

## Terms of Reference

### Company to deliver quality assurance services for the implementation of the e-Parliament Information System

#### A. Project Title "Strengthening Parliamentary Governance in Moldova"

#### B. Project Description

The UNDP "Strengthening Parliamentary Governance in Moldova" (SPGM) Programme works with the Parliament of the Republic of Moldova (PRM) to strengthen its law-making, oversight and representation functions with a specific focus on EU integration and the Sustainable Development Goals. The programme directly assists standing committees and the secretariat of parliament in the implementation of their mandate. Interventions include training, technical assistance, easy-to-read publications, exchanges and opportunities for learning from other parliaments, as well as the provision of specialized technical equipment.

At the request of the parliament, UNDP Moldova has initiated the procurement of an *off-the-shelf* software platform for the implementation of an e-Parliament information system, in accordance with Permanent Bureau Decision No. 19 of 18 November 2015. The scope of the project is the delivery of an integrated system consisting of three components:

- Document management system (DMS)
- Electronic voting sub-system
- Public web portal

In line with the approved concept, the goal of implementing the e-Parliament system is to follow the global trend of establishing an information society to strengthen the democratic process. By implementing the e-Parliament system, the legislature will apply modern technologies and standards in support of its core functions:

- **Representative function.** The representative function of the PRM is characterized by its role as a venue for disparate perspectives, for the expression and debate of issues of local and national importance, and the translation of those debates into policies. For MPs, effective representation requires engaging their constituents in continuing dialogue to understand their views and perspectives and to rely on their knowledge on various topics.
- **Legislative function.** A central role of parliament is to make new laws, as well as making changes to existing legislation. Draft laws are introduced by government or individual members of parliament. After review by the relevant parliamentary committee, the draft laws or bills are discussed and voted on in the plenary for adoption.
- **Oversight function.** Parliamentary oversight aims to promote people's freedoms and well-being, and to improve accountability and transparency in government. Oversight processes assess the impact of government action on society; help ensure that appropriate resources are provided to implement government programmes; identify unintended or negative

effects of government policy and actions; and monitor the meeting of national and international commitments.

Overall, the implementation of e-Parliament will change the PRM's work processes through a standardization of many of its business processes. Additionally, the e-Parliament system is expected to increase parliamentary transparency and visibility through the introduction of a new and improved public web portal.

In this context, UNDP is looking to contract a company to deliver quality assurance services during the implementation of the e-Parliament Information System. The company will have to certify that the offered e-Parliament IT solution is in line with the announced Technical Specifications, assisting in software and security testing of e-parliament IS, as well as advising on acceptance of implemented e-Parliament IT solution. The selected company is also supposed to carry out a technical security audit of application software systems developed/procured.

### **C. Scope of Services and Expected Outputs**

The overall objective of the assignment is to plan, organize and delineate responsibility for the completion of the offered e-Parliament IT solution and certify it is compliant with the Technical Specifications, through software and security testing of e-parliament IS.

The primary objectives of this assignment are to ensure that:

- E-parliament information system is developed according to the Technical Specifications;
- User Acceptance Testing (UAT) process is performed in a smooth and controlled manner as to ensure efficient transition to operations of the e-Parliament System;
- Performance requirements of the new implemented e-Parliament system are met;
- QA standards are respected during the implementation of e-Parliament System;
- Information system is tested according to international QA standards and are free of major issues.
- Information system is developed according to security standards and are free of security vulnerabilities.

In order to achieve the stated objectives, the company will have the following responsibilities:

#### **(i) Analyse the Information system requirements**

The purpose of this analysis is to understand the information system requirements. The company shall review the following documents for preparation of test strategy and test plans:

- a) Technical Requirements for Supply and Installation of the e-Parliament Information System;
- b) Detailed software requirements specification document – a document that will be submitted by the Supplier of the e-Parliament software solution and will contain:
  - Analysis Models, including:
    - requirements model and/or use cases;
    - domain model, fully specifying the entities and the relations between them;
  - Component model, including a narrative description of all components, the links between them and integration interfaces with other systems/external components;
  - Logical model;
  - Deployment model, including a narrative description of all nodes and the links between them. This model will also contain the precise specifications of the equipment and operation environments for the operation of the system at normal parameters, as well as specifications for a minimal configuration;

