



WADIA INSTITUTE OF HIMALAYAN GEOLOGY
(An Autonomous Institution of Department of Science & Technology Government of India)
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DEHRA DUN- 248001 (INDIA)

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OPEN TENDER DOCUMENT
TECHNICAL BID DUE TO OPEN ON:-21-01-2021

NoS-2/108-P(BBS-DAS)WIHG 2020-21 /6

Dated : 28-12-2020

Sub: INVITATION OF TENDER

Dear Sirs,

We intend to purchase '(BBS-DAS) as per the details/specifications(Annexure-1) You are requested to submit your sealed tender/quotation/s along with Compliance statement 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	(Broad Band Seismometer +Data Acquisition System and accessories)	20Nos

TERMS AND CONDITIONS

- Detailed terms & conditions of supply **MUST** be mentioned in your offer.
- (i) Minimum two years on site comprehensive warranty 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.
(ii) The bidder should supply updates of all software, supplied at the time of initial installation and commissioning free of cost during the warranty period .
- 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 envelope Your technical bid should be submitted in one of the sealed covers super scribed "BBS-DAS" due to open on 21-01-2021 the other sealed envelope should contain your commercial bid and should be super scribed " BBS-DAS" due to open on 21-01-2021 both these sealed envelopes should be submitted in a third sealed cover super scribed "BBS-DAS" due to open on 21-01-2021.


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)**
- 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 No47/2011Integrated Tax (rate) dated 14th 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 6,10,000(Rupees Six lakh Ten Thousand only) or its equivalent foreign currency. **The EMD MUST be submitted with the Technical bid** in the shape of **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 suppliers 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 **Training**
- a) Operational /Maintenance training for a period of two days for WIHG Dehradun should be provided . **During** the training period all applications and operating software's reinstalled rom the fresh and restart all the computer systems.
 - b) Hard copy of training material should be provided.
 - c) Cost if any towards training shall be quoted separately

- 11 Installation of the equipment will be done at Wadia Institute of Himalayan Geology, Dehradun . Operational 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).
12. Delivery period required by you MUST be clearly mentioned in your offer.
- 13 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.
14. Your offer must reach us by 13.00 hrs. On.21-01-2021. 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.
- 15 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
- 16 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
- 17 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.
- 18 Résolution of Disputes: All disagreements, disputes, différences 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 International Law as the case may be. The venue of the proceedings and arbitration shall be Dehradun, INDIA.
- 19 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.
- 20 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) 28/12/2020

Store & Purchase Officer, for Director

ANNEXURE-I
(Specifications)

BROADBAND SEISMOMETER (20 field stations)

(1)	Type	Tri-axial electro-mechanical force balanced broadband velocity transducer in a single sealed module with output for one vertical (Z) and two horizontal components N-S and E-W) orthogonal to each other.
(2)	Frequency Response	Flat (within ± 3 dB) to ground velocity, at least in the range of 120 sec (or less) to 50 Hz or more
(3)	Dynamic range	≥ 140 dB
(4)	Output Voltage	± 20 V
(5)	Damping	0.7 critical
(6)	Sensitivity	Minimum 1000 v/m/s
(7)	Linearity	+/- 1% of full scale
(8)	Mass Centering	Automatic & external command locally or from remote. No mass centering within temperature range +/- 45 Deg C.
(9)	Calibration Facility	Calibration facility from Das Acquisition System (DAS)
(10)	Frequency response curve and system information	The frequency response curve of the unit along with information regarding transfer function including poles and zeros should be provided as per the serial number of each sensor
(11)	Electronic self-noise	Must be below the USGS Low Noise Model over 20 sec to 5Hz range
(12)	Indicator	a) Should have an indicator for leveling the transducer. b) Should have an indicator mark on its body to indicate the direction of relative orientation of the seismometer.
(13)	Operating temperature	-10° to +50° C
(14)	Humidity tolerance	0 to 100% RH
(15)	Power Requirement	Less than 2 Watts and 12 DC derived from the DAS
(16)	Housing	All the components should be permanently mounted in single stainless steel or cast of aluminum casing, water tight, vacuum tight enclosure.
(17)	Mass Locking	Automatic mass locking facility during transportation
(18)	Connectors	Water Proof and Rustproof
(19)	Cable	Low-loss shielded cable, at least 10 meters with end connectors.
(20)	Thermal insulation cover	An air -tight thermal insulation cover should be provided from OEM. The sensor cover should not touch to the walls/casing of the sensor.
(21)	Supporting Document	The Bidder (both hard and soft copy) should provide detailed technical documentation of the sensor supplied.

