



***Government of West Bengal  
Directorate of Land Records & Surveys  
Survey Building, Alipore  
35, Gopalnagar road, Kolkata – 700 027***

**TENDER**

**FOR GROUND SURVEY USING DGPS AND  
ELECTRONIC TOTAL STATION**

**TENDER NO: DLRS/SURVEY/NIT\_01/2017\_18**

## *Disclaimer*

*The information contained in this Tender document (hereinafter referred to as "TENDER") or subsequently provided to Bidder(s), whether verbally or in documentary or any other form by or on behalf of the Director of Land Records & Surveys and Joint Land Reforms Commissioner, West Bengal hereinafter referred to as "DLR&S, WEST BENGAL" or alternatively the "Authority" or any of their employees, is provided to Bidder(s) on the terms and conditions set out in this TENDER and such other terms and conditions subject to which such information is provided.*

*The purpose of this TENDER is to provide interested parties with information that may be useful to them in making their financial offers pursuant to this TENDER (the "Bid"). This TENDER includes statements, which reflect various assessments arrived at by the DLR&S, WEST BENGAL in relation to the Project. Such assessments and statements do not purport to contain all the information that each Bidder may require. This TENDER may not be appropriate for all persons, and it is not possible for the DLR&S, WEST BENGAL, its employees to consider the investment objectives, financial situation and particular needs of each party who reads or uses this TENDER. The assessments, statements and information contained in this TENDER, may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assessments, statements and information contained in this TENDER and obtain independent advice from appropriate sources. Information provided in this TENDER to the Bidder(s) is on a wide range of matters, some of which depends upon interpretation of law. The information given is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The DLR&S, WEST BENGAL accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.*

*The DLR&S, WEST BENGAL, its employees make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this TENDER or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the TENDER and*

*any assessment, assumption, statement or information contained therein or deemed to form part of this TENDER or arising in any way in this Bid Stage.*

*The DLR&S, WEST BENGAL also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this TENDER.*

*The DLR&S, WEST BENGAL may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this TENDER. The issue of this TENDER does not imply that the DLR&S, WEST BENGAL is bound to select a Bidder or to appoint the Selected Bidder, as the case may be, for the Re-survey Project of West Bengal and the DLR&S, WEST BENGAL reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever.*

*The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the DLR&S, WEST BENGAL or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and the DLR&S, WEST BENGAL shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation for submission of the Bid, regardless of the conduct or outcome of the Bidding Process.*

## **Part – I**

### **Tender Details**

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## IMPORTANT INSTRUCTIONS

### **Instruction / guidelines for the Bidder for Electronic submission of the tenders on line:-**

#### **1. Registration of the Bidder**

- Any Bidder willing to participate in the processes of e-Tendering is required to log on to <https://etender.wb.nic.in> or <https://wbtenders.gov.in> with user ID (a valid e-mail ID with password) for enrolment and registration. The Bidder is to click on the link for e-Tendering site as given on the web portal.
- The registration page would appear where the Bidder is to fill up the details asked for regarding basic organization information in that page.
- Upon submission of such details online, registration would be done.

#### **2. Obtaining Digital Signature Certificate(DSC)**

- A Digital Signature is not a digitized form of signature. It is rather an identity proof for the Bidder, who is tendering electronically online. This may be used in the name of Authorized Representative of the Organization(Firm). It is stored in and given as a USB e-token.
- Class – II and Class – III Digital Signature Certificate can be procured from the approved Certifying Authorities recognized the Controller of Certifying Authorities. Government of India on payment of requisite amount.
- The Bidder is again required to log on with the User ID and password to register the Digital Signature Certificate (DSC) without which he cannot participate in e-Tendering. Once registered, this DSC can be used for participating in any e-Tendering of this Directorate in future.

#### **3. Uploading documents**

- The Bidder is to log in with Digital Signature Certificate(DSC), e-token password to upload scanned copies of various documents, as sought for in the NIT. This can be saved, edited and even deleted, if necessary, by the Bidders.

#### **4. Downloading tender documents**

- By tender search,(by value, by location and by classification) or from latest tender, the Bidder may download and view details of tenders after clicking on serial number.
- Such downloaded documents can be saved in computer as well.
- After downloading documents and before submission of tenders online, it is to be ensured that the documents have properly been filled up and necessary scanned documents have been uploaded, virus scanned and digitally signed.

5. Bid Security/EMD should be submitted in hard copy in Sealed Envelope and scan copy of this is to be provided in the format specified in E-tender system.

6. Technical bid is to be submitted through E-tender system, using specified formats.

8. Commercial bid is to be submitted ONLY through the E-tendering system and **HARD COPY of Technical Bid & Commercial bid will not be accepted.**

6. Bidder should note that a training program on the E-tendering system will be held at the time of pre-bid meeting - to familiarize Bidders with the system and help them in the electronic submission. Hence it is recommended that Bidders should attend the pre-bid meeting.

10. It is also very important that Bidders familiarize themselves with the E-tender system well in advance for the submission as to avoid any doubts.



**GOVERNMENT OF WEST BENGAL**  
**Directorate of Land Records & Surveys, West Bengal, Survey Building**  
**35, Gopalnagar Road, Alipore, Kolkata – 700 027**

## 1. INTRODUCTION

The Directorate of Land Records & Surveys, Govt. of West Bengal (DLR&S, W.B.), is responsible for cadastral Mapping in the state, showing land parcel boundaries on large scale maps. The DLR&S, W.B. intends to update the mouza maps using Electronic Total Stations (ETS) and Differential GPS (DGPS).

## 2. PARTICULARS OF THE TENDER

Sl No	Key activities	Date & Time	Address for communication
1	Issue of Tender paper - It should be downloaded from the e-tendering website.	From 02.06.2017	Director of Land Records & Surveys, and Joint Land Reforms Commissioner West Bengal, Survey Building' 35, Gopalnagar Road, Alipur, Kolkata-700027 There is no provision for hard copy submission except EMD. All other tender related activity will be done through e-tendering system.
2	Pre-bid conference	09.06.2016 at 12-30 pm	
3	Last date for submission of Tender Paper (through e-tendering and hard copy of cost of tender papers and EMD).	19.06.2017 up to 01:00 pm	
4	Opening of cover containing cost of Tender papers & EMD.	21.06.2017 at 1:30 pm	
5	Opening of document of technical qualification	21.06.2017 at 2:00 pm	
6	Presentation	22.06.2017 at 11-30 am	
7	Technical Marks Announcement	23.06.2017 at 12.30 pm	
8	Opening of the commercial proposal	23.06.2017 at 1:30 pm	

### **3. GUIDELINES FOR PREPARING THE TENDER**

3.1. Bidder shall have to submit their offer in prescribed formats in the e-tendering system after downloading and enclosing scanned copy of tender documents (Stamped and signed in each page) with the date and time as specified in Tender Notice.

The offer/bids are to be submitted in two parts viz – (1) EMD in a sealed cover (hard copies) (2) All document related to the tender including Technical Bid and Financial Bid through e-tendering system.

The Technical Bid includes latest Technical Brochures, experience and other Terms and Conditions, duly signed and stamped in each page and any other documents that the Bidder consider would strengthen the bid proposal. All documents should be scanned and uploaded as per provisions in the e-tendering system.

The Financial Bid should only be submitted through the e-tendering system. The format of the financial bid will be available with the e-tendering system. Bidders will download the excel file from the e-tender only and upload the same excel file properly filled up in the e-tendering system. The format of the excel file should not be changed by the Bidders in any condition otherwise the financial bid cannot be uploaded/ processed in the e-tendering system.

**3.2.** One sealed cover containing EMD in original – Super scribed Tender Notice No. and title of the Tender and should be submitted to the Directorate of Land Records & Surveys, West Bengal, Tender Processing Section at 'Survey Building', 35-Gopal Nagar Road, Kolkata – 700 027 within notified date and time. EMD will not be received after date & time notified in the tender.

#### **3.3. The tenders shall be rejected before technical evaluation if:**

- I. The Bidder did not achieve minimum qualification set in the tender.
- II. EMD (in original) is not submitted in sealed cover.
- III. The EMD is not furnished or is furnished in any other form than those specified, is not acceptable and the tender shall be deemed to be without valid deposit. Except for fully owned manufacturing companies of Central or State Government, exemption from Tender Deposit or EMD on any ground, shall not be accepted.
- IV. All the required documents set in the tender not uploaded.



- V. The Bidder has imposed any other conditions beyond those contained in this Tender Paper.
- VI. The Bidder has made any additions or alterations in the contents of any of these pages of the Tender Papers.

### **3.4. OPENING OF THE TENDER**

- a. Tenders received would be opened in two sessions one for EMD and Technical Bid (in the e-tendering system) and the other for the Financial Bid or Price Bids (also in e-tendering system).
- b. The Sealed Cover containing EMD will be opened first during opening the tenders.
- c. Short listed tenders whose technical bids matches with the specifications mentioned in the tender document will be invited in the field trial. They will be communicated regarding field trial via e-mail mentioned in the bid. Bidders are requested to provide their e-mail id, phone and fax number in the tender for communication.
- d. Bidders whose inputs in Technical Bids and in field trials are found to be matching or exceeding the qualification requirements will be eligible for the Price/ Commercial Bids.
- e. Ambiguous offers or if any alterations found in the Tender document shall be summarily rejected.

### **3.5. WITHDRAWAL OF TENDER**

Any Bidder may withdraw his/her tender as per provision of the e-tendering system and not thereafter. Any Bid withdrawn thereafter will make the Bidder liable to forfeiture of the EMD.

## **4. General Terms and Conditions**

### **4.1.1 Interpretation of Documents**

If any Bidder finds discrepancies or omission in the specification or other tender documents or if he is in doubt as true meaning of any part thereof, he shall make a written request to the tender inviting authority for correction/clarification or interpretation before the submission of the tender.

#### **4.1.2 Earnest Money Deposit**

Value of EMD = Rs.1,00,000/- (One Lakh only).

The Bank Guarantee on any Bank or Bank Demand Draft in favour of 'Director of Land Records & Surveys, West Bengal' payable at Kolkata issued by any Scheduled Bank should be submitted in hard copies and the scan copy to be uploaded in the e-tendering system as per format of the e-tender.

This amount of EMD, without interest, will be refunded to all the unsuccessful Bidders after the selection of the fittest Bidder. No tender will be accepted without EMD. The Earnest Money of the successful Bidder can be adjusted as part of the security Money.

#### **4.1.3 Tender validity Period**

The Tender bids shall be valid for One years.

#### **4.1.4 Price Validity**

(a) The rates offered will remain valid till completion of the work in a stipulated time from the date of award of the contract to the Bidder and no escalation of price for reason whatsoever will be allowed till the completion of the work.

(b) The tender inviting authority reserves the right for seeking extension of validity of the offered rates from the successful tenderer. Acceptance of such request during offer is however optional to Bidders.

#### **4.1.5. Liquidated Damages for delay in completion (Penalty caused for Delay and Inaccuracies)**

(a) If the Agency fails to deliver the services ordered thereof within the period fixed for such delivery, or on account of inaccuracies in the work executed the Director of Land Records & Surveys, West Bengal shall have the right to claim penalty. As this project is a time bound project being implemented by this Directorate, the delivery schedule given by this Directorate should be scrupulously observed.

(b) If the Agency fails to complete the work or job within the contracted time, he shall without prejudice to any other right or remedy available under the Law, on account of such breach pay the agreed compensation to this Directorate.

#### **4.2. PAYMENT**

After completion of the allotted work the Bidder will submit the work (printed copy of the mouza maps) along with all documents and information to the authorized officers of the DL&LRO of the concerned district with proper written information to the DLR&S, West Bengal. Field Evaluation of this work will be done by the authorized officers of the DLR&S, West Bengal or the DL&LRO of the concerned district. After field evaluation, the Bidder will submit all the deliverables including the soft copy of the maps in proper format, printed hard copy, which has been duly checked, and passed by the evaluating officer to the officer (s) authorized by the DLR&S, West Bengal at the Directorate office. The authorized officers of the Directorate after being satisfied all the deliverables has been deposited in complete form will issue the job completion certificate for the mouzas After receiving a job-completion Certificate the Bidder will submit the bill. Part payment (pro rata basis) can be made after completion of all mapping work of at least 1 Mouza in 1:990 scale in urban areas or 1:3960 scale in case of rural areas.

#### **4.4. Canvassing**

Canvassing or support in any form for the acceptance of any tender is strictly prohibited. Any Bidder doing so will render him liable to penalties, which may include cancellation of his / its bid.

#### **4.5. Termination of Contract**

a) Notwithstanding anything contained here before, the D.L.R.&S, W.B. shall have the right to terminate the contract unilaterally by giving only 15 (fifteen) days' notice in writing to the successful Bidder, without assigning any reason or reasons whatsoever and shall not be liable to pay any compensation by way of liquidated damages. However, in case of such termination of contract, the security money shall not be forfeited.

b) The tender inviting authority also reserves the right to terminate the contract at any time giving only 15(fifteen) day notice: -

(i) If the fund support for the project or job is withdrawn or discontinued.

(ii) If the Bidder breaches any of the terms and conditions as laid down in the tender document of this tender.

#### **4.6. SECURITY DEPOSIT**

Successful Bidder will have to furnish Security Deposit @ 10% value of the order/contract. The security deposit will be kept by the DLR&S,WB until the completion of the job. If the Bidder fails to do the job or breaks the agreement and leaves before the completion of the job defined in the work order / agreement the security deposit will be forfeited.

#### **4.7. COMPANY PROFILE :**

- i. The intending Bidder must have in its name as prime contractor, preferably having experience of successfully completed similar nature of work during last three years.
- ii. Reputed Organisation, preferably with at least three years' experience of preparation of Cadastral mouza maps / Ground survey & GIS work in large scale in large scale as mentioned in tender and plotting by computer is necessary.
- iii. The single Bidder alone should have a total turnover, preferably not less than Rs. 50 Lakhs in the last three years.
- iv. The Bidder should be a Indian GIS / Surveying company with at least Three years' experience in preparation of large scale mapping (scale = 1:4000 , 1:2000, 1:000 1:500) by modern technologies (GPS, ETS, satellite imagery using appropriate software) with desirable experience in Land Records Re-survey of NLRMP and should have completed /engaged in such project (Documentary Evidence to be provided).
- v. The Bidder should have executed Central/State Government projects, 1 (one) project of Rs. 30 Lakhs, or more than one project totaling Rs. 40 Lakhs in which one of the projects should be not less than of Rs. 5 lakh in the last three years.

- vi. The Bidders must submit documentary evidence in support of the above claims in the form of certified copy of work order, completion certificate and payment certificate.
- vii. The Bidders should possess one of the following valid Quality Certifications from accredited and internationally reputed firms (Documents to be attached).
  - a. Quality Management System: ISO 9001:2008
  - b. Information Security Management System: ISO/IEC 27001:2005 or equivalent
  - c. IT Service Management System: Preferably ISO/IEC 20000-1:2005 or equivalent.
- viii. Bidders will have to give the Registration no of the firm, CST No. sales/ Service Tax / VAT Documents/PAN in their respective tender and will produce photo-copies of up-to-date sales tax/service tax, Income Tax, Professional Tax and Vat clearance certificate in the standard format from the Tax Authority for the proceeding three years along with tenders paper or a certificate that the assessment is under consideration. All such clearance certificates will valid on the date of opening of tender bid. Original certificates are to be produced on demand at any stage after opening the tender.
- ix. The Bidder / Bidders should be in a position to ensure availability of adequate skilled man power (preferably not less than 05 skilled GIS manpower 10 surveyors) for the entire working period and shall furnish documents from the HR in support.
- x. The Bidder should have credential for doing such cadastral Differential GPS. The work completion/ performance certificate should be uploaded properly.
- xi. The Bidder / Bidders should propose a technical team with detail description regarding their qualification, experience in the field of Survey and GIS.
- xii. The Bidder / Bidders preferably should have their Office/Development centre in Kolkata, West Bengal. The Bidder / Bidders who do not fulfill the criteria must establish office & Development centre in Kolkata if they are awarded the contract. In that case they must submit a declaration with the tender document regarding establishing an Office & Development centre having head of the project and adequate number of employees with the knowledge of Bengali language. The Bidder / Bidders having their Registered Office/Development centre in Kolkata, West Bengal with employees having knowledge of Bengali language will be given preference during selection.
- xiii. Bidders failing to comply with the Eligibility & Qualification criteria, their technical bids will be rejected.

#### 4.8. The following documents should accompany the Technical Bid

The scan copy uploaded should be signed in each page of the document.

##### 4.8.1 Statutory folder

###### 4.8.1.1 **TECHNICAL DOC1:** Folder for documents to be Digitally Signed and uploaded

- i. Signed copy of the tender document
- ii. Certificate of Acceptance of Terms & Conditions.
- iii. DD of EMD.

All documents should be scanned (in low resolution to keep the file size small) to form a single .pdf file

##### 4.8.2 Non-Statutory folder

Document in the non statutory folder will be uploaded as the following chart

A	CERTIFICATES		
		A1. CERTIFICATES	VAT/ CST/ SALE TAX REGISTRATION CERTIFICATE ALONG WITH ACKNOWLEDGEMENT,PAN,LATEST IT ACKNOWLEDGEMENT, PTAX
B	COMPANY DETAILS		
		B1. COMPANY DETAILS 1	PARTNERSHIP DEED, CO-OPERATIVE SOCIETY BY LAW, MOA, TRADE LINCENCE, COMPANY REGISTRATION CERTIFICATE
		B1. COMPANY DETAILS 2	ISO CERTIFICATE
C	CREDENTIAL		
		C1. CREDENTIAL1	WORK ORDER
		C2. CREDENTIAL2	PAYMENT CERTIFICATES
D	FINANCIAL INFO		
		D1. P/L & BALANCE SHEET	P/L & BALANCE SHEET 2013-2014
		D2. P/L & BALANCE SHEET	P/L & BALANCE SHEET 2014-2015
		D3. P/L & BALANCE SHEET	P/L & BALANCE SHEET 2015-2016

#### **4.9 Performance security / security Deposit**

The successful Bidder shall have to deliver in favour of the tender inviting authority a performance security / security Deposit limited to a sum equal to 10% of the total Bid value (or contract Price).

#### **5. TENDER INVITING AUTHORITY RESERVES THE FOLLOWING RIGHTS.**

- (a) The acceptance of the tender will rest with the accepting authority and does not bind the accepting authority to accept the lowest bid or any tender and reserves the absolute right to accept or reject any tender in full or in part or all tenders received; if no party is found suitable as per requirement Tender Inviting Authority reserve the right to split up the work among the qualified Bidders without assigning any reason thereof.
- (b) The Tender Inviting Authority reserved the right for seeking extension of offer from the successful Bidder. Acceptance of such request offer is however optional to the Bidder.
- (c) The Tender Inviting Authority reserves the right to modify and amend any of the stipulated conditions/criterion depending upon the project priorities vis-à-vis urgent requirements.

#### **6. TECHNICAL EVALUATION OF TENDER**

Evaluation of tender will be done by the Committee formed by DLR&S, West Bengal, as per Technical Evaluation Criteria given in Annexure-II.

#### **6.1 *The evaluation of the Technical bids will be carried out in the following manner:***

- a. The Technical Bids of only the pre-qualified Bidders will be opened for evaluation.
- b. The Bidders' technical solution proposed in the bid document would be evaluated as per the requirements specified in the TENDER and adopting the evaluation criteria spelt out in this document. The Bidders are required to submit all required documentation in support of the evaluation criteria specified (e.g. detailed project citations and completion certificates, client contact information for verification, profiles of project resources, specifications of equipment proposed to be used) as required for technical

evaluation. The Technical evaluation shall be done as per the criteria specified in part II.

c. Proposal Presentations: Each pre-qualified Bidder shall be invited to make a presentation to DLR & S, WEST BENGAL on the date mentioned in the Tender. The purpose of such presentations would be to allow the Bidders to present their proposed solutions and orchestrate their key strengths, approach, methodologies and work plans described in their proposals.

## **6.2 *The following points would be considered in evaluating the proposals –***

i. Does the Bidder demonstrate an understanding of the project, particularly its scope and tight timeframe?

ii. Does the Bidder have the capacity, skill and financial resources, reputation, experience, and efficiency required to complete the work? This will be evaluated based on the past experience, successful completion of projects, adherence to the time lines, credentials from clients, technical skills associated with organization etc.,

v. Can the Bidder take on the obligations and responsibilities set forth in the TENDER and produce the required outcomes within the required timeframe?

vi. Is the equipment proposed by the Bidder like DGPS, ETS and software suitable to meet the requirements of the project, technologically up-to-date and calibrated?

vii. Are the Bidder's proposed internal QA/QC procedures as per the international standards?

viii. Does Bidder's proposed project management methodology adhere to timeline and whether it covers the risk mitigation?

## **6.3 *TECHNICAL PRESENTATION***

As a part of the TENDER preparation process, the vendors would be required to present their proposed solution to the DLR & S, WEST BENGAL. To facilitate a better understanding of proposed solution and other issues, a presentation including a structured walkthrough have been scheduled on the following lines. The presentation should be conducted as per the

sequence outlined in this document. Handout material should be distributed (2 copies) in addition to an electronic copy on a CD (2 no. copies).

**6.4 The agenda of the presentation has been laid out below.**

Section A: General Information of the management (2 minutes)

- (1) Name of the primary Bidder and Single Point Interface for the DLR & S, WEST BENGAL (1 slide).
- (2) Scope of Work (1 slide).
- (3) Roles & Responsibilities of all the consortium members (1 slide).

Section B: Structured Walkthrough of Proposed Approach and Methodology (15 minutes)

The purpose of the structured walkthrough is to get an insight into the Bidders understanding of the user requirements and assess the capability of the Bidder deliver the within the stipulated timeframe.

- (1) Understanding of Scope of Work of the Project & its requirements
- (2) Proposed approach and methodology to comprehensively address all the requirements the project laid out in the TENDER Milestones
- (3) Project Timelines and detailed project plan
- (4) Quality Control methodology, standards and quality assurance plan Capabilities
- (5) In terms of the human resources, and proposed manpower and experience -that will be deployed for this project, should be mentioned broadly under the following heads:
  - (i) Domain Experts
  - (ii) Managerial Staff
  - (iii) Qualified Surveyors
- (6) The surveyors should have working knowledge of Bengali.

The Bidders should also furnish the software and hardware details, that will be engaged in this project.

Section C: Section D: Miscellaneous (5 minutes): Questions & answers



6.5 The presentations are expected to be concise and touch upon all the above sections & sub-Sections in the format and slide titles mentioned above.

The presentation time should not exceed 30 minutes including Q & A.

6.6 Following will be the technical evaluation scheme:

- i. Each Technical Bid will be assessed for technical score on a scale of 1 (minimum) to 100 (maximum) points
- ii. Only the Bidders, who score a minimum Technical score will qualify for the opening of their commercial bids.

## Part – II

### Technical Details

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## 1. Scope of work:

The cadastral survey in West Bengal was conducted on the basis of scientific survey started way back in 1888. The first series of cadastral maps and land records were prepared during District Survey and Settlement Operation during 1888 – 1940 under B.T. Act 1885. A Revisional Survey and Settlement Operation under West Bengal E. A. Act, 1953 were conducted during 1954 – 1962 to update the maps and land records. Presently the maps and land records are being revised under West Bengal L. R. Act, 1955. The work started during 1972 and over the years most of the maps and land records has been revised.

The use of modern surveying instruments like GPS and ETS will ensure much faster and more accurate survey. The main objective of the tender is to survey of the urban areas (survey under LR Act) using faster and more accurate instruments like GPS and ETS.

The expected time for completion of the project is 04 months.

The list of mouzas under the present scope of the work:

Name of the District	Sl. No.	Mouza	JL. No.	Police Station	Area ( in acres)
South 24 Parganas	1	Hiranmaypur	150	Canning (Basanti)	2133.64
	2	Miagheri	21	Canning	630.46
	3	Baruipur	31	Baruipur	2471.88
Total area for the project (Approx)					5235.98

This list is not exhaustive, DLR&S, WB reserve the right to make some addition alteration during allotment of work to the successful Bidder.

On successful execution of the project, DLR&S, WB may extend the work to survey - pending mouzas of North 24 Parganas and South 24 Parganas and it will be binding upon the successful bidder to execute such work.

Directorate of Land Records & Surveys, West Bengal has already computerized all land records data and also digitized the present cadastral maps. The 'Bhuchitra' software was running successfully in West Bengal for a long period for management and updation of Land Records. 'eBhuchitra' – the upgraded version of 'Bhuchitra' is presently running in the State Land Records Management System. Therefore, the updated maps are needed to be compatible with the 'eBhuchitra'.

