15 –ാം കേരള നിയമസഭ

9 –ാം സമ്മേളനം

നക്ഷത്ര ചിഹ്നം ഇല്ലാത്ത ചോദ്യം നം. 1668 **11-09-2023 - ൽ മറുപടിയ്ക്ക്**

ഡിജിറ്റൽ സർവ്വേ ഉപകരണങ്ങൾ വാങ്ങുന്നതിനുള്ള ടെണ്ടർ

ചോദ്യം		ഉത്തരം	
ശ്രീ. ഐ. സി. ബാലകൃഷ്ണൻ, ശ്രീ. കെ. ബാബു (തൃപ്പൂണിത്തുറ), ശ്രീ. സി. ആർ. മഹേഷ്, ശ്രീ. റോജി എം. ജോൺ		**ശ്രീ. കെ. രാജൻ (റവന്യൂ-ഭവനനിർമ്മാണ വകുപ്പ് മന്ത്രി)**	
(എ)	സംസ്ഥാനത്ത് ഡിജിറ്റൽ സർവ്വേ നടത്തുന്നതിനായി ഉപകരണങ്ങൾ വാങ്ങാനായി ടെൻഡർ ക്ഷണിച്ചിരുന്നോ; വ്യക്തമാക്കാമോ;	(എ)	സംസ്ഥാനത്ത് ഡിജിറ്റൽ സർവ്വെ നടത്തുന്നതിനായി ഉപകരണങ്ങൾ വാങ്ങാനായി ഗ്ലോബൽ ടെൻഡർ ക്ഷണിച്ചിരുന്നു. പ്രസ്തുത ടെണ്ടർ നോട്ടീസിന്റെ പകർപ്പ് അനുബന്ധമായി ചേർക്കുന്നു. രാജ്യത്തിലെ തന്നെ ലാൻഡ് സർവ്വെ രംഗത്തെ വിദഗ്ധരായ സർവ്വെ ഓഫ് ഇന്ത്യ, National Informatic Centre (NIC), Kerala State Remote Sensing & Environment centre (KSREC), കേരള സ്റ്റേറ്റ് IT മിഷൻ (KSITM), Kerala State Council for Science, Technology & Environment (KSCSTE), കോളേജ് ഓഫ് എഞ്ചിനീയറിംഗ് തിരുവനന്തപുരം (CET) എന്നിവിടങ്ങളിലെ സാങ്കേതിക വിദഗ്ധരും, സർവ്വെ വകുപ്പിലെ സീനിയർ ഉദ്യോഗസ്ഥരും ഉൾപ്പെട്ട ടെക്നിക്കൽ കമ്മറ്റിയുടെ മേൽനോട്ടത്തിലാണ് ടെണ്ടർ സ്പെസിഫിക്കേഷനും, RFP യും അന്തിമമാക്കി ടെണ്ടർ നടപടിയിലേക്ക് പോയിട്ടുള്ളത്. ടെക്നിക്കൽ കമ്മറ്റി അംഗീകരിച്ച സ്പെസിഫിക്കേഷൻ അനുസരിച്ച് Procurement Portal ആയ etenders.kerala.gov.in എന്ന ഓപ്പൺ ടെണ്ടർ പോർട്ടലിൽ പബ്ലിഷ് ചെയ്ത് നിയമാനുസൃത നടപടികളിലൂടെ ഏറ്റവും സുതാര്യമായ രീതിയിലാണ് പർച്ചേസ് നടപടികൾ സ്വീകരിച്ച് L1 ബിഡ്ഡറെ തിരഞ്ഞെടുത്തിട്ടുള്ളത്. കൂടാതെ L1 ബിഡ്ഡർ ലഭ്യമാക്കിയ ഉപകരണങ്ങൾ ടെക്നിക്കൽ കമ്മറ്റിയുടെ മേൽ നോട്ടത്തിൽ ഫീൽഡിൽ പരീക്ഷണം നടത്തി ഉപകരണങ്ങളുടെ ഗുണനിലവാരം ഉറപ്പാക്കിയതിന് ശേഷമാണ് വിതരണാനുമതി നൽകിയിട്ടുള്ളത്.
(ബി)	പ്രസ്തുത ടെൻഡർ പത്രങ്ങളിൽ പരസ്യപ്പെടുത്താതെ	(ബി)	പത്രങ്ങളിൽ പരസ്യം

	സർക്കാർ വെബ്സൈറ്റിൽ മാത്രമാണോ പരസ്യം നൽകിയിരുന്നത്; എങ്കിൽ ഇതിന്റെ കാരണം വിശദമാക്കാമോ;		നൽകിയിട്ടുള്ളതാണ്.ഇതിനോടൊപ്പം വ്യാപകമായ പ്രചാരണം ഉറപ്പാക്കുന്നതിനുള്ള മറ്റ നടപടികളും സർക്കാർ സ്വീകരിച്ചിട്ടുണ്ട്. ഡിജിറ്റൽ സർവ്വെ പ്രോഗ്രാമിനായി ലഭ്യമാക്കേണ്ട ആധുനിക സർവ്വെ ഉപകരണങ്ങൾ ഒരു അതുല്യ ശ്രേണിയിൽ (niche category) പെട്ടതാണ്. കൂടാതെ പരിമിത എണ്ണം വിതരണക്കാർ മാത്രമാണ് രാജ്യത്ത് ഉള്ളത്.സ്റ്റോർ പർച്ചേസ് മാനുവലിൽ പറഞ്ഞിരിക്കുന്ന പ്രകാരം ഡയറക്ടർ ജനറൽ ഓഫ് ഇന്റലിജൻസ് ആൻഡ് സ്റ്റാറ്റിസ്റ്റിക്സ് പുറത്തിറക്കിയ പ്രതിവാര ഇന്ത്യൻ ടേഡ് ജേണലിൽ ടെൻഡർ വിജ്ഞാപനം പ്രസിദ്ധീകരിച്ചിട്ടുണ്ടെന്ന് സർക്കാർ ഉറപ്പുവരുത്തിയിട്ടുണ്ട്. മാത്രവുമല്ല, ടെൻഡർ ഇ-പ്രൊക്യൂർമെന്റ് പോർട്ടലിൽ പ്രസിദ്ധീകരിക്കുകയും അതിന്റെ അടിസ്ഥാനത്തിൽ ടെൻഡർ സംബന്ധിച്ച വിവരം പതിനാലോളം ടെൻഡർ വെബ് സൈറ്റുകളിലും/സോഷ്യൽ മീഡിയ പേജുകളിലും വന്നിട്ടുണ്ട്. രാജ്യത്തെ സർവ്വെ ഉപകരണങ്ങള് വിതരണം ചെയ്യുന്ന എല്ലാ കമ്പനികളെയും ടെൻഡർ നടപടികളെക്കുറിച്ച് ബോധവാന്മാരാക്കുന്നതിനും പ്രീ ബിഡ് കോൺഫറൻസിൽ പങ്കെടുപ്പിക്കുന്നതിനും, എല്ലാ വിധ സംശയങ്ങളും ദൂരീകരിക്കുന്നതിനും വേണ്ട നടപടികളും സ്വീകരിച്ചിരുന്നു. കൂടാതെ ടെണ്ടറിൽ ചെറുതും വലുതുമായ എല്ലാ ബിഡ്ഡർമാരുടെയും പങ്കാളിത്തം ഉറപ്പാക്കാൻ വിവിധ ഡിജറ്റൽ പ്ലാറ്റ്ഫോമുകളിലൂടെയും മതിയായ പ്രചാരണം നൽകുകയും ചെയ്തിട്ടുണ്ട്. പ്രീ ബിഡ് ടെൻഡറിൽ നേരിട്ട് ഓൺലൈനായി പങ്കെടുത്ത 12 ബിഡർമാരും ഇമെയിൽ വഴി ചോദ്യങ്ങൾ ഉന്നയിച്ച് പങ്കെടുത്ത 6 ബിഡർമാരും ഉൾപ്പെടെ 18 ബിഡർമാരുടെ പങ്കാളിത്തം ഉറപ്പാക്കിയിട്ടുണ്ട്.
(സി)	കരാർ പ്രകാരം നൽകേണ്ട ഉപകരണങ്ങൾ കമ്പനി നൽകിയിട്ടില്ല എന്ന പരാതി ശ്രദ്ധയിൽപ്പെട്ടിട്ടുണ്ടോ; എങ്കിൽ ഇതിന്റെ കാരണം വിശദമാക്കാമോ;	(സി)	കരാർ പ്രകാരം നൽകേണ്ട ഉപകരണങ്ങൾ കമ്പനി നൽകിയിട്ടുണ്ട്.
(ഡി)	ഏതുതരം ഉപകരണങ്ങളാണ് നൽകേണ്ടത് എന്നും അതിന്റെ ഗുണമേന്മ എന്തായിരിക്കണമെന്നും കരാറിൽ വിശദീകരിക്കാത്തതിന്റെ കാരണം വിശദമാക്കാമോ?	(ഡി)	ഏതുതരം ഉപകരണങ്ങളാണ് നൽകേണ്ടത് എന്നും അതിന്റെ ഗുണമേന്മ എന്തായിരിക്കണമെന്നും ഉള്ളത് നിശ്ചയിക്കുന്നതിന രാജ്യത്തിലെ തന്നെ ലാൻഡ് സർവ്വെ രംഗത്തെ വിദഗ്ദരായ സർവ്വെ ഓഫ് ഇന്ത്യ, National Informatic Centre (NIC), Kerala State Remote Sensing & Environment Centre (KSREC), കേരള സ്റ്റേറ്റ് IT മിഷൻ (KSITM), Kerala State Council for Science, Technology & Environment (KSCSTE), കോളേജ് ഓഫ്

			എഞ്ചിനീയറിംഗ് തിരുവനന്തപുരം (CET) എന്നിവിടങ്ങളിലെ സാങ്കേതിക വിദഗ്ധരും സർവ്വെ വകുപ്പിലെ സീനിയർ ഉദ്യോഗസ്ഥരും ഉൾപ്പെട്ട ടെക്നിക്കൽ കമ്മറ്റി രൂപീകരിച്ചിട്ടുള്ളതും ടി ടെക്നിക്കൽ കമ്മിറ്റിയുടെ മേൽനോട്ടത്തിലാണ് ടെണ്ടർ സ്പെസിഫിക്കേഷനും, RFP യും അന്തിമമാക്കി നിയമാനുസരണം ടെണ്ടർ നടപടി പൂർത്തിയാക്കി ടെക്നിക്കൽ കമ്മറ്റിയുടെ മേൽനോട്ടത്തിൽ ഫീൽഡിൽ പരീക്ഷണം നടത്തി ഉപകരണങ്ങളുടെ ഗുണനിലവാരം ഉറപ്പാക്കിയതിന് ശേഷമാണ് വിതരണാനുമതി നൽകിയിട്ടുള്ളത്. അതനുസരിച്ച് കരാറിൽ ഏർപ്പെടുകയും ഉപകരണങ്ങൾ ലഭ്യമാക്കുകയും ചെയ്തിട്ടുണ്ട്

സെക്ഷൻ ഓഫീസർ

Kerala Tenders

eTendering System Government of Kerala

Tender Details

Print

Date : **07-Jun-2023 11:45 AM**

Basic Details

Organisation Chain	Directorate of Survey and Land Records		
Tender Reference Number	DSLR/2038/2021-B6		
Tender Id	2021_DSLY_456044_3		
Tender Type	Global Tenders	**Form of contract**	Supply and Service
Tender Category	Goods	**No. of Covers**	2
General Technical Evaluation Allowed	No	**ItemWise Technical Evaluation Allowed**	No
Payment Mode	Online	**Is Multi Currency Allowed For BOQ**	No
Is Multi Currency Allowed For Fee	No	**Allow Two Stage Bidding**	No

Payment Instruments

Online Bankers

S.No	Bank Name
1	SBI MOPS

Cover Details, No. Of Covers - 2

Cover No	Cover	Document Type	Description
1	Pre Qualifiction and Technical	.pdf	All Technical documents mentioned as per Tender Document
		.pdf	Bidder should submit GST Receipt of Tender fee.
2	Finance	.xls	Price/Financial BID

Tender Fee Details, [Total Fee in ₹* - 25,000.00]

Tender Fee in ₹	25,000.00		
Fee Payable To	Nil	**Fee Payable At**	Nil
Tender Fee Exemption Allowed	Yes		

EMD Fee Details

EMD Amount in ₹	25,00,000.00	**EMD through BG/ST or EMD Exemption Allowed**	Yes
EMD Fee Type	fixed	**EMD Percentage**	NA
EMD Payable To	Nil	**EMD Payable At**	Nil

Work /Item(s) Details

Title	SUPPLY, INSTALLATION AND TESTING OF ROBOTIC TOTAL STATION, REAL TIME KINEMATIC (RTK) DEVICE, TABLET PC FOR MAPPING, SOFTWARE SOLUTION AND ACCESSORIES FOR SURVEY INSTRUMENTS IN THE STATE OF KERALA -Retender				
Work Description	SUPPLY, INSTALLATION AND TESTING OF ROBOTIC TOTAL STATION, REAL TIME KINEMATIC (RTK) DEVICE, TABLET PC FOR MAPPING, SOFTWARE SOLUTION AND ACCESSORIES FOR SURVEY INSTRUMENTS IN THE STATE OF KERALA -Retender				
Pre Qualification Details	Please refer Tender documents.				
Independent External Monitor/Remarks	NA				
Show Tender Value in Public Domain	No				
Tender Value in ₹	1,68,00,00,000.00	**Product Category**	Equipments	**Sub category**	Survey Instruments and Software
Contract Type	Tender	**Bid Validity(Days)**	180	**Period Of Work(Days)**	120
Location	Thiruvananthapuram	**Pincode**	695014	**Pre Bid Meeting Place**	Through VC
Pre Bid Meeting Address	google meet link qmb-hqeb-tgb	**Pre Bid Meeting Date**	28-Mar-2022 11:00 AM	**Bid Opening Place**	Survey Directorate

Should Allow NDA Tender	No	**Allow Preferential Bidder**	No	
Enable Media Publish Date	No	**Enable Tender Bulletin Date**	No	

Critical Dates

Publish Date	25-Mar-2022 05:00 PM	**Bid Opening Date**	23-Apr-2022 04:00 PM
Document Download / Sale Start Date	25-Mar-2022 05:00 PM	**Document Download / Sale End Date**	22-Apr-2022 03:00 PM
Clarification Start Date	NA	**Clarification End Date**	NA
Bid Submission Start Date	25-Mar-2022 05:00 PM	**Bid Submission End Date**	22-Apr-2022 03:00 PM

Tender Documents

NIT Document

S.No	Document Name	Description	Document Size (in KB)
1	Tendernotice_1.pdf	Tender Notice	372.92

Download as zip file

Work Item Documents

S.No	Document Type	Document Name	Description	Document Size (in KB)
1	Tender Documents	Rebid2document.pdf	Tender Document	2087.12
2	BOQ	BOQ_696167.xls	BoQ	248.50

Bid Openers List

S.No	Bid Opener Login ID	Bid Opener Name	Certificate Name	Serial No
1	pr.pushpa08@gmail.com	Pushpa P.R	P R Pushpa	30 da e7 c
2	priyaudayakumar77@gmail.com	Priya N	Priya N	31 1f e4 7
3	jyothipallichal100@gmail.com	Cherupushpa Jyothi Jetrude	Cherupushpa Jyothi J	31 1f e3 5

Tender Properties

Auto Tendering Process allowed	No	**Show Technical bid status**	Yes
Show Finance bid status	Yes	**Show Bids Details**	Yes
BoQ Comparative Chart model	Normal	**BoQ Compartive chart decimal places**	3
BoQ Comparative Chart Rank Type	L	**Form Based BoQ**	No

Tender Inviting Authority

Name	Director, Survey and Land Records
Address	The Director Department of Survey and Land Records, Govt. of Kerala, Vazhuthacaud, Thiruvananthapuram Kerala, India 695014 Tele 0471 2325266 Fax 0471 2338210

Tender Creator Details

Created By	Mrs Priya N
Designation	FGD
Created Date	25-Mar-2022 03:48 PM

Tender Publisher Details

Published By	Mrs PriyaN
Designation	FGD

Published Date	25-Mar-2022 05:00 PM

Request for Proposal (RFP)

for

SUPPLY, INSTALLATION AND TESTING OF ROBOTIC TOTAL STATION, REAL TIME KINEMATIC (RTK) DEVICE, TABLET PC FOR MAPPING, SOFTWARE SOLUTION AND ACCESSORIES FOR SURVEY INSTRUMENTS IN THE STATE OF KERALA

(Tender document)

RFP Reference No: DSLR/2038/2021-B6

Acronyms		
1	AMC	Annual Maintenance Contract
2	BOM	Bill of Material
3	CAMC	Comprehensive Annual Maintenance Contract
4	DSLR	Department of Survey and Land Records
5	ETS	Electronic Total Station
6	EMD	Earnest Money Deposit
7	GoK	Government of Kerala
8	ICT	Information and Communication Technology
9	INR	Indian Rupee
10	IPR	Intellectual property rights
11	IT	Information Technology
12	LoA	Letter of Award
13	LoI	Letter of Intent
14	NEFT	National Electronic Fund Transfer
15	NIC	National Informatics Centre
16	O&M	Operations and Maintenance
17	OEM	Original Equipment Manufacturer.
18	PBG	Performance Bank Guarantee
19	PoA	Power of Attorney
20	PoC	Proof of Concept
21	ReLIS	Revenue Land Information System
22	RTGS	Real Time Gross Settlement
23	RTK	Real Time Kinematic
24	RETS	Robotic Electronic Total Station

25	SDC	State Data Centre
26	SDK	Software Development Kit
27	SI	System Integrator
28	SLA	Service Level Agreement
29	SOW	Scope of Work
30	UAT	User Acceptance Test

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DISCLAIMER

The information contained in this proposal (RFP) document provided to the bidder, by or on behalf of the Director, Department of Survey and Land Records, Government of Kerala or any of its employees or advisors, is provided to the bidder(s) on the terms and conditions set out in this RFP document and all other terms and conditions subject to which such information is provided.

The purpose of this RFP document is to provide the bidder with information to assist the formulation of their proposals. This RFP document does not purport to contain all the information each bidder may require. This RFP document may not be appropriate for all persons, and it is not possible for the Director, Department of Survey and Land Records, its employees or advisors to consider the business / investment objectives, financial situation and particular needs of each bidder who reads or uses this RFP document. Each bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this RFP document and where necessary obtain independent advice from appropriate sources. Director, Department of Survey and Land Records or its employees and advisors make no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the RFP document.

I. DATA SHEET

Sl. No		Description
1.	Mode of bid submission	**Online through e-Procurement portal of the Government of Kerala at https://etenders.kerala.gov.in**
2.	Type of proposal required	Prequalification, Technical & Financial
3.	RFP Download Start Date/ Time	25 March - 3.00 pm
4.	RFP Download End Date/ Time	04 April - 10.00 am
5.	Last date for receipt of pre-bid queries.	27 March - 12.00 pm
6.	Date, time & venue of pre-bid meeting	28 March - 11.00 am at Video call link: https://meet.google.com/qmb-hqeb-tgh
7.	Last date for submission of proposal	04 April - 10.00 am
8.	Date of opening of Technical bid	05 April - 11.00 am
9	Technical Evaluation Dates	11th April onwards
10.	Opening of Financial Bids	Will be informed after completing the technical evaluation.
11.	Earnest Money Deposit	Rs. 25,00,000 /- (Twenty Five Lakhs only)
12.	Tender Fee	Rs. 25,000/- (Twenty-Five thousand) including GST as applicable

13.	Validity of the proposal	180 days from the date of opening of technical bid.	
14.	Evaluation of the proposals & scoring criteria	As detailed in the RFP document.	
	Contact Email where queries/correspondence concerning this RFP is to be sent	Pushpa.P.R	mail id: procurementdslr1@gmail.com
15.		Anilkumar.S	mail id: procurementdslr2@gmail.com
16.	Name & address of Issuer	**The Director** **Department of Survey and Land Records** Vazhuthacaud, Thiruvananthapuram Kerala 695014 Tele: 0471-2325266 Fax: 0471-2338210 Email–mail id: 1) procurementdslr1@gmail.com 2) procurementdslr2@gmail.com	

2. NOTICE INVITING REQUEST FOR PROPOSAL

1. The documents may be downloaded from the website https://etenders.kerala.gov.in/
2. RFP shall be accompanied with Earnest Money (EMD) & a tender fee deposited through the e-payment system in the e-procurement portal of the Government of Kerala. https://etenders.kerala.gov.in/.
3. Application for this RFP supported by prescribed Appendix shall be submitted through the e-procurement portal of the Government of Kerala.
4. The bidders are advised to keep visiting the website https://www.etenders.kerala.gov.in from time to time (till the deadline for bid submission) for any updates in respect of the RFP document notice, if any. Failure to do so shall not absolve the applicant of his liabilities to submit the RFP document

complete in all respects including updates thereof, if any. An incomplete application may be liable for rejection.

5. The Director, Department of Survey and Land Records reserves the right to verify the particulars furnished by the bidder independently.
6. The Director, Department of Survey and Land Records reserves the right to reject any or all prospective applicants without assigning any reason and to restrict the list of pre-qualified firms to any number deemed suitable.

3. PROJECT OVERVIEW

The Department of Survey and Land Records is one of the oldest departments in the State of Kerala. The main mandate of the department is to conduct the re survey and prepare the cadastral land records and handover to the Revenue department for the subsequent land administration purposes. As per the G.O.(Rt) No.364/2021/P&EA dtd: 27-08-2021, the Govt has accorded administrative sanction for the execution of Digital survey of 1550 villages in the State of Kerala in 4 year time frame.

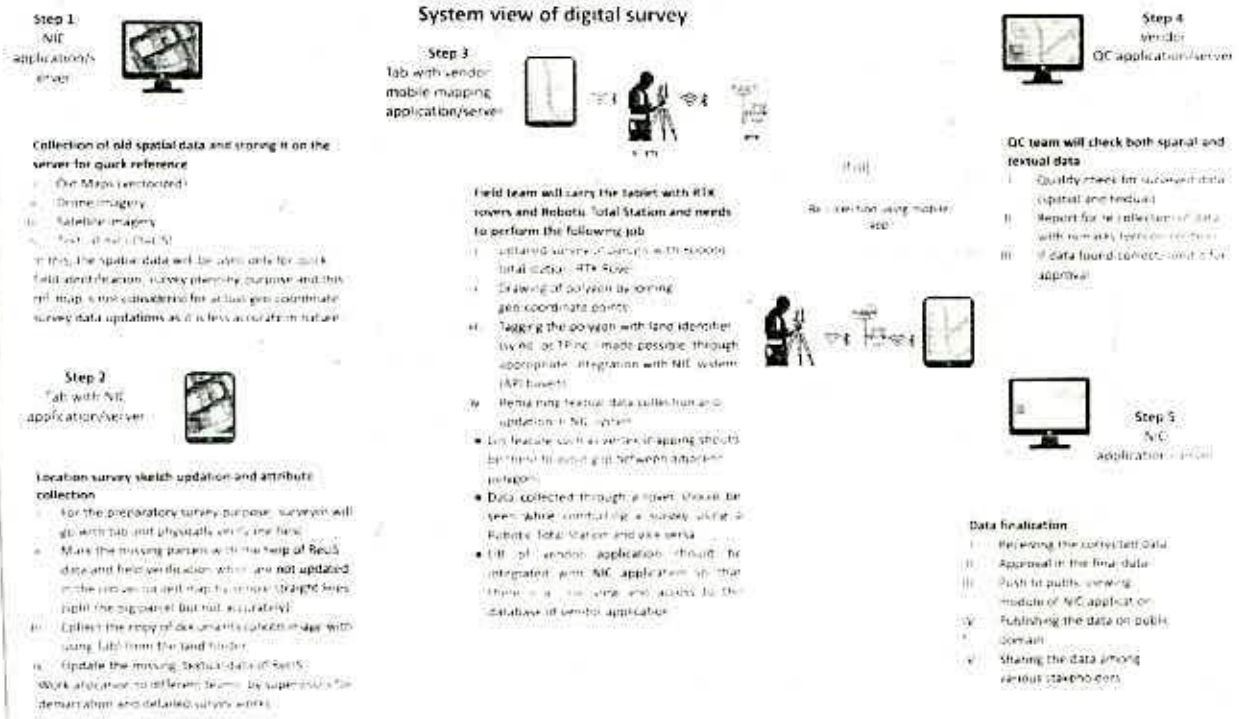
In this connection, modern survey equipment like Real Time Kinematic (RTK) device, Robotic Total Station and tablet PC with real time mapping facilities backed up by data processing system etc are planned to be utilized for the speedy implementation of the digital survey program. Expectation is that the Tablet based mapping devices should be capable enough to take input data from both the survey instruments (Robotic Total Station and RTK rover) and also should have access to data on cloud based platform (vendor application) without resulting in duplication of Job file/ workspace. This data should be available through the web for quality checking, validation and for approval of collected data. The vendor should give the requirement to do an on premise cloud hosting of the server application (Vendor Application) at the State Data Center and the strategic control should be vested with the Department of Survey and Land Records. The final data provided by the vendor should be pushed and available on the central server of NIC (application) which will be used for the further management of the survey process and to provide various services to citizens.

Thus the IT system consists of a Cloud based Vendor Application with field data collection component, data processing application (Quality Checking and Validation QA/QC) that

should work as an integrated system without duplication of files and the vendor should take the responsibility for building the integrated solution with NIC.

A schematic representation of the system view of digital survey is given below for the better understanding of the overall requirements.

System view of the digital survey



Detailed description about the system view

Step - 1 (NIC application/server)

Collection of old spatial data and storing it on the server for quick reference

i. **Old Maps (vectorized)** - In the traditional survey process, the map data (FMB and litho maps) will be used to collect from different offices and take a copy of it for the identification of survey field positions. This map will be used for future reference purposes during the field survey. Instead of the traditional method, vectorized maps are approximately georeferenced on top of satellite imagery. This spatial index map becomes an excellent tool for identification of exact fields, shape of the old boundary etc. Reaching to the desired field location will be much easier as the map shows the real

world feature in the satellite imagery background.

ii. **Drone Imagery** - Before the commencement of the digital survey process, the available drone imagery will be added in this platform as a reference basemap. This will further ease the location identification work.

iii. **Satellite imagery** - Available satellite imagery will be placed in the background of the vector map. This also acts as a reference base map for easy guiding.

iv. **Textual data (ReLIS/PEARL)** - In the traditional method, surveyors will go to multiple revenue offices (Taluk, village and LA offices) to collect different revenue registers and records to ascertain the ownership of land in the assigned villages. This data collection and copying itself is a time consuming task. In order to avoid such jobs, the textual database of ReLIS will be linked with the above described old maps (vectorized data).

The spatial data will be used only for quick field identification, survey planning purposes and this reference map is not considered for actual geo-coordinate survey updates as it is less accurate in nature. The sole purpose of the vectorized map is to guide the surveyor in the field similar to any other online reference maps (example google map for location identification).

Step - 2 (Tab with NIC application/server)

Location survey sketch updation and attribute collection

i. **Location sketch** - In the traditional survey process, a location sketch of the defined survey area is usually prepared for detailed understanding of the field. Manual preparation of this sketch consumes a lot of time. In the new approach of this preparatory survey process, the surveyor will go with the tab having the above mentioned vector data. Physically go and verify the field. The old spatial records will not have all the land parcels as per the ground possessions and hence needed updation so as to match with the latest ReLIS/PEARL textual data.

ii. **Rough marking of missing parcels** - Mark the missing parcels with the help of ReLIS data and the parcels which are not updated in the old vectorized map will be updated by simple straight lines (roughly split the big polygon after field chek). Here the surveyor need not do detailed marking of each and every bend points, curves etc and instead he will cut the available polygon in the Tab by using a drawing tool.

iii. **Collection of textual data** - There are chances of missing textual data in the ReLIS/PEARL as well due to non-updation. Collect the copy of documents (photo image by using the Tab) from the land holder and attached to the concerned parcel. NIC software should be capable of uploading such images by using an identifier tool (tagging by survey number, TP number etc).

iv. **Updation of textual data** - By doing this preliminary data collection exercise, surveyors will input missing data through Tab in the NIC application. After conducting this exercise, both spatial and textual will be matched (tallied) and a total quantum of work will be assessed. Field deployment of staff, work allocation, the methodology to be used (drone, RTK, Robotic ETS) will be arrived at easily.

Work allocation (subsequent demarcation and detailed survey with instruments) by supervisors will be easy after conducting the above location survey work. Before the commencement of a detailed survey work by using survey instruments, the survey team will do the demarcation survey work. In this task each and every bend point of the parcels will be identified and physical marking will be done (paint mark, tar marking etc) for the quick reference of the detailed survey team.

Step - 3 (Tab with vendor mobile mapping application/server)

Field team will carry the tablet with RTK rovers and Robotic Total Station and needs to perform the following job

i. **Detailed survey of parcels** - With the help of Robotic total station and RTK Rovers, field survey team will be perform the detailed survey works of each land parcels (Govt and private land)

ii. **Parcel drawing** - Unlike the traditional survey approach, the surveyor will draw the polygon by joining geo-coordinate points (coordinate of each parcel corners)

iii. **Linking with textual data** - Fields such as District, Taluk, Village, Block number, Survey number, Sub division number and Tandaper number (land identifier) would be available from the NIC system for appropriate integration with vendor software (API based). API Document will be provided by NIC. Spatial data collected to be attachable/linkable through land identifier.

iv. **Pending textual data collection** - Any textual data are left out during the preparatory survey process (location and demarcation survey stages), will be collected and updated

in NIC system

a. Data collected through a rover should be seen (without duplication of files) while conducting a survey using a Robotic Total Station and vice versa
b. DB of vendor application should be integrated with NIC application so that there is a live view and access to the database of vendor application. This is not related to vendor application.

Step - 4 Vendor application (QA/QC component)

Quality Control team will check both spatial and textual data

i. **Quality checking** - Quality check for surveyed data (spatial and textual) will be done in this stage by the supervisory staff at the office. Any issues found after referring with existing records like variation of area, survey number mismatch, gaps between the polygon, overlapping of polygon etc will be identified and flagged.
ii. **Revisit and corrections** - Such data will be accessed by the field survey team without copying the file to the field systems or duplicating the file for revisit. After the rectification process is over after field check, the next version of data will be synced.
iii. **Verification and sent for approval** - Data which is found correct will be sent for approval to the next level authority

Step 5 (NIC application/server)

Data finalization

i. **QC completed data** - All the data which is ready to accept/approve will be received in this stage in the NIC application
ii. **Approval** - Approval will be done in the finalized data in this stage.
iii. **Public view** - Push to public viewing module of NIC application once the map layers, symbology and other features are arranged
iv. **Multipurpose cadastral map** - Publishing the data on public domain with different colour codes based on land use, land type etc. Citizens should be able to query the parcel, view their maps and related attributes. Subsequent land transactions (mutation) should be digitally plotted and sketches to be prepared through this system.
v. **Seamless data integration** - Sharing the data with various stakeholders such as financial institutions, courts, other line departments etc for the benefit of effective land based planning

About existing software system for land records ReLIS: Revenue Land Information System (ReLIS) is a web application developed by the Revenue department for enabling

online integration with Registration and Survey departments thereby creating an electronically enabled backbone for the effective management of land records in the State. This platform is developed by National Informatics Center (NIC). The major components of the system are computerization of all land textual records, mutation, integration with Registration, Survey, Treasury and providing online services to the citizen for e payment of Tax and search facility for Land.

PEARL : Through Package For Effective Administration of Registration Laws (PEARL) software. Registration of deeds by Sub Registrar Office based on the online request made and the subsequent mutation process can be ensured and achieved through the integration of PEARL and ReLIS systems after deed registration. Form 1B which is required by the Village Office, is made available in ReLIS from PEARL.

Online submission of application for Encumbrance Certificate, Certified copies, Online submission of document details for registration, Provides e-payment facility and SMS utility, Fair Value Integration, Multi-lingual, Property Registration, Provides information on public queries, E-Stamping, Fingerprint and photo capturing options for Generation and issuance of Encumbrance Certificates, Auto-generation of under valuation cases. MIS queries etc are facilitated in the PEARL software.

Proposed NIC solution: The envisaged NIC system comprises an end-to-end workflow solution for resurvey activities covering pre survey, field survey (textual data collection) and post survey works. Services such as notice generation, all the statutory process, report generation etc are also envisaged as part of this solution. The web application will have organization workflow and procedures followed by the department in the re survey. The proposed software will be designed and developed using open source technology in compliance with the open source policy of Government of Kerala. This solution envisages development of web GIS application for re survey by using core services of BhuNaksha and other open source resources. BhuNaksha is cadastral mapping software of NIC holding exclusive IPR. BhuNaksha is developed using open source tools and libraries. The proposed comprehensive re survey application will have the following features:

- The resurvey application will implement record keeping of users involved in the application workflow, implementation, authentication and authorization of various modules in the application.

- The resurvey application will implement required workflow with business processing at various levels.
- Re survey application will facilitate the maintenance of the database for record keeping of textual data related to land parcels during resurvey.
- The application will consume BhuNaksha core services for GIS features like map drawing, map display and sketch generation.
- The application will have features for generating reports that involve textual data and map sketch.

4. SCOPE OF WORK

The scope of work of the System Integrator (bidder) shall include but not be limited to the following. Survey teams with Robotic Total Station and Rovers must work in coordinated fashion. This requires interoperability of the data collected in separate devices which means the data collected through a rover should be seen while conducting a survey using a Robotic Total Station and vice versa. There should be provision to draw the polygon in the field itself by connecting the geo-coordinate of the individual points with the help of Tablet based mapping software component (vendor software). Vendor software should be integrated with survey department applications of NIC so as to ensure land holding details are available for selection so that collected spatial data gets tagged to land identifier. This is to avoid unnecessary data entry and data matching exercises in the office after completing the field survey and to ensure a seamless field survey process.

The operating System of the devices and processing software should be Android based or Windows based. The communication between the field devices and also with the server should be through mobile technology facilitated with a SIM Card in each of the devices. The SIM card would be provided by the department along with the cost of data. The field mapping component of the software should have an offline data capturing facility so as to ensure that the data will be able to be synced to the server when connected to the internet. Since the field devices are handling very sensitive data in order to prevent leakage a Mobile Device Management Software is a must and that has to be provided by the vendor and also endpoint security to protect the device from malicious software.

Screens of all the devices should be of high resolution and should be colour touch screens. Tablet PCs should have the capability to display raster and vector images. Vendors need to

demonstrate these capabilities to the satisfaction of the Department of Survey and Land Records, Kerala during the evaluation of bid. Failure to demonstrate these capabilities as described above would result in the disqualification of the bidder. In short, the procurement is not only intended for merely a survey instrument supply and apart from that the device software must have complete integration and data synchronization in a real time fashion.

The successful Bidder shall provide the following items and services:

1. SUPPLY, INSTALLATION, INTEGRATION AND TESTING OF REAL TIME KINEMATIC (RTK) ROVER DEVICE, ROBOTIC TOTAL STATIONS AND TABLET PC FOR THE DIGITAL SURVEY INCLUDING SOFTWARE AND ACCESSORIES in the locations mentioned in Appendix - O
2. Configuration, testing and commissioning of all the products and software.
3. Training.
4. Performance Tuning, Acceptance Testing
5. System Handover
6. Periodical maintenance, calibration of the instruments
7. Post implementation warranty support and other conditions.
8. Annual maintenance contract (AMC) of the instruments

4.1. **Supply of equipments and softwares**

As part of supply of these systems, the following activity has to be carried out by the successful bidder.

a. Bidders may inspect the sites for the testing of the survey equipment in headquarters (Thiruvananthapuram) after due concurrence from Department of Survey and Land Records. The supply has to be made by the successful bidder in the district locations as prescribed in the Appendix - O
b. Supply, installation, integration and testing of Robotic Total Station, Real Time Kinematic (RTK) device and Tablet PC for the digital survey including software and accessories delivery should be completed in Staggered manner over 4 months. Purchase order will be given for the entire procurement in a single order.

c. Staggered delivery has to be made by the successful bidder over the 4 months such that 10% is delivered in the first month, 20% in the second month, 30% in the third month, 40% in fourth month.

d. Any major product delivery issues due to valid reasons will be considered by the Director Survey and reasonable extension for the delivery can be given. It will be the sole discretion of the Director Survey.

e. Delivery should be made from the date of receipt of Purchase Order & installation and testing shall be completed within 21 days from the date of delivery

f. The delivery shall be done to the locations mentioned in **Appendix - O**

4.2. Installation, Configuration and Testing.

a. The Bidder should ensure the installation and configurations have been done by an OEM authorised service engineer at site during the supply, installation, integration and testing of Robotic Total Station, Real Time Kinematic (RTK) device and Tablet PC for the digital survey including software and accessories. (any cost incurred in this regard needs to be considered as part of the solution cost in BOQ).

b. Bidder needs to configure the software solution and survey instruments for Department of Survey and Land Records, Kerala's requirements, and should use all industry best practices to ensure that the proposed solution is working optimally and best utilized as per Department of Survey and Land Records, Kerala requirements and also needs to arrange for OEM certification for the supply, installation, integration and testing of Robotic Total Station, Real Time Kinematic (RTK) device and Tablet PC for the digital survey including software and accessories.

c. Proposed solution should be implemented along with all latest best practices before making the solution operational by bidder or OEM.

d. Proposed server software solution should be hosted in the allotted server space at State Data Center (SDC), Government of Kerala at Technopark, Thiruvananthapuram

e. Calibration and testing of the survey instrument and integrated software solution.

f. System Acceptance Test (SAT).

g. System Performance Test.

h. Survey accuracy assessment (distance, area, height measurements)

4.3. Capacity Building

The bidder has to provide complete product training with hands-on sessions covering the following modules for the personnel as decided by the Department of Survey and land Records, Kerala. All the required costs towards the arrangement of training have to be borne by the bidder. One time training has to be given onsite for a period of minimum 6 days in all the 14 districts with 20 persons each.

a. RTK, Robotic Total Station, Software overview and general product training
b. Mode of operation of each device.
c. Robotic Total Station, RTK with Tablet PC integration, connectivity and working architecture.
d. Software training, drafting of maps and quality checking.
e. Demonstration of native/manufacturer tools, troubleshooting and utilities.
f. Bidders should provide a training plan, course preparation and course materials as a deliverable.

4.4. Performance Tuning, Acceptance Testing

The successful bidder, in the presence of the Director, Department of Survey and Land Records, Kerala will conduct the acceptance test, which involves the operation of the supplied instruments and solutions within 21 working days from the date of delivery/Supply of products. The instruments and software solution will be accepted subject to its compliance of the acceptance test as per the acceptance test procedure to the satisfaction of technical committee and Department of Survey and Land Records, Kerala.

a. In case of failures, such machines should be replaced with new machines within 7 days.
b. The acceptance tests shall include the demonstration of the proper functioning of all the instruments and the software solutions.
c. The acceptance test duration will be 21 days from the date of delivery/Supply of products.
d. However, if the machine does not meet the performance criteria laid down in the RFP during the acceptance test, the Director, Department of Survey and Land Records, Kerala shall have the right to reject the machine and ask for its replacement. If so, deemed necessary, the bidder shall replace the machine within 7 days from the date

of rejection notice. If the bidder fails to replace the machine as required, the Director, Department of Survey and Land Records, Kerala reserves the right to initiate any contingent measures as deemed necessary in the interest of the project.

