Terms of Reference
Aircraft/UAV (Drone) captured LiDAR /ortho image based GIS mapping &Land Use Survey Agency for MPD 2041

INTRODUCTION

- The Delhi Development Authority (DDA) is currently preparing the next Master Plan for Delhi with a perspective period up to 2041. Master Plan for Delhi 2041 is the continuation of the master planning exercise carried out by Delhi Development Authority as per Delhi Development Act 1957

- The Master Plan for Delhi is prepared for a perspective period of 20 years.

- The first plan was prepared in 1962 for the horizon year of 1981, followed by two subsequent plans, namely MPD 2001 and MPD 2021 (ongoing plan period). The first plan was based on an extensive survey of ground conditions. However, subsequent plans have not taken stock of changes on ground and as a result, numerous discrepancies have emerged between the proposed land use plan for Delhi and the actual uses of plots and buildings. As part of the process of preparation of the next Master Plan, DDA intends to undertake a detailed Aircraft/UAV (Drone) captured LiDAR/ortho image based GIS mapping of existing land use and building use in the city. This will facilitate a better understanding of the present uses of land in the city and result in informed planning and strategy development as part of MPD 2041.

- In this context, DDA wants to appoint a reputed registered consultancy firm/company/agency/institution having experience in Aircraft/UAV (Drone) survey mapping, developing GIS-based web applications and conduct of ground surveys to collect attributes and ground truthing. The objective of this RFP is to select a Land Use Survey Agency (LSA) for undertaking GIS based aerial survey mapping, ground surveys, transferring such data on a GIS-based database and prepare an existing land use and building use map for Delhi through a bidding system. The LSA shall be responsible for all services detailed in the Scope of Work given in the RFP.

- National Institute of Urban Affairs (NIUA) is the technical partner of the DDA for development of MPD 2041 and will work along with DDA to coordinate with the LSA for technical inputs during project implementation.

1. Schedule for submission of the Proposal

Release of this RFP	2nd Week November-2019 - 00.00 hrs
Deadline for submission of queries online at dirplgmpmr@dda.org.in/ddplgmpmr@dda.or.in mentioning your name, address, phone no., subject and query in clarity	3rd Week November 2019 - 00.00 hrs
Pre-bid meeting	2nd Week December 2019 - 00.00 hrs
Deadline for Proposal submission	3rd Week December 2019- 00.00 hrs
Opening of Technical Bid	1st Week January -2020 - 00.00 hrs
Opening of Financial Bid	Will be intimated later to shortlisted applicants

2. Scope of Work

The LSA will be involved in the following broad areas of work:

Component A- GIS & 3D Based Ortho Model for future feature extraction through High Resolution Satellite Imagery (HRSI)/ Aircraft/Unmanned Arial Vehicle (UAV)(Drone) mapping.

1. To prepare a GIS ready map for geographic asset identification and mapping with a special emphasis on built profile, existing infrastructure and utilities, as built infrastructure.
2. In case Aircraft/UAV image acquisition is not permitted by government, then the base map shall be created using HRSI Images and DGPS/ ETS / vehicle mounted mobile scanners etc.
3. The GIS ready map shall include all the layers as laid down in AMRUT guidelines for "Preparation of Master Plan using GIS" relevant to the Delhi city and its master planning exercise. The list of 160 mandatory layers including AMRUT recommended and Master Plan for Delhi (MPD)/Zonal Development Plans (ZDP) recommended is enclosed as Annexure -I for reference. The list is for reference only and additions if deemed necessary may be included during project execution.

   The GIS database is to be prepared with mutually registered layers generated from Aircraft/UAV Imagery/LiDAR data, cadastral maps, satellite image, field survey inputs, existing land use, proposed land use etc. Thematic content of the GIS database is described below but not limited to:
   - Parcel boundaries
   - Land use (existing and proposed)
   - Drainage
   - Surface Water Bodies and canals
   - Road & Rail (existing and proposed)
   - Transportation Nodes
   - Health facility (existing and proposed)
   - Education facility (existing and proposed)
   - Water Supply infrastructure (proposed)
   - Sewage infrastructure
   - Solid Waste Management infrastructure
   - Ground water prospect areas
   - Hazard zones (Flood and earthquake)
   - Administrative boundaries (Municipal corporations/wards etc)
   - Urban sprawl
4. The scale of such a map will be 1:500 and resolution 10cm.
5. The GIS ready map by LSA shall be able to fit into the existing digitized GIS basemap of Delhi (prepared on satellite imagery of June 2018 vintage) at the scale of 1: 4000 and resolution 50 cm as provided by Survey of India (SoI) to DDA.
6. The existing digitized GIS basemap of Delhi by SoI will also include digitized layout plans of various schemes of DDA which are currently being undertaken by RSI.
7. LSA shall ground verify and rectify the existing digitized GIS basemap mentioned at para 5 and 6 above if required as per the aerial survey undertaken through UAV for consistency and homogeneity.

