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.

**Down-hole/cross-hole geophysical survey instrument**

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 **23.06.2015 at 10:00 hrs** at the following address:

Prof. Probal Sengupta  
Professor, Geology & Geophysics, Indian Institute of Technology  
Kharagpur – 721 302, West Bengal, India

Earnest money of ` 20,000/- 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.

<table>
<thead>
<tr>
<th>Tender Reference</th>
<th>IIT/SRIC/GG/GPO/PS/2015-2016/EQ/2, Dated: 20.05.2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price of Tender Document</td>
<td>NIL</td>
</tr>
<tr>
<td>Last Date and Time for submitting the tender document</td>
<td>23.06.2015 at 10:00 Hrs (Indian time)</td>
</tr>
<tr>
<td>Time and Date of Opening of Bids</td>
<td>24.06.2015 at 10:30 Hrs (Indian time)</td>
</tr>
<tr>
<td>Place of Opening tender offers</td>
<td>Dept. of Geology &amp; Geophysics, Indian Institute of Technology Kharagpur – 721 302, West Bengal, India</td>
</tr>
<tr>
<td>Address of Communication</td>
<td>As stated above</td>
</tr>
<tr>
<td>Contact Telephone Numbers</td>
<td>+91- 9433423738</td>
</tr>
<tr>
<td>E-mail</td>
<td><a href="mailto:probal@gg.iitkgp.ernet.in">probal@gg.iitkgp.ernet.in</a></td>
</tr>
</tbody>
</table>
1. Down-hole/cross-hole geophysical survey instrument

The system should come with the following:
1. Seismic recorder 6 channels or more to accommodate two tri-axial geophones at time. In Option 3 channel and 12-channel recorders need to be offered.
2. Two tri-axial borehole geophones need to be offered.
3. Borehole hammer source – 1 number needs to be offered.
4. One surface trigger geophone along with 100m cable and suitable connector to connect the recorder need to be offered.
5. Other accessories like hand pump for applying air pressure locking of Geophones, cables, USB cable for communication to PC/Laptop for collection, data Processing Unit, Clamping of the geophones and Source into the borehole for complete Cross-hole survey need to be offered.

Detailed specifications for the system:

i) Data Acquisition system
6-ch or more (12ch and 3-ch system need to be offered in optional)
• System should be 24-bit, Windows based data acquisition with free license and can be loaded to any number of PCs or Laptop.
• Sampling rate should be minimum 125μs to 2ms for all channels
• Digital Filters: in post-acquisition (50-60 Notch, 250LP) anti aliasing: active, LPF, 8° Butterworth order; attenuation -48dB/oct (-160dB/dec); f0=5/8fnyq; accuracy ±1% cutting frequency
• Delay: 0-8000ms
• First picking: marker to find out the position on the video points on the time scale; possibility to save first arrivals on the file for data transfer to PC
• Seismic wave display: wiggle-trace / variable area
• Port: must have one USB port for communication
• Data format: SEG2
• Power: External 12V battery rechargeable along with charger
• Compact, rugged casing & light weight

ii) 3D Bore Hole Geophone
• Tri-axial Sensors -10Hz Geophones (1 vert.+2orizz.)
• Cable Length-100m or more, on winch
• Probe diameter- 47mm or less
• Probe Length- 680mm or less
• Useful for the Borehole- Min.70mm to Max 170mm dia
• Protection- Electronic circuit with current overcharge control and protection
• Must be compatible with an engineering seismograph

iii) Borehole Seismic Energizer Model for P & S Wave
Hammer source should be light weight & compact, used for cross-hole survey, to generate both P and S waves. The hammer can be down to borehole using the steel cable and clamped to the requested depth by a pneumatic clamping. System should be manually or auto controlled by a lever from the surface; simply pushing up the steel cable to execute the first shot, the trigger installed on the energizer should start the acquisition for the “P/S”. For next data acquisition, the mass should be dropped to make the acquisition with inverse polarity.

- Probe Material –Steel
- Cable Length-100 m or more (on cable reel with small wheels)
- Probe Diameter-60 mm or less
- Probe Length-700 mm or less
- Borehole Diameter -Min.70 mm & Max.170 mm
- Probe Weight- less than 4kg

iv) Processing & Interpretation Software

The software should be useful for inversion of downhole seismic data in Windows®. It should support any type of survey geometry provided that the P & S waves recorded at the same depth in the borehole.

It should have features for picking of the first arrivals may be directly done on SEISMIC UNIX file, using the “zoom” and “scroll screen” functions. Conversion modules for files in SEG-2, SEG Y and other formats also should be available.

It should accept up to 30x3 traces; 3 shots with 3 geophones recorded at each depth inside the borehole (the ideal would be tri-axial borehole geophones using two horizontal geophones and a vertical one).

Two energizations, obtained by the impact on the opposite ends of a special striking bar or plate, must be recorded to produce S waves, while the third energization will be obtained by beating on a striking plate to generate P waves. Simply modifying the parameters being set for the entry of data to realize all the other combinations for these operations.

OTHER FEATURES AND MAIN FUNCTIONS SHOULD INCLUDE:

- Grid with trace information and original SU file display
- Import SEG2, SEG-Y and other data files
- Filtering and gain field records
- Use 3 component geophones
- Interactive P-waves and S-Waves first break picking
- Invert and stack horizontal traces to enhance S-Waves
- Produce travel time graph
- Produce interval velocity graph
- Compute Poisson ratio, Shear modulus
- Graphs can be ready to paste into the application (WMF) or to print
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.

1.3 PLEASE ENCLOSE THE DOCUMENT(S) RELATED TO THE ENLISTMENT OF THE INDIAN AGENT WITH DIRECTOR GENERAL OF SUPPLIES & DISPOSALS (DGS & R) UNDER THE COMPULSORY REGISTRATION SCHEME OF MINISTRY OF FINANCE.

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**

   A) 100% PAYMENT THROUGH SIGHTDRAFT/FOREIGN DEMAND DRAFT/LC (EXCEPTIONAL CASES)/SWIFT TELE TRANSFER AFTER RECEIPT OF STORE IN GOOD ORDER AND CONDITION.

   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 AND CONDITION.

B) ENSURE MENTIONING

   i) BANK DETAILS OF THE BENEFICIARY 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.

13. 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.

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) CURRENT INCOME TAX AND SALES TAX CLEARANCE CERTIFICATES AND PAN NO.

C) 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

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>JAN. TO MARCH</th>
<th>APRIL TO JUNE</th>
<th>JULY TO SEPT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROSS REVENUE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 PROF. PROBAL SENGUPTA, DEPARTMENT GEOLOGY & 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 Prof. Probal Sengupta, at the address mentioned above.

LAST DATE FOR SUBMISSION OF SEALED BIDS: 23.06.2015

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.