Data Acquisition System (20 field stations)

(22)	Number of Channel	3 Channels upgradable to 6 channels.
(23)	Dynamic Range	140 dB or more measured at 100 SPS.
(24)	ADC resolution	24-bit independent digitizer for each channel.
(25)	Input range	Should match the sensor outputs
(26)	Common Mode Rejection	Greater than 70dB
(27)	Channel to channel skew	a) Zero- Simultaneous sampling of all channels. b) Immune to electromagnetic interference.
(28)	System noise	Not more than 2-3 counts of 24-bit system
(29)	Sampling rate	User Selectable 1, 20, 50, 100 and 200 SPS per channel.
(30)	Filter	Linear phase digital FIR filter
(31)	RAM	At least 128 MB RAM
(32)	Storage Type	Storage memory card/hard disk of 32 GB or more in ring buffer configuration. For each digitizer two storage media should be supplied. Technical bid should mention about the maximum memory that the offered DAS will support, type of memory card, make, model and major specifications.
(33)	Recording format	Standard seismological format compatible to Windows/UNIX with proven compression technique. It should be easily convertible to miniSEED, SEISAN, ASCII formats etc.
(34)	GPS timing system	a) UTC timed with digitally controlled precision VCOX clock phase locked to GPS. b) Time accuracy less than 0.1 mSec when GPS is locked c) Free running TCXO accuracy of 1 ppm over a wide temperature range. d) GPS receiver electronic circuit should be inside the DAS. e) An antenna is exposed to the outer side. f) A thick antenna cable length should be 15 meters or more. g) Antenna enclosed in watertight and work effectively in extreme climate condition. h) Antenna mounting rod and its accessories. i) The antenna cable should withstand harsh weather conditions.
(35)	Sensor Control	a) Sensor calibration facility for both BB seismometer and accelerometer. b) Sensor mass position monitoring for BB seismometer

		c) Sensor mass centering on command for BB seismometer
(36)	State of Health Channels	Provision for checking state of health information like sensor mass position, temperature voltage, condition of GPS time lock, etc. locally and remotely.
(37)	Status display	Status indicators for power, data acquisition, SOH (state of health), GPS etc. should be provided.
(38)	Gain	Hardware gain selection through software menu for 1 or more
(39)	Data Acquisition Mode	Both Continuous and Trigger mode simultaneously
(40)	Trigger	User selectable, independently for each channel at different sampling rates based on triggering criteria as STA/LTA level, etc.
(41)	Communication	<p>a) Inbuilt communication interface circuitry for provision of remote data acquisition and State-of-Health in near real-time mode through V-SAT and GPRS modem</p> <p>b) Suitable interface for computer/laptop for parameter setting and data downloading</p> <p>c) Sensor calibration facility from the Central Server</p>
(42)	Transmission setting	Should have facility to select transmission of continuous mode data to remote location.
(43)	V-SAT connectivity	<p>a) In built communication interface circuitry for provision of remote data acquisition and State-of-Health in near real time mode through V-SAT and GPRS modem.</p> <p>b) In case communication failure, the DAS should transmit the previous recorded data parallelly with the fresh recording data.</p> <p>c) The communication settings and parameters should not get erased when DAS is switched off.</p> <p>d) It should resume transmission automatically when the power is re-stored.</p>
(44)	Power supply	<p>a) Supply voltage 10-15 volts through solar panel activated maintenance-free batteries.</p> <p>b) Power consumption of DAS less than 6 watts at 12 volts in data acquisition mode including the storage media.</p> <p>c) Lower battery voltage protection</p> <p>d) DAS shall resume data acquisition and transmission automatically when power is restored.</p>

(45)	Operating temperature and humidity range	<p>a) Operating temperature -10 deg to 50deg C.</p> <p>b) Humidity up to 100% RH.</p>
(46)	Environment	All the indoor units should work in typical tropical environment conditions and should work without air conditioning.
(47)	Housing	<p>a) GPS and DAS modules should be enclosed in weather and shockproof sealed enclosures with lightning protection.</p> <p>b) Earthing is to be provided to digitizer, if necessary, for trouble free operation.</p>
(48)	DAS capabilities Firmware	<p>(a) Real time ground motion data acquisition (week motion and acceleration data) in DAS including GPS data and State of Health monitoring.</p> <p>(b) Restoration of automatic data acquisition in DAS on assumption of power in case of power failure.</p> <p>(c) Transmission of recorded data to central station in near real time using VSAT communication facilities in continuous mode /trigger mode/ or both as per user selected criteria.</p> <p>(d) Capability to serve the request from Central Receiving Station (CRS) for re-transmission of data in case of real time data transmission break/failure.</p> <p>(e) Provision to supply off-line waveform data transfer of any segment from the ring buffer (of storage memory of DAS) on manual request from CRS.</p> <p>(f) In case of communication failure, automatic request/transfer for the pending data from the point at which it was executing just before the failure.</p>
(49)	Warranty	<p>a) The bidder should offer comprehensive on-site free warranty for a period of twenty-four months from date of acceptance of Goods.</p> <p>b) The bidder should supply free of cost, during the period of Warranty, updates of all software, supplied at the time of initial installation and commissioning.</p>