## **2. Roles and Responsibilities**

### **2.1 Responsibilities of the Director of Land Records & Surveys West Bengal (DLR & S, W.B.) will be limited to the –**

- a. Supplying coordinate data of Primary and secondary GCPs in working area to the Agency / Successful Bidder . The DLR & S, West Bengal has procured the coordinate data (WGS 84) of 76 Primary control points from SOI. The DLR & S, WB established secondary control points (WGS 84) with monument throughout the state as per specification adopted by the DLR & S, WB and will supply the coordinate data of primary and secondary GCPs along with point description to the Agency / Bidder / successful Bidder for their work. The co-ordinate data will be lat, long, height format ( lat-long data upto 3 or 4 decimal places of one second and upto 3 decimal places of one meter in WGS 84.)
- b. Providing scan data of the cadastral Mouza maps (raster – not geo-referenced) to the Agency / successful Bidder.
- c. Issuing of Government Orders, Circulars, Instructions, etc., to effect changes to existing policies, framing of new policies, and such other matters as may be necessary from time to time.
- d. Constituting a Project Management Team to monitor and checking the accuracy of work of the Agency / successful Bidder and issue necessary instructions if required.
- e. Nominating personnel for accepting the deliverables.

### **2.2 Responsibilities of the Agency / successful Bidder(s)**

The following are the roles and responsibilities of the Implementing Agency / Bidder / successful Bidder:

- a. Establishing Tertiary control points along with momumentations as per specifications and Auxiliary control points required for the work as per specification adopted by DLR & S, WB at least 2 pillars per mouza.
- b. Preparation of accurate geo-referenced digital Mouza maps using established control survey network and submission in phases to DLR&S, WB.
- c. Setting up of infrastructure for processing of data (DGPS and ETS).
- d. Conduct the field survey.
- e. Submit all data both physical and mathematical regarding control stations established and used.
- f. Deploying the required infrastructure and skilled & experienced resources, including workstations, laptops, printers, connectivity, etc.
- g. Quality check of the all the deliverables before submitting to the DLR&S, WB.
- h. Servicing of General Notices and collection of Classifications & Ownership details of land parcels.

### **3. Deliverables**

- a. Hard copy cadastral maps (sheet wise divided) Printed in 119 GSM(or better) sunshine coated paper. This shall be submitted in phases.
- b. Soft copy of cadastral maps (seamless mosaic. The adjacent mouzas also should be able to join in Seamless mosaic form).
- c. GCP data: All filled up forms provided in the Annexure I, observation data in RINEX format, all processed co-ordinate of points along with photographs of location.
- d. Softcopy also to be supplied in sheet wise divided shape files.
- e. The list of additional layers / shape files other than mentioned in para 3.2.5 : Road, (Name of the road, character of the road: [Katcha Road / Pucca Road], width, National Highway or State Highway should be collected as an attribute in addition to geographic features)., River, Nullah, Railway line, Control Station, Well (Pucca well, deep tube well, Pump), House (Katcha house / Pucca house / Farm house), P S Boundary, District Boundary, sheet boundary, Mouza boundary.
- f. Maps of administrative boundaries – Block, P.S., Subdivision, District, Alamat (classification) Katcha Road, Pucca Road, River, Nullah in different shp (shp, shx & dbf) format.

- g. Creation of Plot Numbers.
- h. Creation of Rendered Plot Numbers (RPN) and Centroid points of each Polygons in point layer. Sometimes plot number cannot be written inside the plot because it is small to accommodate the number. In that case a last one or two digit is written to represent the original number. This plot number is called rendered plot number. Centroid is the geometric centre point of the polygon. The number of the polygon is written at the centroid.
- i. Creation of in-situ lines and point Alamats (line & point layer).
- j. Thoka lines of Mauza and sheet control points, tri-junction pillars, permanent features or marks, old control stations, roads, railway tracks, rivers or streams, relay lines of acquisition plans, etc in .shp format of line, point and area layers.
- k. Creation of DBF files for Point/Area Alamats and Bata Plots (point & area layer).
- l. Creation of GIF files of non-map features (Sheet heading, North Direction, legends.
- m. List of Conventional Signs, Contents of Certificate Block.
- n. Creation of text files in point layers.
- o. Width of the access road for plots.
- p. If any plot is not adjacent to road, then distance from nearest road, then distance from nearest road.
- q. Distance from nearest hat/bazar.
- r. The formats provided in the clause '3.2' are not exclusive. Addition or modification can be made by the DLR&S, WB any time during the tender process or before or after awarding the work to the successful bidder till the date of completion.

**3.2** The following four database tables should be developed. This is to be done by carefully observing each & every plot in the map.

**3.2.1 Table No. 1** - The conventional signs or Alamats shall have to be codified along with the reference of bata plot no. in the following dbf:

Mouza code no	Sheet no	RS/LR	Plot no	Alamat code	Reference 'Bata' plot no

### 3.2.2. Table No. 2 –

Data with respect to Alamats in point layers shall be developed that shall contain the following information. This is master data information and should be developed centrally & maintained centrally.

Alamat code	Alamat Name	Actual file as OLE object

**3.2.3 Table no. 3** - This table will contain the information on the first plot and the last plot no. in a sheet of cadastral map for a particular Mouza.

Mouza Code	Sheet no	First plot no	Last plot no.

**3.2.4 Table no. 4** - The table will keep track of missing plots of in a particular sheet of a mouza. Missing plots numbers are those numbers within the 1<sup>st</sup> & last plot numbers that are no longer attached with any plot.

Mouza Code	Sheet no	Missing plots.

Output of map will be 'BHUCHITRA' compatible GIS formats. The outline of the files are mentioned below. However, the selected Agency / Bidder / Bidder will be given a detailed training on the formats of the 'BHUCHITRA'.

