

#### WADIA INSTITUTE OF HIMALAYAN GEOLOGY (An Autonomous Institution of Department of Science & Technology Government of India) 33, GENERAL MAHADEO SINGH ROAD, DEHRA DUN- 248001 (INDIA)

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### OPEN TENDER DOCUMENT TECHNICAL BID DUE TO OPEN ON:-28 -01-2021

No S-2/215-P(CGDAS)WIHG 2020-21

Dated: 28-12-2020

Sub: INVITATION OF TENDER

Dear Sirs,

We intend to purchase '(Campaign GNSS Data Acquisition System with Geodetic Base and RTK Rovers ) as per the details/specifications (Annexure-1).. You are requested to submit your sealed tender/guotation/s along with Compliance statement (Annexure-2) and technical leaflets /Brochures for the same on your own letterhead. Bids without Compliance statement and technical leaflets / Brochure will summarily be rejected .-

SI. No	Description of Items	Quantity
1	Campaign GNSS Data Acquisition System with Geodetic Base and RTK Rovers .Specifications are given in Annexure –1	05Nos

#### TERMS AND CONDITIONS

- Detailed terms &conditions of supply MUST be mentioned in your offer.
- 2 On site comprehensive warranty for a period of twelve months for the base and Rover units against any malfunctioning from the date of Satisfactory installation commissioning and final acceptance of supply MUST be available on the offered system. The warranty clause on these lines MUST be clearly mentioned on both technical and commercial bids. Offers with other warranty clauses will not be considered. After sales service facilities in India should also be available. Details of warranty/guarantee and the after-sales service facilities available in India must be specifically mentioned in your offer, failing which the offer is liable to be rejected.
- 3 The sealed tenders/quotations/offers are to be submitted in two parts as under:-The technical and commercial bids should be submitted on your own letterhead in separate Sealed envelopes. Your technical bid should be submitted in one of the sealed Covers super scribed" Campaign GNSS Data Acquisition System with Geodetic Base and RTK Rovers" due to open on 28-01-2021 the other sealed envelope should contain your commercial bid and Should be super scribed "Campaign GNSS Data Acquisition System with Geodetic Base and RTK Rovers" both these sealed envelopes should be submitted in a third sealed cover super scribed "Campaign GNSS Data Acquisition System with Geodetic Base and RTK Rovers" due to open on 28-01-2021

Continued on page -2

The undermentioned documents/details MUST be submitted with your technical offer

- a) Relevant Technical Literature
- b) Details of training and after-sales-service facilities available.
- c) Details of warranty (elaborative as per term No. '2').
- d) Details of users and copies of the user certificates of the proposed model/make of "Campaign GNSS Data Acquisition System with Geodetic Base and RTK Rovers"
- e) Details of para-wise/item wise compliance statement (Annexure-2)
- For Indigenous Indian supply rates, MUST be for delivery on F.O.R. Dehra Dun basis. Only GST@ 5% as applicable, will be paid extra by us.( Against Certificate issued by the head of the institution) You may take note of Govt Notification No47/201Integrated Tax (rate) dated14th November 2017
- Being a Research & Development Institution, we are exempted from payment of excise duty and are entitled for payment of basic custom duty on concessional rates. Therefore, suppliers are advised to quote their rates accordingly.
- 6. Earnest Money Deposit:
- (i) For Indigenous Original Equipment Manufacturer or Their Authorized Dealer -: Notwithstanding anything contained in rule 171 of GFRs 2017 or any other rule or any provision contained in "Procurement Manuals", no provision regarding bid security is being kept with this bid document. However, the bidders are required to submit Bid Security Declaration as notified by Procurement policy, Department of Expenditure, Ministry of Finance, Government of India vide there Office Memorandum no. F.9/4/2020-PPO dated 12-11-2020. (A copy of the Format is enclosed as annexure-3)
- ii) For Overseas Original Equipment Manufacturer or Their Authorized Dealer-: The bid should be accompanied by FDR /Bank Guarantee towards earnest money for an amount of Rs 70,000(Rupees Seventy Thousand only) or its equivalent foreign currency. The EMD MUST be submitted with the Technical bid in the shape FDR/Bank Guarantee in the name of the Director, Wadia Institute of Himalayan Geology, Dehradun (India), failing which the offer will not be considered. The Bank Guarantee shall remain in force up to and including forty five (45) days after the bid validity.
- For Indigenous supply:- 100% payment will be made after satisfactory installation commissioning and final acceptance of supply
- 8. 100% payment to overseas suppliers will be made by us through wire/Telegraphic Transfer. However, 80% payment will be released on receipt of consignment and the balance 20% payment will be released after satisfactory installation/commissioning and acceptance of supply.
- 9. Commercial offer from overseas manufacturers/suppliers MUST be submitted on the following lines and must be for supply on f.o.b. basis:
- (a) Ex-works cost.
- (b) (-) Less Indian Agent's Commission, if any, payable in Indian currency after satisfactory Installation and acceptance of supply.
- (c) Net ex-works cost.
- (d) f.o.b. charges up to international airport of dispatch in supplier's countries
- (e) Net f.o.b. cost
- 10. Installation of the equipment will be done at Wadia Instittue of Himalayan Geology, Dehradun .In case Operational training is required training charges (if any) should be mentioned separately in the offer, failing which the offered rates will be treated as inclusive of training charges. Installation and training clauses MUST be clearly mentioned in your offer (both in technical and commercial bids).
- 11. Delivery period required by you MUST be clearly mentioned in your offer.

- Your offer MUST be valid for a minimum period of **one hundred twenty days** from the date of opening of technical bids and validity period MUST be mentioned in your offer. Air-freight charges on imported consignment will be paid by us in India in Indian currency. Insurance of the imported consignment will also be arranged by us.
- 13. Your offer must reach us by 13.00 hrs. on **28-01-2021**. In their own interest, the tenderers must ensure that their tender reaches us in time. Tender will be opened at 15.00 hrs. on the same day. Late tenders or delayed tenders will not be considered. In case the due date happens to be a closed day because of any of the reasons, tenders will be opened at 3 p.m. the next working day.
- In case Indian Agents submit offer on behalf of their overseas principals, proper Authorization certificate from the principals on their (Principals) letterhead MUST be Submitted in original with the technical bid, **failing which the offer will not be considered**.
- 15. Security Deposit: The tenderer will have to submit security deposit @3% of order value .In the Shape of FDR/Bank Guarantee till the completion of warranty period
- Risk Purchase Clause: If the supplier fails to supply the goods in correct quality and quantity within the stipulated delivery period, liquidated damages @1% per week for a maximum period of ten weeks will be deducted from the balance payment of the supplier. If the ordered materials are not supplied even after the delay of said period of ten weeks, termination/cancellation of the order will be considered and in such a situation, the purchaser will have the right to forfeit the security deposit of the tenderer and procure the material(s) or services from elsewhere upon such terms and in such manner as it deems appropriate and the supplier shall be liable to pay the purchaser for any excess costs for such similar goods or services.
- 17. Résolution of Disputes: All disagréements, disputes, différence that may arise between Wadia Institute of Himalayan Géology and your firm/agency which cannot be resolved through mutual négociations shall be referred to an Arbitrator appointed in Accordance with the provisions of relevant Indian or International Law as the case may be. The venue of the proceedings and arbitration shall be Dehradun, INDIA.
- Amendement(s) in the tender documents required if any, will be made availabel in our Web site and accordingly, the prospective bidders are required to keep themseleves updated till four days of tender opening.
- 19 The Director, Wadia Institute of Himalayan Geology, Dehra Dun (India) reserves the right to reject any or all tenders in public interest without assigning any reason.

Yours faithfully,

(M.K Biswas)

Store & Purchase Officer, for Director

## ANNEXURE-I

# TECHNICAL SPECIFICATIONS FOR CAMPAIGN GNSS DATA ACQUISITION SYSTEM WITH GEODETIC BASE AND RTK ROVERS

Sr. No.	Technical Parameters
1.	General: GNSS Receiver with external geodetic antenna for base station (Quantity-2 observations and seamless RTK connectivity with GNSS class multi-frequency RTK rove (Quantity-3) of high number of channels. Base Receiver must be capable of tracking 50 satellite with multiple signals per satellite simultaneously. There must be continues remote connectivity of the rover with the base for the RTK correction under field conditions in Himalaya.
2.	Geodetic class Base station specifications: (Quantity-2)  Multiple frequency, 600+ channel GNSS receiver supporting the following simultaneous signification tracking Compatibility with all current and planned GNSS constellations, including GPS GLONASS, Galileo, Beidou, and IRNSS: GPS: L1 C/A, L2E (L2P), L2C, L5  GLONASS: L1 C/A2 and unencrypted P-code, L2 C/A and unencrypted P code, L3 CDMA Galileo: E1, E5A, E5B & E5AltBOC, E6  BeiDou: B1, B2, B3  QZSS: L1 C/A, L1C, L1S, L1S, L2C, L5, LEX/L64  IRNSS: L5, S-Band  SBAS: L1 C/A (EGNOS/MSAS), L1 C/A and L5 (WAAS)
	L-Band
3.	Receiver must be capable of tracking all satellites in view, even if unhealthy, to even low elevation
	angle.
4.	L1, L2 SNR in dB Hz referenced to a 1 Hz (or better)
5.	POSITIONING PERFORMANCE
	Differential Positioning
	Code differential GNSS positioning
	Horizontal
	Vertical
	SBAS differential positioning accuracy
	Horizontal 0.50 m RMS
	Vertical0.85 m RMS
	Static GNSS Surveying
	High Accuracy Static
	Horizontal3 mm + 0.1 ppm RMS
	Vertical
	Static & Fast Static
	Horizontal
	Vertical
	Real Time Kinematic Surveying
	Single Baseline ~ < 30km
	Horizontal8 mm + 1 ppm RMS
	Vertical
	Networked RTK
	Horizontal
	Vertical
	Initialization time typically <10 seconds
1196	Initialization reliabilitytypically >99.9%
6.	The offered receiver should have monitor system to detect and reject degraded signals to improve
	position quality. Should have anti-spoofing security



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7.	Receiver must support the ability to enable/disable code and carrier multipath rejection technology
	using a serial/IP command.
	The receiver shall support real time kinematic positioning using industry standard formats.
	The receiver shall support onboard worldwide, real-time, precise positioning, via Internet Protocol
	(IP) and L-Band satellite delivery. This allows for absolute positioning globally without the
	requirement of additional base station hardware
8.	The offered receiver shall offer a minimum of two power inputs supporting both AC and DC
	operation with a minimum input power range of 10-28VDC. The receiver should be capable to
	receive power from external 12V, 100 Ah SMF batteries connected with solar charge controller
	and solar panels under standalone conditions in the field.
	The offered receiver shall support Power over Ethernet (PoE 802.3af) as a means of powering the
	receiver. The offered receiver shall have power consumption less than around 5W while tracking
	satellites.
9.	Power on and Power off voltages must be user configurable.
	The offered receiver should have the tracking capabilities up to 100HZ
	The receiver should have Spectrum Analyzer to troubleshoot GNSS Jamming.
	The receiver should have built in Wifi Access Point and Client Mode.
	The receiver should have Dual hot-swappable Li-ION batteries better than 12 hours of continuous
	operation.
10.	The receiver must automatically restart after loss of power and must power up in the same
	configuration when powered down (or loss of power).
	The receiver must have a front panel display and a physical keyboard to allow the basic receiver
	configuration on site without the need of any other device (ie: IP configuration, data logging,
	coordinates set-up).
11.	The receiver front panel display must be capable of being turned off to preserve power.
	The receiver shall offer an automatic shutdown and wakeup routine to allow the receiver to power
	down when not needed, and wake up at a predetermined time and continue the configured activity.
	Support of Maximum logging rates 100Hz. File durations 1 min to continues.
12.	Must contain embedded (non-removable) solid state memory with up to 24 GB of logging space.
	The embedded memory will help to maintain operation and logging during high motion events
	such as earthquakes.
	In addition to the internal embedded memory, the receiver must have a source of removable media
	supporting up to 1TB of logging space.
	Must support a minimum of 10 or better independent and concurrent logging sessions.
13.	Internally logged data shall have a optimal file size.
	Must be capable of producing both RINEX and BINEX file formats internal to the receiver without
	the need for external tools/converters.
	Must be capable of pushing logged and converted data files to separate FTP servers.
14.	Must be capable of sending logged and converted data files via email.
	Receiver must support both a configurable ring buffer style memory deletion scheme.
	Additionally, data must be able to be protected from being overwritten in the case of an event.
	Receiver must support the configurable input, output and logging of Met/Tilt measurements.
15.	The receiver must have an integrated RJ45 connector (supporting both TCP/IP and UDP), two
	serial ports, USB, and an external frequency input.
	Should have unique TCP/IP ports. Unique magning and It's TOP IP
	Should have unique TCP/IP ports. Unique meaning one multicast TCP/IP port (allows multiple connections) only counts as 1 TCP/IP port. Each part was 1 to 6 lb.
	connections) only counts as 1 TCP/IP port. Each port must be fully configurable independent of the other ports and outputs.
	In addition to this the receiver shall support NTRIP Caster, NTRIP Client, and NTRIP Server ports



