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/quotation/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.-**

Sl. 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

1   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**

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)**

4   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

5   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.

7   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.

12   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.

14   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

16   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.

18   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,

28/12/2020

(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 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.
4.	L1, L2 SNR in dB Hz referenced to a 1 Hz (or better)
5.	POSITIONING PERFORMANCE Differential Positioning Code differential GNSS positioning Horizontal. . . . . .0.25 m + 1 ppm RMS Vertical.. . . . . 0.50 m + 1 ppm RMS SBAS differential positioning accuracy Horizontal. . . . . 0.50 m RMS Vertical. . . . . 0.85 m RMS Static GNSS Surveying High Accuracy Static Horizontal. . . . . .3 mm + 0.1 ppm RMS Vertical. . . . . .3.5 mm + 0.4 ppm RMS Static & Fast Static Horizontal. . . . . .3 mm + 0.5 ppm RMS Vertical. . . . . .5 mm + 0.5 ppm RMS Real Time Kinematic Surveying Single Baseline ~ < 30km Horizontal. . . . . .8 mm + 1 ppm RMS Vertical. . . . . .15 mm + 1 ppm RMS Networked RTK Horizontal. . . . . .8 mm + 0.5 ppm RMS Vertical. . . . . .15 mm + 0.5 ppm RMS Initialization time . . . . typically <10 seconds Initialization reliability. . . . . . .typically >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

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 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. 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 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 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 modem transmission technology. Radio based RTK corrections are also required for short range corrections.
19.	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. 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 $\pm$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 ~1m drop	
Available with external / inbuilt radome	

TECHNICAL SPECIFICATION GNSS ROVER (Quantity-3)

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 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 Corrections		GAGAN
4	No. of Channels		600 or more
5	Data Logging Rate		20 Hz or better
6	High Static Accuracy	Horizontal	3mm+0.1ppm RMS
		Vertical	3.5mm+0.4ppm RMS
7	RTK Accuracy	Horizontal	8mm+1ppm RMS
		Vertical	15mm+1ppm RMS
8	Initialization Time		Typically < 8 Seconds
9	Receiver Memory		Memory 4 GB Internal & 32 GB External through memory Card
10	Display		Integrated graphical LED Display
11	Temperature	Operating	−30 °C to +65 °C
12		Storage	−40 °C to +75 °C
	Humidity		100%, Condensing
11	Ingress Protection		IP67
12	Communication		1 Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.
13	RTK Mode		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 backup		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 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
			Import Export to industry standard formats like CSV, DXF, KML etc
			COGO Functionality
			Calculation of transformation parameters from point list.
18	Post processing 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.

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.		
4.	L1, L2 SNR in dB Hz referenced to a 1 Hz (or better)		
5.	POSITIONING PERFORMANCE Differential Positioning Code differential GNSS positioning Horizontal. . . . . .0.25 m + 1 ppm RMS Vertical.. . . . . 0.50 m + 1 ppm RMS SBAS differential positioning accuracy Horizontal. . . . . 0.50 m RMS Vertical. . . . . 0.85 m RMS Static GNSS Surveying High Accuracy Static Horizontal. . . . . 3 mm + 0.1 ppm RMS Vertical. . . . . 3.5 mm + 0.4 ppm RMS Static & Fast Static Horizontal. . . . . 3 mm + 0.5 ppm RMS Vertical. . . . . 5 mm + 0.5 ppm RMS Real Time Kinematic Surveying Single Baseline ~ < 30km Horizontal. . . . . .8 mm + 1 ppm RMS Vertical. . . . . .15 mm + 1 ppm RMS Networked RTK Horizontal. . . . . .8 mm + 0.5 ppm RMS Vertical. . . . . .15 mm + 0.5 ppm RMS Initialization time . . . . typically <10 seconds Initialization reliability. . . . . .typically >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.		

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 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. 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 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 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 modem transmission technology. Radio based RTK corrections are also required for short range corrections.		
19.	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. 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 ~1m drop		
	Available with external / inbuilt radome		

TECHNICAL SPECIFICATION GNSS ROVER (Quantity-3)				
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 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 Corrections		GAGAN	
4	No. of Channels		600 or more	
5	Data Logging Rate		20 Hz or better	
6	High Static Accuracy	Horizontal	3mm+0.1ppm RMS	
		Vertical	3.5mm+0.4ppm RMS	
7	RTK Accuracy	Horizontal	8mm+1ppm RMS	
		Vertical	15mm+1ppm RMS	

8	Initialization Time		Typically < 8 Seconds		
9	Receiver Memory		Memory 4 GB Internal & 32 GB External through memory Card		
10	Display		Integrated graphical LED Display		
11	Temperature	Operating	−30 °C to +65 °C		
12		Storage	−40 °C to +75 °C		
	Humidity		100%, Condensing		
11	Ingress Protection		IP67		
12	Communication		1 Serial/Power Port/External Radio Modem Port in single housing, Integrated Bluetooth & Wi-Fi & web Interface & NTRIP.		
13	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.		
14	Data format		NMEA 0183, RTCM 3.2, RTCM 3.1, CMR & CMR+		
15	Battery backup		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	Windows 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		

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		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 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		
			Import Export to industry standard formats like CSV, DXF, KML etc		
			COGO Functionality		
			Calculation of transformation parameters from point list.		
18	Post processing 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		
19.	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 company should have a provision to service the instrument within India for any minor repairs as and when required.			
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, 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.			

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: