

INVITATION FOR TENDER FOR SUPPLY OF EQUIPMENT

Sealed tender offers are invited in two separate sealed covers (Technical and Commercial offers) from eligible manufacturers/suppliers or their direct Indian agents for the supply of the following equipment.

Broadband Seismometer with 24 bit 3 channel Digitizer (18 Units)

Please send offers, ALONG WITH DESCRIPTIVE CATALOGUE/ BROCHURE. The validity of the bid should be at least four months (120 days) or more from the date of the opening of this tender. Please ensure that your quotation reaches not later than **15.01.2019 at 15:00 Hrs** at the following address:

Dr. Arun Singh

Associate professor, Geology and Geophysics

Indian Institute of Technology Kharagpur – 721 302, West Bengal, India

Earnest money of **Rs. 100,000/-** is to be deposited in the form of Account payee Demand Draft in favour of IIT Kharagpur, payable at Kharagpur, India. Any bid which is not accompanied with an EMD shall be summarily rejected. Earnest money deposited will be forfeited if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender. No interest will be paid on the earnest money of the unsuccessful bidders.

Tender Reference	IIT/SRIC/GG/SDH/AS/ 2018-19/EQ/1 , Dated: 04.12.2018
Price of Tender Document	NIL
Last Date and Time for submitting the tender document	15.01.2019 at 15:00 Hrs (Indian time)
Time and Date of Opening of Technical Bids	15.01.2019 at 16:00 Hrs (Indian time)
Place of Opening Tender	Department of Geology and Geophysics, Indian Institute of Technology Kharagpur – 721 302, West Bengal, India
Address of Communication	As stated above
Contact Telephone Numbers	+91- 3222 - 283378
E-mail	arun@gg.iitkgp.ac.in

DETAILED TECHNICAL SPECIFICATIONS FOR
Broadband Seismometer, 24 bit 3 channel Digitizer

Broadband Seismometer 120 Seconds to 50 Hz

1.	Topology	Symmetric tri-axial, broadband force balanced mechanical type velocity transducer in a single sealed water and vacuum tight enclosure. Axial accuracy should be better than <0.5 degree.
2.	Feedback	Force balanced type
3.	Frequency response	Flat response from 120 Sec to 50 Hz or Better
4.	Sensitivity	1200 V/m/s or higher
5.	Dynamic range	>140 dB
6.	Clip Level	15 mm/s or higher
7.	Mass Centering / Mass Locking	Manual mass re-centering or Automatic through Digitizer. Operates +/-45 Deg C range without mass centering. Robust Automatic mechanical mass locking or no mass locking required during transportation.
8.	Leveling Indicator	Integrated bubble leveling
9.	Noise	Below NLNM from 100S to 2 Hz or Better.
10.	Output Voltage	40Vp-p or Better
11.	Mass Position	Three independent voltage outputs
12.	Calibration	Remote calibration from DAS
13.	Power	10 to 35 V DC, <1.5W
14.	Operating temperature	-20°C to +50° C
15.	Humidity	0 to 100 %
16.	Housing	IP68 or better
17.	Seismometer cable	High quality, low noise cable with 10 meter length and end connector.
18.	Insulating cover	Insulating cover and thermal insulating base foam for the seismometers should be provided.
19.	Carrying case	Carrying Case for each seismometer is required and should be quoted as optional.

True 24 bit 3 Channel Digitizer

1.	Number of Channel	3 Channels
2.	State of Health Channels	Provision for checking state of health information like sensor mass position, temperature, Voltage, Condition of GPS, time lock etc., through Laptop.
3.	Hardware Gain	User Selectable in various range
4.	Sampling rate	User-Selectable; 10,20,50,100, 200 SPS or better
5.	ADC resolution	True 24 bit @ 100 SPS
6.	Dynamic Range	140 dB at 100 SPS or better
7.	Data Acquisition Mode	Continuous / Trigger mode
8.	Sensor Control	Digitizer should have the facility to control the seismometer on the Mass Centering (motorized), Mass Lock / un lock, Calibration, etc.,
9.	Input range	Match with the sensor output
10.	RAM memory	At-least 32 MB RAM
11.	Shortest input noise	> 1 count RMS @ 100 SPS of 24-bits.
12.	Storage Type	2 Nos Hot Swappable CF/SD card of 32 GB or better with each Digitizer
13.	Recording format	The data should be available in Miniseed, Seisan, ASCII format while download the data from the storage Media through USB or Directly from the Digitizer.
14.	GPS Timing system	GPS receiver electronic circuit should be inside the DAS with UTC timed with digitally controlled precision VCOX clock phase locked to GPS. Timing accuracy less than 0.1 mSec when GPS is locked. Free running TCXO accuracy of 1 ppm over wide temperature range. Antenna exposed to outer side. Antenna Cable length should be minimum 15 meters. Antenna enclosed in water tight and work effectively in extreme climate condition. Antenna mounting rod and its accessories
15.	Power Supply	<ul style="list-style-type: none"> α. Supply Voltage 10-35 Volts β. Power consumption of DAS should be less than 1.5W in data acquisition mode including the Storage media at 100 SPS continuous mode. χ. Low battery voltage protection δ. DAS shall resume data acquisition and transmission automatically when power is restored
16.	Communication port	Configurable serial asynchronous full duplex port, 100 Mbps Ethernet port, USB/IP port, etc., for VSAT connectivity and data transfer purpose through Multicast, Unicast should be ready to connect the