8. In addition to the 160 layers mentioned at para 3 above, each built structure/building will be assigned a centroid/point feature and will be marked with a unique reference number (URN) and a digital inventory of buildings will be prepared. The URN will be differentiated on the basis of the existing Planning Zones of DDA. For example, buildings in Planning Zone A will be marked as A-0000001, A-0000002, and so on.
9. Details of the planning zones are given below for reference. Actual boundaries of zones shall be discussed and finalized with DDA before the start of the database preparation exercise. In case of any ambiguity, nearest physical feature shall be considered as zone boundary w.r.t the approved & existing ZDPs.

Planning Zones (13 no.)	Zones	Area in (Ha)
Old City	A	1159
City Extn. (Karol Bagh)	B	2304
Civil Line	C	3959
New Delhi	D	6855
Trans Yamuna	E	8797
South Delhi-I	F	11958
West Delhi-I	G	11865
North West Delhi-I	H	5677
West Delhi-II	K-I	5782
Dwarka	K-II	6408
West Delhi-III	L	22840
North West Delhi-II	M	5073
River Yamuna / River Front	O	8070

10. All necessary permissions from to fly Aircraft/UAVfromDGCA/MoDaccess to aerial survey including co-ordination with Delhi ATC/NPNT Compliance/ Digital Sky of DGCA etcshall be undertaken by LSA. DDA can only facilitate in initiating the permission process through a request letter, followup of the same is the core responsibility of LSA. UAV's/Aircraft shall comply to all DGCA/MoD norms including area permission and Security Vetting of data after data capture. Required UAOP/UIN/NSOP permit etc as applicable must be submitted. 0All such permissions obtained be submitted to DDA for its record before start of the work. LSA will indemnify DDA against any regulatory violations.

