Terms of Reference for

O&M Software Development, Testing & Deployment in West Bank & Gaza

(34 WB & 5 Gaza)

Ref. No (MDP3-C2-2.1.2.E9)

1. <u>Background:</u>

The Palestine Liberation Organization, for the benefit of the Palestinian National Authority (PNA), has received an initial financing of 130 Million Euros from the World Bank-International Development Association (IDA), Central Government, KFW, Denmark, SDC, VNG, GIZ and AFD towards the cost of the 3rd phase of the Municipal Development Program (MDP3).

The MDP3 is aligned with the PA's long-term strategy to consolidate and strengthen service delivery in the LG sector towards financially sustainable LGUs, as specified in the MoLG's Sector Strategy 2017-2022.

MDP 3 is at the center of a series of interlocking interventions by the multi-donors in collaboration with the central government to strengthen the institutional development, accountability and financial sustainability of local governance and service delivery in Palestine.

The MDP3 will consolidate and scale up past gains under MDP 1 and MDP 2 in municipal performance and accountability enhancement and will start enabling the environment at the central level and municipal partnerships with the private sector to improve the efficiency and sustainability of municipal services.

MDP III Project Components

Component 1: Municipal performance and Service Delivery. MDPIII is the third municipal development project to support and incentivize improvements in the development of municipal management capacity. Previous MDPs financed municipal infrastructure and service delivery through the provision of a basic block and performance-based grants and provided demand-driven capacity development support for municipalities. This approach was very innovative at the design and has shown to be highly effective. The proposed MDPIII would continue this overall approach while focusing more on improving financial sustainability and accountability in municipal service provision. Like MDPI and MDPII, municipal performance will be measured through Key Performance Indicators (KPIs), yet these have been substantially revised to reflect a greater focus on the sustainability of municipal services. Performance measurements will encompass three

main areas for reform: i) Financial Performance and Sustainability, ii) Institutional Performance, and iii) Transparency, Accountability, and Participation.

Component 2: Capacity Development. This component of the project would continue to strengthen municipal capacity in the project's three performance areas: (i) financial sustainability, ii) institutional performance and iii) transparency, accountability and participation. In addition, specific attention will be paid to higher order needs of municipalities that will enable them to improve their financial sustainability and creditworthiness, strengthening other core municipal functions as well as strengthen their social accountability to their citizens and stakeholders.

Municipal capacity development activities will continue to be identified by municipalities and MDLF to enable municipalities to achieve results and improve their performance. The performance measuring system will be applied to identify relevant capacity building activities to the municipality, which will be delivered to improve capacity and sustain results achieved.

Component 3: Municipal Partnership Projects. This component will provide technical assistance and project financing to municipalities to a) engage more effectively with the private sector, and b) work across administrative boundaries to develop joint and/or innovative investments for municipal service delivery and local economic development. The Bank will finance only the technical assistance portion under Sub-component A.

Sub-Component A: Private Sector Partnership Support.: In order to better leverage private sector engagement, this component will support municipalities to identify, develop, and structure opportunities for private sector participation in municipal service delivery and local economic development on a demand-driven basis. This component will support municipalities to identify the potential modalities for private sector engagement, select the most relevant or appropriate modality based on feasibility, and design the implementation of the agreed modality. Specific areas for support would range from permitting and other processes to structuring private sector participation in infrastructure and service delivery (contracting out, joint ventures, special purpose vehicles, and build-operate-transfer agreements), as well as strategic land use planning and associated infrastructure development related to economic growth priorities. The component will be particularly important in terms of supporting technical and human capacity development at the municipal level. This sub-component, through DP parallel financing, will also provide project financing to facilitate local economic development in cooperation with the private sector.

Sub-Component B. This sub-component will finance top-up payments complementary to the grant allocations under component 1 to incentivize municipal joint and/or innovative investments based on municipal demands to leverage economies of scale for municipal investments and facilitate financially sustainable municipal investments.

Component 4: Project Implementation Support and Management. This component will finance goods and consultant services for monitoring and evaluation, outreach and communication and local technical consultants for the engineering supervision of Component 1 and the MDLF management fee.