Training

- a) Operational/ Maintenance training for a period of two days for WIHG officials at WIHG, Dehradun should Be provided. During the training period all application and operating software should be reinstalled from the fresh and restart all the computer systems.
- b) Hard copy of training material should be provided.
- c) Cost if any, towards training shall be quoted separately.



ANNEXURE-II
(Compliance statement)

BROADBAND SEISMOMETER (20 field stations)

			Compliance statement	Remarks
(1)	Type		Tri-axial electro-mechanical force balanced broadband velocity transducer in a single sealed module with output for one vertical (Z) and two horizontal components N-S and E-W) orthogonal to each other.	
(2)	Frequency Response		Flat (within $\pm 3\text{dB}$) to ground velocity, at least in the range of 120 sec (or less) to 50 Hz or more	
(3)	Dynamic range		$\geq 140\text{dB}$	
(4)	Output Voltage		$\pm 20\text{ V}$	
(5)	Damping		0.7 critical	
(6)	Sensitivity		Minimum 1000 v/m/s	
(7)	Linearity		$\pm 1\%$ of full scale	
(8)	Mass Centering		Automatic & external command locally or from remote. No mass centering within temperature range $\pm 45\text{ Deg C}$.	
(9)	Calibration Facility		Calibration facility from Das Acquisition System (DAS)	
(10)	Frequency response curve and system information		The frequency response curve of the unit along with information regarding transfer function including poles and zeros should be provided as per the serial number of each sensor	
(11)	Electronic self-noise		Must be below the USGS Low Noise Model over 20 sec to 5Hz range	
(12)	Indicator		a) Should have an indicator for leveling the transducer. b) Should have an indicator mark on its body to indicate the direction of relative orientation of the seismometer.	
(13)	Operating temperature		-10° to $+50^\circ\text{ C}$	

(14)	Humidity tolerance	0 to 100% RH		
(15)	Power Requirement	Less than 2 Watts and 12 DC derived from the DAS		
(16)	Housing	All the components should be permanently mounted in single stainless steel or cast of aluminum casing, water tight, vacuum tight enclosure.		
(17)	Mass Locking	Automatic mass locking facility during transportation		
(18)	Connectors	Water Proof and Rustproof		
(19)	Cable	Low-loss shielded cable, at least 10 meters with end connectors.		
(20)	Thermal insulation cover	An air -tight thermal insulation cover should be provided from OEM. The sensor cover should not touch to the walls/casing of the sensor.		
(21)	Supporting Document	The Bidder (both hard and soft copy) should provide detailed technical documentation of the sensor supplied.		

Data Acquisition System (20 field stations)

			Compliance statement	Remarks
(22)	Number of Channel	3 Channels upgradable to 6 channels.		
(23)	Dynamic Range	140 dB or more measured at 100 SPS.		
(24)	ADC resolution	24-bit independent digitizer for each channel.		
(25)	Input range	Should match the sensor outputs		
(26)	Common Rejection Mode	Greater than 70dB		
(27)	Channel to channel skew	a) Zero- Simultaneous sampling of all channels. b) Immune to electromagnetic interference.		
(28)	System noise	Not more than 2-3 counts of 24-bit system		
(29)	Sampling rate	User Selectable 1, 20, 50, 100 and 200 SPS per channel.		