PLANNING ZONES BOUNDARY
PLANNING DEPARTMENT, DDA

NOT FOR EXPORT

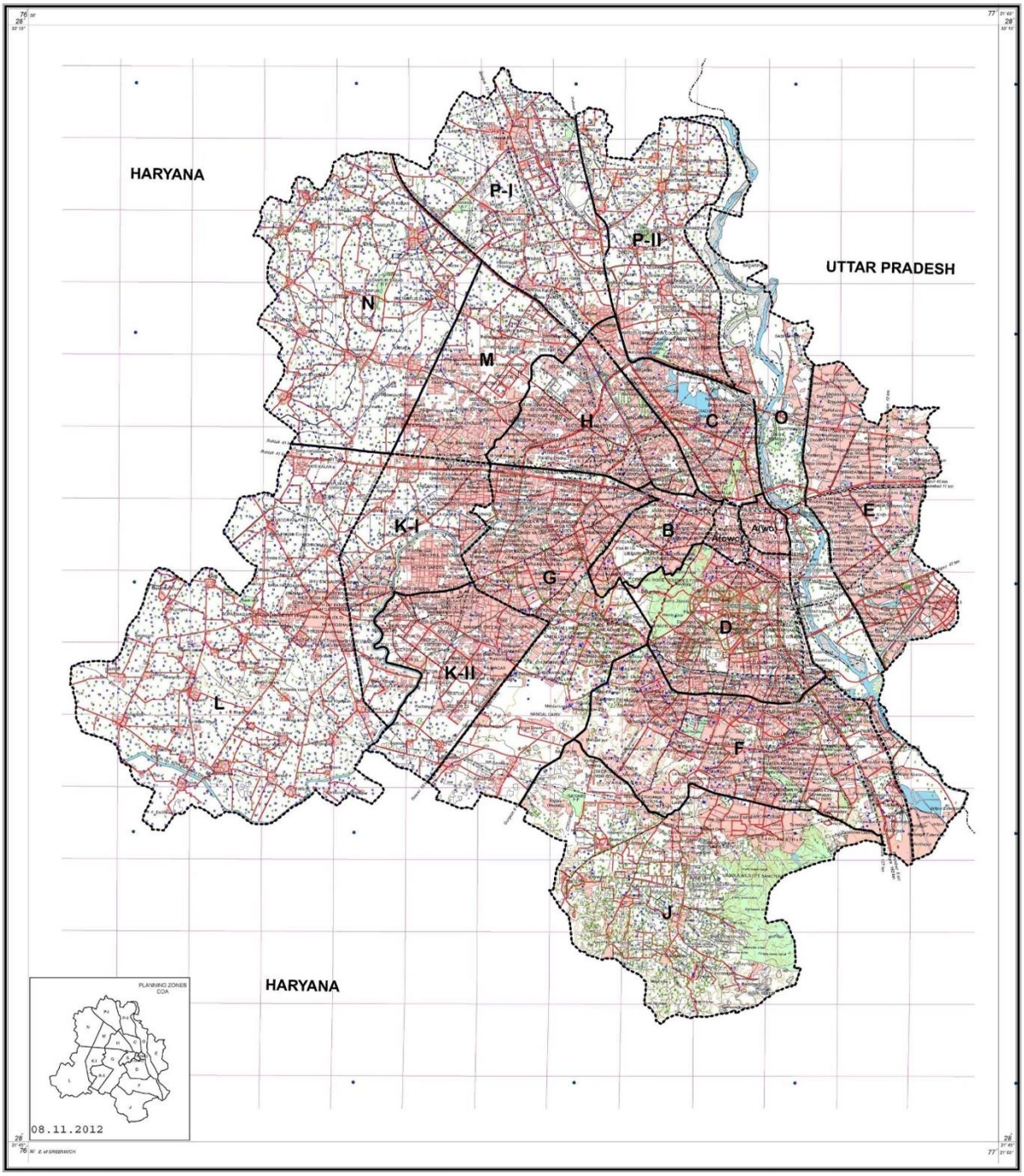
CENTRAL, EAST, NEW DELHI, NORTH, NORTH EAST, NORTH WEST, SOUTH, SOUTH WEST & WEST DISTRICTS.

Surveyed: 2001-03.

DELHI REGIONAL PLAN SURVEY

Magnetic variation from True North about 1° East in 2005. (Increasing by about 1' annually).

PARTS OF SHEET No. 53D/13, 53D/14, 53H/1, 53H/2, 53H/3, 53H/5, 53H/6 & 53H/7



Component B- Existing Land Use Survey through on-ground observation and creation of GIS based information layer.

1. LSA shall undertake extensive field survey/ physical survey to collect attributes for each of the identified built structure/building in respective Planning Zones through a compatible app based technology (android or any at par application) for updation of building records/site information on the common GIS platform. Database structure shall be finalized at the start of the project for uniformity.
2. The on-ground observation shall include for each built structure/buildings/utilities, the landuse survey/predominant use on each floor (in terms of approximate built area), activity type/use premise information, number of floors, ownership information to the extent possible and other site related information required to build an existing landuse layer for Delhi. Different land use on each floor/ separate numbering of each unit (e.g.flat number)shall be marked as separate unit.

   The following table will facilitate in assigning the use (Use classification) to the built structure/buildings/utilities:

Class	Sub-Class
Residential	Residential plotted/ Residential apartment/ Residential colony/ Foreign Mission/group housing/CGHS
Commercial	District Centre/ Community Centre/ Vegetable Market/ Non-hierarchical Commercial Centre/ Retail Business/ Hotel/ Office/ Wholesale Market/ Warehousing and Depots/ Sub Central Business District/ Service Market/ CNG Station/ Petrol Pump/ LPG Godown/ Gas Godown/ Cold Storage/ Oil Depots
Industrial	Manufacturing/ Service/ Light and Repair industries, service centre
Public & Semi-Public	College/ Technical Education/ Professional College/ Professional Engineering College/Medical College/ University/ Vocational Training Centre/ ITI/ Education and Research Centre/ Institutes/ School of Physically or mentally challenged/ School (Primary/Secondary/Sr. Secondary)/ Hospital/ Nursing Home & Polyclinic/ Maternity Home/ Veterinary Hospital/ Care Centre for Physically/ Mentally Challenged/ Orphanage/ Children's centre/ Facility Centre/Area (Facility Corridor)/ Disaster Management Centre/ Cultural Complex/ Socio-Cultural Complex/ Multipurpose Community Hall/ Old Age home/ Working men's/women's hostel/ Recreational Club/ Science Centre/ Exhibition cum fairground/Exhibition Ground/ District Sports Complex/ Stadium/ Divisional Sports Centre/Sports Centre/Play Ground/ Post Office/ Telegraph Office/ Head Post Office and Administrative Office/ Telephone Exchange/ Telephone office/ Transmission site/Centre/ Police Station/ Jail/District Jail/Police/Police Lines/Headquarters/Battalion/ Fire Station /Headquarter/ Cremation and Burial

	Ground/Cemetery/ District Office/ Bathing Ghat/ Night Shelter
Public Utilities	Water Treatment Plant/ Boosting Pumping Station/ Sewerage Treatment Plant/ Sewerage Pumping Station/ Common Effluent Treatment Plant/ Command Tank/ Electric Power Plant/ Electric Sub Station 440/220/66kv/Electricity (Power houses, substations)/ Transmission Tower/ HT Line/ Solid Waste (Sanitary Land fill etc.)/ Slaughter house/ Natural Gas – City Gate Metering Station
Government	President Estate and Parliament House/ Government Land (use undetermined)/ State Assembly/ Government Office/Courts/ District Court/ Municipal Office
Religious	Religious Buildings
Heritage	Historical Monument
Transportation	ISBT/Bus stand/Terminus/Depot/ Rail Terminal/ Yard/ Passenger Terminal/ Metro Station/ Metro Depot/ Airport/Truck Terminus/IFC/Freight Terminal/ Transport Nagar/ Parking/MLCP

Note:

a. The table above is both inclusive and exclusive to incorporate any missed out uses/ category as finalized by DDA at the time of finalization of the Inception Plan.
b. In case of institutions or where more than one building form a part of a cluster or compound, e.g. residential colony, district centers, hospital compounds, schools, etc. the overarching land use shall be assigned to all floors. Floor-wise detailing of uses shall not be done for such sites. Names of such institutions, district centers, hospitals, etc. shall be duly recorded.
c. Detailed premise-level surveys (including details such as type of activity) shall be conducted for all notified mixed-use streets/commercial streets as per MPD 2021.
d. Slums and areas with temporary structures shall be excluded from the survey. Such sites will be shared by DDA

3. The GIS ready map as developed in component A of scope of work, will be updated to ensure that the final layer matches the built areas as seen on the ground on the date of survey.
4. The LSA will prepare a detailed survey plan and finalize the same in discussion with DDA.
5. The surveys shall be carried out on a zone-wise basis. Each zone will be divided into survey blocks of approximately 1 sq.km. Multiple parallel survey teams will be mobilized to conduct existing land use survey in at least 20 survey blocks simultaneously.
6. Mobile applications on an appropriate platform shall be developed and utilized for the surveys. All such survey instruments shall be connected to a server to submit data on a real time basis on a cloud server. Application should work on online and offline mode. In case of non-availability of internet connection, data should be synced to cloud as soon as connectivity is available. The data shall be time stamped and GPS tagged to ensure the accuracy and reliability of the data collected.The database structure and the app shall be approved by the DDA before commencement of the field survey.

