



# CSIR -National Geophysical Research Institute

## TENDER DOCUMENT

**Tender No.55(5)2016-Pur/T-112  
December 09, 2016**

**Hiring / Leasing of Heliborne  
Multi / dual-moment / Multi-pulse  
TEM System on annual basis for  
high-resolution aquifer mapping**

Uppal Road,  
Hyderabad  
500007

Tel: 0091 40 2701 2887 / 2701 2370  
Fax: 0091 40 2717 1564

e-mail: [purchase@ngri.res.in](mailto:purchase@ngri.res.in)

<b>CSIR-NATIONAL GEOPHYSICAL RESEARCH INSTITUTE</b>		
(Council of Scientific and Industrial Research)		
<b>UPPAL ROAD, HYDERABAD 500 007. Telangana, INDIA</b>		
Telephone No:+91-40-2701 2370 / 2702887	Fax: +91-40-27171564	e-mail: purchase@ngri.res.in

No. 55(5)2016-Pur/T-112

December 9, 2016

**GLOBAL TENDER**

**Sub: Hiring/Leasing of Heliborne Multi/dual-moment / Multi-pulse TEM System – Reg.**

Director, CSIR-NGRI invites sealed tenders under **two Bid system** (**Part-I Techno-Commercial Bid** and **Part-II Commercial Bid**) from OEMs/Agents for providing the following:

Sl. No.	Description	Quantity	Single/ Two bid	Bid Security (EMD)
1	<b>Hiring / Leasing of Heliborne Multi / dual-moment / Multi-pulse TEM System on annual basis for high-resolution aquifer mapping</b>	As per details furnished under Scope of Service	Two Bid	INR 6,00,000 / USD 9,000 / equivalent

**PRE-BID Conference - Date & Time : 22 December, 2016 - 10.30 a.m. (IST)**

The Part – I Techno commercial un-priced bid should accompany EMD as indicated above. **The bids must reach this office on or before 11.01.2017 – 11.30 A.M. ( IST ) and the Part – I Techno commercial un-priced bid shall be opened on same day at 2.30 P.M ( IST )**

The Techno-commercial un-priced bids will be opened in the presence of Bidders' representatives who choose to attend on the specified date and time. In the event of the date specified for bid receipt and opening being declared as a closed holiday for purchaser's office, the due date for submission of bids and opening of bids will be the following working day at the appointed time.

The Director, CSIR-NGRI reserves the right to accept or reject any or all tenders either in part or in full or to split the order without assigning any reasons there for.

**( S.S.CHOUDHARY )**  
- **Stores & Purchase Officer**



## INSTRUCTIONS TO BIDDERS

### 1. GENERAL

- 1.1. The Bidder shall comply fully with the instructions contained in this Bid documents. The bidder is expected to examine all instructions, sections, terms and conditions, specifications etc. in the bid documents. Failure to furnish all information, data as required by the bid documents or submission of a bid not substantially responsive to the bid documents in every respect will be at bidder's risk and may result in the rejection of their bid.
- 1.2. Bidder shall bear all costs associated with the preparation and submission of bid etc. NGRI Will in no case is responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
- 1.3. **A Pre-Bid Conference** will be held for clarifying issues and clearing doubts, if any. Should the Purchaser deem it necessary to amend the Bidding Documents as a result of a clarification, it shall do so following the procedure under *clause* relating to amendment of Bidding documents and Clause relating to Deadline for Submission of Bids. The clarifications and amendments issued would also be hosted on the website of the purchaser for the benefit of the other prospective bidders.

**The Conference will be held as per details given below:**

<b>Date &amp; Time</b>	:	<b>22 December, 2016 - 10.30 a.m (IST)</b>
<b>Venue</b>	:	<b>Lecturer Hall-1 Extension Building 1<sup>st</sup> Floor CSIR-NGRI, Uppal Road Hyderabad - 500 007</b>

A Prospective bidder requiring any clarification may send an e-mail to [purchase@ngri.res.in](mailto:purchase@ngri.res.in) giving complete details of clarifications required, before 18 December, 2016. The response will be given by NGRI during Pre-Bid Conference and will also be hosted on the website for benefit of other prospective bidders.

### **Amendment of Bidding Document**

- 1.4 At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by amendment.
- 1.5. All prospective bidders who have received the bidding documents will be notified of the amendment in writing or by cable or by fax, or by e mail and will be binding on them. The same would also be hosted on the website of the purchaser and all prospective bidders are expected to surf the website before submitting their bids to take cognizance of the amendments.
- 1.6. In order to allow prospective bidders reasonable time to take the amendment into account, while preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids and host the changes on the website of the purchaser.



- 1.7 Offers are to be submitted in triple sealed cover. The first inner cover will contain TECHNO-COMMERICAL bids having all details but price column blanked out. This cover will clearly be super scribed “**TECHNO-COMMERICAL**” bid (Part – I) along with tender number. The second sealed inner cover will contain only the price schedule duly filled in and signed and will be clearly super scribed “**Price bid (Part - II)**” along with tender number. These two covers shall be put into an outer cover and sealed. The outer covers should duly bear the number and date of closing/opening of the tender prominently underlined, and should be addressed to the Director, NGRI.

Bidders desiring to deliver the bid in person may handover the same to the Bid Receiving Officer at NGRI. Bidders may also submit their offers by registered post / speed post to reach NGRI on or before the due date and time.