4.5. Handover of instruments and software solution

a. Integration between RTK rover, Robotic Total Station, Tablet PC and vendor software and the data synchronization with the central software of NIC should be provided as a deliverable while handing over.

b. The bidder should execute all the necessary for end to end integration of the devices and different databases (through API based integration) as per the functional requirements in the RfP. Should handover Software Development Kit (SDK) and integration document. Detailed configuration, connectivity and schematic details and connected documents with regards to the solution integration should be provided as a deliverable while handing over.

c. All admin passwords and user and technical manuals associated with the installation, configuration, Operation, maintenance and troubleshooting of Robotic total station, RTK, Tablet PC and software and licence of the machines shall be handed over to the Department of Survey and Land Records, Kerala while handing over.

d. Appropriate vendor software to be provided with RTK rover, R-ETS and Tablet PC without additional cost. We have 1700 nos. of field users (surveyors).

e. Software for the QA/QC users - Total 100 nos. floating license to successfully operationalise the entire functionalities given in the RfP.

4.6. Post Implementation Support and other conditions.

a. Periodic firmware upgrades and updates of the instrument to be done as and when released by OEM after testing during the warranty and support period.

b. All the parts/items/components delivered for the proposed instrument and the software solution as per specification in this RFP and necessary modification in future should be covered under comprehensive onsite warranty for a period of five years and CAMC period of three years.

c. The bidder/OEM has to provide post implementation support onsite for the issues associated with configuration, calibration, fine tuning etc. of the machine during the warranty and CAMC period.

d. Bidders should have a back to back support agreement with OEM(s), for Supply, Installation, Configuration, Integration, Implementation, Testing (UAT), warranty and CAMC support of the entire solution. Service Level Agreement (SLA) for the post implementation support to be signed by the successful bidder before the commencement of the supply and installation.

e. The machines should receive all future software/firmware upgrades free of cost with feature additions, during the entire warranty and CAMC period.

4.7. Bill of Materials (BoM).

Sl	Item Description	Quantity
1	**Robotic Total Station (1 No) with following accessories** Tribrach (1 No) Prism (1 No) Prism pole (1 No.) Battery (2 Nos) Battery charger (1 No) Tripode (1 No) USB stick (1 No) Carrying case for Total Station(1 No) Carrying case for Prism and accessories (1 No) Align key (1 No) Stylus (1 No) Quick guide (1 No).	700 Set
2	**Real Time Kinematic (RTK) rover machine (1 No.) with following accessories** RTK Antenna (1 No) GSM Antenna (1 No) Pole (1 No) Pole Mount accessories for controller (1 set) Battery (4 Nos) Battery charger (1 No) Bipod (1 No) Cable (1 No) Carrying case for RTK rover (1 No) Carrying case for RTK accessories (1 No) Stylus (1 No) Quick guide (1 No). Appropriate data transfer facilities and required port should be provided in the RTK machine to transfer the internal data to any external devices	1000 Set.
3	**10" Tablet PC with compatible software** with following accessories and applications	1700 Nos.

	Android/windows 10 or higher Mobile Device Management Software and Endpoint security Pouch with shoulder strap Basic Rugged Protective Casing and Screen Protector Battery Charger Touch pen Data cable Standard accessories Carry bag	
4	**Robotic Total Station and RTK software solution/package covering field spatial data collection (survey), desktop based QA/QC activities** (the solution should be capable of real time data synchronization with the central web application for the resurvey management of NIC as already explained in section 3) **All these software solutions should be provided without any additional cost along with the RTK and R-ETS devices.**	Software solution should provide licenses for 1700 nos. of field surveyors (tab users) and 100 number licenses for QA/QC users to successfully operationalise the entire functionalities given in the RfP.
5	**Three-year Comprehensive Annual Maintenance Contract (CAMC) on the expiry of 5 years comprehensive warranty for the following items**	
5.1	CAMC for Robotic Total Station and Accessories	700 Nos
5.2	CAMC for Real Time Kinematic (RTK) rover instrument and Accessories	1000 Nos
5.3	CAMC for the Tablet PC and accessories	1700 Nos

Note:

a. The maximum percentage by which quantities may be increased is: 25%

b. The maximum percentage by which quantities may be decreased is: 25%

c. The equipment supplied should be from a well-known manufacturer & of the latest model with proven reliability and the model should be in the field for at least one-year of operation. The equipment supplied must have a minimum life period of 10 years.

d. The Manufacturer is to give undertaking (**Appendix - M**) that availability of spares & services will be ensured in case the equipment is obsolete in between the period.

4.8. Delivery Timeline.

Bidders have to complete the delivery of Robotic Total Station, RTK, Tablet PC and software integration and accessories from the date of acceptance of Work Order / Letter of Intent (LOI) in a staggered manner as per delivery timeline mentioned.

4.9. Configuring, Testing and commissioning - Timeline.

Once the delivery gets completed, Bidder shall complete the Configuring, Testing, commissioning of machine and software integration/solution for this project as per the below schedule:-

Sl #	Description	Go-Live Schedule
1	Configuring, Testing, commissioning of machine and software integration/solution	21 days from the date of delivery

4.10. Warranty and Comprehensive AMC Support

a. All the machines/parts/items/components delivered as per specification in this RFP should be covered under comprehensive on-site warranty from the OEM for a period of five years plus CAMC for three years, which shall start from the date of acceptance. The supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

b. The quoted product shall not be announced as End of Life/ End of Sale by the OEM at the time of bidding

c. Bidder shall have a back to back agreement with the OEM to provide the warranty and support during the contract period as per the SLA terms of this RFP.

d. Warranty: 5 years comprehensive and 3 year CAMC (including parts and labor)

e. The bidders must include Standard Comprehensive Warranty as per Conditions of Contract of the Tender document for complete equipment (Including all spares, labour and third-party items).

f. The warranty charges shall not be quoted separately.

g. Vendor software should be maintained throughout the 8 year period and all software updates should be provided free of cost.

4.11. Performance Guarantee for warranty and CAMC

a. Bidder must submit an unconditional Bank Guarantee by any Nationalized Bank/Scheduled bank of 10% of the product cost (Robotic total station, RTK and Tablet PC) at the time of signing of agreement as a guarantee for meeting the obligations mentioned in the RfP during the warranty period of five years. Successful bidder can reduce the bank guarantee by 1% every one year of successful operation. At the end of fifth year the bank guarantee will be 5% which will remain for the CAMC period.

b. The performance bank guarantee shall be submitted as per Proforma at **Appendix – K**

5. INSTRUCTIONS TO BIDDERS FOR SUBMISSION OF PROPOSAL

5.1. General Instruction

a. An eligible bidder is expected to provide a comprehensive solution as specified in the Scope of Work of this RFP. The bidders are advised to study the tender document carefully. Submission of Bids shall be deemed to have been done after careful study and examination of the tender document with full understanding of its implications.

b. Department of Survey and Land Records, intends to adopt a two-cover bidding process (Prequalification cum and Technical Cover & Financial Cover) for selection of eligible bidders for the assignment, as per the Scope of Work set out in the previous section of this RFP document.

c. The bidder shall be responsible and pay for all of the costs associated with the preparation of its proposal and its participation in the bidding process.

d. The Successful Bidder is required to enter into an agreement with The Director, Department of Survey and Land Records, Government of Kerala.

e. Supply, Installation, Configuration, Integration, Acceptance Testing, Commissioning, Training and Support as per the delivery schedule mentioned earlier in the document, and also including the warranty period and CAMC. Any extension beyond this should be mutually agreed to between the successful bidder & Director, Department of Survey and Land Records, Government of Kerala with adequate modifications in the pattern of payment disbursal, at the appropriate time.

f. The proposal submitted by the bidder shall remain valid for a period not less than 180 days from the date of signing of the agreement with the Director, Department of Survey and Land Records, Government of Kerala. Director, Department of Survey and Land Records, Government of Kerala, reserves the right to reject any proposal, which does not meet this requirement. The proposal validity period may further be extended on mutual consent.

g. Director, Department of Survey and Land Records, reserves the right to carry the capability assessment of the bids and the department's decision shall be final in this regard.

h. All the licenses should be in the name of Director, Department of Survey and Land Records, Government of Kerala.

i. Each Bidder shall submit only one Bid, either individually or as a partner in a joint venture. A Bidder who submits or participates in more than one Bid will cause all the proposals with the Bidder's participation to be disqualified.

5.2. Pre-Qualification Criteria

SL#	Description of Clause	Documents to be submitted
1	The Bidder should have cumulative turnover of at least Rs. 100 Crores for the last 3 financial years.	Profit & Loss Account Statement of audited balance sheet or Statutory Auditor Certificate confirming turnover.
2	The Bidder should be an established company registered under the Companies Act, 1956 or later and in operation for at least 3 years as on 31.03.2021 and should have their registered office in India.	Valid documentary proof of: (a) Certificate of incorporation (b) Valid documentary proof of GST, PAN

3	• OEMs/Bidders should have undertaken and successfully completed projects which includes supply, installation, integration and testing of ETS / Robotic Total Station / GNSS Receivers / GPS/ Reference Station in India or abroad for Govt. / PSU / BFSI / Private organizations in the last five years with a project value as mentioned below. • Three completed projects consist of supply of ETS / Robotic Total Station / RTK / GNSS / Reference Station with a project value of >= INR Rs. 10 Crores each. Or • Two completed projects consist of supply of ETS / Robotic Total Station / RTK / GNSS / Reference Station with a project value of >= INR Rs. 15 Crores each. Or • One completed project consists of supply of ETS / Robotic Total Station / RTK / GNSS / Reference Station with a project value of >= INR Rs. 30 Crores.	a) Copy of relevant Purchase Orders. *b)* Installation certificate
4	The bidder must have a valid ISO 9001:2008 or later certificate (issued in India).	Valid Copy of the Certificate issued from the accreditation organization stating accreditation No. and the scope of the certification to be submitted.

5	a) The bidder must have a regional/local office in Kerala and if it is not, they have to establish an office within 30 days after the award of the contract. A promissory note in this regard to be submitted by the bidder. b) Bidder should set up a service centre in two regions in Kerala (Thiruvananthapuram, Kozhikode). In this regard, the bidder should give an undertaking along with the bid and the employees must have prior experience in providing all kinds of services related to RTK, Robotic Total Station machines and Tablet PCs with software.	Certificate from Bidder's HR Department for the number of Technically qualified professionals employed by the company with their skill set. Experience letter from HR describing prior projects involved by its employee and the detailed nature of the project.
6	As on date of submission of the proposal, the Bidder shall not be under any declaration of ineligibility for unsatisfactory past performance, corrupt or fraudulent practices, any other unethical business practices or blacklisted either by the Ministry/ Departments of Government of India/ State Governments.	Self-Declaration from the bidder.
7	The bidders should be an OEM /OEM Authorized supplier	MAF (Manufacturer's Authorization Form) from OEM whose products are being quoted by the Bidder need to be attached in the proposal.as per, If there is more than one OEM, the bidder must produce the MAF from all OEMs. **Appendix - M**
8	a) Certificate by authorized signatory of the bidder confirming acceptance of all tender terms and conditions and undertaking for the Total responsibility of design, procurement and implementation of the total solution. b) In case an Authorized Signatory signs the Bid on Behalf of the Bidder, he/she should be duly authorised by the Bidding Company to sign the Bid and the Agreement on their behalf.	a) As per **Appendix – I** Declaration of acceptance of terms and conditions in the RFP. b). As per **Appendix -B** Power of Attorney
9	Bidder should have a local office in India	Details of the local office
10	The OEM from a country which shares a land border with India will be eligible only if they are registered with the competent authority as per Govt. of India order, issued by Ministry of Finance vide No.F.No.6/18/2019-PPD dated 23/07/2020	Copy of document of registration with DPIIT, Govt. of India.

5.3. Earnest Money Deposit (EMD) & Tender Fee

a. The Bidder shall pay a tender document fees of Rs. 25,000/- (Twenty-Five thousand) including GST and Earnest Money Deposit or Bid Security of Rs.25,00,000 (Twenty five Lakh rupees only). Bidders shall remit along with their Bids, Earnest Money (EMD) & tender fee through the e-Tender portal. In the case of EMD exemptions, the supporting documents shall be submitted by the bidder.

b. EMD of all unsuccessful bidders would be refunded. The EMD amount of the successful bidder would be returned upon execution of the agreement.

c. The EMD amount is interest free and will be refundable to the unsuccessful bidders without interest, whereas the Tender Fee is non-refundable

d. The bid/proposal submitted without EMD & Tender Fee mentioned above, will be summarily rejected.

e. The EMD may be forfeited:

   i. If a bidder withdraws its bid during the period of bid validity.

   ii. In case of a successful bidder, if the bidder fails to sign the contract in accordance with this RFP

5.4. Procurement of RFP Document

The tender document can be downloaded from the State e-Procurement website www.etenders.kerala.gov.in. Bidders should submit their bids through this e-tendering website.

Bidders should remit tender fee and Earnest Money Deposit (EMD) at the time of online bid submission. The Bid will not be considered in the absence of payment of the tender fee and EMD. Exemption to bidders registered under MSME and NSIC for tender document fee and EMD are applicable as per MSME rules.

Bidders are requested to follow the instructions regarding e-tendering given in the download section of www.etenders.kerala.gov.in for understanding the procedures for online bid submission and payment.

5.5. Pre-Bid Queries & Clarifications

The bidders can send their pre-bid queries or clarifications to procurementdslr1@gmail.com or procurementdslr2@gmail.com within the last date as mentioned in the e-tender portal.

The Department of Survey and Land Records shall not be responsible for ensuring that the bidders' queries have been received by them. Any requests for clarifications post the indicated date and time may not be entertained by the Department of Survey and Land Records. The queries should necessarily be submitted in the following format:

Sl #	RFP Document Reference(s) (Section & Page Number(s)	Content of RFP requiring Clarification(s)	Clarification
1			
2			
3			
4			
5			

5.5.1 Responses to Pre-Bid Queries and Issue of Corrigendum

Department of Survey and Land Records will endeavour to provide timely response to all queries. However, the Department of Survey and Land Records makes no representation or warranty as to the completeness or accuracy of any response made in good faith, nor does the Department of Survey and Land Records undertake to answer all the queries that have been raised by the bidders. At any time prior to the last date for receipt of bids, Department of Survey and Land Records may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the RFP Document by a corrigendum. The Corrigendum (if any) & clarifications to the queries from all bidders will be posted on https://etenders.kerala.gov.in and bidder is advised to visit the portal for any updates. Any such corrigendum shall be deemed to be incorporated into this RFP. The bidders would be given a period of at least 5 days for submissions of bids after any such change in the RFP/ or after publishing the corrigendum. Failure to do so shall not absolve the applicant of his liabilities to submit the RFP document complete in all respects

including updates thereof, if any. An incomplete application may be liable for rejection. In order to provide prospective Bidders reasonable time for taking the corrigendum into account, Department of Survey and Land Records may, at its discretion, extend the last date for the receipt of Proposals.

5.6. Conflict of Interest

If a bidder is a contractor of a manufacturing firm for the project under this assignment, offering services as bidders for services or supply under this project, the bidder should include relevant information on such relationships along with a statement in the Qualitative proposal cover letter to the effect that the bidder will limit its role to the scope of the present project and disqualify itself and its associates from work, in any other capacity or any future project within the next five years, that may emerge from this assignment (including bidding or any part of the future project).The contract with the bidder selected to undertake this assignment will contain an appropriate provision to such effect.

5.7. deleted

5.8. Contract Agreement

The selected bidder shall enter into and execute the Service Agreement and SLA with the Director, Department of Survey and Land Records, Government of Kerala. The Contract Agreement shall include the RFP document, all letters/communication exchanged between the successful bidder & the Director, Department of Survey and Land Records, before the date of execution of the Contract, Scope of Work, Contract Fee, Payment Schedule, Project Time Schedule, and other clauses like Indemnity Clause, Provisions for Modification of Contract; Termination of Contract; Confidentiality; Obligations and Liability of the Parties; Settlement of Disputes; Liquidated Damages; Representations, Warranties and Disclaimer; Force Majeure; Severability; Survival Clauses etc. The Contract will be executed within 7 days from the date of issue of Work Order.

If the successful bidder fails to execute the contract within the specified time-lines (beyond one week) specified for any reason whatsoever, the successful bidder will be liable to compensate the Director, Department of Survey and Land Records, with

limited to the following reasons:

i) If the bidder disregards any of the terms & conditions of the bid and/or leaves any ambiguity in calculation of the rates quoted

ii) If the participant attempts to influence any member of the selection committee

iii) Conditional bids

b. The decision of the Director, Department of Survey and Land Records, Kerala in the matter of disqualification shall be final and binding on the firms.

5.11. Termination of Bid

a. Against all expectations entertained by the Director, Department of Survey and Land Records, if none of the participating firms could be declared by the selection committee as the winner of the bid, the bidding will be regarded as terminated.

b. Director, Department of Survey and Land Records, reserves the right to accept or reject only / all bidders including the lowest bidder without assigning any reason(s) whatsoever.

5.12. Settlement of Disputes

The decision of the Director, Department of Survey and Land Records, shall be final & binding on participating firms. In the event of any grievance, the aggrieved party may make a representation before the Director, Department of Survey and Land Records within 3 working days of the announcement of the successful bidder. The Director, Department of Survey and Land Records will decide upon the issue raised by said aggrieved party and will give his finding in writing on receipt of said representation. The findings of the Director Department of Survey and Land Records, Government of Kerala will be final and binding upon the aggrieved party. Any disputes arising out of the contractual agreement shall be settled with Addl. Chief Secretary, Revenue, Govt of Kerala and the issues which are not resolved shall be settled in the jurisdiction of civil courts in Thiruvananthapuram district of Kerala only.

5.13. Additional Information

a. Department of Survey and Land Records, reserves the right to:

i) Postpone and/or extend the date of receipt of or to withdraw the bidding notice without assigning any reason thereof, entirely at his discretion. In such an event, the bidders shall not be entitled to any compensation in any form,

liquidated damages equivalent to 10% of EMD for first week of delay 20% for the second week and 30% for the third week and 40% for the fourth week of delay. It is hereby clarified that penalty shall be applicable only in case of delay solely due to the actions of the successful bidder.

5.9 Purchaser's Right to vary the Quantities

a. The purchaser reserves the right to increase or decrease the quantity originally specified in the RfP by a maximum of 25%, without change in the unit prices, other terms and conditions of the bid and the Bidding Documents.
b. Purchase order will be given for the entire procurement in a single order. Delivery should be completed in Staggered manner over 4 months based on logistic and management convenience of the department.
c. DSLR can withdraw the order if the supply is not as per the requirement specified in the RfP.
d. At any time prior to the deadline for submission of bids, the Purchaser may amend the Bidding Documents by issuing addendum. The addendum will appear on the e-procurement system
e. Any addendum thus issued shall be part of the Bidding Documents and shall be deemed to have been communicated to all the bidders.
f. To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Purchaser may, at its discretion, extend the deadline for the submission of bids.

5.9.1 Right to Rejection

The Director, Department of Survey and Land Records reserves the right to reject any proposal that does not address all the requirements of the RFP. In addition, the Director, Department of Survey and Land Records reserves the right to accept or reject any proposal submitted by the bidders, in part or in full, and to cancel the RFP process and reject all proposal submissions at any time, without thereby incurring any liability to the affected bidder/bidders or any obligation to inform the affected bidder the grounds for his action.

5.10. Disqualification

a. The bid Evaluation/Selection Committee may disqualify bids on account of but not

whatsoever

ii) Reject or accept proposals; and

iii) Cancel the bidding process and reject all or any of the proposals and will not be bound to accept the lowest or any proposal or to give any reasons for the decision.

iv) Seeking clarifications from the bidders and can ask the bidder to provide supporting documents for the shortfalls noticed during the tender evaluation process.

5.14. Preparation of Proposal

5.14.1. General Conditions

a. The bidders must read the RFP document carefully and submit their bids in strict conformity with the requirements as given in the document, through the e-procurement portal of the Government of Kerala. The proposal and related correspondence and documents shall be written in English language.

b. Bidders are advised to study all instructions, forms, diagrams, drawings, terms, requirements and other information in the RFP documents carefully. Submission of the bid shall be deemed to have been done after carefully studying and examination of the RFP document with full understanding of its implications.

c. Failure to comply with the requirements of this paragraph may render the proposal non-compliant and the proposal may be rejected. Bidders must:

   i. Include all documentation specified in this RFP;

   ii. Follow the format of this RFP and respond to each element in the order as set out.

   iii. Comply with all requirements as set out within this RFP.

d. The bidders must submit an undertaking to the effect that they have read, understood and agreed to abide by the terms & conditions of this RFP. Failure to submit this undertaking will be treated as non – compliance of the terms and as such bids will not be considered for evaluation (Appendix I).

e. The bidders must submit all documents with sign and seal in each page.

f. Eligibility and compliance to all the forms and appendixes would be the first level of evaluation. Only those Bids which comply with the eligibility criteria will be taken up for further evaluation.

g. Technical compliance sheet shall submit by adding columns like compliance (yes/no), cross reference and remarks, any deviation on technical requirements: clearly mention those in the deviation's column with reference to the corresponding SL No. of Non-compliance statement sheets as per the **APPENDIX - D** given in shall be provided.

h. Sub-contracting of the work in full or in part is not allowed as per this RFP.

i. To qualify in the Pre-Qualification and Technical Evaluation, a Bidder must comply with all the Pre-qualification, Technical terms and condition and Technical requirements as mentioned in the respective section of this RFP. Bidder(s) must submit their compliance to these specifications and requirements in yes or no only, with cross reference to the corresponding artefacts to the submitted supporting documents.

ii. In case of any deviations from these requirements it should be recorded in the compliance sheet and the details of the deviation need to be submitted as per the deviation sheet separately; any deviation on this would be treated as non-compliance. Format for Pre-Qualification and Technical terms & conditions and Technical specifications along with the deviation sheet is provided in Appendix - D.

5.14.2. Documents Comprising the Bid

Bidder's proposal shall be of two cover systems through e-Tendering portal https://etenders.kerala.gov.in as shown here in the table.

Cover - 1	Pre-qualification Criteria
	Technical Cover
Cover –2	Financial Cover

5.14.3. The Contents of the Envelopes

Cover 1: "Pre-Qualification" and "Technical Cover"

The following documents also shall be submitted in the *Prequalification Cover*:

i) Letter of proposal in the prescribed format **(Appendix A)**;

ii) Power of Attorney for signing the proposal in the prescribed format **(Appendix – B)**. Letter of Transmittal **(Appendix C)**

iii) Scanned supporting documents as applicable, as mentioned in this RFP document.

iv) Pre-qualification compliance in the following format as per **Appendix-D**.

S#	Description of Clause	Document to be Submitted	Compliant (Yes / No)	Cross Reference to document submitted with Page No & Line No.	In case of deviation, Sl. No of the item in non-compliance statement form.
1					

v) Particulars of the Bidders as per APPENDIX - E

vi) Detailed specification of the Items proposed by the bidder.

vii) Technical Proposal with product configuration, technical specification, unpriced bill of materials, and deployment plan (Refer Appendix – G for Technical Requirements and Technical Term and conditions)

viii) Technical requirement compliance and Technical Term and conditions compliance as per the format mentioned in APPENDIX -D.

ix) Proposed Technical Solution Note as per APPENDIX - J

Cover 2- "Financial Cover"

i) Bidders are required to submit their Financial Bid quoting the price as per BOQ.

ii) The total amount indicated in the Financial Bid shall be without any condition attached or subject to any assumption, and shall be final and binding.

iii) The financial Bid shall take into account all applicable taxes & duties, at the time of submissions, payable by the successful bidder and all payments shall be subjected to TDS as per applicable laws. Any change to the tax structure shall be adjusted on actual basis.

iv) Bidders shall use only Indian currency (INR) while quoting the financials. The quote shall be inclusive of the cost of personnel, cost of hardware and software, all cut-off pocket expenses, cost of lodging, boarding, loading and unloading, travel, transportation, training, expenses for proof of concept, documentation overhead, all the taxes and levies, cost to company, profits, etc.

v) The Financial proposal shall be uploaded into Cover – 2 "Financial Cover" of the

e-procurement portal of the Government of Kerala. If the Financial proposal is not uploaded by the bidder in the separate cover, this will constitute grounds for declaring both Technical and Financial proposals non-responsive and the bid will be summarily rejected. All the pages of the proposal (both technical as well as financials) must be signed and seal affixed.

5.15. Evaluation Criteria

A two-stage procedure will be adopted for evaluation of proposals. In the first stage pre-qualification cum technical evaluation will be carried out and thereafter in the second stage financial proposals of bidders who have been qualified in first stage alone will be opened and compared. Department of Survey and Land Records, Kerala will review the technical Bids of the short-listed Bidders to determine whether the technical Bids are substantially responsive. Bids that are not substantially responsive or conditional bids are liable to be disqualified.

The commercial Bids for the technically qualified Bidders will be opened and reviewed to determine whether the commercial Bids are substantially responsive.

5.15.1. Evaluation of Bids

This RFP is open to all entities meeting or exceeding all of the following minimum qualification criteria. Bidders need to fulfil all the pre-qualification conditions mentioned below. Any Bidder not meeting any one of the qualification criteria as mentioned below shall be summarily rejected.

Director, Department of Survey and Land Records, Kerala will examine the Bids to determine whether they are complete, whether the Bid format confirms to the Tender requirements, whether any computational errors have been made, whether required EMD and tender fee has been furnished, whether the documents have been properly signed, and whether the Bids are generally in order, whether the Pre-Qualification Criteria Compliance Sheet is updated properly with all the supporting documents.

Director, Department of Survey and Land Records, Kerala may waive any non-conformity or irregularity in a Bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

Director, Department of Survey and Land Records, Kerala may at any point of time ask clarifications or shortfall documents from the Bidders during the evaluation process. The clarification shall be given in writing immediately, but no change in the price shall be sought, offered or permitted.

As such, the pre-qualification criteria mentioned above are prescribed as qualification criteria for bidders interested in undertaking the project. The Bids must be complete in all respects and should cover the entire Scope of Work as stipulated in this RFP.

5.15.2. Evaluation of Technical Bid

Proposals of bidders who are qualified after the pre-qualification evaluation phase only will be considered for the technical evaluation phase. After qualifying the Pre-qualification criteria, the Technical Bid document will be evaluated as per the requirements specified in the RFP.

Bidders should give a Proof of Concept (PoC) which consists of physical demonstration of the integrated solutions at Thiruvananthapuram including survey equipments, software integration aspects and its application with respect to the requirements specified in the RfP, presentation of test survey results and their proposal to an Evaluation Committee to be constituted for the purpose. Bidder can develop a simple application similar to that of NIC application consisting of some dummy land records so as to demonstrate textual linking of field spatial data with the land records as explained in the system requirements. The PoC to be adhered with quality (accuracy) and quantity of the survey job in a stipulated time frame with the offered solution. It is, however, clarified that, subject to other provisions of this document, every Bidder will have to comply with the minimum technical specifications laid down in the RFP for being qualified technically. Technical criteria are mentioned in **APPENDIX - N**

In order to assist in the examination, evaluation and comparison of Bids, Department of Survey and Land Records, Kerala may at its discretion ask the Bidder for a clarification or documents regarding its Bid. The clarification shall be given in writing, but no change in the price shall be sought, offered or permitted. Department of Survey and Land Records, Kerala may waive any informality or non-conformity or irregularity

in a Bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

5.15.3. Scoring Criteria

The following criteria shall be used to evaluate the technical bids. All the bids scoring 70% and above as per below criteria, in the technical evaluation will be qualified for commercial bid opening.

Sl #.	Criteria	Description	Weightage
1	Relevant Experience	The bidder must provide details on past projects they had undertaken in a similar nature. Different weights will be assigned to different levels of experience based on number of projects, scale of project, status of project and also the type of project as per **Appendix - N**	30%
2	Test survey	The bidder must prove the accuracy, speed and effectiveness of the survey equipment in the prescribed field scenario as part of the evaluation process as per **Appendix - N**	40%
3	PoC	Bidders should undertake a Proof of Concept (PoC) which consists of physical demonstration of the integrated solutions at Thiruvananthapuram including survey equipment, quality experience, performance in Tablet PC when loaded with vendor software, software integration aspects and its application with respect to the functional requirements specified in the RfP. The output of the field test/demonstration will be treated as binding in this scoring process. The PoC to be adhered with quality (accuracy) and quantity of the survey job in a stipulated time frame with the offered solution as per **Appendix - N**	30%
	Total		100%

Note:- Detailed evaluation criteria provided in **Appendix - N**

5.15.4. Evaluation of the Commercial / financial bid and its Criteria

a) The Financial Bids of technically qualified bidders will be opened after publishing the details of qualified bidders on the e-procurement website www.etenders.kerala.gov.in on the prescribed date in the presence of bidder representatives.

b) The commercial Bids would be evaluated based on the overall price quoted, the evaluation would be based on L1 criteria. The Bidder who quotes the lowest price shall be considered as L1 and shall be called for further process leading to the award of the assignment.

c) Only fixed price financial bids indicating total price for all the deliverables and services specified in this bid document will be considered.

d) The bid price will include all taxes and levies and shall be in Indian Rupees.

e) Any conditional bid would be rejected.

5.16. Payment Terms

Sl. No.	Description	Amount released in %
1	Delivery of the Robotic Total Station, Realtime Kinematic (RTK) devices, Tablet PCs suitable for realime mapping and Online processing software for both the above survey instruments with accessories mentioned. Installation, Agreement execution, Delivery of warranty documents, brochures, hand book, guidelines, software integration, Configuration, Testing, Commissioning and Training.	60% after successful supply of the product on basic functional testing of equipment which will be done in 3 days period 30% after successful completion of Installation, software integration, Configuration, Testing, Commissioning, Training 10% after successful operation of the equipment and solution for a period of one month after handing over

2	Comprehensive AMC of the equipment (Robotic ETS, RTK rover, Tablet PC) for 3 years after the expiry of the comprehensive warranty period of 5 years. AMC amount must be calculated with unit price of each equipment. CAMC amount will be released yearly after the satisfactory report obtained from the concerned authority from the department. No advance payment will be released as part of the AMC. *For the qualification of the bid, the bidder shall quote the AMC amount should be more than 4% of the product cost per year. *Software updation and maintenance should be for the total 8 years without any cost. *Separate cost for CAMC should be quoted for R-ETS and Accessories, RTK and Accessories, Tablet PC and accessories.	33.3% of CAMC amount per year

- The payment will be made upon submission of the invoices and other supporting documents.
- Necessary testing, calibration certificate to be issued by the bidder during the warranty period
- Compliance certificate from the district offices, survey & land records will be considered for the release of subsequent yearly payments

5.17. SLA

The successful bidder shall be responsible for provisioning of on-going support services through a single point of contact to resolve emergency, non-critical day to day assistance, to repair and maintain the Robotic Total Station, RTK and Tablet PC for the Department of Survey and Land Records in good working condition and conforming to the accuracy requirements. For this, the successful bidder shall:

a. Visit the place of storage of the machine anywhere in Kerala and to inspect the equipment faults within 24 hours of reporting a fault.

b. Make earnest efforts to detect and rectify' the equipment's fault at the site to the extent possible

c. Lift the equipments and take the same to the repair centres at their own cost and rectify the defects and return the equipments within 7 days from the date of receipt of the equipments.

d. Calibrate all the equipment to the accuracy prescribed (at the time of purchase) and calibration certificate to be issued accordingly as frequently as required by the

Department of Survey and Land Records officials during the warranty and CAMC period.

e. Prepare and hand over a preventive maintenance schedule for the equipment and carry out the periodic preventive maintenance through visits at regular intervals to the place of storage of the machine anywhere in Kerala.

f. Repair and replace all faulty parts without any further costs as part of this comprehensive warranty and CAMC period

g. The survey instrument and software integrated solution should be able to meet the response time and rectification time mentioned in the clause 5.17.1. At the end of every year, performance of the vendor would be evaluated based on the total accumulated downtime during the year as per the report of concerned officers.

5.17.1. Response and resolution time

a) If the successful bidder fails to execute the contract within the specified time-lines (beyond one week) specified for any reason whatsoever, the successful bidder will be liable to compensate the Director, Department of Survey and Land Records, with liquidated damages equivalent to 10% of EMD for first week of delay 20% for the second week and 30% for the third week and 40% for the fourth week of delay. It is hereby clarified that penalty shall be applicable only in case of delay solely due to the actions of the successful bidder.

b) In case of failure of supply of the equipment within the specified time after issuing the Work Order / Letter of Intent, a penalty of 0.1% of the total project cost for the first one month of delay with respect to the delivery timeline and beyond one month, 0.25% for every week of delay will be levied from the performance bank guarantee.

c) After sales service center should be available in Kerala on 24 (Hrs.) X 7 (days) X 365 (days) basis

d) Complaints should be attended properly, maximum within 7 Working Days. The service should be provided directly by Bidder/Indian Agent. Undertaking, that the spares for the equipment shall be available for at least 8 years from the date of supply of equipment is to be submitted by the Principals in the "Manufacturer Authorization Form

e) During the Warranty period, desired Uptime of 95% of 365/366 (Leap Year) days (24 Hrs.), if downtime more than 5%, the warranty period will be extended by double the downtime period.

f) In addition, a penalty equal to 0.25 % of the total cost of equipment per day will be liable for the excess downtime period. Complaints should be attended properly, maximum within 7 Calendar days.

g) Limitation of Liability - Maximum liability will be limited to the total project cost

h) There will be a SLA management module available in the NIC application with appropriate logins provided to vendors. Issue Tickets will be raised in this module and downtime will be automatically calculated based on the inputs/response from the Users and Vendor.

6. DATA PROTECTION AND POLICY

a) The bidder must adhere with the time to time guidelines issued by Govt of India and Govt. of Kerala while handling the Geospatial data in the entire course of the project execution. Detailed guideline issued by the Department of Science and Technology, Govt of India in this regard are attached in **Appendix - P**

b) Foreign companies and foreign owned or controlled Indian companies can license from Indian Entities digital Maps/Geospatial Data of spatial accuracy/value finer than the threshold value (cadastral data of large scale in nature) only for the purpose of serving their customers in India.

c) Access to such Maps/Geospatial Data shall only be made available through APIs that do not allow Maps/Geospatial Data to pass through Licensee Company or its servers.

d) Re-use or resale of such map data by licensees shall be prohibited.

e) Digital Maps/Geospatial Data of spatial accuracy/value up to the threshold value can be uploaded to the cloud but those with accuracy finer than the threshold value shall only be stored and processed on a domestic cloud or on servers physically located within territory of India.

f) There shall be no restriction on export of Maps/Geospatial Data of spatial accuracy/value up to the threshold value except for attributes in the negative lists.

7. AWARD OF THE CONTRACT

Director, Department of Survey and Land Records will award the Contract to the successful bidder whose proposal has been determined to be substantially responsive and has been determined as the most responsive bids as per the process outlined above.

8. Exit Management

This clause sets out the provisions which will apply on expiry or termination of the Contract and Scope of Work including the extensions of the Contract, if any.

Transfer of Assets

1. The list of all the Assets including the IT infrastructure server software licenses Source Code including the modifications during the tenure of Agreement to be transferred/ handed over to purchaser should be prepared by Supplier and to be physically verified by authorized representative of purchaser. The hardware should be in accordance with as mentioned in the RFP documents & Contract document
2. All titles to the Assets to be transferred to purchaser on the last day of the exit management period. All hardware supplied, software & documents etc. used/supplied by Supplier shall be the legal properties of the purchaser.
3. Properly on reasonable request by purchaser, the Supplier shall provide access to and copies of all information held or controlled by it. Purchaser shall be entitled to copy all such information. Such information shall include details pertaining to the services rendered and other performance data. The Supplier shall permit the department or its nominated agencies and/or any Replacement Party to have reasonable access to its employees and facilities as reasonably required to understand the methods of delivery of the services employed by the Supplier and to assist appropriate knowledge transfer.
4. Confidential Information, Security and Data - The Supplier will promptly on the commencement of the exit management supply to Purchaser or its nominated agencies the following:
   i. Information relating to the current supplies and services rendered and customer satisfaction surveys and performance data relating to the performance in relation to the supplies and services.
   ii. Documentation relating to Intellectual Property Rights.

iii. All current and updated departmental data as is reasonably required for purposes of

Purchaser or User Departments transitioning the services to its Replacement Party in a readily available format.

iv. All other information (including but not limited to documents, records and agreements) relating to the supplies and services reasonably necessary to enable Purchaser or User Departments, or its Replacement Party to carry out due diligence in order to transition the provision of the Services to Purchaser or User Departments, or its Replacement Party (as the case may be).

5. General Obligations of the Supplier

i. The Supplier shall provide all such information as may reasonably be necessary to effect handover as practicable in the circumstances Purchaser or its nominated agencies or its replacement Party and which the Supplier has in its possession or control at any time during the exit management period.

ii. The Supplier shall commit adequate resources to comply with its obligations under this Exit Management Clause.

6. Exit Management Plan

The Supplier shall provide Purchaser or its nominated agencies with a recommended exit management plan and the Exit Management plan to be presented to DSLR, at the beginning of the CAMC period and got approved ("Exit Management Plan") which shall deal with at least the following aspects of exit management as a whole:

i. A detailed programme of the transfer process that could be used in conjunction with a Replacement Party and of the management structure to be used during the transfer.

ii. Plans for communication with such of the Supplier's staff, suppliers, customers and any related third party as are necessary to avoid any material detrimental impact on Purchaser's or User department's operations as a result of undertaking the transfer.

iii. Plans for provision of contingent support to Purchaser or User Departments, and Replacement Party for a reasonable period after transfer for the purposes of providing service for replacing the Services.

iv. Exit Management Plan shall be presented by the Supplier to and approved by the Purchaser or User Departments. During the exit management period, the Supplier shall use its best efforts to deliver the services.

APPENDIX - A Letter of Proposal

(In the letterhead of the bidder)

Dated:

To,

The Director.
Department of Survey and Land Records

Sub: Request for Proposal for Selecting supply, installation, integration and testing of Robotic Total Station, Real Time Kinematic (RTK) device and Tablet PC for the digital survey including software and accessories.

Sir.

With reference to your RFP No: _____, I/we, having examined the bidding Documents and understood their contents, hereby submit my/our proposal for the aforesaid project. The proposal is unconditional.

All information provided in the proposal and in the Appendices is true and correct.

This statement is made for the purpose of qualifying as a bidder for undertaking the project.

I/We shall make available to the Authority any additional information it may find necessary or require to supplement or authenticate the Bid.

I/We acknowledge the right of the Authority to reject our proposal without assigning any reason or otherwise and hereby waive our right to challenge the same on any account whatsoever.

We certify that we have not been barred/blacklisted by any of the departments or agencies of the Government of Kerala or any other State Government in India or Government of India (GoI), or any of the agencies of any state Governments/GoI from participating in its projects.

We certify that we have not been engaged in any ongoing legal dispute with any of the departments or agencies of the Government of Kerala or any other State Government in India or Government of India (GoI), or any of the agencies of any state Governments/GoI from participating in its projects.

I/We declare that:

I/We have examined and have no reservations to the Bidding Documents, including any Addendum issued by the Authority;

I/ We do not have any conflict of interest in accordance with the RFP document;

I/We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in the RFP document, in respect of any tender or request for proposal issued by or any agreement entered into with the Authority or any other public sector enterprise or any Government, Central or State; and

I/We hereby certify that we have taken steps to ensure that in conformity with the provisions of the RFP, no person acting for us or on our behalf has engaged or will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice;

I/We understand that you may cancel the bidding process at any time and that you are neither bound to accept any proposal that you may receive nor to invite the bidders to bid for the project, without incurring any liability to the bidders, in accordance with the RFP document;

I/We declare that we are not a member of any other firm submitting a proposal for the project;

I/We certify that we have not been convicted by a Court of Law or indicted or adverse orders passed by a regulatory authority which could cast a doubt on our ability to undertake the project or which relates to a grave offence that outrages the moral sense;

I/We further certify that in regard to matters relating to security and integrity of the country, we have not been charge-sheeted by any agency of the Government;

I/We further certify that no investigation by any regulatory authority is pending either against us or our Associates who are working or related to the instant proposal and it is also certified that the current claims as arising elsewhere will not have as adverse impact on the ability to perform the services as contracted for in the instant engagement;

I/We undertake that in case due to any change in facts or circumstances during the bidding process, we are attracted by the provisions of disqualification in terms of the guidelines referred to above, we shall intimate the Authority of the same immediately;

I/We hereby irrevocably waive any right which we may have at any stage at law or however otherwise arising to challenge or question any decision taken by the Authority in connection with the selection of the bidder, or in connection with the bidding process itself, in respect of the above mentioned project and the terms and implementation thereof;

In the event of my/our being declared as the successful bidder, I/We agree to enter into a Service Agreement in accordance with the draft that has been provided to me/us prior to the proposal due date. We agree not to seek any changes in the aforesaid draft and agree to abide by the same;

I/We have studied all the Bidding Documents carefully and also surveyed the project site. We understand that except to the extent as expressly set forth in the Service Agreement, we shall have no claim, right or title arising out of any documents or information provided to us by the Authority or in respect of any matter arising out of or concerning or relating to the Bidding Process including the award of assignment;

The rate has been quoted by me/us after taking into consideration all the terms and conditions stated in the RFP, draft Service Agreement etc.;

I/We also certify that we have remitted on-line through the e-tendering portal of the Government of Kerala (www.etenders.kerala.gov.in) the following (i) A non-refundable tender fee for an amount of Rs ( ) *[Transaction Receipt no: ..... dated .....]* & (ii) An amount of **Rs. ( )** towards EMD

[Transaction Receipt no: ..... dated .....], both remittances in favour of the Director, Department of Survey and Land Records, the Authority in accordance with this RFP document.

I/We agree to keep this offer valid for 180 (one hundred and eighty days) from the proposal due date specified in the RFP.

I/We agree and undertake to abide by all the terms and conditions of the RFP document. In witness thereof, I/we submit this proposal under and in accordance with the terms of the RFP document.

Yours faithfully
(Signature of the Authorized signatory)
Name and designation of the of the Authorized signatory

Name and seal of the bidder.

APPENDIX - B Power of Attorney for signing of proposal

(In non-judicial stamp paper)

Know all men by these presents, We, ... *(name of the firm &the address of the registered office)* do hereby irrevocably constitute, nominate, appoint and authorise Mr./Ms. ..... *(name)*, son/daughter/wife of ..... and presently residing at ....., who is (presently employed with us/and holding the position of .....), as our true and lawful attorney (hereinafter referred to as the "Attorney") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our proposal in response to the proposal for supply, installation, integration and testing of Robotic Total Station, Real Time Kinematic (RTK) device and Tablet PC for the digital survey including software and accessories by Department of Survey and Land Records, Government of Kerala, but for use is limited to signing and submission of all applications, proposal and other documents and writings, participate in bidders'& other conferences and providing information/ responses to the Authority, representing us in all matters before the Authority, signing and execution of all contracts including the Service Agreement and undertakings consequent to acceptance of our Bid, and generally dealing with the Authority in all matters in connection with or relating to or arising out of our proposal for the said project and/or upon award thereof to us and/or till the entering into of the Service Agreement with the Authority.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, _____, THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS _____ DAY OF _____, 2021.

APPENDIX - C Letter of Transmittal

(In the letterhead of the bidder)

Dated:

To,
The Director,
Department of Survey and Land Records

Sir,

Sub: Submission of Eligibility Documents for Request of proposal for supply, installation, integration and testing of Robotic Total Station, Real Time Kinematic (RTK) device and Tablet PC for the digital survey including software and accessories by Department of Survey and Land Records, Government of Kerala.

Having examined the details given in Notice Inviting Request for Proposal published in the e-tendering portal of the Government of Kerala and bid documents for the above work, we hereby submit the eligibility documents and financial bid documents.

We hereby certify that all the statements made and information supplied is true and correct.

We have furnished all information and details necessary for eligibility as per the RFP and have no further pertinent information to supply other than that entered in this RFP.

We also authorize the Director, Department of Survey and Land Records, to approach individuals, employers, firms and corporations and to visit the works completed by us in the past or are in progress at present, to verify our competence and general reputation.

We submit the following certificates in support our suitability, technical know-how &

capability for having successfully completed the following works:

Sl. No.	Name of Work	Certificate from	Other enclosures (Please list)

Date of submission:

Signature of Applicant

APPENDIX - D Compliance Sheet Format.

Form 1:- format for Pre-qualification Proposal

SL. No	Description of Clause	Documents submitted	Complying (Yes/No)	Cross reference with supporting document having Page No & clause/heading, Line No. etc	In case of deviation, SL.No of the item in non-compliance statement as per (APPENDIX - D Form .3)
1	The Bidder should have cumulative turnover of at least Rs. 100 Crores for the last 3 financial years				
2	The Bidder should be an established company registered under the Companies Act. 1956 or later and in operation for at least 3 years as on 31.03.2021 and should have their registered office in India.				
3	• OEMs/Bidders should have undertaken and successfully completed projects which includes supply, installation, integration and testing of ETS / Robotic Total Station / GNSS Receivers / GPS/ Reference Station in India or abroad for Govt. / PSU / BFSI / Private organizations in the last five years with a project				

	value as mentioned below. • Three completed projects consist of supply of ETS / Robotic Total Station / RTK / GNSS / Reference Station with a project value of >= INR Rs. 10 Crores each. Or • Two completed projects consist of supply of ETS / Robotic Total Station / RTK / GNSS / Reference Station with a project value of >= INR Rs. 15 Crores each. Or • One completed project consists of supply of ETS / Robotic Total Station / RTK / GNSS / Reference Station with a project value of >= INR Rs. 30 Crores.				
4	The bidder must have a valid ISO 9001:2008 or later certificate (issued in India).				
5	a. a) The bidder must have a regional/local office in Kerala and if it is not, they have to establish an office within 30 days after the				

	award of the contract. A promissory note in this regard to be submitted by the bidder. b. b) Bidder should set up a service centre in two regions in Kerala (Thiruvananthapuram, Kozhikode). In this regard, the bidder should give an undertaking along with the bid and the employees must have prior experience in providing all kinds of services related to RTK, Robotic Total Station machines and Tablet PCs with software.				
6	As on date of submission of the proposal, the Bidder shall not be under any declaration of ineligibility for unsatisfactory past performance, corrupt or fraudulent practices, any other unethical business practices or blacklisted either by the Ministry/ Departments of Government of India/ State Governments.				
7	The bidders should be an OEM /OEM Authorized supplier				

8	a) Certificate by authorized signatory of the bidder confirming acceptance of all tender terms and conditions and undertaking for the Total responsibility of design, procurement and implementation of the total solution. b) In case an Authorized Signatory signs the Bid on Behalf of the Bidder, he/she should be duly authorised by the Bidding Company to sign the Bid and the Agreement on their behalf.					
9	Bidder should have a local office in India					
10	The OEM from a country which shares a land border with India will be eligible only if they are registered with the competent authority as per Govt. of India order, issued by Ministry of Finance vide No.F.No.6/18/2019-PPD dated 23/07/2020					

Format for Technical Qualification Proposal.

Form 2:- Compliance Sheet format for Technical Specification mentioned in Appendix - G

SL. No	Features	Required Specification	Complying (Yes/No)	Cross reference with supporting document having Page No & clause/heading, Line No. etc	In case of deviation, SL.No of the item in non-compliance statement as per (APPENDIX -D Form .3)
1					
2					
3					
4					

Form 3:- Non-Compliance sheet.

Sl No	Section/ Page No. in RFP	Sl.No. as in RFP	Requirement as specified in RFP	Deviation description	Remarks/ Reasons /Alternatives
1					
2					
3					

APPENDIX - E Particulars of the Bidders

Details of the Bidder (Company)		
1	Name of the Bidder	
2	Address of the Bidder	
3	Status of the Company (Public Ltd / Pvt. Ltd)	
4	Details of Incorporation of the Company	Date:
		Ref.#
5	Details of Commencement of the Business	Date:
		Ref.#
6	Valid Sales tax registration no.	
7	Valid Service tax registration no.	
8	Permanent Account Number (PAN)	
9	Name & Designation of the contact person to whom all reference shall be made regarding this tender	
10	Telephone No. (with STD code)	
11	Email of the contact person:	
12	Fax No. (with STD code)	

13	Website			
14	Financial Details (as per audited Balance Sheets) rupees in Crore			
15	Year	2018-19	2019-2020	2020-2021
16	Turn over			

Name and Designation

(Authorized signatory)

APPENDIX - F List of equipments & services to be supplied (Unpriced Bill of Materials)

The bidder shall provide the list of items to be supplied as part of this RFP in the mentioned format.

Sl. No	Item description	Quoted Model	Unpriced Bill of Materials (BoM) with part number	Qty
1.	**Robotic Total Station (1 No) with following accessories** Tribrich (1 No) Prism (1 No) Prism pole (1 No.) Battery (2 Nos) Battery charger (1 No) Tripode (1 No) USB stick (1 No) Carrying case for Total Station(1 No) Carrying case for Prism and accessories (1 No) Align key (1 No) Stylus (1 No) Quick guide (1 No).			700 Set
2.	**Real Time Kinematic (RTK) rover machine(1 No.) with following accessories** RTK Antenna (1 No) GSM Antenna (1 No) Pole (1 No) Pole Mount accessories for controller (1 set) Battery (4 Nos) Battery charger (1 No) Bipod (1 No) Cable (1 No)			1000 Set.

	Carrying case for RTK rover (1 No) Carrying case for RTK accessories (1 No) Stylus (1 No) Quick guide (1 No). Appropriate data transfer facilities and required port should be provided in the RTK machine to transfer the internal data to any external devices			
3.	**10" Tablet PC with compatible software** with following accessories and applications. Android/windows 10 or higher Mobile Device Management Software and Endpoint security Pouch with shoulder strap Basic Rugged Protective Casing and Screen Protector Battery Charger touch pen data cable standard accessories Carry bag			1700 Nos.
4.	**Robotic Total Station and RTK software solution/package covering field spatial data collection (survey), desktop based QA/QC activities** (the solution should be capable of real time data synchronization with the central web application for the resurvey management of NIC as			Software solution should provide licenses for 1700 nos. of field surveyors (tab users) and 100 number licenses for QA/QC users to successfully operationalise the

	already explained in section 3) **All these software solutions should be provided without any additional cost along with the RTK and R-ETS devices.**			entire functionalities given in the RfP.
5.	**Three-year Comprehensive Annual Maintenance Contract (CAMC) on the expiry of 5 years comprehensive warranty for the following items**			
5.1	CAMC for Robotic Total Station and Accessories			700 Nos
5.2	CAMC for Real Time Kinematic (RTK) rover instrument and Accessories			1000 Nos
5.3	CAMC for the Tablet PC and accessories	1700 Nos	CAMC for the Tablet PC and accessories	1700 Nos

(Authorized signatory)

APPENDIX - G Technical specifications

1. Functionality requirement and specification

The scope of work of the System Integrator (bidder) shall include but not be limited to the following. Survey teams with Robotic Total Station and Rovers must work in coordinated fashion. This requires interoperability of the data collected in separate devices which means the data collected through a rover should be seen while conducting a survey using a Robotic Total Station and vice versa. There should be provision to draw the polygon in the field itself by connecting the geo-coordinate of the individual points with the help of Tablet based mapping software component (vendor software). Vendor software should be integrated with survey department applications of NIC so as to ensure land holding details are available for selection so that collected spatial data gets tagged to land identifier. This is to avoid unnecessary data entry and data matching exercises in the office after completing the field survey and to ensure a seamless field survey process.

The operating System of the devices and processing software should be Android based or Windows based. The communication between the field devices and also with the server should be through mobile technology facilitated with a SIM Card in each of the devices. The SIM card would be provided by the department along with the cost of data. The field mapping component of the software should have an offline data capturing facility so as to ensure that the data will be able to be synced to the server when connected to the internet. Since the field devices are handling very sensitive data in order to prevent leakage a Mobile Device Management Software is a must and that has to be provided by the vendor and also endpoint security to protect the device from malicious software.

Screens of all the devices should be of high resolution and should be colour touch screens. Tablet PCs should have the capability to display raster and vector images. Vendors need to demonstrate these capabilities to the satisfaction of the Department of Survey and Land Records, Kerala during the evaluation of bid. Failure to demonstrate these capabilities as described above would result in the disqualification of the bidder. In short, the procurement is not only intended for merely a survey instrument supply and apart from that the device software must have complete integration and data synchronization in a real time fashion.

In addition to the above, the software must have the following features:

Sl No.	Requirement	Specifications	Bidder's Offered Specifications be filled up by BIDDER)	Compliance (Yes or No)	Deviation Statement
1	**Robotic Total Station and RTK software solution for the field mapping** The solution should be capable of real time data synchronization with the central web application of the vendor deployed on premises of the department.				
1.1	**Web based mapping solution**	i. Software should be fully web enabled which should be accessible through a mobile mapping software on Tablet PC in the field and through a web application on desktop PC for the QA/QC in office. ii. Bidder must install and configure the software application and database in the Server (at the State Data Centre). iii. Server requirements will be met by the Survey and Land Records department. iv. Bidder should give the server requirement as mentioned in **Appendix - Q**			

		v. Bidder must install and configure the corresponding application in the Tablet PC. vi. The application installed in the Tablet PC must be capable to work in both online and offline mode. vii. The application installed in Tablet PC must be capable of receiving the data from RTK rover, RETS via bluetooth or WiFi in every instance. viii. The data collected in offline must be pushed to the server automatically when the internet get connected ix. Robotic Total Station and RTK Rovers must work in coordinated fashion by using the application. x. Software capability includes interoperability of the data collected in separate devices which means the data collected through a RTK rover should be seen while conducting a survey using a Robotic Total Station and vice versa without duplicating the files. xi. Robotic Total station, GNSS Rover and Tablet PC and mobile mapping system should be able to access and store entire data from			

		cloud storage in geodatabase format. xii. Provision to join the spatial data collected in the form of points (geo-coordinate) and to make polygon in the field itself with the help of Tablet PC. xiii. Application should be integrated with departments application using API so as to link the collected spatial data with the land records available on department application using some basic identifiers like district, taluk, village, block number, survey number, sub division number, thandaper number etc xiv. This functionality will avoid duplicate data entry and data matching exercises in the office after completing the field survey and to ensure a seamless field survey process.			
1.2	seamlessly exchanging/integrating	Surveyors should be able to carry out Survey in an integrated data collection mode by seamlessly exchanging/integrating in field data between field devices i.e Robotic Total Station, RTK Rovers and Tablet in which the mobile mapping application runs.			

1.3	Real time syncing	Primary storage of all field survey data should be in geodatabase on cloud/server storage (department owned) which should get synced as the survey progresses on real time.			
1.4	Prevent duplicating	Syncing data in the server should not result in creation of duplicate files and instead should append to the correct file.			
1.5	Offline editing	However, the systems should be able to carry on with the survey even in the absence of the internet.			
1.6	Interoperable between devices	RTK rovers and Robotic total stations should work in an integrated fashion. Which means the data already collected through one device should be visible while using another device and vice versa. This is required to seamlessly continue the survey of a land parcel with Robotic total station whenever or wherever RTK rover ceases to function.			
1.7	Operating System	The operating System of the devices and processing software can be Android/Windows based. But the administrator should be able to centrally access all field devices, configure and control, define user accounts and control the access to field devices based on user roles.			
1.8	Tracking of machine	Tablet PC should be able to publish its location all the time and other users should be able to locate the devices based on permissions.			

1.9	Communicatio n	The communication between the field devices and with the server (cloud storage) should be through 3 G or higher/4G LTE or higher SIM Card (Indian service provider) in each of the devices			
1.10	Screens & resolution	Screens of all the devices should be high resolution, color touch screens. The interface should have the capability to display raster and vector field data superimposed on each other available in our application			
2	**Software Packages:**	Sufficient licenses of all the software packages required for performing the entire workflow on each device should be supplied by the bidder.			
3	**Cloud Platform**	Sufficient cloud storage space and all other interfaces required for performing the entire workflow/functions on each device will be supplied by the Survey and Land Records department.			
4	**Data Processing software**	Should be capable for Loading on Tablet/Desktop computers Should support industry standard GIS software Should support import/ export to Other formats such as DWG, DXF,CSV, ASCII, SHP, TXT etc Should support traverse and its Adjustments Should support feature coding Should support stake out. Should support determination of local Coordinate system parameter and			

		should have provision to input Predefined Co-ordinate system Should support layers. Software should be capable of handling the edits of all the field mapping users without any time delay in edits and updating the spatial data.			
5	**Access of multiple users in a single project**	Multiple users should have access to a single project/job/workspace pertaining to one Village/block and have to work simultaneously. The supervisors should be able to monitor all the activities of the users under them. All the geo-coordinate observations at the field should be recorded on a real time basis. Robotic Totalstation, GNSS Rover and Tablet PC and mobile mapping system should be able to access and store data from cloud storage in geodatabase format.			
6	**User management**	In the software, there should be a user login facility and it should work in both online and offline modes. If the login and logout are in offline mode, the actual login and logout time and the activities should be saved in the server when the connectivity is available.			
7	**Log**	All the activities including user login and logout, history of the project, edit history etc. should be recorded as a log file and should be centrally accessible.			

8	**Editing provision**	Editing provision for any mistakes during the observation should be there in the software.			
9	**Warning for duplicate identifiers**	A project should not permit duplicate identifiers, duplicate coordinate capture etc. If by mistake any duplicate entries are made, the system should give a warning.			
10	**Layer management**	All the observed data should be viewed and saved in layers. Software should have to handle multiple layers including vector and raster data. Provision to create layers by user for different attributes (point,line,text etc).			
11	**Photograph**	During the field survey, there should be a provision to take photographs and to attach with the concerned parcel (geo tagging).			
12	**Support of Unicode font**	**Deleted**			
13	**Parcel creation**	In the software, a provision for connecting observed points sequentially or manually by entering point identifiers for forming a polygon. Points should be snapped while creating features such as line and polygon. There should be provision for creating points by distance and distance intersection, line and offset, angle and distance and by coordinates.			
14	**Display of dimension**	All the dimensions and area of the polygon should be in the metric system.			

		The number of decimals should be user-definable. There should be provision to convert the dimensions in metric to non -metric			
15	**Area calculation**	While forming the polygon, the area should be generated automatically and displayed.			
16	**Attribute entry**	Software should have provision for land identifier fields like District,Taluk,Village, Block, Survey number, Sub division number and Tandaper number etc. So that the textual data of NIC software can be linked by using this identifier.			
17	**Database Integration**	Database of the software should be integrated with the NIC application, so that there will be live view and access of mobile mapping software in the Tab and vice versa.			
18	**End Point Security**	1. Solution should strengthen the endpoint security solution with improved visibility and new technical controls to detect and prevent advanced sophisticated attacks against users including Anti Phishing, Web form protection, account takeover protection, Browser based attacks and corporate credential theft. 2. Solution must detect and block access to phishing sites by scanning all form fields. Solution should not be only dependent on URL reputation-based Techniques to identify phishing URL's 3. Solutions should not only be dependent on signature-based technologies. Solution should support Next generation technologies for the			

		detection of advanced sophisticated attacks 4. Solution should have intelligence to detect and prevent browser-based attacks. Solution should not have any dependency on signature to detect and prevent these attacks. 5. The solution must be able to proactively block Command and Control communication from the Endpoint and stop exfiltration of data 6. Solution should support zero trust policy for files downloaded from untrusted sources on the web Solution must sanitize all the active content / scripts from the file before it delivers to the end user. File sanitization must support pdf conversion 7. Shall have facility to clean, delete and quarantine and restore the virus, malware, and ransomware affected files. Should support scanning for ZIP, RAR compressed files, and TAR archive files. Should support online update, where by most product updates and patches can be performed without affecting the normal operations. Must update itself over the internet for virus definitions, program updates etc. (periodically as well as in push-updates in case of outbreaks). 8. Solution should have capability to hunt malicious processes, files & hash using inbuilt threat hunting engine/ process for auto remediation. Solution must have provision for auto remediation & restoration of files encrypted by ransomware. 9. Solution must provide the detailed forensic analysis for the incidents on compromised end points. it should include a detailed view about process dependency attack entry point, attack			

		type, suspicious file operations, network operation and business impact. 10. Solution must have on-premise management to define different configuration options. Same management platform must provide centralized logging and reporting functionality 11. Solution must have capability to identify zero-day attacks with on premise sandboxing capability for web, mail and ftp protocols. 12. OEM/Partner should be capable of providing a Managed Endpoint detection and response (EDR) of the solution for a period of 8 years with one report per month.			

