



**GOVERNMENT OF LIBERIA
MILLENNIUM CHALLENGE ACCOUNT LIBERIA**

ADDENDUM #1

To

REQUEST FOR QUOTATION

For

**Supply, Delivery and Installation of Online Geographic Information System (GIS) ICT
Infrastructure Support for Liberia Electricity Corporation (LEC)**

Addendum Date: January 24, 2020	Ref# Number: 4A430/ME/002
RFQ Date: January 15, 2020	Project Name: Energy
Country: Liberia	Funding Agency: Millennium Challenge Corporation
City/Locality: Monrovia	Purchaser: Millennium Challenge Account – Liberia (MCA-Liberia)

The following are changes to the above-mentioned Request for Quotation (RFQ):

1. Clause 4 of the RFQ, is deleted and replaced with the following text:

“You must clearly state your quoted **One (1) year support and maintenance period** and submit your quoted Technical Specifications against the requirement under **Annex 1** of the RFQ for the **Supply, Delivery and Installation of Online Geographic Information System (GIS) ICT Infrastructure Support for Liberia Electricity Corporation (LEC)**.”

2. Annex 1 of the RFQ, Technical Specifications, is deleted and replaced with Appendix 1 attached hereto.
3. Your quotation in the required format should be submitted to the email address below as outlined in the RFQ:

MCA-Liberia Procurement Agent

Email: MCALiberiaPA@cardno.com

4. All other sections and paragraphs of the subject Request for Quotation remain unchanged.

Yours Sincerely,

A handwritten signature in cursive script, appearing to read "Monie R. Captan", is written above a horizontal line.

Mr. Monie R. Captan
Chief Executive Officer
MCA Liberia

APPENDIX 1

Annex 1

Technical Specifications

ONLINE GIS ICT INFRASTRUCTURE SUPPORT TO THE ASSET & CUSTOMER MAPPING STUDY (ACMS) for LEC

Introduction

The Liberia Electricity Corporation (LEC) is implementing an Asset and Customer Mapping Study (ACMS) with funding from the Millennium Challenge Account Liberia (MCA – Liberia). The ACMS seeks to address problems associated with locating customers on the grid, the location of grid assets and processing of new connections. The Study will cover the following locations:

- The LEC 66kV, 22/33kV and low voltage (LV) distribution systems in Monrovia and Greater Monrovia (Montserrado County)
- Kakata Corridor (Monrovia – Kakata Corridor) (Margibi County)
- The LEC Grand Gedeh Distribution Grid (Grand Gedeh County)
- The LEC Maryland Distribution Grid (Maryland County)
- The LEC Nimba Distribution Grid (Nimba County)
- The LEC Bong Distribution Grid (Bong County)

Services to be Provided

MCA - Liberia requires a software application development firm with expertise in providing GIS solutions that integrates and provides a range of geospatial solutions for LEC to reduce implementation risk and ensure that the utility's goals and objectives of the Asset and Customer Mapping Study (ACMS) can be realized. LEC currently has a GIS system. Attributes from the current LEC GIS system will be used in the new GIS solution to be acquired. The GIS solution must be flexible enough to integrate with other information systems that may be introduced in future and must be easy to maintain as technology advances. It must help LEC maintain a competitive advantage and high returns for its investments.

To ensure effective and efficient implementation of the ACMS, MCA-Liberia requests quotations from reputable firms to supply, deliver and install the following services:

1. Create IP to connect to data on the LEC server to the online GIS

- a. Specifically provide online GIS with the following specifications and functionalities:
 - i. Capable of visualization, analysis and data management on desktops, Tablet PCs, and laptop computers
 - ii. Capable of generating schematics, geo-statistics, publish geospatial data, and perform advanced labelling
 - iii. Capable to create, use and share data-driven maps anywhere, anytime and on any device
 - iv. Capable to support 3D mapping and visualization, allowing user to view the data in its real-world context by transforming data into smart 3D models that help in analyzing problems, evaluating designs and conveying information in ways that are only possible with a 3D perspective
 - v. Capable of installation on laptops, tablets and desktops in the following categories: Training - 130-Field Workers; Field Implementation – 120; Back Office users – 10 and Super-users or Administrators – 6 (Bidders are expected to include pricing and installation for computers and field tablets. Include pricing and installation for 136.
 - vi. Capable to monitor streaming data from any type of sensor, device and feed
 - vii. Capable of continuously updating maps and databases with real time metrics and locations, set filters to focus on the events and conditions that matter, and send alerts to field personnel when certain thresholds are met
 - viii. Provides a comprehensive set of tools that can manage, process, analyze and share imagery and also integrate imagery and remotely sensed data from many sources including satellites, aircraft and drones
 - ix. Capable of identifying patterns in imagery and extracting valuable information
 - x. Must have an operating dashboard for providing real time operational view of people, services, assets and events
 - xi. Must be based on an open, industry-standard data model that can be easily modified
 - xii. The online GIS must include productivity tools that automate and streamline tasks and reduce duplicated effort
 - xiii. It must also support advanced information management, reporting, mapping, visualization, and analysis to help utilities meet regulatory requirements
 - xiv. The online GIS must integrate with other information systems to reduce implementation costs and risk.
 - xv. Online GIS must integrate with SAP, Advantica's SynerGEE modeling software, and other systems including graphical work design, outage and distribution management, SCADA, document management, work order management and scheduling, condition- based maintenance, and customer information systems.

The Online GIS solution must be expandable to be used for the following future services:

- a. Emergency preparedness by supporting prediction analysis and resource management, including coordination from a command center and integration with weather data and other agencies.
- b. Outage management by providing tools for creating or integrating with outage and distribution management systems
- c. Business continuity planning by supporting scenario planning and resource management in the event of natural, digital, or other disasters
- d. Compliance by supporting analysis and reporting required by government agencies, like those for pipeline integrity management
- e. Environmental services by helping you respond to regulations related to endangered species, land restrictions, and general environmental impacts
- f. Customer service by visualizing customer related information to promote better communication with customers in a call center. These tools also provide “self-help” opportunities for Web-based interaction with customers (such as streetlight problem reporting)

2. Develop Online GIS and mapping tool

- a. Specifically provide an online GIS and mapping tool with the following capabilities and functionalities:
 - i. Capable of configuring data collection templates to collect points, lines and polygons with attribute information per feature that can be configured to have database relations to other related features and embedded to build a network
 - ii. Capable of capturing electricity assets like poles, conductors, meters, etc.
 - iii. Capable of analyzing information, making decisions, monitoring operations, gathering and editing data in the field and sharing information with anyone at anytime
 - iv. A mapping tool capable of creating, sharing and analyzing surveys
 - v. Must be a mobile data collection app that makes it easy to capture accurate data providing a common source and a common view of information to all users, from desktop users to a mobile workforce
 - vi. Must be a mobile app that makes it easy to capture accurate data from the field and return it to the office
 - vii. Must be an app that can be configured to visualize data collected like poles, transformers and overhead lines already captured per account (user/field worker) that is, it must create an archive of all features collected that can be kept on the server systems (depending on the configuration) to enable querying of features by “date of collection” Users must have the option to view features based on “date of collection” or any other query
 - viii. Must have the capability to geocode property parcel

- ix. Must have the capability to integrate existing files of existing networks captured in a different GIS formats like DWG when imported
- x. Must have the capability to extract satellite imagery from firms like DigitalGlobe
- xi. Must be a mobile solution that helps improve field workforce coordination and can be used by back office staff to assign work to field crews and monitor progress

3. Provide Online GIS and mapping tool hosting

- a. Specifically provide an online GIS and mapping tool hosting with the following capabilities and functionalities:
 - i. Must be capable of creating online databases of assets, customers and premises related data captured to be exported or linked to a server based database LEC wants to maintain
 - ii. Must have capability to be configured for public access and also restricted from public access
 - iii. Must have capability to also be split per asset mapped that is each asset with its own database)
 - iv. Must support databases such as Microsoft and other Databases (SQL Server, MongoDB, etc.) and In-house RDMS (SQL Server, PostGres, etc)
 - v. Must have the capability to provide GIS solutions with customized software to suit the requirements of LEC.
 - vi. Supplier must have a proven track record of training and installations for utilities in West Africa sub region for a minimum of Eight (8) years.

4. Provide Technical Support and Guidance for Installation

- a. Develop and provide Training Manuals for all apps and software to be provided
- b. Provide technical support in training 93 temporary staff along with 10+ LEC permanent staff
- c. Provide technical support in-country to ACMS team for an estimated period of one (1) year by ensuring all apps, software and infrastructure operate and function smoothly for full implementation of the ACMS.
- d. Must be in a position to provide technical support, trainings and installation in Liberia (not remotely)
- e. Additional training will be required on a need to do basis for 130 temporary staff not employed by LEC but will be contracted for the sole purpose of the ACMS and 10 permanent staff i.e. who will implement the ACMS.

The GIS technology must support:

- Standard developer environments including Visual Basic, C#, C++, Visual Studio, NET, and Java
- Major commercial DBMSs such as Oracle, Microsoft SQL Server, and IBM DB2 Universal Database and Informix Dynamic Server

- Most data formats including translators, Web services, published APIs, CAD data (DGN, DXF, DWG), and direct read and data access through SQL, OLE COM, XML, and GML.
- A GIS Mobile solution, which provides Liberia Electricity Corporation's mobile workforce with highly focused mobile GIS and mapping applications that are lightweight, easy to deploy, and service oriented. These can be connected to applications deployed on laptops, Tablet PCs, Pocket PCs, and Smartphones
- Web services standards such as XML, SOAP, UDDI, and WSDL; OGC specifications such as WFS, WMS, and GML; and application servers such as WebLogic
- Complete and advanced capabilities for geospatial data management, spatial analysis, visualization, and cartography.
- Support the storage of GIS and Media data (50GB) on the existing LEC servers. No cloud storage will be utilized.

Software supplier must meet the following Qualification requirements:

- Proven experience with a minimum Eight (8) years working with utilities in West Africa through the design, development and delivery of customized GIS solutions and after sales support
- Experience with a power utility is preferred
- Must be an authorized distributor for the GIS software that will be provided
- Must have the capability to provide GIS solutions with customized software to suit the requirements of LEC
- Must be in a position to provide technical support, trainings and installation in Liberia (not remotely)
- Must have physical presence in West Africa and the ability to support LEC when needed and required at short notice
- A proven track record of trainings and installations for utilities in West Africa sub region