The Municipal Development and Lending Fund (MDLF), as the delegated implementation agency, intends to use part of the Grant to hire the Consultant based on a source selection to perform specific tasks under the contract entitled "**O&M Software Development, Testing & Deployment in West Bank & Gaza**" and represent the fourth phase1 of the O&M capacity building packages.

This O&M computerized system will be implemented in 39 municipalities listed in **Annex I**.

2. <u>Background and Objectives of this Assignment</u>

The objective of the assignment is developed O&M computerized by the local software provider, in 39 municipalities in the West Bank and Gaza and supervise the implementation in the targeted municipalities.

Supplying the O&M system aims to increase the efficacy and improve the quality of the municipalities' services upon the O&M Operation and maintenance manual. As they indeed need a management system for the operation and maintenance of their fixed assets. At this stage, the assignment will assist the selected municipalities to cover roads and public buildings as the system are designed to include other assets' categories.

3. <u>Conceptualization Framework and Objectives of the System</u>

MDLF intends to have a Web-enabled software solution, well supported, a user-friendly O&M management system & automatic guides that handles and manages all activities of Operation and Maintenance procedures in municipalities through a systematic workflow process. This system will allow for linkages or real-time interfacing with municipalities' fixed assets information system on the entire assets lifecycle from acquisition, testing, utilizing, compliance with regulatory maintenance requirements to the disposal. In addition to that, the O&M system enables each municipality to control the efficiency and the performance of each fixed asset. The system is scalable and interoperable, with an ability to import data from multiple proposed structured Excel spreadsheets, Text files, and databases.

4. <u>The scope of Work:</u>

The scope of this assignment includes providing the necessary web-based & Mobile software (including any required software licenses and third party tools) and supporting services needed to install and operate the solution. And Mobile application for assets evaluation process.

The business processes analysis and all necessary documentation will be provided to the consulting firm. Minor adjustments may be made to the business processes to make the implementation easier but the business rules should be adhered to during the implementation.

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[1] Phase four: Roll out the computerized system to the municipalities.

Scalability and Reliability are a must, and sizing must be based on industry best practices, and must be backed up by corresponding performance metrics, based on earlier implementations by the bidder. The consulting firm is required to consider elements of hardware expected include (but not limited to) servers, storage, network elements …etc.

1. **Task One: Analysis & Design phase Document:**

    As part of this task, the consulting firm is responsible to:

    - Conduct comprehensive in –depth review of the O&M manual (http://www.mdlf.org.ps/Files/Docs/O&M Manual Release 1.0.zip), the functional requirements (Annex III), Non-Functional requirements (Annex IIII), and Software Requirements Specifications SRS (Annex V). This task will provide a clear definition of Operation and Maintenance solution functional scope by defining the detailed functions, data, workflow, and operational requirements that the Operation and Maintenance solution must support. Accordingly, firm will finalize the optimized working processes and procedures if needed to support automation and software development.

    - Perform Logical Design that include but not limited to System boundary, The detailed design should include the following tasks:

        – Define a technical software architecture in which the Operation and Maintenance solution will operate.
        – Analyse the system requirements and develop a skeleton database structure for each module that depicts the different components of the envisaged software and its different relations Entity Relationship Diagram ERD.
        – Prototyping: The prototypes help to involve the users in design. They can also verify feasibility of a technical solution.
        – Present, discuss the proposed structure with the working group (stakeholders) and ensure that the database includes all the different work processes and requirements that each module needs.
        – Get feedback and modify accordingly
        – Define the functions of the Mobile application evaluation process that will be used to evaluate the assets onsite.

    - Prepare firm in-house hosting for period of time to allow the physical inspection firms to fill data in the software per municipality, them the firm will move the software and data to the municipality upon MDLF instructions.

Referring to the above, firm will implement any necessary customization to the O&M software requested by MDLF without any additional cost in any stage of the develop

2. **Task 2: Software Development & Acceptance :**

- **Mobility Phase:** Check the Mobile application process online/offline use.
- **Data Entry Phase:** firm will host for Data Entry of the physical inspection companies to be migrated to the software per municipality**.**
- **Data migration phase:** firm will migrate & validate the data entry to be suitable for the system per municipality.
- **Testing Phase:** firm will perform testing the system with the migrated data**.**
- **Documentation Phase**: user & administrator Manuals should be ready for training.
- **Workshops Phase:** the firm will conduct 3 Workshops in 3 clusters to define the system to the municipalities.