2. Specification of Robotic Total Station

Sl No.	Requirement	Specifications	Bidder's Offered Specifications be filled up by BIDDER)	Compliance (Yes or No)	Deviation Statement
1	**Robotic Total Station Features**				
1.1	Accuracy	Accuracy A robotic total station with 1" angular accuracy with detachable control unit for seamless data collection in the field. The total station should			

		be able to measure without a prism up to 500 mt or better and should be able to be controlled from a distance of 500 m. or more. Single pole assembly along with controller and 360-degree prism to collect data for topographic survey			
1.2	R-ETS/Target	R-ETS machine should be motorized, should be able to automatically turn, do automatic target aiming and follow reflective targets			
1.3	Remote operation	Should be able to do automatic target lock, and remote operation. Should work with any standard reflector. Should rapidly locate targets.			
1.4	Deleted	Deleted			
1.5	Rotation Drive	Should be frictionless drive			
1.6	Rotation Speed	40 deg /sec or better.			
1.7	Clamps	Should be endless frictionless			
1.8	Plummet	Optical/laser			
1.9	Magnification	30x			
1.10	Field of view	Field of View: 2.3 m at 100 m in distance or better			

1.11	ATR range with prism	500 m.			
1.12	Search time	Search time : Typ. 7-10 sec.			
1.13	ATR Accuracy	5 sec.			
1.14	ATR Measurement time	Typ. 3 to 4 sec.			
1.15	Robotic range (Internal/External BT)	Robotic range (Radio/Internal/External BT) 500m			
2	**Telescope**				
2.1	Magnification	30 x or better			
2.2	Image	Erect			
2.3	Field of view	Telescope: Field of view 1 degree 25 minutes or better			
2.4	Resolving power	3" or better			
2.5	Focusing range	Focusing range1.70 m. to infinity			

2.6	Laser Pointer	Coaxial Red Light			
2.7	Track / Guide Light	Track / Guide Light Green LED (524nm) and Red LED (626nm)/Orange LED/Yellow LED. Operating range: 5 m. to 150m. (4.3 to 490 ft.). Visibility between 100 mt to 150 mt			
3	**Angular Measurement:**				
3.1	Method	Absolute Encoders			
3.2	Angular accuracy	1" or better			
3.3	Least count	0.5 second			
3.4	Compensator Type	Dual Axis or better with Horizontal collimation and Vertical index correction.			
3.5	Compensating range	Compensator range +/- 4' or better			
3.6	Electronic level resolution 2"	2" or better			
3.7	Circular level sensitivity	Circular level sensitivity 6"/2mm or better or e bubble with the accuracy of 8"/2 mm or better.			

4	**Distance measurements With reflector**				
4.1	360 degree prism	Distance measurement with 360-degree prism 500 m or more			
4.2	Prism accuracy	2 mm ±2 ppm or better			
5	**Distance measurements Without reflector in DR mode (Direct Reflex mode)**				
5.1	Range	500m or more			
5.2	Accuracy	5 mm ± 5 ppm or better			
6	**Plummet**				
6.1	Cantering device	Centering device: Inbuilt Optical/Laser (Class 2) Plummet from the Instrument.			
6.2	Measuring the height	The system should have a mechanism for measuring the height of the machine through laser technology or any manual method			
6.3	Instrument Height	The system should have a mechanism for measuring the height of the machine through laser technology or any manual method			

6.4	Beam accuracy:	Beam Accuracy <=1.0mm@lm, whenever laser plumet is used and similar accuracy should be given when the optical plumet is used			
7	**Level sensitivity**				
7.1	Level	Plate level 30"/1mm or better / Circular level 6'/2mm or better			
7.2	Digital Level	Graphical display on screen			
8	**Battery**				
8.1	Type	Rechargeable Lithium-ion with provision for external battery			
8.2	Operating time	Operating time Min. 7 hrs. or more with continuous distance/angle measurement by using single battery			
9	**Keyboard and Display/Instrument control unit**				
9.1	Operating System	Windows EC or Android Current version.			
9.2	Display	5" Windows/ Android Based High Resolution Touch Screen. Bright, readable in sunlight, at least **one sides**			

9.3	Display : Resolution	Minimum resolution of 750 x 450 pixels			
9.4	Keyboard	Keyboard: Touch Screen Keys. 25 keys. 37 Keys with Function Keys at least one sides			
9.5	Position	Position: **Both Faces with display at least on one side**			
9.6	Weight without Carry case	Weight without carry case Less than 6 kgs without controller. tribrach			
9.7	DRIVES : Horizontal & Vertical Drives	Should have Endless movements with friction drives / Electric drives, without any mechanical locks			
10	**Communication port**				
10.1	Port	Communication Port Serial, USB 3.0 (Type A/mini-B) / SD Card Support			
10.2	Wireless Connectivity	Wireless connectivity Wireless (Integrated Bluetooth/Integrated WiFi). GSM. LTE, WLAN for ETS/Tab used as controller			
11	**Data storage**				
11.1	Internal memory	Internal/internal removable memory 4 GB or more			

11.2	External Memory	Should support 8 GB or more Flash/Pen drive /SD/CF cards			
11.3	Interface	Interface GSM & LTE, Serial, USB, Bluetooth and WLAN			
12	**Capabilities of Programmes Inbuilt**				
12.1	Program	Graphical Intuitive Application Programs			
12.2	Speed	System should run onboard Operating System and processor with speed of minimum 1GHz			
12.3	Survey tools	Software should be capable of basic surveying like Station Setup. Back site- Fore site data collection, Stakeout, Setting out . Free Station. Remote Height.			
12.4	Geometry functions	Software should be capable of Co-ordinate Geometry functions. generating. Distance (projected distance and also actual ground surface distance), Area (projected area and also actual ground surface area), Volume, Missing line measurement, Reference line. Resection.			
12.5	Automatic Drawing generation	Software should be capable of Automatic Drawing generation from feature codes, 3-			

		Dimensional view, Traverse Adjustment.			
12.6	data export	Software should be capable of Generation of data to export to third party software like CSV, DXF, Shapefile, Geodatabase, ASCII etc in the instrument itself.			
12.7	Data import	Software should have the capability to attaching DXF, Shapefile, Geodatabase points.ASCII, Zoom in / Zoom out / PAN, Window zoom facility, Area Division.			
12.8	Raster support	Raster/vector Support: Software should be capable of displaying images/vector in the background			
13	**Survey Data**				
13.1	Graphical display	Software should have the capability to Graphically Display surveyed points, Lines & Areas with Codes & Symbols.			
13.2	input Spherical coordinates	Software should have the Facility to input Spherical coordinates (GPS Coordinates)			
14	**Environmental Specification**				

14.1	Working temperature	-20o C to + 50o C			
14.2	Dust/water proof	Dust/Water (IEC60529)/ Humidity: IP55 or better / 95% non- condensing or better			
15	**Accessories with Instrument**				
15.1	Tribrach	Tribrach with Optical/ Laser Plummet			
15.2	Battery	Rechargeable Lithium-ion			
15.3	Battery charger with adapter	Battery charger with adapter for charging the Robotic Total Station battery			
15.4	Lens hood	Lens hood			
15.5	Machine rain protection cover	Waterproof Machine rain protection cover			
15.6	External storage	Not less than 8 GB Pen drive			
15.7	Carrying case (for machine)	Strong and durable carrying case with proper cushion for the machine			
15.8	Carrying case (For Prism and accessories)	Strong and durable with proper cushion for the accessories			

16	**Calibration Certificates**	Internationally acknowledged Calibration Certificates that are issued by accredited laboratories shall be provided by the bidder for each Total Station.			
18	**Training manuals**	Detailed training manuals for performing all the tasks should be provided with each device. Detailed theoretical and hands-on training for performing all the activities on the Total station should be provided as mentioned in 4.3.			

3. Specification of Real Time Kinematic GNSS Rover and Antenna

Sl No	Requirement	Specifications	Bidder's Offered Specifications be filled up by BIDDER)	Compliance (Yes or No)	Deviation Statement
1	**GNSS Rover and Antenna**	GNSS rover must have integrated/external antenna. Receiver must be capable of receiving/transmitting the messages from base receiver through GSM/GPRS/UMTS/HSDPA/3 G or higher/4G LTE or higher **cellular technology** or equivalent TCP/IP network. Receiver and Rover must have field-tested, field-ready IP68 design or better compliance for dust and water ingress. GNSS-Rover should support Real Time Kinematic positioning using industry standard formats. GNSS rover should be compatible to other makes of Base Receiver. GNSS-Rover must be provided with a heavy duty protective case for Receiver unit and the other standard OEM accessories. GNSS-Rover must be provided with Allen Key for Range pole and bipod/tripod.			

2	**Range Pole**	Range Pole: Each GNSS-Rover must have a standard range pole to meet the requirement of the RfP.			
3	**Satellite Tracking**	Should be Capable of tracking: **GPS:** L1C/A, L2C,L2P/ L2E , L5 **GLONASS:** L1C/A, L1P, L2C/A, L2P, L3 **Galileo:** E1, E5A, E5B, E5 AltBOC, E6 **QZSS:** L1 C/a, L1C, L2C, L5, L6 **Compass:** B1, B1C, B2, B3 **IRNSS:** L5 SBAS– WAAS, EGNOS, GAGAN, MSAS, L1C/A, L5			
4	**No of Channel**	No. of Channel 500 channel or more or capability to track all the available constellations with the required accuracy			
5	**Measuring Modes**	Static, Fast Static, Real-Time Kinematic, Post Processed Kinematic.			
6	**Measurement Technology**	GNSS Rover must have technology that minimizes multi-path interference. GNSS-Rover must support logging rates of 20Hz. The GNSS -Rover shall be able to receive different type of corrections to allow			

		different kind of services via TCP/IP over: a. Single RTK corrections from specific stations b. Single RTK corrections from nearest station. (Requires rover's position to be sent, rover should be able communicate his position to even for different make and model Base receiver). c. Network RTK corrections from VRS, FKP and solution through NTRIP protocol. (Requires rover's position to be sent).			
7	**Remote configuration**	1] The GNSS system should be able to be configure remotely. 2] Accessible via WiFi, Serial, USB, and Bluetooth. 3] Receiver must have inbuilt GSM modem and have support for 3 G or higher/4G LTE or higher Network. 4] GNSS Rover should be able to be part of a domain controller (Active Directory) under Client Server Architecture. 5] GNSS Rover should be able access and update and work from a common Job defined centrally and stored			

		centrally in a cloud storage commonly for each village irrespective of the number of Rovers, Robotic Total Stations, Tablets, PCs working on the same simultaneously. 6] GNSS Rover/field Software Should allow defining common Job Files with geodatabase stored in a RDMS as the file format. 7] GNSS Rover should access and update this database during data collection in the field without resulting in any duplication of Job file or any other file contained within the Job file irrespective of the number of instruments working simultaneously from the same Job file.			
8	**Measurement Accuracy**				
8.1	*High precision static*				
8.2	Horizontal	3 mm +0.1 ppm			
8.3	Vertical	3.5 mm + 0.4 ppm			
9	***Real Time Kinematic***				
9.1	Horizontal	8 mm + 1 ppm			
9.2	Vertical	15 mm + 1 ppm			
10	***Network R T K***				
10.1	Horizontal	8 mm + 0.5ppm			
10.2	Vertical	15 mm + 0.5 ppm			

10.3	*On Field requirements*	i) GNSS Rover must have tilt sensor and tilt sensor must have minimum 15 degree working range on either side of pole. ii) Real Time TILT compensation should be shown in the onboard software. iii) GNSS rover should have NTRIP client port and should be capable of Receiving RTCM data stream for NTRIP server. iv) GNSS Rover shall be able to receive different type of corrections to allow different kind of service via TCP/IP a) Single RTK corrections; b) Single RTK corrections from nearest station c) Network RTK corrections from VRS, FKP or equivalent technology GNSS Rover should be capable of			

		receiving Real Time data streams from the connected stations/Network to be received using TCP/IP communication. Should support for all common Real time Formats i.e. CMR, CMR+, RTCM v2.x, RTCM v3.x, and NMEA. Proprietary message types will be considered in addition to (not in replacement of) the before mentioned formats. GNSS Rover should have NTRIP Client port and should be capable of receiving RTCM data stream from NTRIP server.			
10.4	Survey Work Flow	As per diagram in the project overview section			
11	**General Specification**				
11.1	**Bluetooth & Cable**	Bluetooth & Cable: Bluetooth, Wi-Fi & USB/Mini USB			
11.2	**No of Port in GNSS sensor**	USB/Micro USB port and RS232 serial port/Limo port. Necessary data transfer cable should be provided with GNSS Rover. GNSS-Rover should have provision for External memory like SD, Mini SD, Micro SD, SDHC, Memory stick, NA for standalone receiver.			

11.3	**Power consumption**	Power consumption for satellite receiver and antenna including internal radio should be less than 6W in RTK mode. In addition to Internal Rechargeable Battery, GNSS-Rover shall have a minimum of one more power input for AC as well as DC supply. Provision for connection to external batteries should also be available. Power inputs must be Hot - Swappable b/w External and Internal Power Sources without affecting Data Recording.			
11.4	**Internal Batteries**	GNSS Rover should be supplied with internal battery capable of continuously operating for upto 8 Hrs in RTK Mode. One spare battery is to be provided with equipment. In case single battery can not support 8 hours continuous operation, additional internal batteries and battery chargers should be provided to ensure 12 hours operation in RTK Mode.			
11.5	**Weight**	Weight: The Entire RTK rover including internal			

		batteries, range pole controller and bracket should not weigh more than 4 Kg.			
11.6	**Operating Temperature for all major RTK component**	-30*C +65*C or better			
11.7	**Storage Temperature for all major RTK component**	- 30°C to + 70°C			
11.8	**Humidity**	Humidity : 95% or better, IP67 or better			
11.9	**Drops**	Should withstand topple over from a 2m survey pole on to hard surfaces.			
11.10	**Initialization Reliability**	Should be less than 5 cm.			
11.11	**Initialization Time**	Should be less than 5 seconds			
11.12	**Position Update Rate**				
11.13	**RTK Data Formats**	Data formats input and outputs • CMR: CMR+, CMRx input and outputs •RTCM: RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1 or later. GNSS Rover should be capable of receiving Real Time data streams from the connected stations/Network to be received using TCP/IP communication. The support for all common Real time			

		Formats i.e. CMR, CMR+, RTCM v2.x, RTCM v3.x, and NMEA. Proprietary message types will be considered in addition to (not in replace of) the before mentioned formats. GNSS Rover should have NTRIP Client port and should be capable to receive RTCM data stream from NTRIP server.			
11.14	**RTK MODEM**	GNSS Receiver should have inbuilt 3 G or higher/4G LTE or higher for GPRS connectivity. Should have LTE, UMTS, GSM frequency bands.			
11.15	**NMEA output**	GNSS Rover should be capable to transmit NMEA message output to the Base Receiver /CORS control centre.			
11.16	**Memory**	Onboard internal/internal removable memory of 4 GB or more in the receiver			
12	**Data Controller On-Board Software (One data controller per GNSS sensor)**				
12.1	Tablet PC as controller	Tablet PC provided with each GNSS Rover must act as the Controller.			

		No separate controller is required. GNSS-Rover must be able to connect to a windows/Android based Tablet/laptop/Cloud Server. Necessary software to be provided for configuration of Rover and establishing data uplink/downlink with Tablet/Laptop/Database in the Cloud Storage. Said software to be provided with free updates upto Warranty period inclusive in the scope of supply.			
12.2	**NTRIP Client operation & GNSS support**	It shall have capability to support NTRIP Client operation for rover receiver. It shall support GNSS Rover to receive the RTCM data stream and apply necessary correction to the rover's position.			
12.3	**Survey Style Configuration**	The Software should allow: a. Full GNSS receiver Configuration, setup, status monitoring and management. b. Should provide full control over selection and configuration of RTK correction sources, type of correction and type of data stream, projection and datum coordinate system.			

		c. Downloading of data containing corrected and uncorrected coordinates, raw file etc. d. Correction sources type of correction and type of data stream projection and datum coordinate system. e. Collection and storage of point, line and area features on the basis of rover's position feature coding and basic symbolization. f. Graphical staking of points, lines, arcs and alignments. g. Calculating coordinate points from surveyed bearings distances, angles and vice versa. h. Provide standard COM components to integrate into third party applications. i. COGO functions for measurements of Area, Distance, Angle etc. J. Add a Vector/Raster layer in the background of the working space. k. Digitize points lines and area features along with attributes over attached Vector/raster. l. Manipulate point, line and area features along with attributes. m. Stake-out Capability. n. Collection of Data for Post-Processed Kinematic. The software should be able to log data for all the signals tracked			

		& Static, Fast Static, RTK. Automatic survey (by distance, by time, stop & o) Satellite view status (quality, position, sky view, satellites list, base info, PDOP, HDOP) , Line, polygon, area calculation , National grids. System settings (units, precision, parameters, etc.). m. Should support Integration Survey with Total Station, Tablet and office PC (i.e. all client machines).			
12.4	**Multitasking**	The software should be capable of: a. multitasking so that multiple operations can be opened at a time e.g. COGO, Stakeout, Point Manager etc. b. Graphical staking of points, lines, arcs, and alignments from active maps. c. Feature Coding; d. Active Background maps in the form of JPEG/TIFF, DXF/DWG and Image Services; e. Import / Export to industry standard formats like RDBMS Geodatabase, Shapefile, CSV, DXF, Export CSV, DXF & KML etc.; f. COGO Functionality Calculation of transformation			

		parameters from point list. g. Provide standard COM components to integrate into third party applications. h. COGO functions for measurements of Area, Distance, Angle etc.. i. Software should be able to enforce survey result recording restrictions based on "" Fixed" and "" Float" solutions.			
12.5	**Coordinate System Manager**	Should have datum and projection support. Should support Grid coordinates. It shall be capable of taking local parameters & also support Datum transformation.: Should be capable of calculating coordinate points from surveyed bearings distances, angles and vice versa.			
12.6	**Color Graphical Support**	Color Graphical Support The Software should have color graphical support to visualize work while working on 10 inch or above sunlight readable full VGA data controller touch screen. Graphical staking of points, lines, arcs and alignments.			

12.7	**Feature Coding**	Should support Feature Coding with attributes for GIS data collection. Control Coding should be possible for automatic plot creation.			
12.8	COGO	Should support COGO functionality for measurements of Area, Distance, Angle etc.. Should be able to Key in Lines, Sub-divide lines and create parallel lines for staking out purposes. Should be able to calculate transformation parameters from the point list.			
12.9	**Menu Driven**	Should be User Friendly and Menu Driven for easy field operation. Should be work flow driven. Should be able configure and enforce the workflow centrally from a client PC or a Tablet.			
12.10	**Data Storage**	Should be able to access and store GNSS data collected by the RTK system into the Job file in Relational Database format stored in the cloud storage without duplication.			
12.11	**Transfer Data between Field and Office**	Robotic Total station, GNSS Rover and Tablet PC and mobile mapping system should be able to access and store data from cloud storage in geodatabase format. GNSS must be able to connect to controller/laptop/comput			

		er for configuration/downloading through USB/micro USB port and RS232/serial port/ limo port. Necessary data transfer cable should be provided with GNSS Rover.			
12.12	**Stake Out**	Should support Graphical stakeout, not only for points but for Lines and DTM as well. Should be able to perform Real Time Quality Control for stake out positions.			
12.13	**Background Map**	Should be able to accept background maps, Ortho rectified images, satellite imagery etc. in all industry standard formats.			
13	**Post-processing software**				
13.1	**Operating System**	Windows and should be compatible with the latest version.			
13.2	**Importing Raw Data**	Should be able to import Raw data from the GPS/GLONASS/GALILEO/ Beidou/Compass/QZSS/ IRNSS receivers as well as RINEX data. Also should be able to import raw data as well as precise ephemeris data via internet IGS data from net.			
13.4	**Baseline Processing**	Should be capable of processing GPS, Glonass, Galileo, Compass,QZSS,IRNSS			

		and Beidou constellations together or individually			
13.5	**Network Adjustment**	Should be able to perform Network Adjustment using Least Square adjustment principle.			
13.6	**Export**	Capable of Exporting the data in RINEX format as well in GIS/CAD format including Relational Database format.			
13.7	**Reporting**	Software should be capable of generating reports directly for the surveyed data.			
13.8	**Datum Transformation**	Capable of transferring the data from one datum to another for a given set of common points with or without the knowledge of datums.			
13.9	**Feature Coding**	Software should support feature coding.			
13.10	**COGO**	Software should have all COGO functionality			
13.11	**Data Processing**	Should be able to handle RTK data , PPK as well as STATIC data			
13.12	**Surfaces**	Deleted			
13.13	**Volumetric analysis**	Deleted			
13.14	**Accessories**	GNSS-Rover must be provided with a heavy duty protective case for Receiver unit and the other standard OEM accessories. GNSS-Rover must be provided with Allen Key			

		for Range pole and bipod/tripod.			
13.15	**Scope of Supply (Rover and Tablet as Controller)**	Scope of Supply (Rovers and Tablet as controller) RTK Antenna (1 No) GSM Antenna (1 No) Pole (1 No) Pole Mount accessories for controller (1 set) Battery (4 Nos) Battery charger (1 No) Bipod (1 No) Cable (1 No) Carrying case for RTK rover (1 No) Carrying case for RTK accessories (1 No) Stylus (1 No) Quick guide (1 No). Appropriate data transfer facilities and required port should be provided in the RTK machine to transfer the internal data to any external devices Post processing software: Post processing software to process all the existing constellations for code and phase, imaging and adjustments. Pole mount clamp for Controller devices, is to be provided along with the GNSS			

		Rover. Robust bipod/tripod is to be provided along with the GNSS Rover. GNSS-Rover must be provided with a heavy-duty protective case for the Receiver unit and the other standard OEM accessories. GNSS-Rover must be provided with Allen Key for Range pole and bipod/tripod. Device should be supplied with digitizer pen, battery, AC adapter, separate one bay or two bay battery charger and carry bag. AC adapter should have minimum 36"" input/output cable. Low/High input voltage disconnect, output short circuit, overcurrent protection and internal over temperature protection."			

4. Specification of 10" Tablet PC

Sl No	Requirement	Specifications	Bidder's Offered Specifications be filled up by BIDDER)	Compliance (Yes or No)	Deviation Statement
1	**Controller (Tablet PC)**				
2	**Processor**	Processor : Intel core i5 10th Gen or higher Processor Base Frequency (Ghz) : 1.6 Ghz or Higher Cache (MB): 6 Mb cache Good performance of applications deployed should be ensured by the vendor			
3	**Memory RAM**	Memory RAM: 8 GB or Higher			
4	**Internal Storage**	Internal storage: 128 GB or Higher			
55	**Camera**	Integrated Rear Camera of 8 MegaPixel or better and front camera Min 2 MP			

6	**Display & resolution**	10" IPS /TFT, 1280 x 800 or higher with LED backlighting. Anti Glare, anti reflective, sunlight readable. Capacitive multitouch, waterproof digitiser pen daylight readable screen. Automatic screen rotation, HD graphics (built in CPU) video controller. Min 600 Nits brightness.			
7	**Speakers & Microphone**	Integrated			
8	**Display & protection**	Fitted with Tempered Glass and pre-installed before delivery (bumper to bumper warranty)			
9	**Touch**	Capacitive multi Touch screen			
10	**Connectivity**	Wifi , 4G LTE, Bluetooth			

11	**GPU**	MALI / Adreno / SGX544 based GPU / Intel HD based GPU / Intel HD Graphics/Nvidia			
12	**Positioning system**	Inbuilt GPS/4G LTE/AGPS			
13	**Gyroscope**	Yes			
14	**Operating System**	Operating System: Windows 10 or above (support future Upgrades)			
15	**Power Supply**	Power Supply 90 V - 230V, AC Supply. Power adaptor			
16	**Battery**	Suitable for 8 hours continuous HD playback with 100% brightness and no sound. Sample will be tested			
17	**Weight**	Weight Less than 1. 3 kg (including battery). Rugged casing of the Tablet are			

		not considered as part of the weight criteria			
18	**Language Support**	English			
19	**Certification**	BIS, MIL-STD-810, MIL - 461 EMI/EMC, IP - 65 RoHS			
20	**Manageability / security**	MDM			
21	**Ruggedness**	Ruggedness - 50 cm drop, IP 65 or better/MIL-STD-810			
22	**I/O interface**	I/O Interface: USB 2.0 / Micro USB/C-type USB Audio Jack 3.5 mm. or alternate SIM card slot			
23	**Carry case**	Yes, Lightweight Carry Case with strap which can be put around shoulder along with other holder so as to prevent			

		Tablet from falling down while being used in the field for survey.			
24	**Other features:**	Should support all common multimedia formats and video conferencing and streaming			
25	**Operating Temperature**	Operating Temperature - 10°C to +55°C and IP65 or better			

5. Other Requirements

Sl #.	Features	Required Features / Specifications
1	CORS, RTK rover compatibility	RTK rover must be compatible and interoperable with the data standards of the CORS network of all the brands/make/model. The product must be compiled with the data exchange formats between the CORS network for receiving correction signals for the production of high accurate spatial data.

APPENDIX - H Proforma of Contract Agreement

This SERVICE LEVEL AGREEMENT is made and executed on this.....<<Current Date>> day of .....<<Current month>>, Two Thousand and twenty one <<Current Year>> between Department of Survey and Land Records, represented by Survey Director, Vazhuthacaud , *Thiruvananthapuram, Government of Kerala (hereinafter referred to as "The Department", which expression shall, unless it be repugnant to or inconsistent with subject or context thereof, include and be deemed to include their heirs, executors, successors or administrators and assigns) on the FIRST PART AND _____, <<With Organization Brief Details and Address>> (hereinafter referred to as _____, which expression shall, unless it be repugnant to or Inconsistent with subject or context thereof, include and be deemed to include their heirs, executors, successors or administrators and assigns) represented by Shri .....Head/ MD<< Successful bidder's organization>> on the SECOND PART.*

Hereinafter collectively referred to as the "PARTIES" or individually as the "PARTY" WHEREAS the FIRST PARTY is desirous of engaging the SECOND PARTY for the task of supply, installation, integration and testing of Robotic Total Station, Real Time Kinematic (RTK) device and Tablet PC for the digital survey including software and accessories mentioned AND WHEREAS, the SECOND PARTY has expressed their willingness to undertake the work of Supply with Warranty and Service for the *DSLR, Government of Kerala* as per the Work Order No. _____dated --/--/2021, which form part of this Agreement;

AND WHEREAS administrative sanction is for procurement of Supply, Installation, Configuration, Integration, Acceptance Testing, Commissioning, Training and Support for Robotic Total Station, Realtime Kinematic (RTK) devices, Tablet PCs suitable for realime mapping and Online processing software for both the above survey instruments with accessories mentioned by Department of Survey and Land Records, Thiruvananthapuram

AND WHEREAS, the parties hereto had detailed discussion in the matter particularly the rights, obligations and liabilities of respective parties and have reached an understanding which they desire to reduce into writing.

1. Effective Date

This agreement shall become effective from the date on which the duly authorized representatives of the parties have signed the Agreement.

2. Scope of the Project

Supply: The total number of Items to be supplied under this RFP is.

List of equipments & services to be procured as per the RFP

Sl #	Item description	Quantity
1	Robotic Total Station with accessories	700 set
2	RTK rover with accessories	1000 set
3	Tablet PC with accessories	1700 Nos
4	**Robotic Total Station and RTK software solution/package covering field spatial data collection (survey), desktop based QA/QC activities** (the solution should be capable of real time data synchronization with the central web application for the resurvey management of NIC as already explained in section 3) **All these software solutions should be provided without any additional cost along with the RTK and R-ETS devices.**	Software solution should provide licenses for 1700 nos. of field surveyors (tab users) and 100 number licenses for QA/QC users to successfully operationalise the entire functionalities given in the RfP.
5	Three-year Comprehensive Annual Maintenance Contract (CAMC) on the expiry of 5 years comprehensive warranty for the items as per Bill of Materials (BoM)	

All the Licenses should be in the name of The Director, Department of Survey and Land Records.

Installation and Testing: Each Item needs to be pre-tested to ensure that it works smoothly. Testing will be done by designated technical personnel of the locations as mentioned in this RFP.

Warranty & Support: Warranty and support for 5 years and CAMC of 3 years onsite comprehensive from the date of acceptance.

Deliverables shall be:

1. Delivery of the said devices as per the RFP
2. Comprehensive Warranty support certificate of each lot
3. User Guides
4. Help Desk Details
5. Acceptance Certificate

3. Warranty & CAMC Support

<< Name of Successful Bidder> shall warrant that the devices supplied to THE DEPARTMENT shall have no defect arising from the design or workmanship or any act or omission. This warranty should also cover as per RFP conditions.

4. Responsibility of both the parties

1) Department will facilitate a designated person to receive and certify after verifying the software and equipment as per the conditions laid in the RFP.
2) Certificate of acceptance is provided by THE DEPARTMENTS to the supplier.

5. Commencement & Completion

The date of commencement of this supply of the equipments and Software as mentioned in the RFP shall be considered as the date of signing of this Agreement and shall be valid for 5+3 years from the date of signing this agreement.

6. Timelines

The proposed schedules for the supply of the equipments are as follows:

Sl No	Activity	Timelines
1.0	Supply, installation, integration and testing of Robotic Total Station, Real Time Kinematic (RTK) device and	Staggered delivery has to be made by the

	Tablet PC for the digital survey including software and accessories delivery should be completed in Staggered manner over 4 months. Purchase order will be given for the entire procurement in a single order. Any major product delivery issues due to valid reasons will be considered by the Director Survey and reasonable extension for the delivery can be given. It will be the sole discretion of the Director Survey. Delivery should be made from the date of receipt of Purchase Order & installation and testing shall be completed within 21 days from the date of delivery	successful bidder over the 4 months such that: 10% is delivered in the first month, 20% in the second month, 30% in the third month, 40% in the fourth month.

* Numbers and timeframe mentioned in the above table are subjected to changes as per the discretion of the Director of Survey and Land Records, Kerala

7. Payment terms

Sl. No.	Description	Amount released in %
1	Delivery of the Robotic Total Station, Realtime Kinematic (RTK) devices, Tablet PCs suitable for realime mapping and Online processing software for both the above survey instruments with accessories mentioned. Installation, Agreement execution, Delivery of warranty documents, brochures, hand book, guidelines, software integration, Configuration, Testing, Commissioning and Training.	60% after successful supply of the product on basic functional testing of equipment which will be done in 3 days period 30% after successful completion of Installation, software

		integration, Configuration, Testing, Commissioning, Training 10% after successful operation of the equipment and solution for a period of one month after handing over
2	Comprehensive AMC of the equipment (Robotic ETS, RTK rover, Tablet PC) for 3 years after the expiry of the comprehensive warranty period of 5 years. AMC amount must be calculated with unit price of each equipment. CAMC amount will be released yearly after the satisfactory report obtained from the concerned authority from the department. No advance payment will be released as part of the AMC. *For the qualification of the bid, the bidder shall quote the AMC amount should be more than 4% of the product cost per year. *Software updation and maintenance should be for the total 8 years without any cost. *Separate cost for CAMC should be quoted for R-ETS and Accessories, RTK and Accessories, Tablet PC and accessories.	33.3% of CAMC amount per year

8. Taxes & Duties

All taxes and duties, as applicable, will be inclusive of the total bid.

9. Validity of the Agreement

This Agreement shall be valid for a period of nine years from the date of signing this document/agreement.

10. Conditions of Contract

The terms and conditions specified in this document as well as all the other supporting documents as listed below shall govern this contract.

1. RFP
2. Amendments made if any.
3. Agreement.
4. Or any other document which was agreed with the successful bidder shall also include.

11. Severability

If any part of this Agreement is found by a court of competent jurisdiction or other competent authority to be invalid, unlawful or unenforceable, then such part will be severed from the remainder of this Agreement which will continue to be valid and enforceable to the fullest extent permitted by law.

12. Force Majeure

Neither party shall bear responsibility for the complete or partial non-performance of any of its obligations (except for failure to pay any sum which has become due on account of receipt of goods under the provisions of the present contract), if the non-performance results from such Force Majeure circumstances as Flood, Fire, EarthQuake and other acts of God as well as War, Military operation, blockade, Acts or Actions of State Authorities or any other circumstances beyond the parties control that have arisen after the conclusion of the present contract.

In such circumstances the time stipulated for the performance of an obligation under the present contract is extended correspondingly for the period of time of action of these circumstances and their consequences.

The party for which it becomes impossible to meet obligations under this contract due to Force Majeure conditions, is to notify, in written form, the other party of the beginning and cessation of the above circumstances immediately, but in any case, not

later than 10 (Ten) days from the moment of their beginning. Certificate of a competent authority or organization of the respective organization be a sufficient proof of commencement and cessation of the above circumstances. If the impossibility of complete or partial performance of an obligation lasts for more than 6 (six) months, either party hereto reserves the right to terminate the contract totally or partially upon giving prior written notice of 30 (thirty) days to the other party of the intention to terminate without any liability other than reimbursement on the terms provided in the agreement for the goods received.

13. Breach of Contract

For breach of any Clause of this agreement, the aggrieved party shall give notice thereof to the other party who shall be given 30 days' time to rectify the above. In the event this breach continues beyond this 30-day period, the aggrieved party shall be entitled to recover all costs of damages and other incidental expenses, arising from the breach of the agreement Clause, from the other party.

14. Disputes/Arbitration

In the event of a dispute or a difference of any nature whatsoever between the parties during the course of performance of respective obligations arising out of this Agreement, the parties agree to refer the matter to the Heads of the Institutions to resolve the disputes keeping in view the best interest of the Parties and in keeping with the spirit of performance of this Agreement. If the matter still remains unresolved, then the same may be settled as per the provision of the arbitration and conciliation Act 1996.

15. Jurisdiction

The Parties to this Agreement hereby declare that the Courts in Thiruvananthapuram alone are competent to deal with disputes, if any, arising out of this Agreement.

16. Communication

Any notice, request, demand, approval, consent or other communications provided or permitted hereunder shall be in writing and given by personal delivery or sent by registered post or by ordinary mail, postage prepaid, or by fax addressed to the party for which it is intended at its following address:

Director

Department of Survey and Land Records,

Vazhuthacaud,

Thiruvananthapuram

Government of Kerala.

17. Entire Agreement

Each party acknowledges that it has read this agreement, understands it, and agrees to be bound by its terms and further agrees that it is the complete and exclusive statement of the agreement among the parties.

IN WITNESS WHEREOF, THE DULY AUTHORIZED REPRESENTATIVES OF THE PARTIES SIGNED THIS AGREEMENT AT THE PLACE AND ON THE DAY WRITTEN HEREIN BELOW.

Director,

Department of Survey and Land Records

The MD/ Head, <Successful Bidder org Name>>

For and on behalf of

The Director

Department of Survey and Land Records,

Government of Kerala.

(PARTY OF FIRST PART)

For and on behalf of

<< Successful Bidder Org Name>>

(PARTY OF SECOND PART)

In the presence of Witnesses:

1. ----------

2. ----------

In the presence of Witnesses:

1. ----------

2. ----------

APPENDIX - I Acceptance of Terms & Conditions in the RFP

(On Bidders Letter Head)

To,

The Director
Department of Survey and Land Records
Survey Bhavan
Vazhuthacaud, Thiruvananthapuram
Kerala

Sir,

I have carefully gone through the Terms & Conditions contained in the RFP document [No. .....] for supply, installation, integration and testing of Robotic Total Station, Real Time Kinematic (RTK) device and Tablet PCfor the digital survey including software and accessories. I declare that all the provisions of this RFP/Tender Document are acceptable to my company. I further certify that I am an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)

Printed Name

Designation

Seal

Date:

APPENDIX - J Proposed Functionality Solution Document

The Technical solutions document must contain the following details:

1. Understanding of the project Requirements and functionality requirements.
2. Proposed technical solution architecture. Unpriced BoM. Approach & Methodology for implementation
3. Proposed project execution methodology.
4. Project Management Plan and Post Implementation Support plan (equipment and Software).
5. Issue escalation mechanism and plan during (Implementation and warranty)
6. Manpower handling plan till handover.
7. Details of Training
8. Futuristic readiness of the proposed solution.
9. Documents required for the **APPENDIX- N** Evaluation Criteria's.

APPENDIX - K Performance Bank Guarantee

<Location, Date>

<Name>

<Designation>

<Address>

<Phone Nos.>

<Fax Nos.>

<e-mail id>

Whereas, <<name of the supplier and address>> (hereinafter called "the applicant/supplier") has undertaken, in pursuance of contract no. <<insert contract no.

>> dated << insert date>> for Proposal for Proposal for Selecting System Integrator for Supply, Installation, Configuration, Integration, Acceptance Testing, Commissioning, Training as mentions in the RFP, for Survey and Land Records Department Kerala (hereinafter called "the beneficiary")

And whereas it has been stipulated by in the said contract that the applicant/supplier shall furnish you with a bank guarantee by a recognized Bank for the sum specified therein as security for compliance with its obligations in accordance with the contract;

And whereas we, <<Name of the Bank>> a banking company incorporated and having its head /registered office at <<address of the registered office>> and having one of its office at <<address of the local office>> have agreed to give the supplier such a Bank Guarantee.

Now, therefore, we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of Rs. <<Insert Value>> (Rupees <<insert value in words>> only) and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of Rs. <<Insert Value>> (Rupees <<insert value in words>> only) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the applicant/supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the applicant/supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This Guarantee shall be valid until <<Insert Date>>.

Notwithstanding anything contained herein:

Our liability under this Bank Guarantee shall not exceed Rs<<Insert Value>> (Rupees <<insert value in words>> only).

This Bank Guarantee shall be valid up to <<insert expiry date –8 years and 3 months from the date of supply of last lot of item >>.

It is condition of our liability for payment of the guaranteed amount or any part thereof arising under this Bank Guarantee that we receive a valid written claim or demand for payment under this Bank Guarantee on or before <<insert expiry date>> failing which our liability under the guarantee will automatically cease.

APPENDIX - L - Financial Proposal

(i) BOQ should be filled in the given excel format as per the Bill of material in the e-procurement portal

(ii) Rates shall be inclusive of all taxes in India & including GST if any applicable in India and subject to deduction of Income Tax and other taxes if any in India. Fees quoted will be firm and no escalation will be applicable.

(iii) The successful bidder shall pay all other taxes, duty and like Government impositions arising from this Contract and indemnifies the Director, Department of Survey and Land Records, against same

(iv) The Bidders are directed to quote the price inclusive of taxes & duties, if any.

(iv) Director, Department of Survey and Land Records, Kerala reserves the right not to procure those hardware items quoted by the bidder, due to any reason whatsoever. In that situation, the L1 price will be arrived at, after excluding the price quoted by the bidders for such items.

(v) If the hardware quoted for by the bidder requires any accessories, additional equipment etc., the bidder is expected to quote for such items in the BOQ in detail.

APPENDIX - M Manufacturer's Authorisation Form (MAF)

(To be filled by the OEM and signed by his authorised signatory.)

To

The Director,

Department of Survey and Land Records

Sub: Issue of the Manufacturer's Authorisation Form (MAF)

Ref: RFP Document No: _____ .dated.....

Sir,

We {name and address of the OEM} who are established and reputed original equipment manufacturers (OEMs), country of origin, _____, do hereby authorize {M/s _____} who is our {Distributor/ Channel Partner/ Retailer/ Others <please specify>} to bid, negotiate and conclude the contract with you against the aforementioned tender reference for the following Hardware/ Software manufactured by us: -

{OEM will mention the details of all the proposed product(s) with their make/model}

We undertake to provide OEM Comprehensive Warranty and CAMC (for hardware items)/ Technical Support Services (for software items) for the offered Hardware/ Software/spare parts for a period of 8 years (warranty for 5 years and CAMC for 3 years) from the date of acceptance. If the aforementioned {Distributor/ Channel Partner/ Retailer/ Others <please specify>} fails to provide support for these systems during the above referred operations during warranty period of 5 years and CAMC period 3 years, we as OEM assure to provide support to DSLR.

The products quoted are not "end of life or end of sale products" as on this date. If the OEM support for the product quoted has been stopped/ withdrawn during the tenure of the project, the same shall be replaced with the superior product at no extra cost.

Yours faithfully,
(Authorized Signatory)
Name, Designation & Contact No.:

APPENDIX - N Evaluation Criteria's.

Evaluation Criteria Summary			
	Criteria	Description	Weig htage
1	Relevant Experience	The bidder must provide details on past projects they had undertaken in a similar nature. Different weights will be assigned to different levels of experience based on number of projects, scale of project, status of project and also the type of project	30%
2	Test survey	The bidder must prove the accuracy, speed and effectiveness of the survey equipment in the prescribed field scenario as part of the evaluation process	40%
3	PoC	Bidders should undertake a Proof of Concept (PoC) which consists of physical demonstration of the integrated solutions at Thiruvananthapuram including survey equipment, software integration aspects and its application with respect to the functional requirements specified in the RfP. The output of the field test/demonstration will be treated as binding in this scoring process. The PoC to be adhered with quality (accuracy) and quantity of the survey job in a stipulated time frame with the offered solution as per **Appendix - N**	30%
	Total		100%

APPENDIX - N Evaluation Criteria.

1. Relevant Project Experience.			
Sl. #.	**Sub-Criteria**	**Description**	**Maximum Marks**
1	**No. of projects completed in similar nature by bidder or consortium of bidders**	a) 800 above Number of RTK/ / GNSS / DGPS / Reference Station supplied in the last 5 years = 10 Marks b) 500 to 800 Number of RTK/ / GNSS / DGPS / Reference Station supplied in the last 5 years = 5 Mark c) 200 to 500 Number of RTK/ / GNSS / DGPS / Reference Station supplied in the last 5 years= 2 Marks	30
		a) 1000 above Number of ETS (Manual/Mechanical)/Robotic Total Station supplied in the last 5 years = 10 Marks b) 500 to 1000 Number of ETS (Manual/Mechanical)/Robotic Total Station supplied in the last 5 years = 5 Marks c) 200 to 500 Number of ETS (Manual/Mechanical)/Robotic Total Station supplied in the last 5 years = 2 Marks	

		1. 10 above Number of projects completed in the Supply of mapping software, RTK Rover, ETS, DGPS or similar devices supplied in the last 5 years = 10 Marks OR 10 above mobile mapping software for spatial data processing supplied in the last 5 years = 5 Marks	
Total			**30**

Note:- Bidders have to provide a detailed description to justify all the above points.

2. Test survey			
Sl. No.	**Sub-Criteria**	**Description**	**Maximum Marks**
1	Test survey	In the assigned test field, the vendor must demonstrate the test survey using RTK and Robotic Total Station. The terrain, parcel density and other parameters will be decided by the department. Speed of data acquisition from GNSS, speed of RTK survey, Robotic Total Station observation are counted in the evaluation.	
		RTK Rover - We will identify 20 stations amenable for rover based survey and this test bed is common for all the bidders. Vendor will have to temporarily establish a CORS set up by using RTK rovers. Each point should be observed and resolved in 5 Cm horizontal accuracy within 10 seconds/station.	**20**
		Robotic Total Station - Closed Traverse along with the offset points with a length of 1Km to be proved with minimum closing error. Traverse must be processed in the machine itself.	**20**
Total			**40**

3. Proof of Concept (PoC)			
Sl.No.	**Sub-Criteria**	**Description**	**Maximum Marks**
1	PoC	Bidders should undertake a Proof of Concept (PoC) which consists of physical demonstration of the integrated solutions: 1) Ability to store a single job file for a survey of a large area in geodatabase format in cloud storage and accessing and editing and updating the same simultaneously by multiple devices without duplication of files. 2) Ability to centrally configure and add all the field and office devices, operators in a common domain and control, regulate and monitor access permissions based on roles and functions. 3) Capability to regulate survey output based on 'Float" /"Fixed' solutions of the Relative Positioning Techniques. 4) Ability to define a common workflow centrally and manage the surveying and mapping based on a workflow management system. 5) Ability to access from the cloud and display raster data in the Tablet PC of all the field devices. 6) Generation of report date wise, device wise, and operator wise, location wise etc. 7) QA/QC of RTK and Robotic ETS data on the field mapping component. 8) RTK, Robotic ETS and Tablet PC should comply with the RfP specifications. 9) Field mapping software installed in the Tablet PC must be capable of simultaneous viewing and editing of geo-coordinate points by joining lines and creating polygons in the Tablet PC. 10) Must be capable of textual attribute editing and updation. 11) Integration of field mapping software with test application similar to mentioned in the scope of work. a. Bidder can develop a simple application similar to that of NIC application consisting of some dummy land records so as to demonstrate textual linking of field spatial data with the land records as explained in the system requirements.	30

		b. The PoC to be adhered with quality (accuracy) and quantity of the survey job in a stipulated time frame with the offered solution. It is, however, clarified that, subject to other provisions of this document, every Bidder will have to comply with the minimum technical specifications laid down in the RFP for being qualified technically	
		Total	**30**

APPENDIX – O Location for Supplying Eq ipment

Sl No	Item Description	TVM	KLM	PTA	ALP	KTM	IDK	EKM	TCR	PKD	MLP	KOZ	WAY	KAN	KAS	Total
1	**Robotic Total Station (1 No) with following accessories** Tribrach (1 No) Prism (1 No) Prism pole (1 No.) Battery (2 Nos) Battery charger (1 No) Tripode (1 No) USB stick (1 No) Carrying case for Total Station(1 No) Carrying case for Prism and accessories (1 No) Align key (1 No) Stylus (1 No) Quick guide (1 No).	78	41	41	28	32	45	45	82	49	63	56	28	49	63	700 set

2	**Real Time Kinematic (RTK) rover machine with following accessories** RTK Antenna (1 No) GSM Antenna (1 No) Pole (1 No) Pole Mount accessories for controller (1 set) Battery (4 Nos) Battery charger (1 No) Bipod (1 No) Cable (1 No) Carrying case for RTK rover (1 No) Carrying case for RTK accessories (1 No) Stylus (1 No) Quick guide (1 No).	110	60	60	40	45	65	65	115	70	90	80	40	70	90	1000 set
3	**10" Tablet PC with compatible software** with following accessories and applications	188	101	101	68	77	110	110	197	119	153	136	68	119	153	1700 Nos.

	Android/windows 10 or higher Mobile Device Management Software and Endpoint security Pouch with shoulder strap Basic Rugged Protective Casing and Screen Protector Battery Charger touch pen data cable standard accessories Carry bag															
4	**Robotic Total Station and RTK software solution for the field mapping** (the solution should be capable of real time data synchronization with the central web application for the resurvey management)															

Note - All other items except mentioned above shall be supplied at Directorate of Survey and Land records

The location mentioned in the above table and quantities are tentative only and may subject to changes according to the logistic and management convenience of the department

The quantities of the equipment to be supplied in lots and the numbers will be intimated in each work orders

Address of delivery locations and the contact Person

Sl No	District	Address	Contact Person	Phone No.
1	Thiruvananthapuram (TVM)	Assistant Director Resurvey Office, Survey School ,Ambalamukku Thiruvananthapuram	Assistant Director	0471-2433346
2	Kollam (KLM)	Assistant Director Resurvey Office, Taluk office, Kollam	Assistant Director	0474-2764310
3	Pathanamthitta (PTA)	Assistant Director Survey (Range) Office, Kannankara Junction, Near Jilla Jail, Pathanamthitta.	Assistant Director	0468-2322209
4	Alappuzha (ALP)	Assistant Director Resurvey Office, Mini Civil Station, Near Transport Stand, Chengannur, Alappuzha	Assistant Director	0479-2451554
5	Kottayam (KTM)	Assistant Director Resurvey Office, Near Pallipurathu kavu Temple ,Kodimatha Junction,Kottayam	Assistant Director	0481-2567092
6	Idukki (IDK)	Assistant Director Resurvey Office, Mini Civil Station (New Block) Near Taluk Office ,Thodupuzha , Idukki	Assistant Director	0486-2222254
7	Ernakulam (EKM)	Assistant Director Resurvey Office,Civil Station, Kakkanad,	Assistant Director	0484-2427503

		Thrikkakara, Ernakulam		
8	Thrissur (TSR)	Assistant Director Survey (Range) Office, Shornur Road ,Thiruvambadi P.O Thrissur	Assistant Director	0487-2334459
9	Palakkad (PKD)	Assistant Director Resurvey Office, Opp. Town Railway station	Assistant Director	0491-2527157
10	Malappuram (MLP)	Assistant Director Resurvey Office , Civil Station, Malappuram.-676505	Assistant Director	0483-2732167
11	Kozhikode (KZD)	Assistant Director Survey (Range) Office Civil Station ,B Block,3rd Floor , Malaparamba P.O Kozhikode	Assistant Director	0495-2371554
12	Wayanad (WAY)	Assistant Director Resurvey Office Mini Civil Station , Near Court ,Mananthavady ,Wayanad	Assistant Director	0493-5246993
13	Kannur (KNR)	Assistant Director Resurvey Office, Near Civil Station Kannur -670002	Assistant Director	0497-2700513
14	Kasaragod (KZD)	Re-Survey Assistant Director Office,Civil Station, Kasargod	Assistant Director	0499-4256240

APPENDIX - P Spatial Data Protection Policy

Sub: Guidelines for acquiring and producing Geospatial Data and Geospatial Data Services including Maps

Preamble

Location information is an integral part of the modern digital ecosystem and critical for unlocking economic, social and environmental opportunities for sustainable growth and development of the country. It is critical to the success of modern industry offering location-based services such as e-Commerce, delivery and logistics and urban transport. It is also essential for more traditional sectors of the economy such as agriculture, construction and development and mines and minerals.

Geospatial data which includes location information are data about the natural or man-made, physical or imaginary features whether above the ground or below, boundaries, points of interest, natural phenomena, mobility data, weather patterns, statistical information, etc. There has been immense progress over the years in technology for capture of geospatial data through ground-based survey techniques, photogrammetry using manned/unmanned aerial vehicles, terrestrial vehicle mounted Mobile Mapping System, LIDAR, RADAR Interferometry, satellite-based remote sensing, mobile phone sensors and other techniques.

The Government of India acknowledges that the availability of comprehensive, highly accurate, granular and constantly updated representation of Geospatial Data will significantly benefit diverse sectors of the economy and will significantly boost innovation in the country and greatly enhance the preparedness of the country for emergency response.

Atmanirbhar Bharat

The availability of data and modern mapping technologies to Indian companies is also crucial for achieving India's policy aim of Atmanirbhar Bharat and the vision for a five trillion-dollar economy. India presently relies heavily on foreign resources for mapping technologies and services. Liberalisation of the mapping industry and democratization of existing datasets will spur domestic innovation and enable Indian companies to compete in the global mapping ecosystem by leveraging modern geospatial technologies. Locally available and locally relevant Maps and

Geospatial Data would also help in improved planning and management of resources and better serve the specific needs of the Indian population.

Blue economy in India is another sunrise issue for development experts where Geospatial Data is expected to play a potentially important role. Fisheries, deep sea mining, and offshore oil and gas make up a large section of India's blue economy. The Sagarmala project, launched by the Government of India, is the strategic initiative for port-led development. India will soon launch an ambitious 'Deep Ocean Mission' that envisages exploration of minerals, energy and marine diversity of the underwater world, a vast part of which still remains unexplored.

Bathymetric Geospatial Data would be crucial for attainment of a flourishing and vibrant blue economy for the country and would require active participation of private sector in acquisition and their use apart from traditional agencies like Navy, etc.

With the advent of publicly available geospatial services, a lot of Geospatial Data that used to be in restricted zones are freely and commonly available now and some of the policies/guidelines that used to regulate such information have been rendered obsolete and redundant. What is readily available globally does not need to be regulated.

Definitions:

a. Positional data: Latitude, longitude and elevation/depth of a point or its x, y & z coordinates in the territory of the Republic of India.
b. Attribute data: Any data that when associated with Positional Data gives any additional meaning to it.
c. Geospatial Data: Positional data with or without attribute data tagged, whether in the form of images, videos, vector, voxel and/or raster datasets or any other type of geospatial dataset in digitized or non-digitized form or web-services.
d. Map: Symbolic representation of real-world objects, regions or themes on a given scale which was generally published in paper form but now also available as web-map-service.
e. Geospatial Technology: Any technology including but not limited to Aerial / UAV Photogrammetry, Aerial / UAV LIDAR, drones, Radar Interferometry, street view or by other means of ground survey, satellite- based remote sensing techniques, AI, underwater mapping, and others.
f. Indian Entity: Any Indian citizen, Government entities, Societies registered under

applicable statutes, statutory bodies, Autonomous Institutions of the Government, or any Indian company or Indian LLP owned by resident Indian citizens or any Indian company or Indian LLP controlled by resident Indian citizens (as defined in the Explanation to Rule 23 of the Foreign Exchange Management (Non-Debt Instrument) Rules, 2019).

Liberalisation of acquisition and production of geospatial data and geospatial data services including maps:

Accordingly, the following guidelines on acquiring and producing geospatial data and geospatial data services are issued in supersession of anything to the contrary on the subject issued from time to time by Department of Science and Technology (DST), Ministry of Defense (MoD) and/or any other Department of Government of India vide their various official memoranda and guidelines. The Guidelines issued by DST on Geospatial Data and Maps would be the single point reference on the subject.

i. These guidelines will be applicable to Geospatial Data, Maps, products, solutions and services offered by government agencies, autonomous bodies, academic and research institutions, private organizations, Non- Governmental Organizations and individuals.

ii. (1) Save as specifically provided for under these guidelines, there shall be no requirement for prior approval, security clearance, license or any other restrictions on the collection, generation, preparation, dissemination, storage, publication, updating and/or digitization of Geospatial Data and Maps within the territory of India. Individuals, companies, organizations, and Government agencies, shall be free to process the acquired Geospatial Data, build applications and develop solutions in relation to such data and use such data products, applications, solutions, etc by way of selling, distributing, sharing, swapping, disseminating, publishing, deprecating and destructing. Self-certification will be used to convey adherence to these guidelines.

(2) Nothing contained in these guidelines shall confer on any individual or an entity a right to physical access including through aerial/territorial water route to any establishment, installation or premises to which access is restricted by the Ministry/Department concerned as the owner of such premises.

iii. (a) There shall be a negative list of sensitive attributes that would require regulation

before anyone can acquire and/or use such attribute data. DST will notify this list on its website along with stipulated regulations after consultation with departments concerned.

(b) The negative lists mentioned above will be specific to very sensitive attributes and care would be taken so as to minimize restrictions in order to boost the Ease of Doing Business. The list may be regularly updated as required.

(c) DST will constitute a Geospatial Data Promotion and Development Committee with representations from relevant departments that would decide any issue arising out of finalization of negative attributes lists and the regulations proposed on those attributes. The Committee's mandate will include promotion of activities related to collection, generation, preparation, dissemination, storage, publication, updating and/or digitization of Geospatial Data.

Explanation:

1. There will not be any negative list of prohibited areas.
2. The negative list of attributes will include attributes that shall not be marked on any Map i.e. no person or legal entity shall identify or associate any location on a Map with a prohibited attribute.

iv. (a) For the purposes of these guidelines, the threshold value for:

1. On-site spatial accuracy shall be one meter for horizontal or Planimetry and three meters for vertical or Elevation.
2. Gravity anomaly shall be 1 milli-gal.
3. Vertical accuracy of Bathymetric data in Territorial Waters shall be 10 meters for up to 500 meters from the shore-line and 100 meters beyond that.

(b) For the attributes in the negative list, different threshold values as well as regulations as warranted can be laid down. The thresholds shall be regularly reviewed and amended as necessary by DST.

v. Indian Entities, whether in Government or outside, will be free to acquire, collect, generate, prepare, disseminate, store, share, publish, distribute, update, digitize and/or

create Geospatial Data, including Maps, of any spatial accuracy within the territory of India including underwater within its territorial waters by using any Geospatial Technology, subject to regulations on attributes in the negative lists.

vi. (a) Ground truthing/verification, access to Indian ground stations and augmentation services for real time positioning (Continuously Operating Reference Stations (CORS), etc) and their data shall be made available without any restrictions and with the ease of access to Indian Entities only.

(b) Terrestrial Mobile Mapping survey, Street View survey and surveying in Indian territorial waters shall be permitted only for Indian Entities irrespective of accuracy.

vii. Maps/Geospatial Data of spatial accuracy/value finer than the threshold value can only be created and/or owned by Indian Entities and must be stored and processed in India.

viii. Foreign companies and foreign owned or controlled Indian companies can license from Indian Entities digital Maps/Geospatial Data of spatial accuracy/value finer than the threshold value only for the purpose of serving their customers in India. Access to such Maps/Geospatial Data shall only be made available through APIs that do not allow Maps/Geospatial Data to pass through Licensee Company or its servers. Re-use or resale of such map data by licensees shall be prohibited.

ix. Digital Maps/Geospatial Data of spatial accuracy/value up to the threshold value can be uploaded to the cloud but those with accuracy finer than the threshold value shall only be stored and processed on a domestic cloud or on servers physically located within territory of India.

x. There shall be no restriction on export of Maps/Geospatial Data of spatial accuracy/value up to the threshold value except for attributes in the negative lists. The Department of Revenue, Government of India will make necessary amendments in GSR in this regard.

xi. All Geospatial Data produced using public funds, except the classified geospatial data collected by security/law enforcement agencies, shall be made easily accessible for

scientific, economic and developmental purposes to all Indian Entities and without any restrictions on their use. Such access shall be given free of any charges to Government agencies and at fair and transparent pricing to others. For attributes in the negative lists, appropriate regulations will be laid down separately. The Government of India shall encourage crowdsourcing efforts to build Maps by allocating public funds towards these efforts as appropriate.

xii. xi. The Survey of India (SoI) and other government agencies producing or owning Maps and Geospatial Data, shall take immediate measures to simplify procedures, revise/abolish various forms/licenses and use modern techniques such as cloud, open APIs and others to make its data accessible online in a useful format.

xiii. xi. For political Maps of India of any scale including national, state and other boundaries, SoI published maps or SoI digital boundary data are the standard to be used, which shall be made easily downloadable for free and their digital display and printing shall be permissible. Others may publish such maps that adhere to these standards.

xiv. All citizens, companies, and organizations including Government agencies, producing Geospatial Data and information shall be encouraged to collaborate in mutually beneficial manner and work towards open-linked Geospatial Data. Government agencies will make all efforts to collaborate for acquiring Geospatial Data.

xv. Any violation of these guidelines will be dealt with under the applicable laws.

****

APPENDIX -Q Server Requirement

Server Type	Count	Core (per Server)	RAM (GB per Server)	Disk Space (per Server)	San Storage Space (per Server)	OS	Application	Remarks
Application Server								
Database Server								
Cache								
NFS								
Data Backup								
Firewall								

Sambad.

SEERAM SAMBASIVA RAO IAS
Director of Survey & Land Records
Govt. of Kerala