3.2.5 At present 31 files are generated for GIS ready maps in West Bengal for the cadastral maps

Serial No	File Name	Description

1	JINo.shp	Shape file for Mouza Map Sheet
2	JINo.shx	Shx file for Mouza Map Sheet
3	JINo.dbf	Dbf file for Mouza Map Sheet
4	Alml.shp	Shape file for Alamat in line layer
5	Alml.shx	Shx file for Alamat in line layer
6	Alml.dbf	Dbf file for Alamat in line layer
7	Almp.shp	Shape file for Alamat in Point layer
8	Almp.shx	Shx file for Alamat in Point layer
9	Almp.dbf	Dbf file for Alamat in Point layer
10	Bnd.shp	Shape file for Sheet Boundary, it the sheet denotes the extent of the sheet.
11	Bnd.shx	Shx file for Sheet Boundary
12	Bnd.dbf	Dbf file for Sheet Boundary
13	Centroid.shp	Shape file for the points where to place the Plot Numbers
14	Centroid.shx	Shx file for the points where to place the Plot Numbers
15	Centroid.dbf	Dbf file for the points where to place the Plot Numbers
16	Img.shp	Shape file for the points where to insert the GIF files
17	Img.shx	Shx file for the points where to insert the GIF files
18	Img.dbf	Dbf file for the points where to insert the GIF files
19	Mbnd.shp	Shape file for Mouza Boundary
20	Mbnd.shx	Shx file for Mouza Boundary
21	Mbnd.dbf	Dbf file for Mouza Boundary
22	Scale.shp	Shape file for Scale of the Mouza Sheet
23	Scale.shx	Shx file for Scale of the Mouza Sheet
24	Scale.dbf	Dbf file for Scale of the Mouza Sheet
25	Text.shp	Shape file for Texts of the Mouza Sheet



26	Text.shx	Shx file for Texts of the Mouza Sheet
27	Text.dbf	Dbf file for Texts of the Mouza Sheet
28	sign.gif	Gif file for Certificate book
29	alm_bata.dbf	Dbf file for conventional signs or alamats along with the reference of bata plot no
30	missp.dbf	Dbf file for Missing Plots in Mouza Sheet
31	first_last.dbf	Dbf file for First & Last Plot Number for Mouza Sheet

3.2.6 The maps will be generated using WGS – 84 reference ellipsoid and UTM Projection. Therefore the projection file (.prj) will also be included in the list of digital files of a mouza.

Sometimes legend is broken into more than one file. These files are named lege1.gif, lege2.gif, lege3.gif & lege4.gif. Accordingly total number of files varies from 35 to 38.

### 3.2.7 Alamat (Symbols)

The Directorate of Land Records has published list of symbols and the Agency / Bidder / Bidder has to follow the system prevailed in the State.

## 3.3 . Important Instructions

1. The ". shp", ". shx" and the ". dbf" files for the mauza containing the area and the line layer should be named as "<JLNo>.shp", "JL.shx" and "JL.dbf" respectively. Thus if the JL No. of a mauza is 100, then the three above mentioned files should be "100.shp","100.shx" and "100.dbf" respectively. The files are to be placed in the "JL No."subdirectory under the corresponding "Block Code" directory in the following format :-

<Block Code> \ <JL No.> \ <JL No>.shp

< Block Code> \ <JL No.> \ <JL No>.shx

< Block Code> \ <JL No.> \ <JL No>.dbf

Thus if for a particular mouza, the Block Code is 50 and the JL No. is 100, then the files corresponding to the layers of that mauza should be organized as follows :-

50 \ 100 \ 100.shp

50 \ 100 \ 100.shx

50 \ 100 \ 100.dbf

2. If the mouza map comprises of more than 1 sheet, then the files for both the sheets are to be given the same names and as per the convention mentioned in point 1 above. However in order to avoid controversy, the files must be kept in different subdirectories denoting the sheet number under the "JL No" directory which itself is kept under the "PS Code" directory. Thus if the mauza map with JL No. 100 (see the example in point 1) comprises of 2 sheets then the file should be organized as follows :-

For sheet no. 1

For sheet no. 2

50 \ 100 \ 1 \ 100.shp

50 \ 100 \ 2 \ 100.shp

50 \ 100 \ 1 \ 100.shx

50 \ 100 \ 2 \ 100.shx

50 \ 100 \ 1 \ 100.dbf

50 \ 100 \ 2 \ 100.dbf

3. The layers for the images and the alamaths need not be qualified with their corresponding JL nos. but they must be kept in the same directory along with the layer files mentioned in the above two points. The files will be named as centroid.shp, almp.shp, alml.shp, scale.shp, bnd.shp, mbnd.shp, img.shp, alm\_bata.dbf, first\_last.dbf, missp.dbf, name.gif, lege.gif, bata.gif, sign.gif etc.

4. The attribute field giving the plot number of each plot of the mauza is a compulsory field. It must be a character field of length 5 and have the name "plotno".

5. The list of conventional symbols for the alamaths as followed by the department should be referred whenever required. The descriptions given in the above tables are additional to those given in the above mentioned booklet.

6. For symbols, which are not "in-situ", the points of insertion of the symbol are to be given at the approximate center of the symbol in the point layer for alamaths.

7. The scale for each map should be digitized and provided as a separate line layer along with the other layers for the mauza. The basename of the files for the line layer for the

alamaths must be "scale" i.e. the ". shp" file for the line layer must be "scale.shp". The names of other necessary files (. shx, etc.) for the same line layer must be given accordingly.

8. The values in the different attribute fields in the various layers should be left justified.

9. Selected agency will be provided with the sample files of deliverables.

## **4. Procedure of work**

### 4.1 Stages of work

- i. DGPS Survey for GCP Collection
- ii. Establishment of Tertiary and Auxiliary pillars as per specification adopted by DLR&S, WB.
- iii. Geo-referencing of existing revenue cadastral maps
- iv. GIS analysis for deriving match / mismatch parcels
- v. Ground Verification
- vi. ETS / DGPS Survey for detail parcels boundary.
- vii. Submission of updated maps (Mouza wise).

### 4.2 Establishment of GCP

Instrument to be used : Dual Frequency GPS / GNSS Receiver.

Minimum observation time:

- i. For Tertiary & Auxiliary control points – as adopted by DLR&S, WB.
- ii. For other control points – 15 minutes minimum.

Processing method:

- i. For control work all data should be collected using Differential GPS.
- ii. Tertiary and Auxiliary points should be used as known points / stations for GPS observations.
- iii. Post processing method should be used for establishing control points.