3. <u>**Task 3: Deployment of O&M Software:**</u>

Deploy O&M Software on the target municipalities and prepare the setup data to be matched with O&M Manual annexes and tables. Prepare at least a real example to each municipality. All needed customization by MDLF shall be ready before acceptance.

3.1 Conduct an acceptance test:
- Conduct an orientation meeting on the system at the level of the municipal council and municipal staff.

- Deployment of the software. This includes the services to set up, configure, install, and test and integrations at the selected municipalities. Testing will be as clarified in the SRS document (Annex A) Operation Acceptance Testing section.

- Transfer all data needed to operate the software. Ensure that data is synchronized between O&M application & mobile application, and all file/paper data is transferred to the software in a secure way. Municipal data and information are of utmost confidentiality; therefore, the consultant shall ensure that the data are well kept and is very secure. This will be by preparing template forms for data inserting and system import.

<u>**3.2 On the job training and Coaching Component:**</u>

- *Firm* **shall prepare a detailed on the job training and coaching plan:**
   - The coaching training plan should defined with schedule of the onsite training visits, the coaching plan should describe the necessary actions to be undertaken taking into consideration the number of users, their capacity, and their computer availability. Propose training schedule taking into consideration the availability of the system users and administrators.
   - The coaching plan should describe the material needed, duration, expected outcome, evaluation methodology, and feedback.
   - Provide support and on-the-job training to all staff involved in operating the software. Ensure that all relevant staff is aware of operational requirements of the software, and have the necessary skills, to work with it. The on the job

training provided by the consulting firm shall provide the trainees with a working knowledge of at least the following:

- Access the Software Application
- Access the Mobile application
- Use different input devices and key functions.
- Select and use the authorized screens to add, edit and delete data.
- Navigate between authorized screens.
- Ability to use and select help and search tools, etc.
- Define, preview and print reports, Import or export data from/to other application

– The Plan should cover the following:
  - 3 onsite End User Training: for municipality staff involved in the system operations
  - 1 onsite Technical Software Training: for IT staff at the municipalities to provide system support, troubleshooting and backup techniques.
  - Anytime remotely training.

– Provide continuous support to the users during the warranty period. The consulting firm shall solve all the problems that might appear during the testing period and reflect it on the software.

– One Year of free Maintenance, support, and Warranty after the issuance of the final acceptance certificate and Installation or moving software and database from server to server is free of charge.

5. **Consultant Qualifications & Pricing Model**

Pricing Model:
The consulting firm is required to price the project as a lump-sum price with details of the following cost categories:

- **Category 1:** Implementation cost (per site) as described in the table below:

Item	Cost per Site
Operation and Maintenance Web-enabled software development Lifetime license per site included all other party licenses needed (3rd party, Database, others), License include all necessary tools to operate the system and any third-party tools to manage the system.	
Annual maintenance and technical support cost	

The consulting firm should take in consideration that the Cost category 1 will be applied for future roll out projects, thus the prices should not change in future.

Consultant Qualifications:
A firm shall provide the following expertise and team of experts in West Bank and Gaza in order to be able to implement the assignment

Expert	Number of Experts
Project Manager	1 – in West Bank
System Architect/Business Analyst and Designer	1 - in West Bank
Software Engineer	4 (3 in West bank, 1 in Gaza)
Software Quality Assurance Specialist	2 (2 in West bank)
GIS & System integration Expert	1
Total	**9**

- **Project Manager/ team leader**:
    - **Education skills**: Having at least BA/BSc in Computer Science, Software Engineering.
    - **Profusions skills**: At least 10 years' experience in Project Management, PMP certificate is a plus by PMI. Experience in the ICT full project life cycle from analysis to post-deployment support.
    - **Project management skills**: including the use of software project management at least 3years.
    - **Experience skills**: at least 3years extensive experience in managing ICT-based solutions for various industries including public sector institutions.

- **Leadership skills** – taking control of how a project will unfold requires someone who can direct others, delegate, boost morale, solve problems, and keep everything flowing. At least 3 assignment SPM projects.
- **Technical knowledge** – a background in programming languages (such as C#, PHP, others), testing procedures, and the like enables software project managers to comprehend what is going on in the development process
- **Attention to detail –** allowing things to slip through the cracks can derail progress and cost valuable money and time
- **Multitasking skills** – demands come from various people throughout the day, and software project managers must prioritize and juggle them.
- **Personal skills:** Strong communication and documentation skills

- **System Architect/Business Analyst**:
    - **Education skills**: at least BSc in Computer Science, Software Engineering
    - **Experience skills**: at least 10 years of technical experience in analysis and design ICT-based solutions for various industries including public sector institutions
    - **Profusions skills**: at least 5years solid experience in system analysis and design in 3 similar assignment.
    - **Problem-solving skills:** The analyst must understand the assignment as it exists, then try to change and improve it.
    - **Attention to detail –** allowing things to slip through the cracks can derail progress and time.
    - **Multitasking skills** – demands come from various people throughout the day, and software project managers must prioritize and juggle them
    - **Technical knowledge:** Solid experience in technical architecture, ICT infrastructure and HW/SW specifications for Web systems/applications, Excellent analytical skills, Experience in relational database & web applications technologies, Experience in component-based software architectures especially Service Oriented Architecture SOA, Experience in Web services and XML, Experience in ICT security standards / technologies in web applications, Excellent problem-solving skills
    - **Personal skills:** Strong communication and documentation skills

- **Software Engineer :**
    - **Education skills:** at least BSc in Computer Science, Software Engineering
    - **Experience skills**: at least 3 assignment development experience.
    - **Profusions skills**: at least 4 years of technical experience in web-based applications.
    - **Profusions skills:** Solid Object-Oriented programming skills, Experience in designing, implementing, and evaluating software components and prototyping, Experience in Web applications programming including HTML page design, Javascript, Java programming, C# and.Net programming, PHP.
    - **Personal skills:** Strong communication and documentation skills

- **Software Quality Assurance Specialist**

- **Education skills:** BSc in Computer Science, IT or Software Engineering
- **Profusions skills**: At least 4 years of technical experience in web-based applications, Thorough knowledge of web application development concepts
- **Technical Profusions skills:** at least 3 testing assignment Knowledge of functional and structural testing techniques and tools, Mastery of general principles of structured testing methods, Differentiate between the developer's and tester's mindset
- **Problem-solving skills:** The Tester must understand the assignment as it exists, then try to test it.
- **Personal skills:** Strong communication and documentation skills

- **GIS & System integration Expert**
  - **Profusions skills**: At least 8 years of technical experience in system integration (3 assignments) & GIS (3 assignments)
  - **Education skills:** BSc in Computer Science, Software Engineering
  - **Technical Profusions skills:** Solid knowledge in Service Oriented Architecture SOA principles and technologies
  - **Experience skills:** At least 3 years' experience in Web Services, UDDI, WSDL, XML, and related integration technologies, Experience in installing, configuring and testing system.
  - **Problem-solving skills:** strong analyst must understand the assignment as it exists, then try to change and improve it.
  - **Personal skills:** Strong communication and documentation skills

Firm Company must provide the following information about the project team members:
- Name
- Position(s) held
- Office(s)
- Nationality
- Language
- No. of years' experience
- Length of service with your firm
- List of main projects worked on and a brief about each project

Software Quality Assurance Specialist located in West Bank only but must be able to monitor the performance in Gaza through all possible channels.

The firm Company need to ask MDLF for any change in the provided resources during the project, the replacement resource must be qualified enough to be replaced.

<u>Deliverables, timeline and level of effort:</u>

<u>Deliverables[2]</u>

6.1 An Inception Report that summarizes key findings, issues discussed and an outline of the full set of actions and objects/documents vital for the successful completion of the assigned tasks, including the timing of the submission of the main deliverables. This deliverable should be prepared in English or Arabic. The Report shall include the followings:

- Methodology;
- Work plan for the main activities, deliverables, and milestones;
- Personal schedule (considering the Time schedule/Work plan)
- Communication plan with the different project stakeholders; and
- Anticipated risks and preliminary risk management plan.

6.2 System Design & Prototype Document: firm will perform the system analysis and develop a skeleton database structure for each module that depicts the different components of the envisaged software and its different relations Entity Relationship Diagram ERD. The prototypes (forms/reports) help to involve the users in design. They can also verify feasibility of a technical solution.

6.3 O&M Software Solution: O&M Software Development with a successful pre installation tests will be conducted, an approved pre-installation report by MDLF will generated indicating the successful of pre-installation test and approve to continue the software implementation in listed municipalities.

Software will include**:**
- Approved Workflows with a document describing the workflow charts
- Approved Forms: In Arabic language with a document describing the form fields
- Approved Reports: In Arabic language
- Temporary forms to be used for initial data entry
- Approved Importing Excel formats and Import mechanism

6.4 Deployment Report for 39 Municipalities: the system should be deployed into the municipalities with the physical inspection database, the system should be functional with employees and with the mobile application.

6.5 Progress Reports that summarize the achievements of 2 Months in reference to the TOR, results in the analysis of the main activities, obstacles, encountered during the reporting period, mitigation measures and outline the planned steps during the following reporting period (with respect to the submitted work plan). In each progress report, the consulting firm should attach copies of the interim reports concluded during the reporting period. These reports should be in English and in the biweekly schedule.

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[2](Deliverables should be submitted to MDLF in a hard copy and soft copy. The files should be in an open editable format.

6.6 Final Report & System Documentations The consulting firm should prepare a final report ten days before the end of the assignment. This Report should summarize the activities of the consulting firm including documentation of all collected data, the analyses, the obstacles encountered, and lessons learned, outputs and achievements. This report should be prepared in English.

Timeline

This consulting assignment is expected to be for a 12 months period.

Deliverables Breakdown and Schedule

ID	Deliverable Name	Expected Date
1.	Inception report	2 weeks after the commencement of the assignment
2.	System Prototype Document	12 weeks after the commencement of the assignment
3.	O&M Software Development with a successful pre installation test	35 weeks after the commencement of the assignment.
4.	Deployment Report for 19 Municipalities	41 weeks after the commencement of the assignment. At least 3 training with site visits to each municipality with a signed Training Report.
5.	Deployment Report for other 20 Municipalities	46 weeks after the commencement of the assignment, At least 3 pieces of training with site visits to each municipality with a signed Training Report.
6.	Progress reports	Each report should be submitted by the end of every 8 weeks
7.	Final report & System documentations	2 week before the end of the assignment

7 Contract Type and Payment Schedule:

This contract is a lump-sum contract. Payments will be linked to deliverables and arranged according to the following:

- Payment 1: 10% of the contract value will be made upon the submission and approval by the MDLF of the *Inception Report*.

- Payment 2: 10% of the contract value will be made upon the **successful development** of the software, the submission of the *System Prototype Document* with MDLF approval.

- Payment 3: 10% of the contract value will be made upon the **O&M Software Development with a successful pre installation test** *with* MDLF approval.

- Payment 4: 20% of the contract value will be made upon the O&M Software **Deployment Report for 19 municipalities**, with each Municipality approval and MDLF receive committee approval.

- Payment 5: 20% of the contract value will be made upon the O&M Software **Deployment Report for other 20 municipalities**, with each Municipality approval and MDLF receive committee approval.

- Payment 6: 20% of the contract value will be made upon the **Mobile Application installed in 39Municiplaity and Integration section Annex II**, with each Municipality approval and MDLF receive committee approval.

- Payment 7 (final): 10% of the contract value will be made upon the submission and approval by the MDLF of the **Final Report & all system documentation**.

8 <u>Reporting and Management</u>

The Municipal Development and Lending Fund (MDLF) will be res*ponsible for coordinating activities with the consulting firm, process*ing payments, and for acceptance of the deliverables. The Project Manager is **the Director of Operations, Mr. Hazem Kawasmi.**

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