and annual reports, feasibility studies, technical data packages, local content reports, etc.), including required templates, metadata and validation rules.
- 5.2.3. Includes detailed functional and technical specifications, data models and user roles in a format agreed with ANM and is endorsed in writing by designated ANM technical focal points.

5.3. Configured NMDR Platform (Core Functions)

- 5.1.4 All core modules are operational in ANM's environment:
 - 5.1.4.1 Online submission portal supporting company reporting (quarterly, annual, feasibility, technical data,) with template-enforced submissions and acknowledgements.
 - 5.1.4.2 Centralised document/data repository with search, version control and audit trails.

5.1.4.3 Integration with ArcGIS for permit/block visualisation.

5.1.5 Functionality is demonstrated in user acceptance testing with no critical or high-severity defects outstanding.

5.4.Data Migration and Configuration

5.4.1. Datasets are successfully migrated into the NMDR system, including a representative set of historical company reports (quarterly, annual, feasibility) and associated technical data.

5.4.2. After migration, metadata (permit IDs, proponents, report type, period, dates, document types etc) must be present in the NMDR, correctly attached to the right licence/company, and open/searchable without corruption or missing content.

5.4.3. User roles and permissions (for both ANM staff and company users) are configured according to ANM's approved access matrix.

5.5.Training and Documentation

5.5.1. Training sessions are delivered to all identified user groups (administrators, data managers, inspectors, licensing officers) and include specific modules on handling company submissions and Mineral Rights Holders reporting workflows.

5.5.2. User and administrator manuals cover configuration and use of the company reporting functions (submission, tracking, review, archiving).

5.5.3. Documentation is complete, consistent with the implemented system, and accepted by ANM team.

5.6.Final Handover and Closure

5.6.1. Fully Developed NMDR

5.6.2. System requirement specification document that defines all functional and non-functional requirements of the system

5.6.3. System design and architecture documentation describing the overall system architecture and detailed design, including system architecture diagrams (logical and physical), database design and data models, application workflow and process diagrams and technology stack and infrastructure design.

5.6.4. Test Plans and Test Reports

- 5.6.5. Vulnerability Testing reports.
- 5.6.6. All agreed defects from UAT and the initial production period are resolved or covered by a written remediation plan.
- 5.6.7. Source code, configuration, deployment instructions and environment details (including configuration of company portals and templates) are handed over to ANM.
- 5.6.8. Training Materials and Training Completion Report
- 5.6.9. User Manuals and Technical Documentation
- 5.6.10. A final project report summarising scope delivered, issues, lessons learned and recommendations is submitted and approved by ANM.

Formal acceptance will be issued in writing by ANM for each major deliverable or milestone, and associated payments will be contingent on meeting the above criteria.

6. Payment Milestones (Indicative)

Milestone	Payment
Phase 1 (5.1-5.4)	20%
Draft Phase 2 (5.5-5.6)	40%
Final completion	40%

7. Licensing, Ownership, and Future Use

- 7.1. The NMDR System shall be delivered with a perpetual license granting the and unlimited users;
- 7.2. No recurring user-based licensing fees shall apply;
- 7.3. ANM will retain full ownership of the system, source code, data, and documentation.

8. Confidentiality and Data Protection

All data, models, reports, spreadsheets, dashboards, and related materials produced under this consultancy shall be the exclusive property of ANM. The consultant shall treat all project-related information as confidential and shall not disclose or reuse such information without prior written consent from ANM.

9. Warranty and Support

9.1. The provider shall provide a warranty period of one year (1) and technical support not less than three (3) months following final acceptance, during which all system defects shall be corrected at no additional cost.

10. Fiscal Compliance

To ensure full fiscal compliance and transparency in accordance with Timor-Leste's Tax & Duty Act No. 5/2019 of 27 August and other applicable regulations, the proposed contract value shall be deemed to explicitly include all applicable taxes and statutory deductions. Consultants shall reflect these obligations clearly in their Financial Proposals.

At a minimum, the following shall apply:

- **Withholding Tax (WHT) – 10%:**

The contract price shall include the applicable ten percent (10%) withholding tax. ANM will apply the statutory deduction at source in accordance with national tax legislation.

Consultants are responsible for:

- Incorporating these taxes into their pricing structure,
- Ensuring compliance with all local tax registration and reporting requirements; and
- Bearing any additional tax liabilities not explicitly stated in this ToR.

Failure to account for the above taxes in the Financial Proposal shall not constitute grounds for contract price adjustment after award.

11. Consultant Qualifications

The Consultant must demonstrate:

- Be legally registered
- Proven experience in information system development
- Experience in database management
- Expertise in data security system
- Proven experience with at least 5 years of experience in relevant area

12. Conflict of Interest

Consultants shall disclose any actual or potential conflicts of interest, including current or past involvement with mining companies operating in Timor-Leste. ANM reserves the right to disqualify proposals where conflicts of interest may compromise the independence of the assignment.

13. Proposal Submission

Interested consultants shall submit **Technical and Financial Proposals**. Proposals shall be written in English and submitted in electronic format.

The proposal will be evaluated by considering technical approach and methodology, relevant experience, qualifications of proposed personnel, delivery schedule, understanding of ANM requirements, financial proposal, legal compliance, and any required declarations. ANM may reject proposals that do not meet mandatory requirements or that fail to provide sufficient information for evaluation.

Therefore, Proposals shall consist of:

A. Technical Proposal

The Technical Proposal should be organized in the same order as the requirements and must include:

1. Relevant work experiences and capacity to perform the scope of work;
2. Qualifications and experience of proposed personnel;
3. Quality of service delivery and design;
4. Proposed Methodology and Work Plan;
5. Vendor conflict of interest and declaration of affiliations;
6. Business registration and legal compliance (**successful bidder is required to be registered locally**);
7. Bank statement with the last three (3) months transactions, if required provide declaration from bank stating current balance or proof of balance;
8. Company organization structure.

B. Financial Proposal

- *The proposed fee must be a total fixed price, quoted as a total gross amount in USD, including 10% withholding tax.*
- *The Financial Proposal should provide a fixed total price in USD and a breakdown by phase, deliverable, taxes, and any other cost assumptions.*
- *Any cost or activity not clearly identified in the proposal may be treated as included in the proposed fixed price.*

14.Submission Deadline

A Proposals should be addressed to the ANM procurement team and submitted via email to: procurementbid@anm.tl or sent by courier to: City 8 – Rua Has Laran, Aldeia Fomento II, Suco Comoro, Posto Administrativo Dom Aleixo, Municipio Dili, PO Box: 297. The submissions will close on **18 September 2026 at 16:00 hours Timor Leste time**. Late applications will not be considered.

15. Right to Accept or Reject Proposals

ANM reserves the right to accept or reject any proposal, to annul the procurement process, or to modify the scope of the ToR at any time, without incurring any liability to the participating consultants.

The above scope is indicative and may be refined in consultation with the selected consultant based on demonstrated experience and proposed methodology.

Dili, 19 August 2026

Maria Graciete Moniz do Rego
Executive Director of Corporate Services