		Receiver must support data streaming on at least 10 TCP/IP ports supporting typically 50 connections.
		NTP Client and NTP Server functionality.
	16.	Receiver must support IP filtering restricting IP packet access to and from the receiver for enhanced access control security based on individual IP addresses or subnets based on a user specified
		neunask.
		A USB port supporting both Device and Host mode operation.
1		The receiver must support multiple Bluetooth connections.
-	10	The receiver must support FTP downloads as well as the FTP REST command.
	17.	The receiver must support the following streaming data types: CMR CMR+ CRMy PTCM v2 v
		RICM v3.x, BINEX, and NMEA. Proprietary message types will be considered in addition to
-	10	(not in replace of) the afore mentioned formats.
	18.	The offered receiver shall be capable of monitoring its own absolute position to centimeter level
		accuracy and alerting via both graphical and email mean of any detected change in antenna
		position. The tolerance at which to send alerts shall be user configurable depending upon the
		solution type in use. When this tolerance is exceeded, the receiver must be able to automatically
ı		stop sending correction data until the antenna moves back within tolerance
		The receiver shall support email alerts for various functions such as tracking, power, reboots,
		logging, status, etc. The base station receiver should capable to push real time position corrections
		to the rover units within ~ 30 km via network mobile towers using installable sim cards through
		tatest centular modern transmission technology. Radio based RTK corrections are also required for
F	19.	short range corrections.
	17.	The receiver shall support dynamic domain name system.
		Receiver must implement a secure network connection (secure means via an encrypted,
		authenticated session) as well as provide various access levels to the receiver controls
-	20.	The offered receiver shall weight no more than roughly 2.5 kg with an internal battery installed.
	20.	The official receiver must support basic field configuration (setting of reference station according to
		antenna types, start/stop logging sessions, set output streams) without the use of additional side
		such as data collectors, computers, PDA type devices, or similar devices/technologies. This should
-	21.	be accomplished via a multi-line display with sufficient buttons to facilitate such configuration
	41.	Receiver must meet the following environmental specification:
		Operating temperature: -40° C - + 65° C, Humidity: 100%, fully sealed with IP68 certification,
-	22.	Shock: ~ Im drop to hard surface.
	-2.	Geodetic class GNSS Antenna capable for multi-frequency tracking from various constellations
		Company of the San Alberta Company of the San Al
		Geodetic antenna tracking GPS, Glonass, Galileo, Beidou, SBAS, L-Band,
		Technology that minimizes multi-path interference.
		Sub-millimeter level phase center stability and repeatability  Antenna gain 50dB ±2dB
		Supply current around 125 mA maximum
		Supply current around 125 mA maximum
		LNA signal margin, Low elevation tracking
		Absolute calibration file from IGS must be available.
		Powered by receiver (supply voltage around 3.5 to 20VDC)
		Antenna shall operate in humidity, high winds, s and storm and blowing rain
		remperature range is -40°C to +85°C
		Humidity up to 100, fully sealed



S. No.	Itam Dagani	mai nu	ON GNSS ROVER (Quantity-3)
1	Item Descri		Parameters
P.	GNSS Ante	nna	Fully independent GNSS satellites tracking systems communication Bluetooth & Wi-Fi with Integrated GNSS system
2	Satellite Sign	nals Tracking and Recording	GPS L1, L2, L5 GLONASS L1, L2, L3 IRNSS L5 Beidou B1, B2, Galileo E1, E5A, E5B QZSS L-Band
3.	SBAS Corre	ctions	GAGAN
4	No. of Chann	nels	600 or more
5	Data Loggin	Rate	20 Hz or better
6	High Static	Horizontal	3mm+0.1ppm RMS
	Accuracy	Vertical	3.5mm+0.4ppm RMS
7	RTK	Horizontal	8mm+1ppm RMS
	Accuracy	Vertical	15mm+1ppm RMS
8	Initialization	A STATE OF THE STA	
9	Receiver Me	A CONTRACTOR OF THE PROPERTY O	Typically < 8 Seconds
*	Receiver ivie	mory	Memory 4 GB Internal & 32 GB External through
10	Display		memory Card
11	Temperature	Operating	Integrated graphical LED Display
12	Temperature	<u> </u>	-30 °C to +65 °C
14	Humidity	Storage	-40 °C to +75 °C
11	Ingress Prote		100%, Condensing
12			IP67
200	Communicat	ion	1 Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.
13	RTK Mode	2	Receiver Inbuilt GSM/GPRS & Inbuilt Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.
14	Data format		NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+
15	Battery backt	ip	8-10 hrs. Li-ion Hot Swappable battery, should also have the provision to connect with external 12V, SMF batteries for powering the device.
16	Controller	Keypad	Full alphanumeric hard keypad
		Operating System	Window 10
		Display	More than 5" Multi Touch screen
		Inbuilt Sensors	GNSS & Accelerometer
		Communication	Bluetooth, WiFi, USB, Integrated speaker



		Memory	Processor: Intel Quad Core, RAM: 8GB, Memory:64 GB internal/external
		Ingress Protection	IP 68 or Better
		Operating Temperature	−20 °C to +60 °C
		Storage Temperature	-40 °C to +70 °C
		Battery	Dual Hot Swappable Inbuilt Battery, Should have necessary cables to connect with the rover for powering and data transfer.
17	Controller So	ftware	Static, Fast Static, RTK., line, polygon, area calculation, satellite view, PDOP, HDOP etc.
			Graphical Stake Out
			Feature Coding
			Active Background maps inform of JPEG/TIFF, DXF/DWG
			Import Export to industry standard formats like CSV, DXF, KML etc
			COGO Functionality
			Calculation of transformation parameters from point list.
18	Post processin	ng Software	Processing of raw data of L1, L2 & L5. The software should be loaded with two standard field laptops (1 TB storage and RAM of minimum 8 GB, both are expandable) and also provide it in storage media with proper license or key.
			Import & Export to RINEX Formats
			Import Export to industry standard formats
			Feature coding and automatic drafting. Layer Management.
			Report Generation
			Coordinate System Manager
			Baseline processing
			Feature to process static data of single point for control

The base and the rover systems supplied by the vendor should function in synchronized mode without having any connectivity issues to transfer the position correction of the rovers from the base. All necessary cables and connectors must be provided along with all units for their smooth interoperability and functioning.

The list of items and their names mentioned in the technical data sheet or compliance sheet must match with their items list mentioned in the financial quote. The cost of optional items must be mentioned below as separate in the financial quote. The vendors should provide complete technical data sheets, brochures or pamphlets to support their technical compliance claim. Any technical correspondence with the supplier/vendors should not be entertained once the financial bid is open. Such acts may lead to disqualification of the bid. The base, the rover, the controller, the software and its accessories are considered as one supplying or purchasable unit and hence should not be taken by parts from different vendors.

On-site comprehensive warranty of minimum one year for the base and rover units.

