

EXPRESSION OF INTEREST (EOI)

Sub :- Survey, Asset Mapping, Geo-referencing, Preparation of Digital AutoCAD Drawings and GIS Based Asset Database of Electrical Infrastructure of Visakhapatnam Port Authority

1. INTRODUCTION

Visakhapatnam Port Authority (VPA) intends to modernize and digitize its electrical infrastructure records by conducting a comprehensive physical survey of all electrical assets spread throughout the Port area, all berths, cargohandling areas, housing colonies etc

The existing electrical distribution network has been developed over several decades and consists of overhead distribution lines, underground cable networks, indoor and outdoor substations, switchyards, transformers, pump houses, administrative buildings, industrial facilities and various allied electrical installations.

VPA proposes to engage experienced agencies having expertise in electrical asset surveying, utility mapping, GIS, AutoCAD drafting, GPS surveying, Total Station Survey, Ground Penetrating Radar (GPR), LiDAR (wherever required) and Digital Asset Management for carrying out the complete survey.

Interested agencies are invited to submit their credentials, technical capability and methodology.

2. OBJECTIVE

The objective of the project is to

- Survey all electrical assets of VPA
- Prepare accurate physical layouts
- Digitize the complete electrical network
- Develop AutoCAD Drawings
- Geo-reference all assets
- Create GIS compatible digital database
- Prepare Single Line Diagrams wherever required
- Create future-ready Digital Asset Register
- Develop "As Built" Electrical Infrastructure Drawings

3. SCOPE OF WORK

The successful agency shall carry out detailed field survey of all existing electrical assets including but not limited to the following.

A. OVERHEAD ELECTRICAL NETWORK

Survey of 1. LT Overhead Lines 2. 3.3 KV Overhead Lines 3. 6.6 KV Overhead Lines 4. 11 KV Overhead Lines 5. 33 KV Overhead Lines including PSC poles / Steel Poles / rail poles / Lattice Towers / Gantry Structures / Stay Sets / Pole Mounted Equipment / AB Switches / GOAB Switches / Lightning Arresters / Isolators / RMUs / Sectionalizers / Pole Mounted Distribution Transformers / Street Lighting Feeders / High Mast Feeders

B. UNDERGROUND CABLE NETWORK

Detailed survey of underground cable network including 1. 415V LT Cables 2. 3.3 KV Cables 3. 6.6 KV Cables 4. 11 KV Cables 5. 33 KV Cables. The agency shall locate Alignment, Route, Joint locations, Cable Trenches, Duct Banks, RCC Cable Trenches, HDPE Ducts, Spare Ducts, Cable Crossings, Cable Entry points, Cable Marker Locations using suitable techniques including

1. Ground Penetrating Radar (GPR)
2. Electromagnetic Cable Locator
3. GPS Survey
4. Total Station Survey wherever applicable.

C. SUBSTATIONS

Survey of Manned Substations, Unmanned Substations, Indoor Substations, Outdoor Switchyards, GIS Switchgear, AIS Switchyards including Transformers, VCBs, SF6 Breakers, RMUs, Control Panels, Protection Panels, Battery Banks, DC Systems, Metering Panels, Bus Bars, CTs, PTs, Earth Pits, Cable Trenches, Fire Fighting System

D. DISTRIBUTION TRANSFORMERS

Survey of all DTRs including Capacity, Manufacturer, Year of Manufacture, Voltage Ratio, Serial Number, Location, GPS Coordinates, Connected Load, Feeder Details, Transformer Health Condition

E. LT DISTRIBUTION SYSTEM

Survey of LT Panels, Feeder Pillars, Distribution Boards, Motor Control Centres, Capacitor Banks, Bus Ducts, Cable Risers, Metering Panels

F. BUILDINGS TO BE COVERED

The survey shall include electrical assets available at Administrative Buildings, all Office Buildings, Workshop Buildings, Pump Houses, Water Supply Installations, Sewage Pumping Stations, Electrical Maintenance Buildings, Stores, Warehouses, Transit Sheds, Wharves, Berths, Residential Colonies, Guest Houses, Security Buildings, Fire Stations, Navigation Lighting Installations, High Mast Locations, Mini Mast Locations, Street Lighting Installations, Railway Electrification Installations and Any other electrical installations under VPA.

4. DATA TO BE COLLECTED

The agency shall collect GPS Coordinates, Asset ID, Equipment Name, Equipment Rating, Manufacturer, Year of Installation, Asset Condition, Feeder Details, Cable Size, Cable Type, Pole Number, Transformer Capacity, Breaker Rating, Panel Details, Switchgear Details, Photographs, Unique QR Code (optional)

5. DELIVERABLES

The agency shall submit Hard Copies, Five sets of Complete Electrical Layout Drawings, Substation Drawings, Cable Route Drawings, Switchyard Layouts, Pole Route Drawings, Building Electrical Layouts,

Soft Copies like AutoCAD Drawings (.DWG), DXF Files, GIS Compatible Files, PDF Drawings, Excel Asset Register, Asset Database, Geo-tagged Photographs, Shape Files, KML Files, Single Line Diagrams, Cable Schedules, Transformer Schedules, Panel Schedules, Equipment Inventory etc

6. SOFTWARE

All drawings shall be prepared using latest versions of AutoCAD, AutoCAD Electrical, Civil 3D (wherever applicable), ArcGIS/QGIS compatible formats, MS Excel, PDF

7. SURVEY EQUIPMENT

The agency shall use Ground Penetrating Radar (GPR), DGPS, Differential GPS, RTK GPS, Total Station, Laser Distance Meter, Underground Cable Locator, Electromagnetic Locator, Digital Levels, Drone Survey (wherever required)

8. ACCURACY REQUIREMENT

Horizontal Accuracy ± 50 mm ; Vertical Accuracy ± 25 mm; GPS Accuracy better than 300 mm. AutoCAD drawings shall represent actual field conditions.

9. ELIGIBILITY CRITERIA

The agency shall

- Have minimum 10 years experience in utility mapping/electrical asset surveys.
- Have successfully completed at least three similar works for Government Departments, Major Ports, Airports, Railways, Metro Rail, Defence Establishments, DISCOMs, PSUs or Industrial Complexes during the last 7 years.
- Possess in-house expertise in GPR, DGPS/RTK GPS, Total Station surveys, GIS and AutoCAD drafting.
- Have an average annual financial turnover of at least ₹2.00 Crores during the last three financial years.
- Have a dedicated team comprising Electrical Engineers, Survey Engineers, GIS Specialists, AutoCAD Draftsmen and GPR Specialists.

- Be registered for GST, PAN and possess valid statutory registrations.

10. PROJECT DURATION

The entire work shall be completed within 180 Days from the date of commencement.

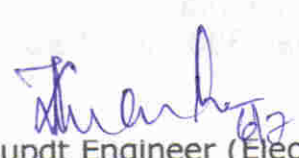
11. OWNERSHIP OF DATA

All field data AutoCAD Drawings, GIS Files, Asset Register, Digital Models, Photographs, Survey Records shall become the sole property of Visakhapatnam Port Authority.

12. SUBMISSION OF EOI

Interested agencies shall submit

1. Company Profile
2. Experience Certificates
3. Completion Certificates
4. Client Certificates
5. Financial Statements
6. List of Equipment
7. List of Key Professionals
8. Methodology
9. Proposed Work Plan
10. Similar Drawings
11. Technical Brochures


Supdt Engineer (Elec)

For Chief Mechanical Engineer