



## United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic

**REQUEST FOR EXPRESSION OF INTEREST (EOI)**

This notice is placed by MINUSCA. The accuracy, reliability and completeness of the contents of furnished information is the responsibility of United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic. You are therefore requested to direct all queries regarding this EOI to United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic using the fax number or e-mail address provided below.

**Title of the EOI:**

Provision of Software for Basic Mapping of Radio Coverage Services

**Date of this EOI:** 30 January 2024**Closing Date for Receipt of EOI:** 14 February 2024**EOI Number:** EOIMINUSCA22310**Beneficiary Country/Territory:** Central African Republic**Commodity/Service category:** End User Technology & Applications**Address EOI response by fax or e-mail to the Attention of:** MINUSCA Procurement Section**Fax Number:****E-mail Address:** minusca-eoi@un.org**UNSPSC Code:**

43232800 - Network management software  
43232902 - Communications server software  
83121702 - Radio related services  
43000000 - Information Technology Broadcasting and Telecommunications  
83110000 - Telecommunications media services  
43211710 - Radio frequency identification devices  
83112200 - Enhanced telecommunications services  
83112606 - Directional radio capacity customer access service



## DESCRIPTION OF REQUIREMENTS

The United Nations Multidimensional Mission in Central African Republic ( MINUSCA) seeks to identify potential service providers for a Spot purchase of TAP for FM Radio Coverage

### 1. Introduction

This document outlines the scope of requirement for acquiring Terrain Analysis Package (TAP) software to predict FM radio coverage. This software will be used by MINUSCA Strategic Communications and Public Information Radio Unit to assess existing and planned FM radio transmitters' coverage areas accurately.

### 2. Functional Requirements

- Software Version:
- Purchase the latest version of Terrain Analysis Package with all available updates and bug fixes.
- Ensure compatibility with our existing operating system ([Windows 11 and above, 64 bit system]).
- Modules:
- Acquire the following Terrain Analysis Package modules:
- Basic Mapping
- RF Facilities
- Longley-Rice
- Broadcast / SMR (FCC Part 73)
- 3D Display (optional)
- Shadow Mapping (optional)
- Aggregate Coverage (optional)
- Adjacent Channel Int. (optional)
- Additional modules may be considered based on future needs.
- Project Management:
- Utilize Terrain Analysis Package project organization features to manage various studies efficiently.
- Import and export project files for collaboration and archiving purposes.
- Terrain Data:
- Import various terrain data formats, including (Digital Elevation Model) DEM, Digital Terrain Model (Shuttle Radar Topography) SRTM, and ASCII grids.
- Define custom datum and projection parameters.
- Clip and subset terrain data to specific areas of interest.
- FM Radio Transmitter Data:
- Define multiple FM radio transmitters with configurable parameters:
- Frequency
- Effective Radiated Power (ERP)
- Antenna height and type
- Azimuth pattern
- Horizontal plane pattern distortion (optional)
- Import transmitter data from industry-standard formats.
- Coverage Prediction:
- Utilize the Longley-Rice propagation model for accurate FM radio coverage prediction.
- Account for terrain features, vegetation, and Fresnel zone clearance.
- Generate detailed coverage maps with customizable parameters:
- Coverage level contours (e.g., 50 dBuV/m)
- Signal-to-noise ratio (SNR)
- Percentage of population covered.
- Interference analysis with adjacent channels (optional)
- Export coverage maps to various formats (e.g., PNG, KML, GeoJSON).
- Reporting and Analysis:
- Generate comprehensive reports summarizing coverage predictions:
- Coverage area statistics



- Population covered.
- Signal strength distribution
- Customize reports with user-defined parameters.
- Integrate with GIS software for advanced spatial analysis (optional).
- User Interface:
- Utilize the standard TAP user interface for ease of use and navigation.
- Access comprehensive online support documentation and tutorials.
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### 3. Non-functional Requirements

- License:
- Purchase a perpetual license for multiple users within [organization name].
- Consider a maintenance and support agreement for continued updates and assistance.
- Delivery and Installation:
- Provide timely delivery and installation of the software.
- Configure the software to meet our specific needs and workflows.

### 4. Acceptance Criteria

#### Functionality:

- Area Coverage Prediction:
- Predicted coverage area must overlap with at least 90% of the actual coverage area measured on-site.
- Signal strength predictions within the coverage area must be within  $\pm 2$  dB of actual measured values.
- Software must successfully integrate with FCC databases and provide accurate interference checks.
- Path Profile Analysis:
- Calculated signal strength along user-defined paths must deviate by no more than 5 dB from on-site measurements.
- All potential obstacles and interference sources within a specified distance of the path must be identified correctly.
- Interference Studies:
- Predicted co-channel and adjacent channel interference levels must be within  $\pm 1$  dB of actual measured values.
- Recommended mitigation strategies must be technically feasible and effective in reducing interference.
- Reporting and Visualization:
- Reports must be clear, concise, and professionally formatted.
- Maps, graphs, and tables must be easy to understand and interpret.
- Results must be exportable in various formats without loss of data or formatting.
- Data Management:
- Software must support import and export of terrain data from commonly used formats (e.g., SRTM, DEM).
- Transmitter and receiver datasets must be easily managed and organized within the software.
- Project files must be compatible with future versions of TAP and allow for easy sharing and collaboration.

#### Performance:

- Processing Speed:
- Terrain analysis and coverage predictions for areas of 10 sq km should be completed within 5 minutes.
- Path profile analysis and interference studies for paths of 10 km should be completed within 1



minute.

- Accuracy:
- Coverage predictions must be accurate to within 95% confidence level compared to real-world measurements.
- Path profile analysis and interference calculations must be based on recognized propagation models and industry standards.

Usability:

- User Interface:
- Users with no prior RF engineering knowledge should be able to complete basic tasks within 30 minutes of software training.
- All functionalities should be readily discoverable and accessible through intuitive menus and icons.
- Data input and manipulation should be efficient and error-free.
- Visualizations should be clear, interactive, and customizable.
- Documentation and Support:
- User manuals and tutorials should be readily available online and in print format.
- Technical support should be available via phone, email, and online chat during business hours.
- Response time to support inquiries should not exceed 48 hours.

Total Cost of Ownership:

- Software Licensing:
- Licensing fees should be competitive with other software solutions offering similar functionality.
- Subscription-based licensing options should be available for users with occasional or project-based needs.
- Maintenance and Support:
- Annual maintenance fees should be clearly defined and predictable.
- Additional training and consulting services should be offered at reasonable rates.

## SPECIFIC REQUIREMENTS / INFORMATION (IF ANY)

### NOTE

Information on tendering for the UN Procurement System is **available free of charge** at the following address: <https://www.unqgm.org/Public/Notice>



Only the United Nations Global Marketplace (UNGM) has been authorised to collect a nominal fee from vendors that wish to receive automatically Procurement Notices or Requests for Expression Of Interest. Vendors interested in this Tender Alert Service are invited to subscribe on <http://www.ungm.org>

***Vendors interested in participating in the planned solicitation process should submit the Vendor Response Form of this EOI electronically (through the link available on the next page) before the closing date set forth above.***



# VENDOR RESPONSE

## NOTICE

- Companies can only participate in solicitations of the UN Secretariat after completing their registration (free of charge) at the United Nations Global Marketplace ([www.ungm.org](http://www.ungm.org)).
- As you express interest in the planned solicitation by submitting this response form, please verify that your company is registered under its **full legal** name on the United Nations Global Marketplace ([www.ungm.org](http://www.ungm.org)) and that your application has been submitted to the **UN Secretariat**.
- While companies can participate in solicitations after completion of registration at Basic Level, we strongly recommend all companies to register at least at **Level 1** under the United Nations Secretariat prior to participating in any solicitations.
- Companies are reminded of the restrictions of employment of former UN personnel that were involved in the procurement process during their last three years of service as per [ST/SGB/2006/15](http://ST/SGB/2006/15), including (a) employing those personnel for one year after separation of service and (b) allowing those personnel to communicate with, or appear before, active UN personnel for matters related to the procurement process for two years after separation of service. Violation of the provisions of ST/SGB/2006/15 may lead to suspension of the registration of the company as a UN vendor.

**PLEASE NOTE:** You should express your interest to this EOI electronically at:

<https://www.ungm.org/Public/Notice/225336>

**In case you have difficulties submitting your interest electronically, please contact [minusca-eoi@un.org](mailto:minusca-eoi@un.org) directly for instructions.**



## EOI INSTRUCTIONS

### 1) Registering as a Vendor with the United Nations

Vendors interested in fulfilling the requirement described above must be registered at the UN Global Marketplace ([www.ungm.org](http://www.ungm.org)) with the UN Secretariat in order to be eligible to participate in any solicitation. Information on the registration process can be found at <https://www.un.org/Depts/ptd/vendors>.

#### **Prerequisites for Eligibility**

In order to be eligible for UN registration, you must declare that:

- A. Your company (as well as any parent, subsidiary or affiliate companies) is not listed in, or associated with a company or individual listed in:
  - I. the Compendium of United Nations Security Council Sanctions Lists (<https://www.un.org/securitycouncil/content/un-sc-consolidated-list>), or
  - II. the IIC Oil for Food List website or, if listed on either, this has been disclosed to the United Nations Procurement Division in writing.
- B. Your company (as well as any parent, subsidiary or affiliate companies) is not currently removed or suspended by the United Nations or any other UN organisation (including the World Bank);
- C. Your company (as well as any parent, subsidiary or affiliate companies) is not under formal investigation, nor have been sanctioned within the preceding three (3) years, by any national authority of a United Nations Member State for engaging or having engaged in proscribed practices, including but not limited to: corruption, fraud, coercion, collusion, obstruction, or any other unethical practice;
- D. Your company has not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against your company that could impair your company's operations in the foreseeable future;
- E. Your company does not employ, or anticipate employing, any person(s) who is, or has been a UN staff member within the last year, if said UN staff member has or had prior professional dealings with the Vendor in his/her capacity as UN staff member within the last three years of service with the UN (in accordance with UN post-employment restrictions published in ST/SGB/2006/15).
- F. Your company undertakes not to engage in proscribed practices (including but not limited to: corruption, fraud, coercion, collusion, obstruction, or any other unethical practice), with the UN or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the UN.

**For Registered Vendors:** Vendors already registered at the UN Global Marketplace with the UN Secretariat must ensure that the information and documentation (e.g. financial statements, address, contact name, etc.) provided in connection with their registration are up to date in UNGM. Please verify and ensure that your company is registered under its full legal name.

**For Vendors Interested in Registration:** Vendors not yet registered should apply for registration on the United Nations Global Marketplace (<http://www.ungm.org>); information on the registration process can be found at <https://www.un.org/Depts/ptd/vendors>. Vendors must complete the registration process prior to the closing date of the REOI. Vendors who have not completed the UNGM registration process with the UN Secretariat before the closing date of the REOI are not considered eligible to participate in solicitations of the UN Secretariat. We strongly recommend all companies to register at least at Level 1 under the UN Secretariat prior to participating in any solicitations.

**IMPORTANT NOTICE:** Any false, incomplete or defective vendor registration may result in the rejection of the application or cancellation of an already existing registration.

### 2) EOI Process

Vendors interested in participating in the planned solicitation process should forward their expression of interest (EOI) to United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic (MINUSCA) by the closing date set forth in this EOI. *Due to the high volume of communications MINUSCA is not in a position to issue confirmation of receipt of EOIs.*

Please note that no further details of the planned solicitation can be made available to the vendors prior to issuance of the solicitation documents.

This EOI is issued subject to the conditions contained in the EOI introductory page available at <https://www.un.org/Depts/ptd/eoi>.