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## ANNEXURE-II (Compliance Statement)

## TECHNICAL SPECIFICATIONS FOR CAMPAIGN GNSS DATA ACQUISITION SYSTEM WITH GEODETIC BASE AND RTK ROVERS

Sr. No.	Technical Parameters	Compliance	Remarks
1.	General: GNSS Receiver with external geodetic antenna for base station (Quantity-2) observations and seamless RTK connectivity with GNSS class multi-frequency RTK rovers (Quantity-3) of high number of channels. Base Receiver must be capable of tracking 50 satellites with multiple signals per satellite simultaneously. There must be continues remote connectivity of the rover with the base for the RTK correction under field conditions in Himalaya.		× ·
2,	Geodetic class Base station specifications: (Quantity-2) Multiple frequency, 600+ channel GNSS receiver supporting the following simultaneous signal tracking Compatibility with all current and planned GNSS constellations, including GPS, GLONASS, Galileo, Beidou, and IRNSS: GPS: L1 C/A, L2E (L2P), L2C, L5 GLONASS: L1 C/A2 and unencrypted P-code, L2 C/A and unencrypted P code, L3 CDMA Galileo: E1, E5A, E5B & E5AltBOC, E6 BeiDou: B1, B2, B3 QZSS: L1 C/A, L1C, L1S, L1S, L2C, L5, LEX/L64 IRNSS: L5, S-Band SBAS: L1 C/A (EGNOS/MSAS), L1 C/A and L5 (WAAS) L-Band		
3.	Receiver must be capable of tracking all satellites in view, even if unhealthy, to even low elevation angle.		110
4.	L1, L2 SNR in dB Hz referenced to a 1 Hz (or better)		4
5.	POSITIONING PERFORMANCE		
	Differential Positioning Code differential GNSS positioning Horizontal		
6.	The offered receiver should have monitor system to detect and reject degraded signals to improve position quality. Should have anti-spoofing security.		



7.	Receiver must support the ability to enable/disable code		
7.	and carrier multipath rejection technology using a serial/IP		
	command.		
	The receiver shall support real time kinematic positioning		
	using industry standard formats.		
	The receiver shall support onboard worldwide, real-time,		
	precise positioning, via Internet Protocol (IP) and L-Band		
	satellite delivery. This allows for absolute positioning		
	globally without the requirement of additional base station hardware		
8.			
0.	The offered receiver shall offer a minimum of two power		
	inputs supporting both AC and DC operation with a		
	minimum input power range of 10-28VDC. The receiver		
	should be capable to receive power from external 12V, 100		
	Ah SMF batteries connected with solar charge controller		
	and solar panels under standalone conditions in the field.		
	The offered receiver shall support Power over Ethernet		
	(PoE 802.3af) as a means of powering the receiver. The		
	offered receiver shall have power consumption less than	11	
	around 5W while tracking satellites.		
9.	Power on and Power off voltages must be user		
	configurable.		
	The offered receiver should have the tracking capabilities		
	up to 100HZ		
	The receiver should have Spectrum Analyzer to		
	troubleshoot GNSS Jamming.		
	The receiver should have built in Wifi Access Point and		
	Client Mode.		
	The receiver should have Dual hot-swappable Li-ION		
	batteries better than 12 hours of continuous operation.		
10.	The receiver must automatically restart after loss of power		
	and must power up in the same configuration when		
	powered down (or loss of power).		8
	The receiver must have a front panel display and a physical		
	keyboard to allow the basic receiver configuration on site		
	without the need of any other device (ie: IP configuration,		
	data logging, coordinates set-up).		
11.	The receiver front panel display must be capable of being		
	turned off to preserve power.		
	The receiver shall offer an automatic shutdown and wakeup		
	routine to allow the receiver to power down when not		
	needed, and wake up at a predetermined time and continue		
	the configured activity.		
	Support of Maximum logging rates 100Hz. File durations 1		
	min to continues.		
12.	Must contain embedded (non-removable) solid state		
	memory with up to 24 GB of logging space. The		
	embedded memory will help to maintain operation and		
	logging during high motion events such as earthquakes.		
	In addition to the internal embedded memory, the receiver		
	must have a source of removable media supporting up to		
	1TB of logging space.		
	Must support a minimum of 10 or better independent and		3
	concurrent logging sessions.		
13.	Internally logged data shall have a optimal file size.		
	Must be capable of producing both RINEX and BINEX file		
	formats internal to the receiver without the need for		
	external tools/converters.		



	Must be capable of pushing logged and converted data files		
	to separate FTP servers.		
14.	Must be capable of sending logged and converted data files via email.		
	Receiver must support both a configurable ring buffer style memory deletion scheme. Additionally, data must be able		
	to be protected from being overwritten in the case of an event.		
	Receiver must support the configurable input, output and		
16	logging of Met/Tilt measurements.	ACT   1	
15.	The receiver must have an integrated RJ45 connector (supporting both TCP/IP and UDP), two serial ports, USB,		
	and an external frequency input.		
	Should have unique TCP/IP ports. Unique meaning one		
	multicast TCP/IP port (allows multiple connections) only counts as 1 TCP/IP port. Each port must be fully		
	configurable independent of the other ports and outputs.		
	In addition to this the receiver shall support NTRIP Caster, NTRIP Client, and NTRIP Server ports		
	Receiver must support data streaming on at least 10 TCP/IP		
	ports supporting typically 50 connections.		
16.	NTP Client and NTP Server functionality.  Receiver must support IP filtering restricting IP packet		
G(A)C	access to and from the receiver for enhanced access control		
	security based on individual IP addresses or subnets based		
	on a user specified netmask.  A USB port supporting both Device and Host mode		
	operation.		
	The receiver must support multiple Bluetooth connections.		
	The receiver must support FTP downloads as well as the FTP REST command.		
17.	The receiver must support the following streaming data		
	types: CMR, CMR+, CRMx, RTCM v2.x, RTCM v3.x, BINEX, and NMEA. Proprietary message types will be		
	considered in addition to (not in replace of) the afore		8
1.0	mentioned formats.		
18.	The offered receiver shall be capable of monitoring its own absolute position to centimeter level accuracy and alerting		
	via both graphical and email mean of any detected change		
	in antenna position. The tolerance at which to send alerts		
	shall be user configurable depending upon the solution type in use. When this tolerance is exceeded, the receiver must		
	be able to automatically stop sending correction data until		
	the antenna moves back within tolerance		
	The receiver shall support email alerts for various functions such as tracking, power, reboots, logging, status, etc. The		
	base station receiver should capable to push real time		
	position corrections to the rover units within ~30 km via network mobile towers using installable sim cards through		
	latest cellular modern transmission technology, Radio		
	based RTK corrections are also required for short range		
19.	corrections.		
*(8/41)	The receiver shall support dynamic domain name system.  Receiver must implement a secure network connection		
	(secure means via an encrypted, authenticated session) as		
	well as provide various access levels to the receiver controls.		
59	The offered receiver shall weight no more than roughly 2.5		
	kg with an internal battery installed.		



