

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 supply of the following equipment:

“4 channel Strong Motion Accelerograph with Velocity Sensor”

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 opening of this tender. Please ensure that your quotation reaches not later than 07.02.2012 at 10:30 hrs. to the following address:

Prof. S. K. Nath
Dept. of Geology & Geophysics
Indian Institute of Technology
Kharagpur, West Bengal, PIN - 721 302.

Earnest money of Rs. 10,000/- for the equipment is to be deposited in the form of Account payee Demand Draft in favor 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/KSM/2011-2012/3 Dated: 28.12.2011
Last Date and Time for submitting the tender document	07.02.2012 at 10:30 Hrs (Indian time)
Date and Time of Opening of Bids	07.02.2012 at 11:30 Hrs (Indian time)
Place of Opening tender offers	At the Department of Geology & Geophysics Indian Institute of Technology Kharagpur, West Bengal, INDIA, PIN-721302.
Address of Communication	As stated above
Contact Telephone Numbers	+91-3222-283374 / 220042
E-mail:	nath@gg.iitkgp.ernet.in

**Technical Specifications for “4 channel Strong Motion Accelerograph
with Velocity Sensor”**

1. 24 Bit Digital Recorder with inbuilt Accelerometer

<u>Sensor Specifications</u>	
1. Topology	Orthogonal oriented force balance triaxial transducers (two horizontal and one vertical) in a single sealed unit placed in the recorder. The unit should have an indicator mark on its body to indicate relative orientation of the sensors.
2. Type	Force Balanced
3. Full scale	±2g (standard)
4. Dynamic range	155 dB or more
5. Frequency Response	Nominally flat (±3dB) from DC to at least 200 Hz
6. Damping	Between 0.6 and 0.7 of critical damping
7. Cross axis sensitivity	< 0.03g
8. Linearity	The relationship between output signal and input acceleration to be within ±1% of full scale for all frequencies from DC to 50Hz
9. Output	Nominally ±2.5Volts to ±10.0 Volts full scale
10. Output impedance	Matching to that of the recording unit
11. Level indicator	Bubble type
12. Input power	Single 12V DC Battery source for the sensor and the companion recording unit
<u>Recorder Specifications</u>	
1. Number of channels	Three for Internal Sensor plus one for external sensor.
2. Sampling Rate	Software selectable from 1 to 2000 SPS per channel
3. Dynamic Range	130 dB at 100 SPS for all four channels
4. Bit resolution	Minimum 24 bit for all four channels
5. Frequency response	DC to Nyquist frequency
6. Input range	Matched the accelerometer output
7. Channel to channel skew	None
8. System response	±3dB Flat from DC to Nyquist frequency
9. Timing system	GPS receiver based timing system with built-in receiver and 15m or more longer cable to antenna
10. Timing Accuracy	Free running accuracy of 0.1ppm to give ± 100 microsec latch-on accuracy

11. Triggering	The system must be capable of recording the acceleration data in triggered mode, e.g. threshold or STA/LTA ratio trigger. Multiple Time Windows, Custom Module (Allow user to write their own trigger module)
12. Noise level	Noise level of the complete system including accelerometer and recorder should be less than 2 milligal in the frequency range from DC to 50Hz.
13. Data Storage	2 GB or more.
14. Output File Format	Selectable and / or multiple (more than 3) output format simultaneously including Miniseed, SAC, COSMOS, MATLAB, SEISAN, ASCII, JMA Seismic Intensity and custom module (Allow user to write their own output format)
15. Recording capacity	At least 4 days of recording time @ 200 SPS for Four channels on the storage device.
16. Output Display	Can display waveform output in real time for viewing including real time FFT and PSD when connected with the Computer.
17. Communication	Ethernet interface, RS232, Modem
18. Anti-aliasing filter	To be provided
19. Operating Temperature	-20° C to + 70° C
20. EMI/RFI Protection	All I/O Lines
21. Humidity tolerance	Upto 100% RH
22. Power supply	External 12 Volts battery source and provision for Solar Panel also.
23. Environment	RoHS Compliant
24. Communication	A serial port through which an IBM compatible PC can be connected

2. SPECIFICATIONS OF SHORT PERIOD VELOCITY SENSOR: Short period velocity sensor of 1 second natural period. Operates in either vertical or horizontal position with Leveling screws.

Detailed Specifications: Natural Period: 1 second
Damping: 70% of Critical
Calibration coil: 100 ohm
Generator Constant: 345 V (m/s)
Mass travel: +/- 1 mm

Note: The above items are complete with all necessary accessories and cables etc.

IMPORTANT INSTRUCTIONS

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

1. PRICES ARE TO BE QUOTED ON 'EX-WORKS' DULY PACKED OR ON "F.O.B. 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 InstituteInsurance will be paid by our Institute separately and should not form part of the quoted price.
2. INDIAN AGENT'S 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.
3. MEASUREMENTS/WEIGHT: NETT/GROSS OF THE CONSIGNMENT AND ESTIMATED AIR FREIGHT CHARGES FROM YOUR INTERNATIONAL PORT TO KOLKATA (INDIA). 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).
4. ESTIMATED SEA-FREIGHT (IF APPLICABLE) CHARGES FROM YOUR F.O.B. SEAPORT TO KOLKATA SEA-PORT, INDIA.
5. YOUR BANKER'S ADDRESS.
6. WHETHER ANY EXPORT LICENCE IS REQUIRED FROM YOUR GOVERNMENT, IF SO, PLEASE CONFIRM WITH DETAILS.
7. OURS BEING A GOVERNMENT OF INDIA ORGANISATION, WE PREFER "SIGHT DRAFT" TERMS OF PAYMENT. PLEASE CONFIRM ACCEPTANCE OF THE SAME. NO ADVANCE PAYMENT. L/C IN EXCEPTIONAL CASES ONLY.
8. TECHNICAL CATALOGUE/LEAFLET SHOULD BE ENCLOSED WITHOUT FAIL.
9. 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.

10. THE SUPPLIER SHALL PROVIDE A COPY OF THE INSURANCE POLICY ALONG WITH INVOICE TO THE PURCHASER WHO MAKE ARRANGEMENTS TO EXTEND THE VALIDITY OF THE POLICY, IF NECESSARY.
 - (A) THE SUPPLIER SHALL INITIATE AND PURSUE CLAIM TILL SETTLEMENT, AND
 - (B) PROMPTLY MAKE ARRANGEMENTS FOR REPAIR AND / OR REPLACEMENT OF ANY DAMAGED ITEM(S) IRRESPECTIVE OF SETTLEMENT OF CLAIM BY THE UNDERWRITERS.
11. FOREIGN SUPPLIERS ARE REQUESTED TO SEND THEIR OFFER INDICATING THE COMMISSION PAYABLE TO THE INDIAN AGENT DIRECTLY TO US FOR CONSIDERATION.
12. COUNTRY OF ORIGIN OF THE GOODS IS TO BE MENTIONED.
13. BANK CHARGES ON LC/SD (BOTH WITHIN INDIA AND OUTSIDE INDIA) SHALL BE TO YOUR ACCOUNT.
14. THE INSTITUTE SHALL PROVIDE THE CUSTOMS DUTY EXEMPTION CERTIFICATE AGAINST GENERAL EXEMPTION NO. 37 [NOTIFICATION. NO. 10/97-CE, DATED 1.3.1997 AS AMENDED BY 16/07 CE].
15. LIQUIDATED DAMAGES: THE STORES SHOULD BE DELIVERED / DISPATCHED TO DESTINATION AND READY FOR OPERATION NOT LATER THAN THE DELIVERY DATE SPECIFIED. IF 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.
16. 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.
17. TENDERS ARE INVITED IN DUPLICATE SETS 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 ENVELOPES CONTAINING THE TENDER SHOULD BE PROPERLY SEALED. SEPARATE ENVELOPES SHOULD BE USED FOR TECHNICAL AND PRICE BID AND INDICATION TO THEIR EFFECT MAY PLEASE BE SUPERSCRIBED ON THE ENVELOPE.
18. PRICE BIDS WILL BE OPENED ONLY FOR THOSE BIDDERS WHO'S TECHNICAL BIDS HAVE BEEN FOUND TO BE ACCEPTABLE.

19. ONLY THOSE BIDDERS WHO'S BIDS HAVE BEEN TECHNICALLY FOUND ACCEPTABLE SHALL BE PRESENT AT THE TIME OF OPENING THE PRICE BID IN THE SAME DAY.
20. THE INSTITUTE DOES NOT BIND ITSELF TO OFFER ANY EXPLANATION TO THOSE BIDDERS WHO'S TECHNICAL BIDS HAVE NOT BEEN FOUND ACCEPTABLE BY THE EVALUATION COMMITTEE OF THE INSTITUTE.
21. THOSE BIDDERS WHO DO NOT RECEIVE ANY COMMUNICATION FOR PARTICIPATION IN PRICE BID OPENING MEETING MAY PRESUME THAT THEIR BIDS HAVE NOT BEEN ACCEPTED BY THE INSTITUTE.
22. PERIOD OF VALIDITY: BIDS SHALL REMAIN VALID FOR ACCEPTANCE FOR A PERIOD OF 120 DAYS FROM THE DATE OF OPENING.
23. CONDITIONAL OFFER WILL NOT BE ACCEPTED.
24. LATE TENDERS I.E. TENDER RECEIVED AFTER THE DUE DATE AND TIME OF SUBMISSION AS MENTIONED ABOVE SHALL NOT BE ACCEPTED.
25. BIDDERS TO ENCLOSE THE FOLLOWING DOCUMENTS:-

A) CURRENT INCOME TAX AND SALES TAX CLEARANCE CERTIFICATES 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.

26. ALL TENDERS (UNLESS OTHERWISE SPECIFIED) ARE TO BE SUBMITTED / HANDED OVER TO PROF. S.K.NATH, DEPARTMENT OF GEOLOGY & GEOPHYSICS, INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR - 721 302 AND ACKNOWLEDGEMENT TO BE OBTAINED.

27. THE PERSON / OFFICER SIGNING THE TENDER / BID DOCUMENTS SHOULD BE DELEGATED WITH AN APPROPRIATE POWER OF ATTORNEY (DULY ENDORSED BY A NOTARY PUBLIC) BY THE CHIEF EXECUTIVE OFFICER OF THE COMPANY TO SIGN SUCH DOCUMENTS.

28. WARRANTY / GUARANTEE: THE 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 AT THE FINAL DESTINATION AS INDICATED ABOVE.

29. TENDERS ARE INVITED IN DUPLICATE SETS 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.

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. In case of any dispute, the decision of the Institute authority shall be final and binding on the bidders.

3. For any query pertaining to this bid document correspondence may be addressed to Prof. S. K. Nath, at the address mentioned above.

LAST DATE FOR SUBMISSION OF SEALED BIDS: 07.02.2012 AT 10.30 HRS.

N.B.:

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. Duplicate Bid document must be submitted in separate closed cover.

3) General Terms and Conditions as stated above related to supply of stores / equipments /assets etc. and for specific service other terms and conditions of the Institute will apply.