		VSAT at any time without any additional charges. The Digitizer should have the Web browser to browse through Internet Explorer to download the data.
17.	Environment	All outdoor equipments should work in harsh weather conditions such as temperature range -20 to 60 degree C and 100% RH and no provision will be provided to keep the remote station Seismic equipments indoor / air conditioning room. The equipment must have the IP68 design.
18.	Indicator LED	Indicator LED to view the Power, GPS Status, etc.,
19.	Cables	The supplier should supply 3 meter Power cable with end connector, Ethernet cable with end connector
20.	Installation and Demonstration	The supplier should install the supplied equipment at IIT, Kharagpur.
21.	Data Retrieval System and Software	The supplier should provide the Data Retrieval System and software or web browser facility to download the data from the storage media in Digitizer.
22.	Warranty	All the supplied items should be under three years warranty from the date of installation or 40 months from the date of supply, whichever is earlier.
23.	Technical Field Support	Field support in case of any technical problems in the instrument should be provided for three years from the date of supply of instruments. The technical support should be provided within 20 working days.

GENERAL TERMS & CONDITIONS

PLEASE SPECIFICALLY INDICATE THE FOLLOWING POINTS IN YOUR QUOTATIONS AND COMPLY THE TERMS AS MENTIONED HEREUNDER:-

1. TENDER ARE INVITED COMPLYING THE REQUIREMENT FOR TENDER AS DETAILED IN THE TENDER SPECIFICATION TO BE SUBMITTED IN THE COMPANY'S / FIRM'S LETTERHEAD NEATLY PRINTED / TYPED DULY SIGNED BY AUTHORIZED PERSON WITH THE SEAL OF THE BIDDERS. ALL ENVELOPS CONTAINING THE TENDER SHOULD BE PROPERLY SEALED. SEPARATE ENVELOPS SHOULD BE USED FOR TECHNICAL AND PRICE BID AND INDICATION TO THEIR EFFECT MAY PLEASE BE SUPERSCRIBED ON THE ENVELOP.

THE FOLLOWING DOCUMENTS ARE REQUIRED FROM THE INDIAN AGENTS OF FOREIGN FIRMS:

1.1 FOREIGN PRINCIPAL'S PROFORMA INVOICE INDICATING THE COMMISSION PAYABLE TO THE INDIAN AGENT AND NATURE OF AFTER SALES SERVICE TO BE RENDERED BY THE INDIAN AGENT.

1.2 COPY OF THE AGENCY AGREEMENT WITH THE FOREIGN PRINCIPAL INDICATING THE NATURE OF AFTER SALES SERVICES, PRECISE RELATIONSHIP BETWEEN THEM AND THEIR MUTUAL INTEREST IN THE BUSINESS.

2. TECHNICAL CATALOGUE/LEAFLET SHOULD BE ENCLOSED WITHOUT FAIL. PROVIDE COMPLIANCE STATEMENT WITH RESPECT TO THE TECHNICAL SPECIFICATIONS MENTIONED ABOVE.
3. PLEASE CONFIRM WHETHER YOU ARE AUTHORISED TO QUOTE ON BEHALF OF YOUR PRINCIPALS AND IF SO, PLEASE ENCLOSE A COPY OF SUCH AUTHORISATION WITH YOUR QUOTATION.
4. **PRICE BIDS FOR FOREIGN FIRMS:** PRICES ARE TO BE QUOTED ON 'EX-WORKS' DULY PACKED OR ON "FCA/FOB" INTERNATIONAL PORT" BASIS AND ALSO INCLUDING AGENCY COMMISSION PAYABLE TO YOUR INDIAN AGENTS, IF ANY SHOWING CLEARLY THE FOLLOWING BREAK UP:-

- I) EX-WORKS PRICE
- II) PACKING & FORWARDING
- III) FREIGHT
- IV) ANY OTHER RELEVANT EXPENSES.
- V) TAXES PAYABLE BY THE INSTITUTE

INSURANCE WILL BE PAID BY OUR INSTITUTE SEPARATELY AND SHOULD NOT FORM PART OF THE QUOTED PRICE.

PRICE BIDS FOR INDIAN FIRMS: PRICES ARE TO BE QUOTED ON F.O.R., IIT KHARAGPUR, ON DOOR DELIVERY BASIS CLEARLY SHOWING THE BREAK UP.

5. **PERIOD OF VALIDITY:** BIDS SHALL REMAIN VALID FOR ACCEPTANCE FOR A PERIOD OF 120 DAYS FROM THE DATE OF OPENING.
6. INDIAN AGENTS ADDRESS AND PERCENTAGE OF AGENCY COMMISSION INCLUDED IN ABOVE F.O.B./EX-WORKS PRICE. (THIS WILL BE PAID TO THE INDIAN AGENTS IN INDIAN RUPEES ONLY AND NOT IN **FE**). PLEASE ENCLOSE COPY OF AGENCY AGREEMENT ENTERED INTO WITH YOUR PRINCIPALS INDICATING THE NATURE OF AFTER SALES SERVICES OF INDIAN AGENTS, PRECISE RELATIONSHIP & MUTUAL INTEREST IN THE BUSINESS.
7. **MEASUREMENTS/WEIGHT:** NETT/GROSS OF THE CONSIGNMENT. IN CASE OF AN ORDER, YOU SHALL USE AIR WORTHY PACKAGE (AS APPLICABLE) DULY CERTIFIED WITH DOCUMENTS – PLYTO – SANITARY CERTIFICATE (AS PER QUARANTINE ORDER 2003).
8. **SCOPE OF SUPPLY:** SHOULD INCLUDE FREE INSTALLATION AND COMMISSIONING
9. **PAYMENT TERMS FOR FOREIGN FIRMS**

The offer will be made on a single currency and only one PO will be issued for the entire scope of the supply.

A) 90% PAYMENT THROUGH SIGHTDRAFT/FORIGN DEMAND DRAFT/LC (EXCEPTIONAL CASES)/SWIFT TELE TRANSFER AFTER RECEIPT OF STORE IN GOOD ORDER AND CONDITION AND 10% AFTER SUCCESSFUL INSTALLATION & COMMISSIONING.

B) BANK CHARGES ON LC/SD (WITHIN INDIA APPLICANT ACCOUNT AND OUTSIDE INDIA TO BENEFICIARY ACCOUNT).

PAYMENT TERMS FOR INDIAN FIRMS

A) 100% PAYMENT THROUGH CROSSED ACCOUNT PAYEE CHEQUE / ELECTRONIC TRANSFER AFTER RECEIPT OF STORE IN GOOD ORDER & CONDITION AND SUCCESSFUL INSTALLATION & COMMISSIONING.

B) ENSURE MENTIONING

i) BANK DETAILS OF THE BENEFICIARY, GST NO. AND PAN NUMBER

ii) FULL NAME AND ADDRESS OF THE BENEFICIARY ON WHOM ORDER HAS TO BE PLACED

10. WHETHER ANY EXPORT LICENCE IS REQUIRED FROM YOUR GOVERNMENT, IF SO, PLEASE CONFIRM WITH DETAILS.

11. COUNTRY OF ORIGIN OF THE GOODS IS TO BE MENTIONED.

12. THE INSTITUTE SHALL PROVIDE THE CONCESSIONAL CUSTOMS DUTY AND EXCISE DUTY EXEMPTION CERTIFICATE AS PER GOVT. NOTIFICATION NO. 51/96 CUSTOMS DATED: 23.07.1996 AND CENTRAL EXCISE DUTY EXCEMPTION IN TERMS OF GOVT. NOTOFICATION NO. 10/97 – CENTRAL EXCISE DATED: 01.03.1997 AS AMENDED FROM TIME TO TIME.

13. **LIQUIDATED DAMAGES:** THE STORES SHOULD BE DELIVERED / DISPATCHED TO DESTINATION AND READY FOR OPERATION NOT LATER THAN THE DELIVERY DATE SPECIFIED. IT THE SUPPLIER FAILS TO DELIVER ANY OR ALL THE STORES OR PERFORM THE SERVICE BY THE SPECIFIED DATE, LIQUIDATED DAMAGES AT 1% PER MONTH OR PART THEREOF IN RESPECT OF THE VALUE OF STORES WILL BE DEDUCTED FROM THE CONTRACT PRICE SUBJECT TO A MAXIMUM OF 5%. ALTERNATIVELY, THE ORDER WILL BE CANCELLED AND THE UNDELIVERED STORES PURCHASED FROM ELSEWHERE AT THE RISK AND EXPENSE OF SUPPLIER.

14. **PATENT RIGHTS:** THE SUPPLIER SHALL INDEMNIFY THE PURCHASE AGAINST ALL THIRD PARTY CLAIMS OF INFRINGEMENT OF PATENT, TRADEMARK OR INDUSTRIAL DESIGN RIGHTS ARISING FROM USE OF THE GOODS OR ANY PART THEREOF IN INDIA.

15. ONLY THOSE BIDDERS WHO'S BIDS HAVE BEEN TECHNICALLY FOUND ACCEPTABLE WILL ONLY BE INVITED FOR PARTICIPATION IN THE PRICE BID.

16. THOSE BIDDERS WHO DO NOT RECEIVE ANY COMMUNICATION FOR PARTICIPATION IN PRICE BID OPENING MEETING MAY PRESUME THAT THEIR BID HAS NOT BEEN ACCEPTED BY THE INSTITUTE.

17. CONDITIONAL OFFER WILL NOT BE ACCEPTED.

18. LATE TENDERS I.E. TENDER RECEIVED AFTER THE DUE DATE AND TIME OF SUBMISSION AS MENTIONED ABOVE SHALL NOT BE ACCEPTED.

19. BIDDERS TO ENCLOSE THE FOLLOWING DOCUMENTS:-

A) INCOME TAX RETURN (3 YRS) AND LATEST SALES TAX RETURN (GST No.), AND PAN NO.

B) BANKER'S SOLVENCY CERTIFICATE

C) SUMMARY OF AUDITED STATEMENT OF ACCOUNTS FOR THE LAST THREE YEARS TO BE ENCLOSED AND FINANCIAL HIGHLIGHTS AND THE KEY PERFORMANCE DURING THE LAST THREE QUARTERS TO BE ENCLOSED AS PER FORMAT:-

COMPANY'S KEY PERFORMANCE

DESCRIPTION	JAN. TO MARCH	APRIL TO JUNE	JULY TO SEPT.
GROSS REVENUE			
PROFIT BEFORE TAX			
PROFIT AFTER TAX			

RETURN ON INVESTED			
CAPITAL (ROIC)			

D) CUSTOMER SATISFACTION CERTIFICATE FROM ONE SUCH ORGANIZATION IS TO BE ATTACHED WITH THE TECHNICAL BID AND PRICE BID.

E) NAME AND ADDRESS OF MINIMUM THREE CLIENTS TO WHOM SUCH EQUIPMENT HAVE BEEN SUPPLIED SHOULD BE MENTIONED.

20. WARRANTY / GUARANTEE: THIS COMPREHENSIVE WARRANTY / GUARANTEE SHALL REMAIN VALID FOR **36 MONTHS** AFTER THE GOODS (OR ANY PORTION THEREOF AS THE CASE MAY BE) HAVE BEEN DELIVERED AND COMMISSIONED TO THE FINAL DESTINATION.

21. THE INSTITUTE DOES NOT BIND ITSELF TO OFFER ANY EXPLANATION TO THOSE BIDDERS WHO'S TECHNICAL BID HAS NOT BEEN FOUND ACCEPTABLE BY THE EVALUATION COMMITTEE OF THE INSTITUTE.

22. ALL TENDERS (UNLESS OTHERWISE SPECIFIED) ARE TO BE SUBMITTED / HANDED OVER TO **DR. ARUN SINGH, GEOLOGY AND GEOPHYSICS, INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR - 721 302** AND ACKNOWLEDGEMENT TO BE OBTAINED.

IMPORTANT

1. IIT Kharagpur authority may accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself to accept the lowest bid. The Institute at its discretion may change the quantity / upgrade the criteria / drop any item or part thereof at any time before placing the Purchase Order.
2. Promptly make arrangements for repair and / or replacement of any damaged item (s) irrespective of settlement of claim.
3. In case of any dispute, the decision of the Institute authority shall be final and binding on the bidders.
4. For any query pertaining to this bid document correspondence may be addressed to **Dr. Arun Singh**, at the address mentioned above.

LAST DATE FOR SUBMISSION OF SEALED BIDS: 15.01.2019

- 1) Please Note that the Institute remains closed during Saturdays & Sundays and all specified government holidays.
 - 2) Fax, e-mail Tender will not be accepted.
 - 3) The General Terms and Conditions as stated above relate to supply of stores / equipment /assets etc. and for specific service other terms and conditions of the Institute will apply.
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