20.	The offered receiver must support basic field configuration (setting of reference station coordinate, antenna types, start/stop logging sessions, set output streams) without the use of additional aids such as data collectors, computers, PDA type devices, or similar devices/technologies. This should be accomplished via a multi-line display with sufficient buttons to facilitate such configuration.	
21.	Receiver must meet the following environmental specification:  Operating temperature: -40° C - + 65° C, Humidity: 100%, fully sealed with IP68 certification, Shock: 1m drop to hard surface.	
22.	Geodetic class GNSS Antenna capable for multi- frequency tracking from various constellations Geodetic antenna tracking GPS, Glonass, Galileo, Beidou, SBAS, L-Band, Technology that minimizes multi-path interference.	
	Sub-millimeter level phase center stability and repeatability  Antenna gain 50dB ±2dB  Supply current around 125 mA maximum	
	LNA signal margin, Low elevation tracking Absolute calibration file from IGS must be available.	
	Powered by receiver (supply voltage around 3.5 to 20VDC) Antenna shall operate in humidity, high winds, s and storm	
	and blowing rain Temperature range is -40°C to +85°C	
	Humidity up to 100, fully sealed	
	Shock rating ~I m drop	
	Available with external / inbuilt radome	

S. No.	Item Description		Parameters	
1	GNSS Antenna		Fully independent GNSS satellites tracking systems, communication Bluetooth & Wi-Fi with Integrated GNSS system	
2	Satellite Signals Tr Recording	acking and	GPS L1, L2, L5 GLONASS L1, L2, L3 IRNSS L5 Beidou B1, B2, Galileo E1, E5A, E5B QZSS L-Band	
3.	SBAS Corrections	12	GAGAN	
4	No. of Channels		600 or more	
5	Data Logging Rate	A CONTRACTOR OF THE CONTRACTOR	20 Hz or better	
6	High Static	Horizontal	3mm+0.1ppm RMS	
	Accuracy	Vertical	3.5mm+0.4ppm RMS	
7	RTK Accuracy	Horizontal	8mm+1ppm RMS	
		Vertical	15mm+1ppm RMS	



	AN LABOR	Keypad	8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V, SMF batteries for powering the device	t e		Controller  Keypad  8-10 hrs. Li-ion Hot Swappable battery, should also have the
	AN LABOR	Keypad	8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V, SMF batteries for powering the device	t e		Controller  Keypad  8-10 hrs. Li-ion Hot Swappable battery, should also have the
	AN LABOR	Keypad	8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V, SMF batteries for powering the device	t e		Controller  Keypad  8-10 hrs. Li-ion Hot Swappable battery, should also have the
	AN LABOR	Keypad	8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V. SMF batteries for powering the device	t e		Controller  Keypad  8-10 hrs. Li-ion Hot Swappable battery, should also have the
	AN LABOR	Keypad	8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V. SMF batteries for powering the device	t e		Controller  Keypad  8-10 hrs. Li-ion Hot Swappable battery, should also have the
	AN LABOR	Keypad	8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V. SMF batteries for powering the device	t e		Controller  Keypad  8-10 hrs. Li-ion Hot Swappable battery, should also have the
	AN LABOR	Keypad	Swappable battery should also have to provision to connewith external 12V, SMF batteries for powering the device.	e		Controller Keypad Swappable battery, should also have the
5 Con	ontroller	Keypad	should also have t provision to conne with external 12V SMF batteries for powering the device	e		should also have the
Col	ontroller	Keypad	should also have t provision to conne with external 12V SMF batteries for powering the device	e		should also have the
		22-7 Pma	provision to conne with external 12V SMF batteries for powering the device	e t		should also have the
			provision to conne with external 12V SMF batteries for powering the device	t		
			with external 12V, SMF batteries for powering the device	T		provision to a service.
			with external 12V, SMF batteries for powering the device			provision to connect
			SMF batteries for powering the device			THE VISION OF THE PROPERTY OF
			SMF batteries for powering the device			provision to connect
			powering the device			with overaged 1007
			powering the device			with external 12V,
			powering the device			with external 12V.
			D 31	5.		with external 12V, SMF batteries for
			TANK I WITCH STREET STREET, ST	4		with external 12V, SMF batteries for
			Full alphanumeric			with external 12V, SMF batteries for powering the device.
						with external 12V, SMF batteries for powering the device.
			hard keypad			with external 12V, SMF batteries for powering the device. Full alphanumeric
		Operating				with external 12V, SMF batteries for powering the device. Full alphanumeric
			Windows 10			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad
		System	17 (47) (18 (18 (18 (18 (18 (18 (18 (18 (18 (18			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating  Windows 10
						with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating  Windows 10
		Display	More than 5" Mult			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System Windows 10
		Display				with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System Windows 10
						with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Windows 10
		Inbuilt Const				with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  Windows 10  More than 5" Multi
		Inbuilt Sensors				with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen
						with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen
			Accelerometer			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS &
		Communication	Dlass	la constitution of the con		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS &
		Communication	Bluetooth, WiFi			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer
		minimization	bructooth, WiFi,			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer
			USB Integrated			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer
		III.	USB, Integrated			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi,
			annula mitegrated			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi,
			speaker			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi,
			speaker			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated
		Mama				with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated
		Memory				with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker
		Memory	Processor: Intel On			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker
			Trocessor: Intel Qu			with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker
		16	Core	1		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker
			Core,	d		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker  Memory  Processor: Intel Quad
				d		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker  Memory  Processor: Intel Quad
				d		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker  Memory  Processor: Intel Quad
			IX A IVI XI CD	d		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker  Memory  Processor: Intel Quad Core,
			LULIVI. OUID.	d		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker  Memory  Processor: Intel Quad Core,
				d		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker  Memory  Processor: Intel Quad Core, RAM: 8GB,
				d		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker  Memory  Processor: Intel Quad Core, RAM: 8GB,
			Memory:64 GB	d		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker  Memory  Processor: Intel Quad Core, RAM: 8GB, Memory:64 GB
		The state of the s	Memory:64 GB internal/external	d		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker  Memory  Processor: Intel Quad Core, RAM: 8GB, Memory:64 GB internal/external
		Ingress	Memory:64 GB	d		with external 12V, SMF batteries for powering the device. Full alphanumeric hard keypad  Operating System  Display  More than 5" Multi Touch screen  Inbuilt Sensors  GNSS & Accelerometer  Communication  Bluetooth, WiFi, USB, Integrated speaker  Memory  Processor: Intel Quad Core, RAM: 8GB, Memory:64 GB internal/external
			provision to conne with external 12V SMF batteries for powering the device	t		
		Second Estate	provision to conne with external 12V SMF batteries for powering the device	e t		should also have the
Con	ontroller	Keypad	should also have t provision to conne with external 12V SMF batteries for powering the device	e		should also have the
Con	Controller	Keypad	Swappable battery should also have to provision to connewith external 12V, SMF batteries for powering the device	e		Controller Keypad Swappable battery, should also have the
	AN LABOR	Keypad	Swappable battery should also have to provision to connewith external 12V, SMF batteries for powering the device	e		Controller Keypad Swappable battery, should also have the
	AN LABOR	Keypad	8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V. SMF batteries for powering the device	t e		Controller  Keypad  8-10 hrs. Li-ion Hot Swappable battery, should also have the
	AN LABOR	Keypad	3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V SMF batteries for powering the device	t		Battery backup  Swappable battery, should also have the
	AN LABOR	Keypad	3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V SMF batteries for powering the device	t		Battery backup  Swappable battery, should also have the
Bat	attery backup	Keypad	RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to connewith external 12V, SMF batteries for powering the device	t		Battery backup  Controller  Keypad  RMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  8-10 hrs. Li-ion Hot Swappable battery, should also have the
Bat	attery backup	Keypad	NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V, SMF batteries for powering the device	t		Battery backup  Controller  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+ 8-10 hrs. Li-ion Hot Swappable battery, should also have the
Bat	attery backup	Keypad	within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V, SMF batteries for powering the device	t e		Data format  Within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  8-10 hrs. Li-ion Hot Swappable battery, should also have the
Bat	attery backup	Keypad	within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V, SMF batteries for powering the device	t e		Data format  Within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  8-10 hrs. Li-ion Hot Swappable battery, should also have the
Bat	attery backup	Keypad	base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to connewith external 12V, SMF batteries for powering the device	t e		Data format  Data format  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  8-10 hrs. Li-ion Hot Swappable battery, should also have the
Bat	attery backup	Keypad	remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to connewith external 12V, SMF batteries for powering the device	d + t		Data format  Data format  Data format  Data format  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  8-10 hrs. Li-ion Hot Swappable battery, should also have the
5 Bat	attery backup	Keypad	remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to connewith external 12V, SMF batteries for powering the device	d + t		Data format  Data format  Data format  Data format  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  8-10 hrs. Li-ion Hot Swappable battery, should also have the
5 Bat	attery backup	Keypad	instantaneously a remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V, SMF batteries for powering the device	d d + t t e		instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Repaired  Keypad  Keypad  Keypad  Instantaneously and remotely from the base station situated within ~30 km.
5 Bat	attery backup	Keypad	instantaneously a remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V, SMF batteries for powering the device	d d + t t e		instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Repad  Repad  Repad  Keypad  Repad  R
5 Bat	attery backup	Keypad	position correction instantaneously at remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have to provision to connewith external 12V, SMF batteries for powering the device	d d + t t e		position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Repad  Bosition corrections instantaneously and remotely from the base station situated within ~30 km.  NMEA 0183, RTCM 3.1, CMR & CMR+  Suppose the state of the state
5 Bat	attery backup	Keypad	and implement its position correction instantaneously as remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connect with external 12V, SMF batteries for powering the device.	d d + t t e		and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Repad  Repad  Repad  Repad  Repad  Repad  Repad
5 Bat	attery backup	Keypad	and implement its position correction instantaneously as remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connect with external 12V, SMF batteries for powering the device.	d d + t t e		and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Repad  Repad  Repad  Keypad
5 Bat	attery backup	Keypad	capable to receive and implement its position correction instantaneously at remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connect with external 12V, SMF batteries for powering the device instantial statement of the statement	s d d + t t e		Capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Controller  Keypad  Controller  Repaired  Repaired  Repaired  Repaired  Controller  Repaired  Controller  Repaired  Controller  Repaired  Controller  Repaired  Controller  Cont
5 Bat	attery backup	Keypad	The rover should capable to receive and implement its position correction instantaneously at remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connect with external 12V, SMF batteries for powering the device and implementations.	s d d d + t t		The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.
5 Bat	attery backup	Keypad	The rover should capable to receive and implement its position correction instantaneously at remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connect with external 12V, SMF batteries for powering the device and implementations.	s d d d + t t		The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.
5 Bat	attery backup	Keypad	Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously as remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have to provision to connewith external 12V, SMF batteries for powering the device	s d d d + t t		Inbuild Radio 2W.  The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Respect to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.
5 Bat	attery backup	Keypad	GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously a remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V, SMF batteries for powering the device.	s d d d + t t		GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Results of the capable battery, should also have the
4 Da	Data format Battery backup	Keypad	GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously a remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V, SMF batteries for powering the device.	s d d d + t t		Data format  Data format  Data format  Data format  Battery backup  Controller  Keceiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  8-10 hrs. Li-ion Hot Swappable battery, should also have the
4 Da	Data format Battery backup	Keypad	Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correctio instantaneously at remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V, SMF batteries for powering the device	s d d		RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.
4 Da	Data format Battery backup	Keypad	Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correctio instantaneously at remotely from the base station situat within ~30 km. NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V, SMF batteries for powering the device	s d d		Interface & NTRIP.  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  S-10 hrs. Li-ion Hot Swappable battery, should also have the
4 Da	Data format Battery backup	Keypad	& Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously at remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V, SMF batteries for powering the device.	P. Se de		RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.
4 Da	Data format Battery backup	Keypad	Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously at remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V SMF batteries for powering the device.	P. Se de		Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  8-10 hrs. Li-ion Hot Swappable battery, should also have the