## 5. GCPs:

- a. The 76 primary GCPs have already been established by Survey of India (SOI). The Directorate has procured the co-ordinate and location data of the Primary GCPs from the SOI.
- b. The primary control points are established in all Districts of West Bengal. Therefore these primary control points would be used as known control points for establishing secondary control points
- c. The Secondary GCPs will be established in 25 km x 25 km grid and Tertiary GCPs will be established in 1 km x 1 km grid. Mouza trijunction pillars will be established as Auxilliary control points.
- d. The design of the pillar at the Tertiary Control Points is to be obtained from the office of the DLR&S, WB.
- e. The data of related primary and secondary GCPs will be provided to the vendor for using them as reference or Known points for GPS observation.
- f. All the GCPs will have an identification number – an 8 digit code. The first two code will be for district (number existing adopted code), second will be one digit code – P for Primary GCP, S for Secondary GCP and T for Tertiary GCP. The fourth and fifth would be the code of the block, sixth seventh and eighth code will be individual serial number of the GCP within a block.  
Example: 01S10001

Here 01 = District Code for Bankura, S= type of GCP here it is Secondary GCP, 10 = Block code for Simlapal, 001= individual serial number of GCP.

### *5.1 Guideline for establishing Tertiary / Auxiliary Control points:*

Tertiary Control points (GCPs) will be established using DGPS observations. The selected vendor / Agency will be provided with data of Primary GCP & Secondary GCP points. The vendor will first make a 1km X1 km grid on a District map and identify suitable points on ground nearest to the grid junction. The pillar will be erected first at the suitable points on the ground and the GPS observation will be taken thereafter. Tertiary control points will be established.

### 5.1.1 Specification of Tertiary Control points

- i. Position: 1 km interval (on average).
- ii. Accuracy: The accuracy of the points would be 5 millimeter.  
(It is determined by residuals of network adjustment with 95% confidence interval.)
- iii. Minimum observation time: 2 hour.
- iv. GDOP: Less than 6.
- v. Method: Triangular offset.
- vi. Base receiver is to be placed on either primary or secondary GCPs.
- vii. Instrument: Dual frequency DGPS receiver.

### 5.2 Duties of the Agency / Bidder

- i. Establishment of tertiary GCPs.
- ii. Tertiary control points with DGPS and monumentation (specification of monument can be collected from this directorate).
- iii. Inform District Land and Land Reforms Officer well in advance (at least 15 days) about their tour programme and detail plan of work.
- iv. The Agency / Bidder will submit forms GCP – 1, GCP – 2, GCP – 3, GCP – 4 & GCP – 5 duly filled and signed to the DLR&S, WB.
- v. The Agency / Bidder will submit raw and RINEX files of all readings of DGPS.
- vi. The Agency / Bidder will submit the network adjustment report in HTML & word files.

## 6. Survey

- a. The selected Agency / Bidder will conduct the ground survey using their own manpower and own instruments (DGPS and ETS).
- b. It will be the responsibility of the Agency / Bidder for the safe keeping of the instruments in field.
- c. The schedule of survey should be strictly maintained by the Agency / Bidder.
- d. Field survey will be conducted maintaining general procedure of survey & Technical Rules and Instruction published by this Directorate.
- e. The Agency / Bidder will observe guideline issued by DLR&S, WB regarding field survey.
- f. Only DGPS (Dual Frequency) and ETS will be used in field. Use of instruments of lower specification / accuracy in the field is strictly prohibited.

- g. The Agency / Bidder will collect the height data of all the points. If the Agency / Bidder is supplied with height data of Primary & Secondary GCPs in MSL they will collect data in MSL. If height data is supplied as Ellipsoidal height then all data will be collected in Ellipsoidal height.
- h. One sheet should contain at least two features surveyed "in-situ" (see Technical Rules and Instructions).
- i. Alamats or conventional signs will be strictly maintained as per list supplied by the DLR&S, WB.

#### 6.1 Checking of field survey:

Officials authorised by the DLR&S, WB or DL&LRO of the concerned district will conduct the checking of field survey. The checking generally will be conducted after submission of data / maps by the Agency / Bidder. DLR&S, WB or DL&LRO may conduct checking of field survey during the work on the field or any stage before submission of the data / maps. Checking of the detail survey will be done on the basis on the partial system described in the 'Technical Rules & Instructions' maintaining project accuracy standard. ETS and DGPS will be used for checking the detail and control survey. The RINEX / raw data collected during DGPS observation for establishing GCPs or control points will be independently processed by the authorized officials of DLR&S, WB. Independent observations may also be conducted by the authorized officials of DLR&S, WB to check the accuracy of the points.

#### 6.2 Accuracy for field work other than GPS control:

- a. For Control Survey (using ETS) Linear Accuracy is : 1:20000, i.e. 10 cm in 2 km.
- b. For Detail Survey Linear Accuracy is 1:1000, i.e. 10 cm in 100 meter.
- c. Discrepancy up to 0.5% of total mouza area.

Final output with lower than prescribed accuracy liable to be rejected.

## 7. Data Security

- a. The Agency / Bidder will come into a non-disclosure agreement with DLR&S, West Bengal for all data – Digital or hard copy supplied for this work.
- b. Only authorized staff members are allowed to take back-up of data. The backup media is always kept at a place that is not accessible to any unauthorized staff.
- c. Data backup will be done only on one system that will be accessible only to the project leader. All backup will be encrypted.
- d. No removable media, such as CD reader/writers & FDD, are installed in any of the systems. Also, USB ports will be disabled in all the systems and wherever possible, the USB cables shall be removed. It is ensured that all removable media is removed before the system is sent for production.
- e. All systems should have a BIOS system level password in order to prevent anyone from changing the setup.
- f. No remote access will be provided to any of the computer.
- g. No data sharing will be allowed on any of the operators PC.
- h. All data in paper/CD/DVD or in any other form shall be retained by DLR&S.
- i. Audits will be performed on a regular basis by authorized organizations.
- j. No Internet access shall be provided to any individual without prior permission from the Project Coordinator.
- k. E-mail access shall only be given to the Project Manager unless any requirement occurs.
- l. Grant access or remove access to any individual shall be given with permission of the Project Manager.
- m. No shared user IDs will be used.
- n. All physical networks like cables, routers and switches shall be inside the project zone.
- o. No sharing of password with anyone shall be allowed.
- p. No wireless technology with data transfer capabilities inside the project zone shall be allowed.
- q. Server shall have password protected screen saver.
- r. No writable media shall be found in the project zone except for the server where backup tapes/disks or other essential writable media are handled.
- s. Only authorized and licensed software shall be installed on workstations and Servers and those records shall be kept for all installed software.
- t. No visitors shall be allowed in the production area. In case of a visitor, the security guard will inform the concerned person about the visitor. Under no circumstances any

visitor is allowed beyond the reception area.

- u. It is mandatory for all employees to wear their Photo ID card at all times in the office.
- v. No employee is allowed to enter the office without the Photo ID card. However, in case any employee forgets to carry his Photo ID card, he shall be required to call the Supervisor/ Shift-in-Charge.
- w. No material is allowed in or out of the office unless a gate pass is issued and verified. All the confidential documents, data backup of the organization are kept in a cabinet and the keys shall be available with Project Manager.

## **8. Final output**

- a. Final output will be as discussed under 'deliverables – point no '3' in this part.
- b. The vendor / Agency / Bidder will first submit draft printed copy and soft copy of the map at the office of the DLR&S, WB for checking. The checking will be conducted by the officials authorized by DLR&S, WB and DL&LRO of the concerned district.
- c. The checking will include soft copy checking, hard copy checking and field checking.
- d. If any error or inaccuracy is detected then vendor / Agency / Bidder will correct the error or inaccuracy within 15 working days. After that penalty will be charged for delay and inaccuracy in mapping.
- e. The Agency / Bidder will be bound to correct all the errors in the map. No map will be passed with the error. No funds will be disbursed against any unfinished or inaccurate work.
- f. The Agency / Bidder will bear all the cost for correction /rectification or errors.
- g. After necessary correction / rectification the corrected copy along with print copy has to be submitted again along with the previous erroneous hard copy.
- h. It is to be noted that there will be two hard copy submission – one is draft copy on which the checking will be done. And second will be final print. But if the draft is found erroneous then again a print draft copy has to be submitted for checking. The number of draft print copy will increase if error is found over and again. The penalty will be charged from the second submission of the draft copy.
- i. The bill can be raised and payment will be made only after acceptance of final product in the form of hard copy and soft copy.



DIRECTOR OF LAND RECORDS & SURVEYS, WEST BENGAL

Form no GCP-1

Planning of Field Observation of GCPs

DISTRICT:

BLOCK :

P.S.:

Sl no	Point ID	Date	Starting time	Closing time	Team / instrument no at base 1	Team / instrument no at base 2	Team/ instrument no at new GCP

Prepared by  
(HQ TA/ Surveyor/Agency)

Checked by  
(HQ TA/SO)

Approved by  
(DL&LRO/DDS)

**DIRECTOR OF LAND RECORDS AND SURVEYS, WEST BENGAL**

**Form no: GCP-2**

REGISTER OF GCPs

DISTRICT :

BLOCK (for tertiary and auxiliary points) :

P.S. (for tertiary and auxiliary points) :

SL NO	POINT ID	LOCATION (P S, Mouza, Plot no )	OWNER OF THE LAND

Prepared by  
(Surveyor/Agency)

Checked by  
(HQ TA/SO)

Approved by  
(DL&LRO/DDS)

DIRECTOR OF LAND RECORDS & SURVEYS, WEST BENGAL

Form no CGP-3

Description of individual GCPs

DISTRICT :

BLOCK :

P.S. :

MOUZA :

POINT ID :

DETAILED DESCRIPTION

PHOTOGRAPH OF THE POINT

Prepared by  
(HQ TA/ Surveyor/Agency)

Checked by  
(HQ TA/ASO)

DIRECTOR OF LAND RECORDS & SURVEYS

Form no GCP-4

Field Observation Data Sheet of individual GCPs

DISTRICT :

BLOCK :

P.S. :

MOUZA :

POINT ID :

Receiver no :

Date:

Antenna Hight :

Starting time:

Closing time:

Obstarction :North:

South

East:

West:

SV TRACKING

	At start						At close					
Satellite vehicle												
L1 SNR												
L2 SNR												

NAVIGATION POSITION (WGS 84)

Time	Latitude	Longitude	Height	PDoP	HDoP	VDoP	GDoP

Observer : \_\_\_\_\_

(In case observation taken by Agency, observer of the Agency will sign)

Date : \_\_\_\_\_

DIRECTOR OF LAND RECORDS & SURVEYS, WEST BENGAL

Form no GCP-5

Consolidated Report of GCPs  
Post Processing Coordinate Data of GCPs

DISTRICT:

BLOCK :

P.S.:

Point Type: Secondary / Tertiary / Auxiliary

Sl no	Point ID	Geodetic Coordinate (WGS 84)			Projected Coordinates (UTM- Zone 45N)		
		Latitude	Longitude	Height	Easting	Northing	Height

Prepared by  
(HQ TA/ Surveyor/Agency)

Checked by  
(HQ TA/SO)

Approved by  
(DL&LRO/DDS)

## Score sheet for Technical Evaluation

Total Score for Evaluation		100	Marks obtained			
Organizational Back Ground		40				
	Years of experience in preparing large scale maps (1:4000 and larger) by pure ground survey using ETS & DGPS		20			
		less than 3 years = 0 marks		10		
		3 to 5 years		15		
		more than 5 years		20		
	Total yearly Turnover		20			
			Less than 20 lakhs		5	
			More than 20 lakhs to 50 lakhs		10	
			More than 50 lakhs to 01 crore		15	
more than 15 crore			20			
Organizational Past Experience		30				
	Similar number of projects executed in the past 3 years		15			
	Project value should be not less than 10 lakhs	Less than 5 projects		5		
		5 to 7 projects		10		
		8 or more projects		15		
	Name of the place where such projects executed (Give the volume of work)		15			
	Projects of more than 1000 Acres of land will be considered	1000 acres to 2000 acres		5		
		2001 acres to 5000 acres		10		
		More than 5000 acres		15		
Personnel		30				
	No. of qualified Surveyor and Total No. of permanent employees		15			
	The Bidder should submit documental evidence of having the personnel in their payroll.	Not more than 05 Surveyor + 10 GIS personnel		5		
		Not more than 10 Surveyor + 15 GIS personnel		10		
		Not more than 20 Surveyor + 20 GIS personnel		15		
	Proposed Project Team		15			
	Qualification & experience of Project Head and other personnel Number of surveyors, GIS experts proposed for the project.			14		
Project Team members are well versed with Bengali language		1				