TERMS OF REFERENCE

Job title:	Web Application and GIS Developer
Contract type:	Individual Contracts (IC)
Duty station:	Chisinau
Reference to the:	Enabling an Inclusive Green Transition in the Republic of Moldova Project
Payment arrangements:	Lump sum contract (payments linked to satisfactory performance and delivery of outputs)
Contract Duration:	October 2026 – February 2027, 80 working days

1. PROJECT OBJECTIVES AND EXPECTED RESULTS

On 23rd of June 2022, the European Council granted the Republic of Moldova the status of EU candidate country which is a substantial achievement, but which comes with great responsibilities and obligations. One of such obligations is the "Green Agenda and Sustainable Connectivity" which includes Chapters of the environment and climate change acquis. In this sense, meaningful reform is expected in view of European Green Deal targets.

The proposed Green Transition Project takes due account of this endeavor. Hence, it will put in place the enabling conditions for a green transformation in Moldova through a combination of cross-sectorial decision-making in joint stakeholder platforms, capacity building measures, general education and awareness raising, dissemination of best policy practices, information sharing and networking, as well as pilot-testing green-transition related solutions and other activities, to ensure that the green transition concept is well understood and implemented.

The established enabling conditions and the investments into green-transition solutions will respond to the key development challenges that the country is currently dealing with such as climate change, environmental pollution and the energy crisis.

It is well acknowledged that Moldova is highly vulnerable to climate change, given the limited resources and institutional capacities to address the climate change impacts. It is also due to the heavy reliance on the agricultural sector, water scarcity and other geographical factors. Currently the country is advancing with the national adaptation planning, including in the agricultural sector, aimed at putting in place proper intuitional, technical and budgeting capacities in the context of climate change, however significant gaps remain in embarking of the sectors into achievement of the long-term adaptation targets.

Environmental degradation is also posing a major threat to Moldova's development agenda as its economy relies greatly on natural resources which leads to their overexploitation and pollution. Inadequate waste management practices and outdated practices and technologies in

the key sectors of the economy also contribute to environmental degradation and pollution. Mainstreaming of the green agenda into the country's economic activities is taking place slowly.

Moldova is in line with the global trend of continuously growing urbanization, with the proportion of the population living in urban areas expected to rise from 47% in 2010 to 60% in 2030 (UN Habitat). Cities are increasingly and significantly contributing to the main drivers of global environmental degradation. The municipalities have the greatest impact on air quality and are responsible for more than 50% of total air pollution in Moldova.

From energy security perspective – Moldova is highly dependent on imported energy sources and rely mostly on the use of fossil fuels. In addition, inefficient energy supply and consumption across all sectors exacerbate the situation. Until recently being 100% dependent on Russian gas import, the country is actively seeking diversification of energy supplies after the war of aggression in Ukraine. Improvements both in energy efficiency and in the development of domestic resources – including renewable energy resources – for strengthened sustainability, competitiveness, and energy security rank high on the political agenda. The energy sector is also the main source of GHG emissions in the country.

Against this background, the Green Transition Project aims to support the Government of Moldova to engage sustainably in a transformative green agenda by enhancing awareness, building capacities and encouraging investments into low-emission and resource efficient economy.

The target areas of the project are resource efficiency, green and circular economy, cleaner and sustainable energy, and mobility.

The Project is be implemented under the following three specific components:

1. Socio-economic framework for a gender-responsive and inclusive green transition enabled.
2. Capacity and awareness on the inclusive green transition increased among key stakeholders.
3. Additional funding attracted by promoting and piloting investments in green and innovative technologies, while evidence-based decision-making for green transition is improved by deploying a reliable air quality monitoring system.

The implementation period of the project is 48 months, and the total budget is 10 mln EUR.

2. OBJECTIVES OF THE ASSIGNMENT

The overall objective of this assignment is to provide specialized .NET web application and GIS development services for the enhancement of the National Agency for Road Transport's "e-Authorization Transport" (e-AT) system and its GIS Module. The Consultant will be responsible for the technical implementation and delivery of the user-facing web application, workflow and

GIS functionalities assigned under this ToR, in accordance with the approved requirements, implementation priorities and existing technical architecture of e-AT.

Specifically, the assignment aims to:

- Enhance the GIS Module for accurate visualization, editing and management of transport routes and related geospatial reference data within the existing e-AT/GIS technical environment.
- Develop the documented user-facing .NET web functionalities supporting route registration, route modification, trip management and electronic administrative workflows.
- Implement Web/GIS-side functionality required for exchange and synchronization of route and itinerary information between the GIS Module and the e-AT Route Register using agreed service interfaces.
- Implement the approved user-interface validation, workflow controls, reporting and export functionality, multilingual interface elements and configurable application components required for the assigned modules.
- Support functional testing, user acceptance, deployment, technical documentation and knowledge transfer for the GIS and application components.

3. SCOPE OF THE WORK, DUTIES AND RESPONSIBILITIES

Under the overall supervision of UNDP and in close cooperation with ANTA, the Web Application and GIS Developer (further "the Consultant") shall act as the Web application and GIS developer for the e-AT system and its GIS Module. The assignment will focus on implementation of the assigned user-facing web application, GIS-enabled route management, user-facing workflows and operational reporting, while consuming and coordinating with backend and interoperability services delivered or maintained under the corresponding backend component.

Functional requirements, business priorities, workflow rules and implementation sequencing for the assigned functionalities will be coordinated by ANTA through its designated Product Owner. The Consultant shall implement the approved requirements relevant to this assignment and shall refer any ambiguity concerning functional requirements, workflow behavior or business rules to the ANTA Product Owner for clarification.

The Consultant shall, inter alia:

- Analyze the approved functional and technical requirements and prepare detailed designs for GIS, route-management and user-facing application enhancements.
- Enhance route visualization and geospatial representation in the GIS Module, including display and management of routes, itineraries, stops, road segments and relevant cartographic reference information.
- Develop functionality for manual itinerary creation and route editing, including configurable route-modification logic and validation of route geometry and associated business data.

- Implement management and import/update mechanisms for road network reference data, border-crossing points and other agreed geospatial layers or nomenclatures.
- Implement synchronization between GIS route objects and the e-AT Route Register through the APIs/services provided by the backend component, including status handling and user-visible error/validation messages.
- Develop user-facing web functionalities for route and trip management, route registration and modification workflows, and presentation of authorization-related information.
- Implement functional validation rules and workflow controls that improve data quality and guide users through route-management and authorization processes.
- Develop analytical and operational reports and export functionalities relevant to route, trip and GIS information, in agreed formats.
- Support multilingual user-facing classifiers, nomenclatures, forms and configurable interface elements relevant to the assigned modules.
- Contribute to usability improvements and consistent presentation of data across the e-AT application and GIS Module.
- Perform unit and functional testing; support integration testing and user acceptance testing; correct defects related to the assigned GIS and application components.
- Prepare technical and functional documentation for GIS components, user-facing workflows, configuration, testing and deployment, and provide technical inputs to user manuals.
- Coordinate closely with ANTA, UNDP, GIS/data specialists and system administrators to ensure compatibility with e-AT architecture, data standards, security requirements and agreed interfaces.

Subject to applicable security and access-control procedures, ANTA and/or the designated technical administrator shall facilitate access to the information and technical environments necessary for implementation, including, as applicable:

- existing source code and designated source-code repositories;
- current application/GIS architecture and relevant technical documentation;
- development and testing environments;
- approved functional requirements/change requests;
- backend API/service specifications and relevant data models;
- GIS datasets, geospatial reference-data specifications and applicable services;
- existing interface, configuration and localization resources; and
- existing configuration and deployment documentation relevant to the assigned components.

4. EXPECTED DELIVERABLES, TENTATIVE TIMEFRAME, AND OTHER ARRANGEMENTS

The Consultant is expected to deliver the following outputs as per the below-identified timeline and anticipated workload:

No.	Deliverables	Number of working days	Tentative timeframe
1	**Deliverable 1: Inception Report and Web Application/GIS Functional Design.** Detailed work plan; analysis of GIS and user-facing workflow requirements; functional/technical design for route visualization, editing, geospatial reference data, synchronization, reporting, and identified technical dependencies.	7 wds	By 31 October 2026
2	**Deliverable 2: Web Application Enhancement Report and Workflow Functionalities Package** Implementation of web application enhancements for route/trip management, route registration/modification workflows, validation rules, multilingual interface elements, relevant configurable components, and related testing evidence.	23 wds	By 30 December 2026
3	**Deliverable 3: GIS Synchronization and Reference Data Functions Implementation Report** Implementation of Route Register–GIS synchronization using agreed backend interfaces; initial geospatial data validation; road network/border-crossing/reference-data import or management functions; functional testing results.	28 wds	By 15 January 2027
4	**Deliverable 4: GIS Module and Reporting Interface Enhancements Report** Implementation of route visualization and editing functions, manual itinerary creation, configurable route modification logic, road network and border-crossing representation, operational/analytical reports and export functions, and related integration testing evidence.	14 wds	By 15 February 2027
5	**Deliverable 5: Testing, Deployment and Documentation Report** Completion of functional, integration and end-to-end testing and UAT support; correction of GIS/application defects; deployment support; finalized GIS/application technical documentation and technical inputs for user manuals; knowledge transfer and final acceptance.	8 wds	By 15 February 2027

Note 1: Deliverables and the final timeline can be amended or specified for the assignment.

The timeframe for the work of the consultant is planned for October 2026 – February 2027.

Each deliverable shall be submitted to UNDP as a consolidated deliverable package containing all technical documentation and supporting evidence to enable UNDP to assess compliance with the requirements of this ToR. Where source code or system environments cannot be included directly in the submission, the Consultant shall provide the relevant repository references, implementation evidence, test results and technical documentation required for verification.

MANAGEMENT ARRANGEMENTS

The Consultant will work under the overall supervision of the **Institutional Development and Capacity Building Manager** of the Green Transition Project and in close coordination with the National Agency for Road Transport (ANTA), acting as the Beneficiary and system owner.
Throughout the assignment, the Consultant will collaborate closely with the Beneficiary's designated technical representatives and maintain regular communication with all relevant stakeholders to ensure the timely and effective implementation of the assignment. This includes coordination with:

- ANTA technical representatives;
- ANTA business process owners;
- the GIS data-entry coordination team;
- administrators of the existing SIA **e-Authorization Transport (e-AT)** and GIS systems;
- representatives responsible for the operation and integration of GEAP, EVO, MConnect, and other relevant government information systems;
- quality assurance, testing and user acceptance representatives.

ANTA will designate a Product Owner responsible for coordinating the functional scope, implementation priorities, workflow and business-rule clarifications and acceptance of the required functionalities. ANTA will retain responsibility for the ongoing maintenance and technical administration of e-AT, including coordination of the official codebase, development environments, releases and production deployment.

The Consultant will be individually responsible for the timely and satisfactory delivery of the Web Application and GIS outputs specified under this ToR and shall coordinate their implementation with the ANTA Product Owner and relevant technical staff.

The Consultant shall comply with the Beneficiary's procedures governing access to development, testing and production environments, source-code repositories, information security, cybersecurity, data protection, testing, deployment and system acceptance.

Throughout the assignment, the Consultant shall ensure that all deliverables are developed in accordance with applicable national interoperability standards, government ICT requirements, and UNDP quality standards. The Consultant shall also comply with all applicable UNDP programming, procurement, financial, administrative and ethical policies and procedures, and

contribute to maintaining effective internal control and quality assurance mechanisms throughout the implementation of the assignment.

Performance evaluation: The Consultant's performance will be evaluated against such criteria as timeliness, responsibility, initiative, communication, accuracy, and quality of the services delivered. This will serve as a basis for a decision on potential contract extension, should it be required.

Language of the deliverables: All deliverables shall be submitted in Romanian.

5. QUALIFICATIONS AND SKILLS REQUIRED

Qualifications:

- University degree in computer science, information technologies, software engineering, geographic information systems (GIS), geoinformatics, computer engineering or another relevant field.

Experience:

- Professional experience in development of web-based information systems, including hands-on development of user-facing application components, forms and business workflows, with demonstrated experience in ASP.NET Core MVC-based applications.
- Demonstrated experience developing GIS-enabled applications or web mapping applications, including geospatial visualization and editing and/or integration of GIS functionality into transactional web applications.
- Demonstrated experience with web application interfaces, business workflows, validation mechanisms and reporting/export functionalities.
- Demonstrated experience with in least one assignment consuming REST APIs/web services and working with relational and/or spatial databases.
- Experience with transport route management, road-network data, public-sector information systems or e-government applications is a strong advantage.

Competencies:

- Strong practical understanding of GIS concepts, route geometry, geospatial reference data and synchronization between map-based and transactional systems.
- Good understanding of user-centered web application development, business-process workflows, validation and operational reporting.
- Strong interpersonal and communication skills, with demonstrated ability to work collaboratively with public-sector users, GIS/data specialists and software developers.

- Ability to work independently, troubleshoot functional issues and deliver high-quality outputs under tight deadlines.
- Excellent analytical, problem-solving and organizational skills.
- Fluency in Romanian and English, written and spoken. Knowledge of Russian is an asset.

The United Nations in Moldova is committed to workforce diversity. Women, persons with disabilities, Roma and other ethnic or religious minorities, persons living with HIV, as well as refugees and other non-citizens legally entitled to work in the Republic of Moldova, are particularly encouraged to apply.

6. PAYMENT MODALITIES

The Consultant will organize and facilitate the implementation of all activities as described above; his/her payment will be lump sum amount based, disbursed in several installments, upon submission and approval of deliverables and certification by the UNDP Moldova Project Manager that the services have been satisfactorily performed.

7. APPLICATION PROCESS

Applicants shall submit the following documents:

- Offeror's letter to UNDP confirming interest and availability for the individual contractor (IC) assignment, incorporating financial proposal in Annex 2.

Upload the signed version of the filled in Offeror's letter to UNDP confirming interest and availability for the individual contractor (IC) assignment. Annex 2 to the Offeror's letter, incorporating the Financial Proposal, shall be filled in mandatorily and includes the detailed breakdown of costs supporting the all-inclusive financial proposal.

Please ensure there are no mathematical errors and that amounts from Offeror's Letter to UNDP Confirming Interest and Availability match with your offer in the system.

- CV, including information about experience in similar assignments, including at least 3 professional references.

- Statement of Health for Individual Contractors.

Important notice:

The applicants who have the statute of Government Official / Public Servant prior to appointment will be asked to submit the following documentation:

- a no-objection letter in respect of the applicant received from the Government, and;
- the applicant is certified in writing by the Government to be on official leave without pay for the entire duration of the Individual Contract.

- a retired government official is not considered in this case a government official, and as such, may be contracted.

EVALUATION

Individual consultant will be short-listed based on the following minimum qualification criteria:

- University degree in computer science, information technologies, software engineering, GIS/geoinformatics or another relevant field.
- At least 3 assignments in development of web-based information systems, including user-facing application development.
- At least 2 assignments in GIS-enabled application development, web mapping, geospatial data processing or integration of GIS components.
- Citizenship of the Republic of Moldova.

The short-listed individual consultant will be further evaluated based on the following methodology:

Cumulative analysis:

The award of the contract shall be made to the individual consultant whose offer has been evaluated and determined as: (a) responsive/compliant/acceptable, and (b) having received the highest score out of a pre-determined set of weighted technical and financial criteria specific to the solicitation.

- Technical Criteria weight – 60% (300 pts);
- Financial Criteria weight – 40% (200 pts).

Only candidates obtaining a minimum of 210 points would be considered for the Financial Evaluation.

Criteria	**Scoring**	**Maximum Points Obtainable**
<u>Technical evaluation criteria</u>		
University degree in computer science, IT, software engineering, GIS/geoinformatics or another relevant field	Bachelor's – 10 pts; Master's – 20 pts; PhD – 30 pts	**30**
Professional experience in development of web-based information systems, including hands-on development of user-facing application components, forms and business workflows in ASP.NET Core MVC-based applications	3 assignments – 40 pts; each additional assignment – 5 pts, up to 55 pts	**55**

Experience in GIS-enabled applications, web mapping, geospatial data processing or GIS integration	2 assignments – 40 pts; each additional assignment – 5 pts, up to 55 pts	**55**
Experience with in least one assignment consuming REST APIs/web services and working with relational and/or spatial databases	1 assignment – 5 pts, each additional assignment – 5 pts, up to 10 pts	**10**
	Subtotal Technical Scoring	**150**
<u>Interview evaluation criteria</u> *(The first 5 (five) candidates who passed technical evaluation criteria with the best score shall be invited for an online interview)*		
Excellent knowledge of .NET/C# web application development and implementation of business workflows	Strong – up to 50 pts; satisfactory – up to 30 pts; limited – up to 10 pts; none – 0 pts	**50**
Knowledge of GIS-enabled applications, route visualization/editing, geospatial data and GIS integration	Strong – up to 55 pts; satisfactory – up to 30 pts; limited – up to 10 pts; none – 0 pts	**55**
Strong interpersonal and communication skills; ability to work with public-sector users and multidisciplinary teams	Strong – up to 15 pts; satisfactory – up to 10 pts; none – 0 pts	**15**
Ability to work under pressure and meet tight deadlines	Strong – 10 pts; satisfactory – 5 pts; no – 0 pts	**10**
Fluency in Romanian and English; Russian is an asset	5 pts per language – 15 pts total	**15**
Belonging to group(s) under-represented in UN Moldova and/or the area of assignment*	No – 0 pts; one group – 2.5 pts; two or more groups – 5 pts	**5**
	Total Interview Scoring	**150**
	Maximum Total Scoring	**300**

Under-represented groups in UN Moldova are persons with disabilities, LGBTI, ethnic and linguistic minorities, especially ethnic Gagauzians, Bulgarians, Roma, Jews, people of African descent, people living with HIV, religious minorities, especially Muslim women, refugees, and other non-citizens.* ***Please specify in CV, in case you belong to the group(s) under-represented in the UN Moldova and/or the area of assignment.*

Financial

Financial	
Evaluation of submitted financial offers will be done based on the following formula: **S = Fmin / F * 200** ***(S** - score received on financial evaluation);* **Fmin** - the lowest financial offer out of all the submitted offers qualified over the technical evaluation round ***(F** - financial offer under consideration)*	**200**

Winning candidate

The winning candidate will be the candidate who has accumulated the highest aggregated score (technical scoring + financial scoring).