4 Da	Data format Battery backup	Keypad	& Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously at remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V, SMF batteries for powering the device.	P. Se de		Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  8-10 hrs. Li-ion Hot Swappable battery, should also have the
4 Da	Data format Battery backup	Keypad	single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously are remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V, SMF batteries for powering the device.	P. Se de		single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  8-10 hrs. Li-ion Hot Swappable battery, should also have the
4 Da	Data format Battery backup	Keypad	Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously are remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V, SMF batteries for powering the device.	oth P. se d d + t		Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.1, CMR & CMR+  Battery backup  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.
4 Da	Data format Battery backup	Keypad	Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously are remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V, SMF batteries for powering the device.	oth P. se d d + t		Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.1, CMR & CMR+  Battery backup  Rodem Port in single housing, Integrated Bluetooth & WiTRIP.  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.
4 Da Bai	Pata format Sattery backup	Keypad	Port/External Ra Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously a remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V, SMF batteries for powering the device.	oth P. se d d + t		Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  RTCM 3.2, None Swappable battery, should also have the
12 C	Communication  RTK Mode  Data format  Sattery backup		1 Serial/Power Port/External Ra Modem Port in single housing, Integrated Bluete & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2V The rover should capable to receive and implement its position correction instantaneously at remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V, SMF batteries for powering the device.	oth P. se d d + t		Communication  I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Sendon And Sendon Battery backup  Controller  Keypad  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Sendon And Sendon
12 C	Communication  RTK Mode  Data format  Sattery backup		IP67  1 Serial/Power Port/External Ram Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously at remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V SMF batteries for powering the device.	io  oth  P.  oe  s d d + t		Communication  IP67  Communication  I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  Data format  NMEA 0183, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+
11 Ir 12 C	Ingress Protection Communication  RTK Mode  Data format  Sattery backup		100%, Condensi IP67  1 Serial/Power Port/External Ra Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correctio instantaneously at remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V SMF batteries for powering the device	g io oth P. see		Ingress Protection IP67  Communication IP67  Communication I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format NMEA 0183, RTCM 3.1, CMR & CMR+  Battery backup 8-10 hrs. Li-ion Hot Swappable battery, should also have the
H 11 Ir 12 C	Ingress Protection Communication  RTK Mode  Data format  Sattery backup		100%, Condensi IP67  1 Serial/Power Port/External Ra Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correctio instantaneously at remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V SMF batteries for powering the device	g io oth P. see		Humidity   100%, Condensing   1P67
12 H 11 Ir 12 C	Humidity Ingress Protection Communication  RTK Mode	Storage	-40 °C to +75 °C 100%, Condensi IP67  I Serial/Power Port/External Ra Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correctio instantaneously ar remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V SMF batteries for powering the device	g io oth P. oe s d d d + t t e e		Storage —40 °C to +75 °C  Humidity 100%, Condensing Ingress Protection IP67  Communication I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller Keypad
12 H 11 Ir 12 C	Ingress Protection Communication  RTK Mode  Data format  Sattery backup		-40 °C to +75 °C 100%, Condensi IP67  I Serial/Power Port/External Ra Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correctio instantaneously ar remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V SMF batteries for powering the device	g io oth P. oe s d d d + t t e e		Storage —40 °C to +75 °C  Humidity   100%, Condensing   Ingress Protection   IP67   Communication   1 Serial/Power   Port/External Radio   Modem Port in   single housing,   Integrated Bluetooth   & Wi-Fi & web   Interface & NTRIP.   RTK Mode   Receiver Inbuilt   GSM/GPRS &   Inbuild Radio 2W.   The rover should be   capable to receive   and implement its   position corrections   instantaneously and   remotely from the   base station situated   within ~30 km.   Data format   NMEA 0183,   RTCM 3.2, RTCM   3.1, CMR & CMR+   Battery backup   Controller   Keypad   Storage   40 °C to +75 °C   Storage   40 °C to +75 °
12 H 11 Ir 12 C	Humidity Ingress Protection Communication  RTK Mode	Storage	-30 °C to +65 °C -40 °C to +75 °C 100%, Condensi IP67  I Serial/Power Port/External Ra Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correctio instantaneously ar remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V SMF batteries for powering the device	g io oth P. oe s d d d + t t e e		Temperature Operating -30 °C to +65 °C Storage -40 °C to +75 °C    Humidity 100%, Condensing    Ingress Protection   IP67    Communication   I Serial/Power   Port/External Radio   Modem Port in   single housing,   Integrated Bluetooth   & Wi-Fi & web   Interface & NTRIP.    RTK Mode   Receiver Inbuilt   GSM/GPRS &   Inbuild Radio 2W.   The rover should be   capable to receive   and implement its   position corrections   instantaneously and   remotely from the   base station situated   within ~30 km.    Data format   NMEA 0183,   RTCM 3.2, RTCM   3.1, CMR & CMR+    Battery backup   S-10 hrs. Li-ion Hot   Swappable battery,   should also have the
12 H 11 Ir 12 C	Humidity Ingress Protection Communication  RTK Mode	Storage	-30 °C to +65 °C -40 °C to +75 °C 100%, Condensi IP67  I Serial/Power Port/External Ra Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2 W The rover should capable to receive and implement its position correctio instantaneously ar remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12 V SMF batteries for powering the device	g io oth P. oe s d d d + t t e e		Temperature  Operating  -30 °C to +65 °C  Storage  -40 °C to +75 °C  Humidity  Ingress Protection  IP67  Communication  I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Keypad  LED Display  -30 °C to +65 °C  Storage -40 °C to +75 °C  Device to +75 °C  NTRIP  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  8-10 hrs. Li-ion Hot Swappable battery, should also have the
11 T 12 H 11 Ir 12 C	Temperature  Humidity Ingress Protection Communication  RTK Mode	Storage	-30 °C to +65 °C -40 °C to +75 °C 100%, Condensi IP67  I Serial/Power Port/External Ra Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2 W The rover should capable to receive and implement its position correctio instantaneously ar remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12 V SMF batteries for powering the device	g io oth P. oe s d d d + t t e e		Temperature  Operating  -30 °C to +65 °C  Storage  -40 °C to +75 °C  Humidity  Ingress Protection  IP67  Communication  I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt  GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotelly from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Keypad  Storage  -40 °C to +65 °C  Storage  -40 °C to +75 °C  Integrated process  Integrated process  NTRIP  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotelly from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  8-10 hrs. Li-ion Hot Swappable battery, should also have the
11 T 12 H 11 Ir 12 C	Humidity Ingress Protection Communication  RTK Mode	Storage	Integrated graph LED Display  -30 °C to +65 °C -40 °C to +75 °C 100%, Condensi IP67  1 Serial/Power Port/External Ra Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously a remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V SMF batteries for powering the device.	g io oth P. oe s d d d + t t e e		Integrated graphical LED Display  Temperature  Operating Storage  -30 °C to +65 °C Storage  -40 °C to +75 °C  Humidity Ingress Protection  IP67  Communication  I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W, The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Integrated graphical LED Display  Integrated graphical LED of to 45 °C  Integrated graphical  Integrated graphica
11 T 12 H 11 Ir 12 C	Temperature  Humidity Ingress Protection Communication  RTK Mode	Storage	memory Card Integrated graph LED Display  -30 °C to +65 °C  -40 °C to +75 °C  100%, Condensi IP67  I Serial/Power Port/External Ra Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correctio instantaneously a remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V SMF batteries for powering the device	g io oth P. oe s d d d + t t e		Display  Integrated graphical LED Display  Temperature  Operating  -30 °C to +65 °C  Storage  -40 °C to +75 °C  Humidity  Ingress Protection  IP67  Communication  I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Negative despite a paper of the
11 T 12 H 11 Ir 12 C	Temperature  Humidity Ingress Protection Communication  RTK Mode	Storage	memory Card Integrated graph LED Display  -30 °C to +65 °C  -40 °C to +75 °C  100%, Condensi IP67  I Serial/Power Port/External Ra Modem Port in single housing, Integrated Blueto & Wi-Fi & web Interface & NTR  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correctio instantaneously a remotely from the base station situat within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V SMF batteries for powering the device	g io oth P. oe s d d d + t t e		Display  Integrated graphical LED Display  Temperature  Operating  -30 °C to +65 °C  Storage  -40 °C to +75 °C  Humidity  Ingress Protection  IP67  Communication  I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W, The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  Negative despited graphical LED Display  10 per 40 ° C to +65 °C  10 vo +65 °C  10 vo +75
11 T 12 H 11 Ir 12 C	Temperature  Humidity Ingress Protection Communication  RTK Mode	Storage	External through memory Card Integrated graph LED Display  -30 °C to +65 °C -40 °C to +75 °C 100%, Condensi IP67  I Serial/Power Port/External Ram Modem Port in single housing, Integrated Blueto Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously as remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V SMF batteries for powering the device the state of t	g io oth P. se d d d + t t e e		External through memory Card  Display  Integrated graphical LED Display  Temperature  Operating  -30 °C to +65 °C  Storage  -40 °C to +75 °C  Humidity  Ingress Protection  IP67  Communication  I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  External through memory Card Integrated graphical LED Display  100%, Condensing 100%, Co
11 T 12 H 11 Ir 12 C	Temperature  Humidity Ingress Protection Communication  RTK Mode	Storage	External through memory Card Integrated graph LED Display  -30 °C to +65 °C -40 °C to +75 °C 100%, Condensi IP67  I Serial/Power Port/External Ram Modem Port in single housing, Integrated Blueto Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously as remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V SMF batteries for powering the device the state of t	g io oth P. se d d d + t t e e		External through memory Card  Display  Integrated graphical LED Display  Temperature  Operating  -30 °C to +65 °C  Storage  -40 °C to +75 °C  Humidity  Ingress Protection  IP67  Communication  I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt  GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  Battery backup  Controller  Keypad  External through memory Card Integrated graphical LED Display  100%, Condensing 100%, C
10 E 11 T 12 H 1 Ir 2 C	Display Temperature Humidity Ingress Protection Communication  RTK Mode	Operating Storage	Internal & 32 G External throug memory Card Integrated graph LED Display  -30 °C to +65 °C -40 °C to +75 °C 100%, Condensi IP67  I Serial/Power Port/External Ra Modem Port in single housing, Integrated Bluete & Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correctio instantaneously at remotely from the base station situat within ~30 km. NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have t provision to conne with external 12V SMF batteries for powering the device	g io oth P. se d d d + t t e e		Internal & 32 GB External through memory Card  Integrated graphical LED Display  Temperature  Operating Storage  -40 °C to +65 °C  Humidity  Ingress Protection  IP67  Communication  I Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.  RTK Mode  Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W. The rover should be capable to receive and implement its position corrections instantaneously and remotely from the base station situated within ~30 km.  Data format  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+  8-10 hrs. Li-ion Hot Swappable battery, should also have the
10 E 11 T 12 H 11 Ir 12 C	Display Temperature Humidity Ingress Protection Communication  RTK Mode	Operating Storage	External through memory Card Integrated graph LED Display  -30 °C to +65 °C -40 °C to +75 °C 100%, Condensi IP67  I Serial/Power Port/External Ram Modem Port in single housing, Integrated Blueto Wi-Fi & web Interface & NTR Receiver Inbuilt GSM/GPRS & Inbuild Radio 2W The rover should capable to receive and implement its position correction instantaneously as remotely from the base station situate within ~30 km.  NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMF 8-10 hrs. Li-ion H Swappable battery should also have the provision to connewith external 12V SMF batteries for powering the device the state of t	g io oth P. se d d d + t t e e		Receiver Memory    Memory 4 GB   Internal & 32 GB   External through memory Card



