



MINISTRY OF DIGITAL DEVELOPMENT,
INNOVATION AND COMMUNICATIONS



SMART GOVERNMENT II PROJECT

REQUEST FOR EXPRESSION OF INTEREST

(CONSULTING SERVICES – INDIVIDUAL CONSULTANT SELECTION)

ASSIGNMENT NAME: INDIVIDUAL TECHNICAL CONSULTANT /KHUR SYSTEM-THE STATE INFORMATION EXCHANGE PLATFORM/

The Ministry of Digital Development, Innovation, and Communications of Mongolia is seeking a qualified Technical Consultant under the Smart Government II Project financed by the World Bank.

The Smart Government II Project is implemented by the Ministry of Digital Development, Innovation, and Communications (MDDIC) as well as identified beneficiary agencies under the Project. MDDIC as the lead implementing agency will be responsible for the overall implementation, fiduciary, and Environmental, and Social Framework (ESF) compliance for the project.

Within the framework of this project, the MDDIC is planning to transition the main State Information Exchange Platform (KHUR) to a distributed architecture to ensure its continued reliable operation.

1. Objectives

MDDIC is looking to hire an individual technical consultant in the capacity of a technical consultant to work for the E-Mongolia Academy under the MDDIC to conduct a technical and functional analysis of the centralized KHUR system and consult on designing the architecture and solutions for transforming the system to a distributed structure that provides secure, reliable, quick, and continuous operation of the platform. The consultant will prepare the necessary reports and documentation, including the technical specifications for further consultancy to implement the desired solution, transition plan, standards, and guidelines.

The consultant will work collaboratively with the selected implementation firm responsible for developing the distributed structure and verify that the delivered system meets the defined requirements.

Furthermore, the scope of work includes activities to support the MDDIC to implement the Project's Component 2 on 'Transforming Digital Government'.

2. Scope of Work

While performing all tasks of this sub-project, the Consultant shall be well-informed and follow the Environment, social and health safeguard (ESHS) procedures and plans. The Consultant will also take related actions and submit relevant reports including supporting documentations. ESHS documents include Environmental Codes of Practice (ECOP), Environmental and social commitment plan (ESCP), Labor management procedure (LMP), and Stakeholder engagement plan (SEP).

The following assignments will be conducted by the consultant:

Task 1: Conduct functional and technical analysis on the KHUR system

- Prepare a detailed work plan /schedule a full task list/ and get approval from MDDIC, E-Mongolia Academy, and PIU
- Conduct analysis of the current system architecture and operations
- Review and analyze relevant reports, previous studies, findings, and recommendations available
- Research international experiences of distributed data exchange platforms
- Conduct analysis on the current and future system data transfer, processing needs, and service calls
- Track and identify user requirements, including identifying relevant technical inputs from national and regional government agencies and vendors to meet MDDIC and the Project's needs for developing and upgrading the current information exchange infrastructure.

Task 2: Design and develop a new distributed architecture of KHUR system.

- Identify several possibilities, compare the solutions, and introduce the proposal and possible solutions to the MDDIC and E-Mongolia Academy for official direction and approval.
- Design and develop a distributed architecture and implementation plan, preferably based on the X-Road platform
- Produce documentation and diagrams for the proposed distributed architecture and implementation plan.
- Estimate the required hardware resource, specifications, and preferred number of nodes based on the approved architecture and analysis.

Task 3: Finalize the technical specifications for an approved distributed architecture design

- Prepare the technical specifications for future work needed according to the approved architecture and solutions that align with the objective of the project. As part of this task, the consultant will:
 - Ensure that the draft technical specifications consider inputs from all the relevant stakeholders, with the MDDIC, E-Mongolia Academy, and PIU, and reviewing them prior to finalization.
 - Develop the estimated resources, budgeting, and schedule for the consultancy based on a market assessment.
 - Finalize the technical specifications and receive no objection from the World Bank, taking into consideration comments and suggestions provided by all relevant stakeholders.

Task 4: Develop a transition plan:

- Create a detailed transition plan for migrating from the current centralized system to the distributed architecture.
- Outline phases of the transition, key milestones, dependencies, and risks.
- Include strategies for mitigating risks and ensuring minimal disruption during the transition.

Task 5: Develop guidelines and standards related to implementation and operation:

- Develop guidelines for implementing the new distributed architecture.
- Define best practices for maintaining security, reliability, and operational efficiency.
- Establish protocols for monitoring and maintaining the distributed system post-implementation.

Task 6: Support and collaborate with the development team of the KHUR distributed solution

- Provide assistance and guidance on end-to-end solutions related to the tasks and deliverables;
- Work closely with the consultant vendor firm responsible for developing the distributed system;
- Provide technical guidance, review progress, and ensure alignment with the proposed architecture and requirements;
- Advise and provide assistance on the development of system documentations;
- Advise and provide assistance on the implementation process;
- Verify that the delivered system meets the defined requirements, standards, and performance criteria outlined in the consultancy.

Task 7: Suggest future recommendations based on the work conducted with the KHUR distributed solution

- Make recommendations based on the findings for the next steps regarding successful implementation, commissioning, maintenance, and further improvements of the distributed architecture.
- Write a post-implementation review report with an assessment of project outcomes, lessons learned, and recommendations for future improvements
- To undertake other tasks as may be reasonably requested and/ or assigned by the World Bank, MDDIC, Project Director and PIU.

3. Deliverables

Based on the contracted assignments and detailed contract implementation plan approved by the client, the Consultant's deliverables will include:

Deliverable 1:

- Approved work plan
- Technical and functional analysis report including as-is reviewing the research findings previously conducted by , best international practices, architecture comparison, and user requirements document

Deliverable 2:

- Detailed system architecture documentation including diagrams
- Required hardware specifications
- Market assessment reports including budget estimation
- Approved and finalized consultancy firm technical specifications

Deliverable 3:

- Approved transition plan detailing the phases, milestones, dependencies, risks, and mitigation strategies for migrating from the current centralized system to the distributed architecture
- Document outlining guidelines, best practices, and standards for implementing and maintaining the new distributed architecture. It includes protocols for monitoring and ensuring operational efficiency

Deliverable 4:

- Technical guidance and review reports detailing technical discussions, and recommendations made during collaboration sessions
- Testing and integration plan outlining integration phases and testing procedures
- Package of all system documentation handed over by the consultant vendor firm, including comprehensive set of manuals, user guides, technical specifications, and system diagrams

Deliverable 5:

- Progress and implementation report on Task 7
- Post-implementation review report with an assessment of project outcomes, lessons learned, and recommendations for future improvements
- Final System Acceptance Report signed by both the Ministry and the consultant vendor firm

4. Consultant's qualifications/ selection criteria

4.1. Academic Qualifications and Work Experience:

- Master's degree in computer science, Information Technology, System Engineer, Networking or related fields.
- Must have at least 15 years of working experience in Information Technology or related field.
- At least 5 years of academic research experience in the fields of Information Technology, Computer Networks, and System Architecture.
- Be proficient in designing and developing enterprise level system architecture.
- Have experience of designing and developing projects of similar scope in enterprise level system architecture.
- Experience in enterprise-level, open-source data exchange platforms like X-Road or similar data exchange platforms is a significant advantage.
- Knowledge of green data centers is preferred.
- Preference of experience in implementing X-Road platforms in other countries at the nationwide level.
- Has experience working as a consultant or project leader on at least 3 projects of e-government or data exchange platform development projects.
- At least three (3) years of work experience as a policy advisor/consultant or project lead role in a digital economy or digital innovation-related projects funded by international development organizations or national governments.
- Experience in engaging with top-level government officials will be an advantage.

4.2. Technical skills

- Be proficient in system architecture and design.
- Proficiency in conducting technical and functional analysis of existing systems.
- Experience in designing secure systems, including data encryption, authentication, and authorization mechanisms.
- Experience with network design and troubleshooting in a distributed environment.
- Knowledge of database systems (both SQL and NoSQL), and experience in database design, management, and optimization.

4.3. General Competencies

- Strongly results-oriented and able to manage a complex and multi-faceted workload with minimal supervision.
- Ability to engage the highest level in the Mongolian government and other local stakeholders and communicate effectively across government agencies and stakeholders.
- Have a strong strategic/high-level perspective and understanding of the government's/MDDIC's digital vision and priorities.
- Team player, with good interpersonal skills, and proven ability to function effectively with multiple host-country counterparts and multi-disciplinary teams.
- Excellent skills in facilitation and coordination, and ability to work harmoniously with stakeholders and resolve conflicts constructively.
- Demonstrates a high degree of professionalism and integrity.

5. Supervision and Reporting

The consultant will work under the guidance of the Director General of the E-Mongolia Academy and the Project Director. The consultant will submit progress reports to the PIU and E-Mongolia Academy. The report shall contain the progress and status of the deliverables.

All information provided to the consultant will be regarded as confidential and information will not be shared with any outside individuals or organizations.

All reports shall be prepared in English or Mongolian, depending on the nationality of the consultant, in electronic and hard format, which shall be submitted to the PIU and the E-Mongolia Academy.

6. Restrictions

All information provided to the Consultant will be regarded as confidential and information will not be shared with any outside individuals or organizations without prior approval of the MDDIC. The Consultant must establish and maintain secure data management and storage protocols to safeguard sensitive information. The Consultant shall have no material interest in any of the outputs of this assignment.

7. Institutional arrangements

The agency of the beneficiary shall provide office space when the consultant is required to work on prolonged tasks or on a daily basis, if applicable. The consultant shall be provided with all necessary data, previous studies, and information to perform the required tasks detailed in this ToR.

CONTRACT DURATION:

The contract is expected to commence in **December 2024** and the duration of the engagement will be intermittent for **24** months, with an expected input of **8 months (payments will be deliverable based)**. Additionally, the individual consultant will be expected to meet the relevant stakeholders in-person for Task 1, Task 6, and Task 7.

If you meet the qualifications listed above, please submit the following documents via email to procurement2@smart.gov.mn

- 1. A cover letter explaining why you believe you are a suitable candidate for this position.**
- 2. A detailed CV highlighting relevant skills and experience.**
- 3. Copies of diplomas or certificates.**
- 4. A list of similar consultancy assignments, contracts, or projects you have successfully completed.**
- 5. Proof of successful completion of at least two academic research projects of comparable scope and complexity.**
- 6. Two (2) reference letters from your previous employers.**

Please ensure that all documents are submitted no later than 3:00 PM on November 11, 2024. (Ulaanbaatar time GMT+8)

The submitted documents will not be returned to the applicants. Please note that incomplete applications will not be considered for evaluation. Only selected candidates will be contacted.