(30)	Filter	Linear phase digital FIR filter		
(31)	RAM	At least 128 MB RAM		
(32)	Storage Type	Storage memory card/hard disk of 32 GB or more in ring buffer configuration. For each digitizer two storage media should be supplied. Technical bid should mention about the maximum memory that the offered DAS will support, type of memory card, make, model and major specifications.		
(33)	Recording format	Standard seismological format compatible to Windows/UNIX with proven compression technique. It should be easily convertible to minISEED, SEISAN, ASCII formats etc.		
(34)	GPS timing system	<ul style="list-style-type: none"> a) UTC timed with digitally controlled precision VCOX clock phase locked to GPS. b) Time accuracy less than 0.1 mSec when GPS is locked c) Free running TCXO accuracy of 1 ppm over a wide temperature range. d) GPS receiver electronic circuit should be inside the DAS. e) An antenna is exposed to the outer side. f) A thick antenna cable length should be 15 meters or more. g) Antenna enclosed in watertight and work effectively in extreme climate condition. h) Antenna mounting rod and its accessories. i) The antenna cable should withstand harsh weather conditions. 		
(35)	Sensor Control	<ul style="list-style-type: none"> a) Sensor calibration facility for both BB seismometer and accelerometer. b) Sensor mass position monitoring for BB seismometer 		

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		c) Sensor mass centering on command for BB seismometer		
(36)	State of Health Channels	Provision for checking state of health information like sensor mass position, temperature voltage, condition of GPS time lock, etc. locally and remotely.		
(37)	Status display	Status indicators for power, data acquisition, SOH (state of health), GPS etc. should be provided.		
(38)	Gain	Hardware gain selection through software menu for 1 or more		
(39)	Data Acquisition Mode	Both Continuous and Trigger mode simultaneously		
(40)	Trigger	User selectable, independently for each channel at different sampling rates based on triggering criteria as STA/LTA level, etc.		
(41)	Communication	<p>a) Inbuilt communication interface circuitry for provision of remote data acquisition and State-of-Health in near real-time mode through V-SAT and GPRS modem</p> <p>b) Suitable interface for computer/laptop for parameter setting and data downloading</p> <p>c) Sensor calibration facility from the Central Server</p>		
(42)	Transmission setting	Should have facility to select transmission of continuous mode data to remote location.		
(43)	V-SAT connectivity	<p>a) In built communication interface circuitry for provision of remote data acquisition and State-of-Health in near real time mode through V-SAT and GPRS modem.</p> <p>b) In case communication failure, the DAS should transmit the previous recorded data parallelly with the fresh recording data.</p>		

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		<ul style="list-style-type: none"> c) The communication settings and parameters should not get erased when DAS is switched off. d) It should resume transmission automatically when the power is re-stored. 		
(44)	Power supply	<ul style="list-style-type: none"> a) Supply voltage 10-15 volts through solar panel activated maintenance-free batteries. b) Power consumption of DAS less than 6 watts at 12 volts in data acquisition mode including the storage media. c) Lower battery voltage protection d) DAS shall resume data acquisition and transmission automatically when power is restored. 		
(45)	Operating temperature and humidity range	<ul style="list-style-type: none"> a) Operating temperature -10 deg to 50deg C. b) Humidity up to 100% RH. 		
(46)	Environment	All the indoor units should work in typical tropical environment conditions and should work without air conditioning.		
(47)	Housing	<ul style="list-style-type: none"> a) GPS and DAS modules should be enclosed in weather and shockproof sealed enclosures with lightning protection. b) Earthing is to be provided to digitizer, if necessary, for trouble free operation. 		
(48)	DAS capabilities Firmware	<ul style="list-style-type: none"> (a) Real time ground motion data acquisition (week motion and acceleration data) in DAS including GPS data and State of Health monitoring. (b) Restoration of automatic data acquisition in DAS on assumption of power in case of power failure. (c) Transmission of recorded data to central station in near real time using VSAT communication facilities in continuous mode 		

	<p>/trigger mode/ or both as per user selected criteria.</p> <p>(d) Capability to serve the request from Central Receiving Station (CRS) for re-transmission of data in case of real time data transmission break/failure.</p> <p>(e) Provision to supply off-line waveform data transfer of any segment from the ring buffer (of storage memory of DAS) on manual request from CRS.</p> <p>(f) In case of communication failure, automatic request/transfer for the pending data from the point at which it was executing just before the failure.</p>		
(49)	Warranty	<p>a) The bidder should offer comprehensive on-site free warranty for a period of twenty-four months from date of acceptance of Goods.</p> <p>b) The bidder should supply free of cost, during the period of Warranty, updates of all software, supplied at the time of initial installation and commissioning.</p>	

Training

- a) Operational/ Maintenance training for a period of two days for WIHG officials at WIHG, Dehradun should be provided. During the training period all application and operating software should be reinstalled from the fresh and restart all the computer systems.
- b) Hard copy of training material should be provided.
- c) Cost if any, towards training shall be quoted separately.



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 contract, 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: