Terms of Reference (TORs) for NATCAT TEAM

Position title: Deputy Manager – GIS, NatCat Data Centre.

Duration: Contractual Initially for 3 years' extendable performance based Contract.

Location: Islamabad.

Reports to: Manager NatCat -Technical Team Lead

A. Duties and Responsibilities

- Work closely with Team Lead to develop specialized dashboards for the NatCat solutions & applications for diverse range of users.
- Design and deploy data models, schemas, and databases for storing and retrieving spatial data from all other data centre within and outside the country.
- Implementing data sharing and exchange protocols to facilitate collaboration with external organizations and partners. Understating of data governance policies, standards, and best practices for spatial data management.
- Integration of new and evolving IT and GIS tools for development of applications for users.
- Support Team Lead for continuous improvements for the users, access and applicability of the system.
- Selecting and implementing GIS software and tools appropriate for NatCat requirements. Configuring and customizing NatCat applications to meet specific organizational needs.
- Implementing quality assurance procedures to ensure data accuracy and reliability. Ensuring data integrity, quality, and consistency through data validation and verification processes. Conducting regular audits and reviews to assess compliance with data quality standards and guidelines.
- Designing and creating maps, charts, and and reports to visualize and communicate analysis results to NatCat users in a clear and understandable format.
- Implementing spatial analysis and queries to support spatial analysis tasks within the NatCat environment, including identifying patterns, trends, and relationships through buffering, overlay analysis, proximity analysis, etc.
- Providing technical support and training to national organizations on NatCat usage and configurations.

B. Knowledge/ Skills / Qualifications/ Experience

- Minimum 16 Years of Education in Geoinformatics, GIS & Remote Sensing, Data Science or related field of study.
- Minimum 06-08 years of professional experience with with minimum 02-03 years of relevant expertise. Must have completed a minimum of 03 landmark national and international projects of similar nature.

- Proficiency in integrating heterogeneous datasets from multiple sources and formats, including vector data (e.g., shapefiles, GeoJSON) and raster data (e.g., satellite imagery, elevation models) from international data hubs and open data repositories.
- Understanding of spatial DBMSs (e.g., PostGIS, Oracle Spatial) and data interoperability standards (e.g., OGC standards) and experience with data transformation, conversion, and harmonization is essential.
- Expertise in designing GIS database schemas, schema transformations, optimize query performance, generating metadata, and manage large volumes of spatial data efficiently.
- Strong analytical skills for performing spatial analysis, geoprocessing, and spatial statistics using open-source GIS software (e.g., QGIS, GRASS) and programming libraries (e.g., GDAL, GeoPandas).
- Ability to derive meaningful insights from spatial data and apply geospatial analysis techniques to solve complex problems.
- Proficiency in data visualization techniques and tools for creating maps, charts, and interactive visualizations to communicate spatial data effectively. Experience with visualization libraries (e.g., D3.js, Leaflet, Mapbox) and designing user-friendly interfaces for exploring and interacting with spatial data and models.
- Understanding of open data principles, licensing terms, and policies governing the sharing and use of open geospatial data. Working experience with open data initiatives such as OpenStreetMap (OSM), Copernicus Open Access Hub, and government data portals.
- Proficiency in programming languages commonly used in GIS and data management, such as Python, R, SQL, and JavaScript. Ability to develop custom scripts, automation workflows, and web services for data processing, analysis, and dissemination.