7. Surveyors shall record any modifications/changes required in the base map to match existing ground conditions and indicate changes in URN in case the number of buildings is higher than indicated in the GIS ready map/base map of SOI
8. At least one photograph of each building shall be captured from the front showing front of the building and shall be integrated with the common GIS data with DDA.
9. Acquired Survey Data shall be integrated accurately with the GIS Layers (Building footprints) and shall be viewable on the click in web GIS platform.
10. Data captured on the ground will be used to update attribute tables in the existing GIS database available with DDA on a daily basis. This will also include updating the map in terms of number of buildings and final assignment of URN numbers. Survey data integration with GIS database shall ensure the total count of survey building records as equal to the count of GIS Building footprint layer. Any modifications/changes required in the URNs based on ground survey will be reflected and finalized after the ground surveys and verification processes have been completed.
11. For survey data integration with GIS building data, LSA shall create point layer of each floor with-in the polygon of building footprint and shall integrate floor wise survey record with respective floor point layer.Sub division in floor shall be marked separately.
12. Once a survey block has been completed, the same shall be sent to the respective Zonal Officer(s) of DDA for verification. Any changes/anomalies pointed out by the concerned officer will have to be verified and checked on the ground, if required through joint site visits with such DDA officers.
13. A survey block will be considered complete only after the concerned Zonal Officer has provided due approval. Anyhow it will not take more than 7 working days.
14. Web-based application shall be developed for monitoring, updating, change management, administration, viewing the records and GIS layers, query-based reports generations etc. Application shall be developed with public and admin interface with user management option for the department.The Database should follow National Spatial Data Infrastructure (NSDI) open source architecture.
15. LSA shall also co-ordinate with the ULB's for integrating property data (tax collection) under facilitation by DDA into the common GIS data base.
16. The LSA will also prepare an existing building use map by assigning overall land uses to each building based on an agreed methodology as discussed and approved by DDA.
17. The LSA will undertake a comparative exercise to identify differences between the existing land-use plan and the proposed gross land-uses as per the respective Zonal Plans. Digitized Zonal Plans will be provided by DDA/NIUA as required for this purpose. This will be submitted to the respective Zonal Officers for verification and finalization.
18. Based on such a comparative analysis the LSA will prepare a detailed report on land and building use in the city along with detailed analytics covering all the major land uses as per MPD.

3. Eligibility of LSA

3.1 Eligible LSA shall be entities which fulfil the criteria stated below:

3.1.1 Consortium Allowed of not more than two partners

3.1.2 A LSA may be a private entity registered in India. The term LSA used hereinafter would therefore apply to a single entity .

3.2 Any LSA found to have a conflict of interest shall be disqualified. A LSA may be considered to have a conflict of interest with one or more parties in this ToR, if:

3.2.1 They receive or have received any direct or indirect subsidy from any of them; or

3.2.2 They have the same legal representative for purposes of this ToR;

3.2.3 A LSA participates in more than one bid in this process. Participation by a LSA in more than one bid will result in the disqualification of all LSAin which the party is involved.

3.2.4 The Successful LSA is prohibited to form a joint venture, with another LSA that had participated in the bid for the project. Such arrangement after the submission of bid or after award of the contract shall result intodisqualification of the LSAor contract as the case may be.

3.3 If at any time before the acceptance of the bid, DDA receives information that a LSA who has submitted a bid has been banned by any procuring entity of any state or central government, then DDA shall not accept the bid of that LSA.

LSA shall provide such evidence of their continued eligibility satisfactory to DDA, as the DDA shall reasonably request.

4. Documents Comprising the BID

The bid shall comprise the following:

Envelop 1

SN.	Documents to be submitted	Submitted (Y / N)	Documentary Proof (Page No.)
1.	DD/Banker's Cheque of Rs. 10,00,000- as BID Fee or MSME exemption (certificate/UAM to be shared)		
2.	EMD of Rs.10,00,000 /- MSME exemption (certificate/UAM to be shared)		

Envelop 2

SN.	Documents required	Submitted (Y / N)	Documentary Proof (Page No.)
1.	The LSA should be a firm or legal entity registered under Companies Act, Societies or any other law with the proof of Valid ISO 9001:2008 certification		Copy of certificate of ISO 9001:2008
2.	LSA shall be registered in India under Companies Act 1956 and must be operational since last 10 years		Certificate of Incorporation and proof of either one WOs for each 10 year or 10 years audited balance sheet along-with CA certificate must be submitted
3.	The LSA should be registered for GST & have valid PAN		Copy of certificate need to be submitted.
4.	LSA should have experience of acquiring and processing of Aerial(Fixed/rotary-wing		Copies of Work order /Completion certificate should

