Government of the People's Republic of Bangladesh
Local Government Engineering Department
Program for Supporting Rural Bridges (SupRB)

Terms of Reference (ToR)
for
Web Developer

1. Background of the Program:

Bangladesh is a densely populated country and more than 70% of the people live in the rural areas. To access to different social and economic centers and settlements, an extensive rural roads network has developed over the period. The total road network size of the country is roughly 375,000 km. This is equivalent to a road density of approximately 250 km per 100 sq. km. The total rural road network comprises just over 350,000 km (94% of the network). Upazila roads (UZRs) and union roads (UNRs) composed of respectively 11% and 12% of the rural road network. Over a quarter (27%) of the rural road network is paved, with 82% and 57% of the UZRs and UNRs, respectively, are paved. The current inventory envisages that a bridge is required for every 4.5km of UZRs and UNRs. Over four-fifths of these gaps now have structures, leaving a fifth of them to be bridged. But currently, the Government does not have any dedicated bridge construction and maintenance program. Nonetheless, none of the Development Partners are involved in rural bridge maintenance and rehabilitation activities.

Due to a shortage of funds, significant backlog exists in the maintenance of bridges on rural roads. Although the rural road maintenance budget has been steadily increased in the last ten years, it was not sufficient to manage the entire maintenance needs including bridge maintenance. In this context, the Government of Bangladesh has received a loan from the World Bank (WB) toward the cost of the program titled "Program for Supporting Rural Bridges" (SupRB).

The program will be implemented by the Local Government Engineering Department (LGED) through the Project Director's Office and contract administration of civil works will be carried out by LGED District/Upazila offices. The program will be implemented in total 61 districts out of 64 districts of the country, except three hill districts at a cost of USD$618million. World Bank has a commitment to contribute in reducing the maintenance backlog of rural bridges by funding the proposed Program for Supporting Rural Bridges (SupRB).

The program Components include (i) Major and minor maintenance of 85,000 meters of bridges, rehabilitation of 24,000 meters of bridges, Capacity Expansion (Widened) of 5000 meters of rural bridges, replacement or newly construction of 20,000 meters of bridges, technical, fiduciary, procurement, social and environmental capacity improvement of LGED

including design and implementation of climate resilient bridges, and establishment and operationalize of Grievance Redress System (GRS). This program will provide continuous connectivity between agricultural production areas, growth center and rural markets located in the program area and enhance earnings opportunities creating uninterrupted access to the commercial institution and basic services like health and education of the rural poor. The impact of the program will be reduced poverty in the intervention area.

To provide support for the maintenance & enhancement of existing software (e.g. RSDMS, RuBIMS, PMIS, ePMS, EMIS, uFMS) and to carry out future software development related activities of the program, three Web Developer will be hired as individual consultant.

2. Objective of the Assignment

The objective of the assignment is to: (i) provide technical support in operation, maintenance and enhancement of LGED's web portal and different web applications;(ii) development of web applications for the program and for different units of LGED as per future need and as instructed by concern authority;(iii) prepare and update technical documents for all the existing and upcoming software applications; (iv) prepare and update training materials and contribute to the training of relevant LGED staff.

3. Overall Scope of Services

The Web Developer will work as a full-time member of PIU and will work under supervision of ICT Unit of LGED. The Web Developer will work in a team and have a significant role in maintenance, enhancement and development related activities of various software applications of LGED.

The scope of the services shall include but notare limited to the following tasks:

a) Provide technical support in operation, maintenance and enhancement of existing web-based software applications, such as- Road & Structure Database Management System (RSDMS), Rural Bridge Information Management System (RuBIMS), Personnel Management Information System (PIMS), Project Monitoring System (ePMS), Environment Management Information System (EMIS), Uniform Financial Management System (uFMS), etc. (according to the responsibilities assigned by the concerned authority);

b) Conduct requirement analysis for software solution as per requirement of the management and develop the necessary business and system specifications;

c) Develop assigned software solutions following software project life cycle rules and using selected technologies and on selected platforms;

d) Develop Application Programming Interfaces (APIs) to ensure interoperability between different software applications;

e) Ensures optimum level of integration among various application systems for better system performance and more efficiency in user procedures;

f) Develop plans for different forms of quality assurance including unit testing, integration testing and user acceptance testingand execute the same during development of new software application;

g) Provide technical support in maintenance and upgrade LGED web portal (Both Bangla & English) with state-of-the-art software technology and platform to make it interactive as well as dynamic for the users providing real-time information;

h) Contribute in data analysis, data migration and carry out R&D activities to improve performance of software applications;

i) Provide assistance in generation of on-demand customized reports and provide information to management of LGED;

j) Prepare and update technical documents for all the relevant existing and upcoming software applications;

k) Monitor health of the assigned web application and carry out data backup management in regular and systematic manner;

l) Prepare and update training materials and contribute to the training of relevant LGED staff;

m) Facilitate and coordinate data collection and entry to make the applications operational;

n) Any other task assigned by the Project Director/project management as and when required.

4. Duration of the Assignment

Duration of the assignment will be 48(forty eight) months. The expected time to start is January 2019.

5. Required Qualification and Experience:

Educational Qualifications:

- 4 (four) years bachelor degree in Computer Science/ Computer Science and Engineering/Information Technology from any reputed university accredited by university grants commission or equivalent body.

Experience:

- Minimum of 7 (seven) years of relevant working experience including web application development, database management and system requirements analyzing & designing out of which 5 (five) years of experience dealing with progressively large-scale ICT projects for GoB/Development Partner's organization;

- Working experience with GoB/Developments Partner's and LGED will be a strong plus;

- Ability to write high quality technical document on software lifecycle management;

- Good understanding of software design patterns and object oriented principles;

- Good understanding of software lifecycle management;

- Excellent written and oral communication skills in English, to deliver technical documents and reports.

Skill:

- Experience in Web-based application development in .NET/Open source platform for large application;
- Experience in requirements analysis, database design and technical documentation;
- Must have skill in writing SQL complex queries, procedures and function;
- Excellent working knowledge in .NET Framework 3.5 and above and ASP.Net;
- Strong knowledge in Object Oriented Language, especially C#.Net;
- Excellent knowledge in design pattern and modern web technologies, such as - MVC, jQuery, Angular JS, CSS3, Java script, HTML5, SOAP APIs, REST APIs and skilled in Markup Languages like XML and JSON;
- Strong command over RDBMS, such as –Oracle, Microsoft SQL Server, PostgreSQL, MySQL.
- Knowledge in PHP Programming for web application is a plus;
- Knowledge of building Large Application like ERP solution will consider as a strong plus;
- Practical experience to work with team in a project;
- Presenting information through reports and visualization.
- Excellent knowledge in various report tools like Crystal reports, BIRT, etc.

6. Institutional arrangements

The individual Consultant will work directly with the ICT Unit & ICT Manager under the overall guidance of Project director of the "Program for Supporting the Rural Bridges" and support the officials and staff of LGED at LGED district in the program area, and at PMU LGED Headquarters, in order to achieve the objectives of the program.

7. Reporting Requirements

The consultant's will submit the following reports to LGED:

8.1 Inception Report: Inception Report within 30 days of mobilization;

8.2 Monthly Report: summarizing briefly the accomplishment over the previous month including details progress (soft & hard component mentioning in PAD), capacity building and training, and consultant's activities, any issues related with achievement of DLI(Disbursement Link Indicator) and resolution of these, and a work plan for the following month;

8.3 Quarterly Reports: Summarizing briefly the accomplishment over the previous three months including details progress, capacity building and training, and consultant's activities, any issues and resolution of these, and a work plan for the following six months;

8.4 Half-Yearly Reports: Summarizing briefly the accomplishment over the previous six months including details progress, capacity building and training, and consultant's activities, any issues and resolution of these, and a work plan for the following six months;

8.5 Annual Reports: Annual reports covering all details of the half-yearly reports summarizing all activities to date, any issues and methods for resolution of these, and planning to achieve future targets;

8.6 Task Completion Report: The consultant will submit the Draft Task Completion Report (DTCR) after completion of services but within two months of contract end.

After approval of the Draft Task Completion Report (DTCR), the consultant will submit Final Task Completion Report (FTCR) within the contract period.