

EMPANELMENT OF GIS AGENCIES FOR GEO COORDINATE MAPPING OF PLOTS IN UNAUTHORISED COLONIES IN DELHI

DATA SHEET 5

Scope of work and Duration of Project

1. Delhi has large no. of un-authorized colonies built-up with the time. Many are existing without any basic amenities and no property tax is collected from these colonies which is a huge loss for the Government. The requirement of the individual property owners is to get their plots / property regularized by DDA and for this purpose, DDA will empanel few companies of repute having good work experience in the field of GIS and data collection.
2. These empaneled companies would be contacted by the individual property owners through the Helpline Numbers provided by the Agency OR through online booking of Survey of their property, and the empanelled GIS company will be carrying out accurate DGPS survey of the plot on First Come First Serve (FCFS) basis and prepare the layout of the plot in CAD drawing with full dimensions of the plots along with the neighboring plots and adjacent road and prominent topographical feature if any. The empaneled company will provide a certificate to the individual property owner in the hard copy and submit the DGPS coordinates of all the corners of the plot along with bounded polygon in .shp format and the plot dimensions in CAD drawing directly on the DDA WEB PORTAL.
3. DDA has been assigned as the appropriate Authority for conveyance of ownership rights over land in the Unauthorized Colonies. Through this project, DDA proposes to empanel GIS agencies who will provide pre-determined services to applicants on payment of charges fixed through this RFP / Tender.

Scope of Work:

Ground Control Points

Identification, Establishment, Densification & Utilisation of Ground Control Points (GCPs)

Existing GCP library of Survey of India shall be utilised for the work. If required, densification of GCPs shall be carried out using DGPS survey. Establishment/Monumentation of Ground Control Points (GCPs) shall be as per DILRMP (Digital India Land Records Modernization Programme) norms.

The Proposed System must cover the following features: -

- a. **Coordinate Collection, Digitization of buildings, houses & plots:** The Agency will provide the Geo -Coordinates of all the corners of each plot using the DGPS observation with reference to GCP (Ground Control Point) of existing GCP library of Survey of India. The digital drawing of the Plot will be prepared from these observed coordinates and neighboring plots, other prominent topographical features will be digitized and geo-

referenced based on the coordinate collections. The following activities will be done under Coordinate Collection, Digitization and Geo referencing of buildings/plots: -

- DGPS Coordinate collection of all the corners of the plot with reference to ground control point (GCP) of Sol
- Digital Drawings of Plot
- Geo reference neighboring plots and prominent topographical feature
- Generation of shop files

b. SOP/ Guidelines for Survey team for collection of DGPS Coordinates –

**DGPS Coordinate Collections from ground control point (GCP)
Methodology**

Agency will use DGPS sets of leading manufacturers capable of receiving signals from various GNSS constellation to derive its accurate position. As per the best practice for accuracy, coordinates will be captured only when minimum four Satellites of GNSS system were available. Agency will capture coordinates of all the corners of the plot to capture the polygon of plot boundaries. Necessary guidelines and method for use of DGPS set will be made available to each team before deployment to field for proper capturing of DGPS coordinates.

c. Actual CAD drawing of the Plot and Building footprint: The Agency will do actual measurement of the plot and the building footprint and prepare a 2D CAD drawing of the plot, its neighborhood and the building footprint thereupon. This CAD drawing will be correlated and geo-referenced with the DGPS data.

d. GIS ready Land Parcel Map (LPM) / Building Map creation

The Land Parcel Map (LPM) product shall comprise of base map overlaid by different layers of neighboring prominent topographical features, man-made structures, land parcel information, district/tehsil/village boundaries information etc. along with linked attributes.

Deliverables

Following shall be output of the Project:

- a) Accurate geo-referenced digital maps of the plot using established control survey network based on National Spatial Reference Framework.
- b) Geodetic network point and the subsidiary control points with co-ordinates and sketches showing their description and location used for DGPS observation of Plot corners
- c) DGPS coordinates of Plot corners along with codes, GCP –the location and ids of all the control points need to be maintained in GIS form and the co-ordinate list need to be maintained in both system of (lat/long and WGS 84 and UTM zone)
- d) Proper indexed Plot / Building footprint map.
- e) Feature description and symbols.

Deliverables shall be :

Land Parcel Map (LMP): 1 set

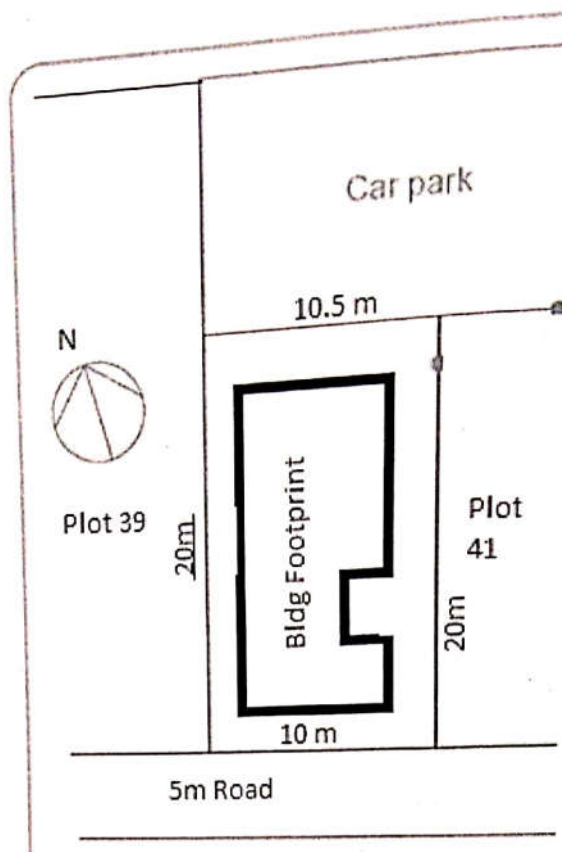
f) Details of the map to be generated are as follows:

- | | | |
|--------------------------|---|---|
| (i) Scale | : | 1 : 400 |
| (ii) Coordinate System | : | WGS84 with UTM projection |
| (iii) Accuracy (minimum) | : | Horizontal - 0.1 m of all the captured Geo-coordinates |
| (iv) Format | : | Output files in Open file format (.shp) along with all the supporting files like .shx, .dbf, .prj, .xml,.sbn,.sbx). |

The Plot maps must be made availabl in .shp file to their true scale.

The Services that are required to be provided to the Applicant approaching the Empaneled Agency are –

- a) Take GPS Coordinates of each of the corner of the Plot (accuracy better than 10 cm)
- b) Take actual measurements of plot, neighborhood & building footprint.
- c) Prepare a to-scale AutoCAD key-plan of the plot and surroundings and the building footprint (see sample below)
- d) The GPS File and the AutoCAD drawing file of the key Plan shall thereafter be uploaded on the DDA portal. (Login credentials for DDA portal shall be provided by DDA).
- e) Agency shall authenticate and certify the data uploaded by Digital Signature.
- f) Upon successful uploading, DDA portal will generate a QR Code or a unique number (as an acknowledgement of successful upload). This QR Code/ Unique number, along with the print of the GPS coordinates & Key-Plan will be delivered to the Applicant by the Agency.



SAMPLE KEY-PLAN of Plot No 40 9 (m-metre)

[Note: Dimensions of all the edges are to be provided in the key Plan.]

4. The scope of work under this Contract involves providing the services and to provide technical support and training for execution of various activities, including activities detailed in the scope of work.

Support Services: Service Level Agreement (SLA)

5. SLA during the Contract period: The Agency shall provide to DDA, as well as the customers, support services to ensure smooth operation of the Scheme. These will include following -
 - L1 : Basic Helpdesk Support
 - L2 : In-Depth Technical Support
 - L3 : Developer Level Technical Support
6. The Agency, based on the nature of the support request, will classify the Request in following four classes (Emergency / High / Medium / Low) based on severity of the problem. These requests will be resolved within the time period as specified in SLA.
7. The Agency, will maintain a computerized log of requests and the resolution undertaken, including time at which the same is resolved. This data shall, through API, shared on-line with DDA on real-time basis, for generating required MIS and made available on Dashboard.

Audit

8. Empaneled Agency shall comply with the DDA's internal audit (including Information Security (IS) Audit) requirement as well as third- party external auditors for conducting periodical audit. The Agency should carry out patch management activities, including Operating System (OS) hardening for the infrastructure deployed as well as changes required in hardware and software for

closure of VA/PT & audit reports without any extra cost to DDA.

9. The Agency shall at all times whenever required furnish all information, records, data stored in whatsoever form to internal, external, DDA appointed and statutory inspecting auditors and extend full cooperation in carrying out of such inspection. The Agency will also undertake to co-operate with the CAG to carry out its supervisory functions and objectives and will furnish all records and other information as CAG may call for to carry out inspection and/or other functions. The Agency is required to facilitate the same at no additional cost and shall provide uninterrupted access to the documents required by the auditors. Further the Agency has to ensure rectification of all the irregularities thus pointed out by the auditor within a given time frame.
10. The Agency must ensure compliance of Information Security (IS) according to policy of the DDA and mitigate the risk, if any, within the stipulated time without any additional cost to DDA.
11. In line of above, the Agency shall ensure that all regulatory, statutory, local Administration requirements are adhered to subsequently while undertaking deliverable and services over the period of contract without any additional cost to DDA.
12. Compliance with security best practices may be monitored by periodic computer/information security audit performed by or on behalf of the DDA. The periodicity of these audits will be decided at the discretion of the DDA. These audit plan to include, but are not limited to, a review of: access and authorization procedures, physical security controls, input/output controls, Database controls, backup and recovery procedures, network security controls and program change controls.
13. To the extent that the DDA deems it necessary to carry out a program of inspection and audit to safeguard against threats and hazards to the confidentiality, integrity, and availability of data, the Agency shall afford the DDA's representative access to the Agency's facilities, installations, technical resources, operations, documentation, records, databases and personnel. The Agency must provide the DDA access to various monitoring and performance measurement system (both manual and automated). The DDA has the right to get the monitoring and performance measurement systems (both manual and automated) audited without prior approval / notice to the Agency.

Project Duration and Extension of Service thereafter

14. The contract will initially be for the project period, including O&M, for the period mentioned in the empanelment letter.
15. However, the assignment may be terminated any time at the discretion of DDA without assigning any reason thereof if the services are not found satisfactory or service/services are not required by DDA after certain period.

Procurement and Ownership of Hardware and Software Tools

16. Empaneled Agency should have own GPS devices, Hardware, Software, connectivity and expertise in conducting the activities under this RfP. The Agency

shall only use/ provide hardware (server) of latest configuration for this.

17. The servers, system software, application software, Software tools (including RDBMS, AutoCAD etc.), internet connectivity (to servers), connected hardware at data center (if any), security of the data and software is to be provided by the Agency. Cloud hosting of Application/ data is allowed.
18. Hardware and Software (at DDA's end for operation of application) provided for by DDA, shall remain the property of DDA and in its custody after conclusion of the project.

Reports

19. Empanelled Agency shall maintain Records and database of Applicants / Cases to whom such services have been provided, and submit quarterly return in the Format prescribed by DDA, in digitalized database form.
20. The Agency will ensure that all works envisaged under the assignment are carried out in discussion with and to the satisfaction of DDA and will submit reports during the contract period, as may be required by the DDA from time to time.

Marketing

21. Agency can do marketing activity to attract customers at its own cost.