		Operating Temperature	−20 °C to +60 °C		
		Storage Temperature	-40 °C to +70 °C		
		Battery	Dual Hot Swappable Inbuilt Battery, Should have necessary cables to connect with the rover for powering and data transfer.	s.	180
17	Controller Software		Static, Fast Static, RTK., line, polygon, area calculation, satellite view, PDOP, HDOP etc. Graphical Stake Out		
			Feature Coding		
			Active Background maps inform of JPEG/TIFF, DXF/DWG		
	v		Import Export to industry standard formats like CSV, DXF, KML etc		
			COGO Functionality Calculation of transformation parameters from		
18	Post processing Softwa	are	point list.  Processing of raw data of L1, L2 & L5. The software should be loaded with two standard field laptops (1 TB storage and RAM of minimum 8 GB, both are expandable) and also provide it in storage media with proper license or key.  Import & Export to		
a			RINEX Formats Import Export to industry standard formats Feature coding and automatic drafting. Layer Management. Report Generation		
	500		Coordinate System Manager Baseline processing		



	Feature to process static data of single point for control		
19.	The base and the rover systems supplied by the vendor shoul function in synchronized mode without having any connectivit issues to transfer the position correction of the rovers from the base. All necessary cables and connectors must be provided alon with all units for their smooth interoperability and functioning. The company should have a provision to service the instrument within India for any minor repairs as and when required.	y e g g,	8.
20.	The list of items and their names mentioned in the technical data sheet or compliance sheet must match with their items list mentioned in the financial quote. The cost of optional items must be mentioned below as separate in the financial quote. The vendors should provide complete technical data sheets, brochure or pamphlets to support their technical compliance claim. An technical correspondence with the supplier/vendors should not be entertained once the financial bid is open. Such acts may lead to disqualification of the bid. The base, the rover, the controller, the software and its accessories are considered as one supplying of purchasable unit and hence should not be taken by parts from different vendors. On-site comprehensive warranty of minimum one year for the base and rover units.	st st e ss y e e o e e o r	



## Form of Bid-Securing Declaration

Bid No .:

To

The Director. Wadia Institute of Himalayan Geology, Dehradun

We, the undersigned, declare that:

We understand that, according to your conditions, bids must be supported by a Bid-Securing Declaration.

We accept that we will automatically be suspended from being eligible for bidding in any contract with the Wadia institute of Himalayan Geology, if we are in breach of our obligation(s) under the bid conditions, because we:

- a) have withdrawn our Bid during the period of one month bid validity specified in the letter of bid: or
- b) having been notified of the acceptance of our bid by Wadia Institute of Himalayan Geology the during the period of bid validity, (i) fail or refuse to execute the contact, if required, or
  - (ii) fail or refuse to furnish the Security deposit, in accordance with tender condition

We understand this Bid-Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder: or

(ii) Twenty-eight days after the expiration of our bid.

Signed:

Name:

Duly authorized to sign the bid for and on behalf of:

Date: