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Project Fiduciary Management Unit  
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**Government of Sierra Leone**

**REQUEST FOR EXPRESSIONS OF INTEREST**  
**(Consulting Services – Individual Selection)**

**Date of Issue:** 30<sup>th</sup> March, 2022

**Country:** Republic of Sierra Leone

**Name of Project:** Sierra Leone Land Administration Project under the Ministry of Lands, Housing, and Country Planning.

**Consulting Services:** Recruitment of an Individual Consultant for Design of a Continuously Operating Reference Station (CORS) Network.

**Reference No:** SL-MOFED—281187 -CS-INDV

**A. Background**

The Government of Sierra Leone with support from the International Development Association (IDA) of the World Bank is preparing the Sierra Leone Land Administration Project (SLLAP) to be financed through a US\$ 40 million grant. The proposed Project Development Objective (PDO) is to establish a transparent and efficient land administration system.

The SLLAP will be implementing those parts of the National Land Policy 2015 (NLP) that relate to Land Administration. Currently land in the Provinces are administered through various customary tenure arrangements and land in the Western Area has a system that includes freehold tenure arrangements as seen in most formal systems around the world. In the Western Area, the existing systems rely on a system of registration of instruments (or deeds) at the Office of the Administration and Registrar General (OARG) overseen by the Attorney General under the Ministry of Justice, with boundaries documented through a Cadastral Survey methodology described in the Land Survey Act and administered by the Director of Surveys Department within the Ministry of Lands, Housing and Country Planning (MLHCP). New legislation is under consideration that will create a National Land Commission that will be responsible for land administration and additional new legislation is under consideration that will create the procedures and rules for supporting and registering customary land rights. The development of a new law that will introduce a system for Registration of Title is included within the NLP, but this has not yet been drafted.

SLLAP would support real estate land property markets for the both the private and public sectors. It would assist the work of real estate agents, notaries, licensed surveyors and lawyers and help build the private sector in these disciplines. It would improve the transparency and security of property rights, which would help address the use of real estate in Sierra Leone and its use for collateral and mortgage purpose. It would speed-up the real estate transaction processes and aim to reduce transaction costs as well as protecting property rights of vulnerable groups, women, and customary communities. Another focus is to improve the efficiency of state property management and would continue supporting the various real estate privatization

programs in the country. Many of these goals would be supported by making real estate market information accessible through information technology and linkage with e-Government initiatives. Details of the SLLAP can be found in Annex 1.

Following years of civil turmoil between 1991 and 2002, much of the capacity to manage the land administration system was significantly reduced, with particular impact on the cadastral surveying profession, which is now particularly in need of modernizing and bringing up to professional standards.

The national geodetic network in Sierra Leone is outdated and mostly destroyed. In that state, it cannot provide the spatial reference necessary for reliable integration of land information and building a land information system. MLHCP has recognized the need for positioning infrastructure and plan to install a Continuously Operating Reference Station (CORS) network to support the Land Administration System. As part of the SLLAP preparation, MLHCP is seeking to hire a consultant to support the MLHCP in designing the CORS network.

## **B. Objectives**

### **Objectives of the Assignment**

The objective of the assignment is to design a CORS network that will support the land administration system by providing positioning services across the country. The design will inform the preparation of Terms of Reference for supply and Installation of a Continuously Operating Reference System.

## **A. SCOPE OF WORK**

The consultant shall prepare the CORS network design considering three factors:

- the CORS stations should have continuous access to the internet as their primary data communication link;
- the CORS receivers and communication systems should have access to the power grid to ensure continuous operation and reduce service disruption;
- the CORS stations should be installed on or near the offices of MLHCP or OARG and/or the potential future Land Commissions and offices at the district level to ensure that the location is secure.

In pursuing this objective, the consultant will:

1. Define in collaboration with the MLHCP the area for installation of CORS by considering the factors above. If any of them is not in place, the network extent should be reduced from the country level to a smaller region or the project area.
2. Once the CORS network area is defined, the consultant shall make a preliminary list of the towns for installing CORS in collaboration with the MLHCP.
3. Visit at least two (2) alternative locations in each town to acquire information on their suitability for installing a CORS. For each location, the consultant shall prepare a detailed Site Visiting Form using the template in Annex 2. Suitable in this context means a suitable location for the antenna setup and a suitable place to install the equipment. A list of criteria to be considered ranked in order of importance is provided in Table 1:

Table 1. Criteria for selection of a CORS site

Rank	A CORS Site should
1	Be placed in public land near government offices.
2	Be safe from vandalism.
3	Include a structure to house the GNSS receiver and peripheral equipment.
2	Be with access to electrical power and Internet.
4	Ensure a clear horizon above 10° elevation at the antenna height.
5	Be at least away from large flat surfaces such as buildings, metal and water surfaces, etc. to avoid multipath interference. As a rule of thumb, a one-story building should be at least 20 m away while taller buildings need to be farther away.
6	Provide conditions for securing the GNSS antenna mount to bedrock, the ground, a building, or any other structure used as a foundation.
7	Be situated at least 1 km away from sources of radio interference such as high-power television or microwave transmission towers.
8	Provide no more than 30 m separation between the antenna and receiver locations.

For each selected location in the town, the consultant shall propose a location and type of the CORS monument and a location for the CORS cabinet to house the Global Navigation Satellite System (GNSS) receiver and peripheral equipment. The consultant must collect all the information and take all the photos requested in the Site Visiting Form.

4. Prepare a CORS network map in agreed Geographic Information System (GIS) format showing a preliminary location for the CORS sites overprinted on a background of topographic data, administrative boundaries, main towns, and road network.
5. Determine in collaboration with the MLHCP the location of the CORS control center.
6. Prepare a layout of the control center premises showing which one is suitable for a server room.

## **B. REPORTING REQUIREMENT**

The consultant shall work in close collaboration with the Project Coordination Unit (PCU) hosted at the MLHCP under the overall supervision of the Project Coordinator to whom he/she will directly report, seek approval, and obtain the acceptance of outputs.

The consultant is expected to provide the following deliverables:

1. Inception report within 10 days of contract signature.

2. Preliminary CORS Network Design report within 3 weeks of contract signature containing:
  - the area for installation of CORS;
  - a preliminary list of towns for installing CORS within the area;
  - Location of the CORS control center.
3. CORS Network Design report within 16 weeks of contract signature containing:
  - CORS network map in agreed GIS format showing the towns for installing CORS overprinted on a background of topographic data, administrative boundaries, main towns, and road network;
  - detailed information on the suitability for CORS installation at two alternative locations in each town using the template in Annex 2;
  - a layout of the control center premises showing which one is suitable for a server room.

The consultant shall submit each report as a draft 1 week in advance, and then as a final version after incorporating MLHCP and World Bank comments in four (4) hard copies and a soft copy on USB.

#### **C. LINE MANAGEMENT**

The Consultant shall report directly to the Project Coordinator/PCU and work with other partners under the Project.

#### **D. QUALIFICATION AND SKILLS**

The consultant shall have experience and minimal qualifications as summarized below:

1. Masters or higher degree in geodesy, surveying, mapping, or related technical field.
2. At least 10 years of practical experience in the surveying and mapping sector after graduation.
3. Sound knowledge of GNSS technology and its application to the establishment of control geodetic network and CORS.
4. Experience in the design or establishment of CORS networks. Knowledge and experience in Sub-Saharan Africa will be an advantage.
5. Knowledge of modern surveying technologies for the collection of cadastral and land administration data.
6. Fluency in spoken and written English.

#### **E. DURATION OF THE ASSIGNMENT**

The estimated level of effort is 90 days. They can be distributed over 4 months. The consultant is expected to spend 80 days in Sierra Leone and 10 days will be home-based.

## **F. INPUTS BY THE CLIENT**

The MLHCP will provide the consultant all data and information necessary for the assignment and will assist the consultant in organizing meetings with other institution and assessing their information related to the assignment. The Client will assist in arranging required meetings and delegate a focal person to work with the Consultant. If required, the Client will provide an adequate office space, located in one of the agencies.

## **G. REPORTING REQUIREMENTS**

All reports will be shared with the MLHCP, OARG and project coordinating unit (PCU). Reports shall be delivered in electronic form and hard copies for the final versions. Comments, provided from the Client side will be discussed at virtual and physical meetings. Required report amendments will be incorporated not later than 2 weeks after receiving these comments.

## **H. Mode of Application**

All applications in writing should be accompanied by up-to-date Curriculum Vitae with Covering Letter and supporting documents (Note: do not send originals) with the names and addresses of three referees, one of which should be the last or current employer and addressed to:

**The Project Coordinator, Sierra Leone Land Administration Project  
Project Fiduciary Management Unit (PFMU)  
Ministry of Finance  
Howe Street  
Freetown, Sierra Leone**

**Or**

By E-mail application as attachment (including all supporting documents) to: [sllapsierraleone@gmail.com](mailto:sllapsierraleone@gmail.com) .

Please indicate clearly on the envelope (in the case of hard copy application) or in the email subject heading and attachment (in the case of electronic applications) the post for which application is made. You can also obtain additional information from the above mentioned email address.

### **Closing Date**

The Closing Date and time for receipt of applications is Wednesday, 16<sup>th</sup> **March, 2022 at 5pm**  
**NOW Extended to the 20<sup>th</sup> April 2022.**

**Only short-listed candidates will be contacted.**