- Dynamic model including diagrams and a narrative description of the states and transitions of the key entities;
- c) Hardware technical specification for the virtual servers and other needed cloud infrastructure (submitted by the Supplier of the e-Parliament);
- d) Report on piloting period, which will include discovered bugs, concerns, proposals and conclusions (submitted by the Supplier of the e-Parliament);
- e) System installation and configuration guidelines, that must include at least how to install the application, what the hardware and software requirements are, platform description and configuration, application configuration and disaster recovery procedures (submitted by the Supplier of the e-Parliament);
- f) Training materials. Guidelines for users and system administrators (submitted by the Supplier of the e-Parliament);
- g) Documentation of APIs used for integration with other IT systems, if any (submitted by the Supplier of the e-Parliament);
- h) Testing plan and testing scenarios (submitted by the Supplier of the e-Parliament);
- i) Change requests to e-Parliament Technical Specifications. These requests will be analysed and proposed for implementation or rejected.

## **(ii) Performing of testing activities for e-Parliament information system**

The purpose of this activity is to ensure that the e-Parliament information system (including document management sub-system, e-Voting and e-Conference sub-system and Public Web Portal) is being developed, in compliance with the Technical Specifications, free of major defects and its builds are ready to be promoted to the production environment. The company will provide testing documentation and activities for the platform level service, including:

- a) Baseline the software test plan document (i.e. get it reviewed and approved/ signed-off by the Beneficiary);
- b) Design the required test strategy and test plan in line with the scope and organization standards;
- c) Identify, evaluate and propose test automation and test management tools;
- d) Evaluate and identify the required test automation and test management tools;
- e) Estimate the test effort and test resources (team size, skills, attitude and schedule);
- f) Review the test cases and test data generated by Supplier of the e-Parliament solution;
- g) Track the new/updated requirements in the project and manage the testing artefacts update accordingly;
- h) Collect and analyse metrics on test progress and product quality;
- i) Report the testing progress/results to the UNDP and PRM;
- j) Ensure the resolved defects are re-tested.

## **(iii) Ensure smooth execution of User Acceptance Testing Process**

The purpose of this activity is to assist the e-Parliament owner in the User Acceptance Testing process for developed information system and perform the following activities:

- a) Carry out the following tests for end product and provide a sign off:
  - Unit Testing;
  - Functional Testing;
  - Integration Testing;
  - Volume Testing;
  - Performance Testing;
  - Stress Testing;
  - Regression Testing;

- b) Facilitate User Acceptance Testing (UAT) with the end users for the defined and accepted set of UAT cases of implemented software applications/e-services. This consists of the following at a minimum:
- Prepare the End Users to conduct User Acceptance Testing, especially the Functional Testing as per the defined UAT criteria;
  - Ensure the readiness of the Software Solution Provider to conduct User Acceptance Testing and report any measures to be taken before the UAT (i.e. ensure data required for testing is set up properly, ensure the process defined for UAT is acceptable);
  - Ensure that the necessary UAT Environment is set up by the Software Solutions Provider as needed;
  - Provide sign off as the Independent Testing provider for User Acceptance Testing together with the End-User organization. The quality of the system should be certified / accepted by this Independent Testing Consultant.

#### (iv) Execution of application software security audit

The purpose of this audit is to perform security code review, penetration testing and other security audit activities to evaluate the following area:

- Validation and Encoding.** The rules for validating and encoding each input to the Information system, whether from users, file systems, databases, directories, or external systems;
- Authentication and Session Management.** The authentication credentials and session identifiers protection throughout their lifecycle;
- Access Control.** The roles (groups, privileges, authorizations) used in the Information system and the access rights to each asset and function for each role;
- Error Handling.** The handling mechanism of errors occurring during data processing;
- Logging.** The information, useful in forensic investigation, logged for each security-relevant event;
- Connections to External Systems.** The authentication and encryption mechanism handled for all external systems, such as databases, directories, and web services;
- Encryption.** The mechanism of data encryption, certificates and other credentials handling;
- Availability.** The mechanism of protect against denial of service attacks such as authentication lockout, connection exhaustion, and other resource exhaustion attacks;
- Secure Configuration.** The mechanism of securing the default values for all security relevant configuration options;
- Public APIs.**

#### D. Deliverables and Indicative Timeframe

No.	Deliverable	Deadline
1.	Inception Report developed and submitted	By July 2018
2.	Report on revised deliverables of the Analysis and Design Phase ( <i>for each component separately: e-Voting, DMS and Public Web Portal</i> ), including comments and recommendations on identified issues/risks in the documents submitted by the software development company.	By July 2019*
3.	Testing documentation for the e-Parliament information system developed ( <i>for each component separately and as an integrated system</i> ). Two iterations: one after the Pilot system release and one after the final system release rendered. The documentation should include:	

\*Note – the response period for validation of each deliverable will be

	<ul style="list-style-type: none"> <li>• Test plan</li> <li>• Test strategy</li> <li>• Test reports</li> </ul>	max 10 working days.
4.	<b>Report on each testing activity developed (as a result of Task ii) and re-testing after the system improvement performed</b> ( <i>for each component separately and as an integrated system</i> ). Two iterations: one after the Pilot system release and one after the final system release rendered. The report should include: <ul style="list-style-type: none"> <li>• System test report</li> <li>• Improvement proposal</li> </ul>	At the request, the response time can be one time extended with an additional 5 working days.
5.	<b>Report on each UAT developed (as a result of Task iii) and re-testing after the system improvement performed</b> ( <i>for each component separately and as an integrated system</i> ). Two iterations: one after the Pilot system release and one after the final system release rendered. The report should include: <ul style="list-style-type: none"> <li>• System readiness report</li> <li>• User guides review report</li> <li>• Improvement proposal</li> </ul>	
6.	<b>Report on application software security audit (as a result of Task iv) and retesting after the system improvement developed</b> ( <i>for each component separately and as an integrated system</i> ). Two iterations: one after the Pilot system release and one after the final system release rendered. The report should include: <ul style="list-style-type: none"> <li>• System security test report</li> <li>• Improvement proposal</li> <li>• Activity Progress Reports</li> </ul>	
7.	<b>Final Report on e-Parliament implementation process developed.</b> The Report will provide details on the compliance level of the implemented e-Parliament system and the original Technical Specification through use of a gap analysis.	

Monthly reports will be submitted to UNDP and PRM detailing activities performed and progress achieved during the reported period. The software and security testing reports shall include the following information:

- Identified deficiencies observed during test and security audit process;
- Recommendations for remediation of identified deficiencies. All recommendations should reflect latest industry trends and standards.

The test report will be submitted after each testing cycle and technical security audit of the Information system and will not take longer than 2 weeks.

All data and information received from the PRM and UNDP, for the purpose of this assignment are to be treated as privileged and confidentially and are only to be used in connection with the execution of these Terms of Reference. The contents of written materials obtained and used in this assignment may not be disclosed to any third parties without the expressed advance written authorization of the UNDP and PRM.

## E. Institutional Arrangements

The company will work under the guidance of the Parliament of Moldova and the SPGM Technical Adviser and Project Manager for the substantive aspects of the assignment, and the Project Associate – with regards to administrative aspects.

All the deliverables should be cleared with the Project's Coordination Team (consisting of representatives of Parliament of Moldova and UNDP SPGM Project Team). The above-listed deliverables will be finalised based on inputs from SPGM Project Team and will be adjusted to the needs of the end beneficiary.

### **Language requirements**

All communications and documentation related to the assignment will be in English and Romanian. The deliverables should be submitted in an electronic format that beneficiaries can further edit and use in their work. If needed, the company shall ensure the interpretation required in the context of performance of the expected tasks.

### **Timeframe and Location**

The expected period of implementation of the assignment is during July 2018 - July 2019. The quality assurance services will be carried out in Moldova. The company shall include information on the volume of allocated resources to carry out the assignment. A breakdown per working day allocated for each deliverable shall be submitted, which clearly explains the role of the team members involved in carrying out the listed tasks.

## **F. Qualifications of the proposed team**

The Bidder shall provide arguments regarding its proposal, demonstrating its adequacy in relation to the project objectives and the environment in which it will run. Subsequently, the information on the volume of allocated resources shall be included.

The successful bidder must meet the following minimum qualification requirements for the assignment:

### **Corporate Requirements**

- Legally registered entity or consortia of firms;
- At least 5 years of experience in software testing, Quality Assurance, stress and security testing/audit;
- Minimum of two successful projects implemented in the last two years, as outsourced project in testing and security testing/audit;
- Demonstrated extensive knowledge of Security Assurance of ICT projects;
- Experience in working with central public authorities would be an asset;
- Certification obtained related to quality and security management (ISO 9001, ISO 27001);
- Commitment to diversity and gender equality:
  - Appointment of women to managerial positions in the team – will constitute an advantage;
  - The below-proposed team is gender balanced respecting the proportion of minimum 40% representation of each sex – will constitute an advantage;
  - Diversity within the team: persons with disabilities, people belonging to minority, vulnerable or marginalized groups are part of the team – will constitute an advantage.

The proposed team should consist of but not be limited to the following members:

1 (one) Team Leader, and 1 (one) Security Testing Consultant, 1 (one) Testing consultant and 1 (one) Business Analyst. Women in decision making/senior positions, as well as gender balance and diversity in the proposed team are strongly encouraged. The minimum qualification requirements for the key staff members are described below:

#### Team leader:

- University degree in areas such as computer sciences, engineering, and telecommunications or other ICT related;
- Minimum 5 years of experience in area of software development;
- Minimum 3 years of software application security audit;
- At least 3 years of experience in Project Management in public or private sectors, proved by an internationally recognized certificate such as PMP, PRINCE2, AGILE;
- Excellent understanding and experience in Microsoft technologies (.NET, SQL Server, SharePoint);
- Excellent understanding of internationally recognized standards and best practices (e.g. OWASP, ITIL, ISO/IEC 270002, etc.);
- Ability to effectively communicate and write in English. Knowledge of Romanian and/or Russian or other languages relevant for Moldova, including Bulgarian, Gagauzian, Romani, Ukrainian or sign language is an advantage;
- This position is taken by a woman, a person with disability, or a person belonging to minority, vulnerable or marginalized group – will constitute an advantage.

#### Security Testing Team Member:

- University degree in areas such as computer sciences, engineering, and telecommunications or related;
- Minimum 5 years of experience in area of software testing;
- Minimum 3 years of experience in security auditing (code review and penetration testing) of application software written in Microsoft .NET technologies;
- Excellent understanding of internationally best practices regarding application software security developed by OWASP (code review and pen testing);
- Certifications in security qualifications such as CEH or are considered an asset;
- Ability to effectively communicate and write in English. Knowledge of Romanian and/or Russian or other languages relevant for Moldova, including Bulgarian, Gagauzian, Romani, Ukrainian or sign language is an advantage;
- This position is taken by a woman, a person with disability, or a person belonging to minority, vulnerable or marginalized group – will constitute an advantage.

#### Testing Team Member:

- University degree in areas such as computer sciences, engineering, and telecommunications or related;
- Minimum 3 years of in-depth software testing and Quality Assurance;
- Good knowledge of the software lifecycle development with emphasis on the Quality Assurance aspects;
- Certifications in testing (such as ISEB, ISTQB or other) are considered an advantage;
- Ability to effectively communicate and write in English. Knowledge of Romanian and/or Russian or other languages relevant for Moldova, including Bulgarian, Gagauzian, Romani, Ukrainian or sign language is an advantage;
- This position is taken by a person with disability, or a person belonging to minority, vulnerable or marginalized group – will constitute an advantage.

#### Business Analyst:

- University degree in areas such as computer sciences, engineering, and telecommunications or related;
- Minimum 5 years of experience in area of IT Business/System Analysis;
- Solid knowledge of UML and BPMN;

- Internationally recognized certification in Business Analysis issued by an internationally recognized institution proving advanced knowledge regarding requirements' identification, analysis, prioritizing, management, communication, verification and validation (ex. PBA, CBAP or equivalent);
- Knowledge on business processes modelling in the content of IT systems;
- Ability to effectively communicate and write in English. Knowledge of Romanian and/or Russian or other languages relevant for Moldova, including Bulgarian, Gagauzian, Romani, Ukrainian or sign language is an advantage;
- This position is taken by a person with disability, or a person belonging to minority, vulnerable or marginalized group – will constitute an advantage.

Each team member should have a proven commitment to the core values of the United Nations, in particular, respecting differences of culture, gender, religion, ethnicity, nationality, language, age, HIV status, disability, and sexual orientation, or other status.

United Nations in Moldova is committed to workforce diversity. Women and men, persons with disabilities, LGBTI, Roma and other ethnic, linguistic 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.