SN.	Documents required	Submitted (Y / N)	Documentary Proof (Page No.)
	aircraft/UAV) images establishing Ground control points network using DGPS/ETS covering a maximum geographical area of 500 sq. km. in India from a single project for Central Govt. of India/ any State Government Organization/ PSU in India for any central /state Government organization of India and preparation of GIS based map of master plan layers for the same		be enclosed in the bid.
5.	LSA should have experience of physical survey/landuse survey/household survey covering a minimum geographical area of 500 sq. km. in India from a single project for Central Govt. of India/ any State Government Organization/ PSU in India for any central /state Government organization of India.		Copies of Work order /Completion certificate should be enclosed in the bid.
6.	The LSA should be in the field of GIS based master planning since past 5 years		Copy of work orders /completions should be attached.
7.	LSA shall submit a self-declaration for being not under legal action for corrupt or fraudulent practices or not being blacklisted /banned / disqualified / declared ineligible / declared having dissatisfactory performance by any Ministry/ Department of GOI/ State/UT Government/ PSU/Government Organizations.		Self-Attested Declaration on company letter head
8.	Cumulative turnover of the LSAfor the last three financial years ending should be equal to or greater than Rs. 5 Crore.		Certificate from CA should be attached as per BID documents
9.	Turn-over from GIS Business should be atleast 80% of the Turn-over for each year		CA/Statutory Auditor's certificate is a must to be attached.
10.	LSA should have completed minimum one project of GIS Base/land use mapping of worth Rs. 50 lacs for Central Govt. of India/ any State Government Organization/ PSU in India for any central /state Government organization of India.		Copies of Work order /Completion certificate should be enclosed in the bid.
11	LSA must have experience in Providing GIS Land-use		Copies of Work order /Completion certificate should

SN.	Documents required	Submitted (Y / N)	Documentary Proof (Page No.)
	mapping and Door to door household survey using Android mobileapplication for towns having population more than 5 lacs as per census 2011 for Central Govt. of India/ any State Govt. Organization/ PSU in India for any central /state Govt. organization of India during the last 10 years Or Panoramic Imagery survey of door to door from moving vehicle for generating AMRUTlayers in town with population more than 5 lacs		be enclosed in the bid.
12	LSA must have surveyed minimum of 5 lacs properties as on bidding date for Central Govt. of India/ any State Govt. Organization/ PSU in India for any central /state Govt. organization of India during the last 10 years Or Carried out panoramic image capture properties in town of 5 lac population for the purpose of AMRUT GIS layers		Proof of work orders and completion certificate to be attached
13.	LSA should have minimum 30 GIS / RS experts on company payroll		Bidder must submit list with HR head Certificate
14.	LSA should submit UAOP from DGCA if proposed survey is to be undertaken using UAV		DGCA Certificate
15	LSA should have a UAV with DGCA issued UIN and NPNT certificate if proposed survey is to be undertaken using UAV		DGCA Certificate
16	LSA aircraft operator should have NSOP from DGCA for use of aircraft		DGCA Certificate

Envelop 3

SN.	Parameter	Quantity	Quote
1.	Letter of Financial bid		

SN.	Parameter	Quantity	Quote
2.	The LSAshall quote their total amount both in words and figures. Financial proposal (Including of all taxes and duties, **but excluding of GST**).		

5. Evaluation and Qualification Criteria

The evaluation of both technical and financialbids/proposals shall be done by a BID Evaluation Committee. The BID Evaluation Committee may choose to request for clarification from the LSA related to their products / services offering, approach, methodology or any other information as part of the technical evaluation.

The decision of the Evaluation Committee in the evaluation of the Technical and Financial bids shall be final and binding on all the LSAs. No correspondence will be entertained outside the process of negotiation/ discussion with the BID Evaluation Committee. Any effort by a LSA to influence the BID Evaluation Committee's processing of Bids or award decisions may result in the rejection of the Bid.

Marking / Evaluation Criteria:

S.No.	Criteria	Total Marks	Document Required
1	About company competency		
	LSA's ISO certification ISO 9001:2015 - 2 Marks ISO 27001:2013 – 5 marks	5	Copy of certificate of ISO 9001:2008
2	LSA should be registered and operational in India in the field of GIS since last 5 years from date of bid submission	10	Certificate of Incorporation
	5 years = 2 Marks > 5years -10 Years = 5 Marks >10 years = 10Marks		
3	**Technical criteria**		
	LSA should have experience of acquiring and processing of Aerial(Fixed/rotary wing Aircraft/UAV) images establishing Ground control points network using DGPS/ETS covering a minimum geographical area of 500 sq. km. in India from a single project for Central Govt. of India/ any State Government Organization/ PSU in India for any central /state Government organization of India and preparation of GIS based map of master plan layers for the same	10	Copies of Work order /Completion certificate should be enclosed in the bid.
	>= 500 sq. km to < = 1000 sq. km. = 5 marks		
	>=1001 sq. km to < = 1500 sq. km. = 10 marks		
4	LSA should have experience of physical survey/landuse survey/household survey covering a minimum geographical area of 500 sq. km. in India from a single project for Central Govt. of India/ any State Government Organization/ PSU in India for any central /state Government organization of India.	10	Copies of Work order /Completion certificate should be enclosed in the bid.

	>= 500 sq. km to < = 1500 sq. km. = 5 marks		
	>=1001 sq. km to < = 1500 sq. km. = 10 marks		
5	LSA should have completed minimum one project of GIS Base/land use mapping of worth Rs. 50 lacs for Central Govt. of India/ any State Government Organization/ PSU in India for any central /state Government organization of India	10	Copies of Work order /Completion certificate should be enclosed in the bid.
	1 project = 5 marks		
	2- 3 Projects = 10 marks		
6	LSA must have experience in Providing GIS Land-use mapping and Door to door household survey using Android mobile application for towns having population more than 5 lacs as per census 2011 for Central Govt. of India/ any State Govt. Organization/ PSU in India for any central /state Govt. organization of India during the last 10 years Or Panoramic Imagery survey of door to door from moving vehicle for generating AMRUT layers in town with population more than 5 lacs	10	Copies of Work order /Completion certificate should be enclosed in the bid.
	Upto 5 projects – 5 marks More than 5 projects – 10 marks		
7	LSA must have surveyed minimum of 5 lacs properties as on bidding date for Central Govt. of India/ any State Govt. Organization/ PSU in India for any central /state Govt. organization of India during the last 10 years Or Carried out panoramic image capture properties in town of 5 lac population for the purpose of AMRUT GIS layers	10	Copies of Work order /Completion certificate should be enclosed in the bid.
	>5 lacs <8 lacs - 5 marks >8 lacs - - 10 marks		
8	Overall Technical staff strength on company payroll with the LSA as on 31stMarch 2019	5	Bidder must submit list with HR head Certificate
	>30nos but <=50nos = 3marks		
	>=50 nos = 5 marks		
9	**Financial criteria**		
	Cumulative Turnover of LSA during the last 3 financial years	10	Certificate from CA should be attached
	= >5 crore to < 15 crore = 5 marks		
	>= 15 crore to < 20 crore = 7 marks		
	More than 20 crore = 10 marks		
10	LSA having work experience in Delhi / NCR project from government / PSUs	5	
	1 Project = 1 mark		
	Additional 4 projects (4 X 1). 4 marks		
11	Technical Presentation	15	

Minimum Eligibility in Technical: 70 and above

Pricing Format:

Sr. No.	Item Description	Item Code / Make	Quantity	Unit Rate (Including all taxes but without GST)	Amount
1	Aircraft/UAV (Drone) survey mapping&GIS Base Map Updation	Per sq.km			
2	Door to door field survey	Per Unit*			
3	Web based application development with unlimited users and portability with hand held devices	Lump sum			
4	Training and Hand Hold support (batch of 20)	Per Batch			
5	Annual Maintenance Cost	Per Annum			
6	Increase %age after each year for 5 year				

Unit shall be per point/line/polygon. Separate land use/bifurcation shall be treated as one unit.*

6. Selection Process:

6.1 Only those LSAthat have achieved at least minimum qualifying score (70% in this case) will be treated as qualified and only their financial bids will be opened.

6.2 After opening and evaluating the Financial bids of technically qualified LSA, a final combined score is arrived based on predefined relative weight ages.

6.3 The bids with the highest weighted combined score (quality and cost) shall be selected.

6.4 After filling the technical score, the system will open financial bid of all qualified LSAand compute QCBS score as given below: QCBS Calculation Logic **(eg. 70:30 weight-age)**

	TECHNIAL EVALUATION		**FINANCIAL EVALUATION**		**RESULT**	**AoC**
Weightage	**70%**		**30%**			
LSA1	75	83	120	83	83	
LSA2	80	89	100	100	92.3	
LSA3	90	100	110	91	97.3	1

*AoC – Award of Contract

Calculation Formula= B=[(Clow/C).X]+[T/Thigh.(1-X)] Where

C=evaluated Bid price
Clow=The lowest of all evaluated Bid price among responsive Bids
T= the total Technical score awarded to the Bid
Thigh=the Technical score achieved by the Bid that was scored best among all responsive Bids. X= weightage for the process as specified in Bids

Total Score will be calculated by GeM based on the Technical and Financial marks awarded by the committee members and the applicable QCBS weight-age.
LSA1 = 83*0.7 + 83*0.3 = 83
LSA2 = 89*0.7 + 100*0.3 = 92.3

LSA3 = 100*0.7 + 91*0.3 = 97.3
Contract will be awarded to LSA3 as it has obtained the highest Final Score.

7. Project Team

7.1 LSA shall deploy sufficient staff of skilled professionals and supporting staff for undertaking the project.

7.2 Development stage: The team should be comprised of adequate number of experts for data acquisition, processing, field survey, integration etc. as follows:

7.3 Key professionals -

- 7.3.1 Project Manager - >15 years experience in GIS / RS/Master planning
- 7.3.2 Data Processing / Digitization : GIS/RS – with relevant experience >10 years
- 7.3.3 Survey Lead – With adequate Field Survey using Mobile App - >7 years
- 7.3.4 IT Support - > 5 years

7.4 The team should also include sufficient support staff for taking care of each activities. Details of the Team Composition should be included in the Technical bid and during Presentation.

8. O&M stage

8.1 The LSA will provide on-call experts as detailed below for supporting the DDA for a period of 1 year after completion of the GIS database.

- 8.1.1 Software Engineers/Coders required for application maintenance and modification of the GIS portal. The cost for such an expert shall be provided by the agency in their financial bid.
- 8.1.2 GIS expert who has been a part of the spatial database development. The cost for such an expert shall be provided by the agency in their financial bid.

9. Timelines and Deliverables

The LSA will complete all responsibilities related to application development and field survey activity as per the schedule given below:

S.No.	Deliverables	Completion timeline (in weeks)
Component A- GIS & 3D Based Ortho Model for future feature extraction through High Resolution Satellite Imagery (HRSI)/ Aircraft/Unmanned Arial Vehicle (UAV)(Drone) mapping.		
1	Detailed Project Plan& Resource Deployment Plan	ED + 1 week
2	Roles and Responsibilities of DDA and LSA & Working on UAV survey plan and get necessary permissions.	
3	Training Strategy and Plan including number and distribution of GCPs so that the GCP are evenly distributed throughout the area.	ED + 3weeks
4	Data acquisition through aerial survey/ possible means as mentioned in the RFP	ED + 3 weeks
5	Data processing report	ED + 8 weeks
6	Assets identification and mapping (first Ortho image based map including 160 identified layers)	ED + 12 weeks
7	Geospatial data analysis	ED + 15 weeks
8	Virtual geographic simulations	ED + 18 weeks

Component B- Existing Land Use Survey through on-ground observation and creation of GIS based information layer.		
9	Meeting with zone-wise DDA official and discussion detailed survey plan. Collection of existing GIS data. Submission of Inception Report with survey plan for one survey block in one identified pilot zone.	ED + 20 weeks
10	Deployment / Mobilization of Survey team in the field after approval of the survey plan from DDA (In minimum 50 survey block simultaneously)	ED + 22 weeks
11	Field survey data submission along with Updated GIS base map for first 50 survey blocks.	ED + 28 weeks
12	Zone-wise field survey completion with updated GIS base map for all remaining blocks as per priority set by DDA	ED + 50 weeks
13	Submission of final database along with entire data and maps, supported by a detailed report	ED + 52 weeks
COMPONENT 3: CAPACITY DEVELOPMENT AND SUPPORT		
14	Competency Development/ Capacity Building/Training of DDA Personnel & DDA Stakeholders'	Throughout the project period

Note:

1. *The survey work on site and software preparation shall be done simultaneously by two teams deployed by the LSA.*
2. *The LSA will have to deploy number of survey teams for various zones to speeden up the work as the project is strictly time bound.*
3. *The survey team members shall upload the data on daily basis or alternate day ie one day survey and second day uploading.*
4. *A separate team comprising of DDA officials shall do the checking of uploaded data.*
5. *The LSA shall do a test check of area covered in survey on three subsequent days so that final timelines are based on actual basis, when they come for presentation.*