## **2. EXPERIENCE OF THE BIDDER & DOCUMENTS REQUIRED**

2.1 Experience - As per the Bid Evaluation Criteria (BEC) read with the SCC & GCC

### **2.2 The following document should be enclosed along with the Bid.**

- a) The original copy of Bid document downloaded is duly signed on each page as token of having accepted the terms and conditions of the Bid documents. Proof of experience should be submitted along with techno-commercial (Unpriced) bid.
  - b) Descriptive literature of the Bidder’s constitution, experience and past performance on similar jobs and capabilities of the personnel.
  - c) Technical and other details except Price as per Bid Document duly filled in and signed.
  - d) Bidder’s exception, if any, to NGRI’s terms and conditions of the contract.
  - e) Copy of PAN CARD of the firm.
  - f) Bidders are required to submit EMD as per Clause 7.1
  - g) Any other information/details as required under Bid Document
- 2.3 Bidders are required to indicate the type and model of the Equipments proposed to be deployed. Bidders will clearly state the Type and Model of Equipments with complete specifications supported by technical brochures
- 2.4 Telex/Telegraphic/Fax/Photocopy/e-mail offer is not acceptable.
- 2.5 Bidders shall clearly indicate their legal constitution and person signing the Bid shall state his capacity as also the source of his authority to bind the Bidder. The power of Attorney or Authorization or any other document constituting adequate proof of the powers of the signatory to bind the bidder shall be annexed to the Bid. NGRI will reject outright any Bid unsupported by adequate proof of the signatory’s authority.



2.6 The Bidder shall sign his proposal with the exact name of the firm to whom the contract is to be awarded. Executive of the Bidder's organization stating his rank/designation, enclosing a copy of his Power of Attorney to sign the Bid, shall duly sign the Bid.

2.7 Relationship with NGRI, if any.

2.8 The bidder shall declare in writing that neither he nor any of his associates is in any way related to any officer of the rank of Under Secretary or above in CSIR/Laboratories. NGRI may decide not to deal with such firms who fail to comply with the above advice.

2.8.1 Canvassing in connection with the tender is strictly prohibited and the tender submitted by the contractor who resorts to canvassing will be liable for rejection.

2.9 Site visit, Local condition etc. – NOT APPLICABLE

### 3.0 INSTRUCTION FOR FILLING BIDS

3.1 Bid documents shall be filled complete in all respect and shall be submitted together with requisite information. It shall be complete and free from any ambiguity, changes or interlineations.

3.2 The Bidder's Bid and any annotation or accompanying documentation shall be in English language.

3.3 Bidder's shall set their prices/rate in figures preferably type written and without any qualification. Each figure stated shall be repeated in words and in the event of discrepancy between the amounts stated in figure and words, the rates quote in words shall be deemed to be the correct amount. Any changes / corrections in bid shall be authenticated with signature of bidder otherwise the bid is liable to be rejected. Illegible price bids will be rejected outright. Bids containing qualifying expressions subject to minimum acceptance etc., will be disqualified.

3.4 No clarifications shall be sought after opening of techno-commercial bids. Conditional bids indicating exceptions/ deviations to tender conditions will be summarily rejected.

3.5 The bidders who are capable to take up the subject work in totality shall submit the bids. But the prices should be quoted item wise as suggested in NIT & Price Schedule. Bidders should quote a FIRM PRICE and they shall be bound to keep this price firm and without any escalation for any reason whatsoever, until the completion of the contract period.

3.7 No correspondence after opening of Bid will be entertained from the bidder. However, if NGRI sends any communication with respect to the bid the same is to be complied with.



#### **4. Deadline for Submission of Bids**

- 4.1 Bids must be received by the Purchaser at the address specified in Invitation for bids not later than the time and date specified therein. In the event of the specified date for the submission of Bids being declared a holiday for the Purchaser, the Bids will be received upto the appointed time on the next working day.
- 4.2 The Purchaser may, at its discretion, extend the deadline for submission of bids by amending the bid documents in accordance with Clause relating to Amendment of Bidding Documents in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

#### **5. VALIDITY OF TENDER**

- 5.1 The tender must be kept valid for acceptance for **90 days** from the date of closure of tender.
- 5.2 The successful Bidder shall be required to execute a Contract on a Non Judicial Stamp Paper of appropriate value soon after receiving Letter of Intent i.e., within 10 days of issue or within such extended time as may be permitted by NGRI in this behalf . For this purpose, the Bidder shall depute his authorized representative along with power of attorney in his favour. Main condition of the proposed contract has been specified hereinafter under the title "General Condition of Contract" in the bid document.

#### **6. SCOPE OF SERVICE**

- 6.1 Detailed scope of service is stated elsewhere in this document.

#### **7. EARNEST MONEY DEPOSIT ( EMD)**

- 7.1 Successful Bidders are required to submit EMD **valid for 135 days** from the date of opening of tender for an amount of **Rs.6.00 lakhs** (Rupees Six lakhs) / USD 9000 (USD Nine thousand ) / Equivalent. EMD can be in the form of a DD drawn in favour of NGRI, payable at Hyderabad. In case, the bidder chooses to submit bank guarantee, it should be strictly as per proforma attached from a Nationalized / Scheduled Bank.
- 7.2 The successful bidder is required to extend the validity of the EMD for a further period till the formal contract is signed and security deposit /performance bank guarantee submitted.
- 7.3 Bid not accompanied by Earnest Money Deposit as mentioned above will be summarily rejected.



- 7.4 The EMD of unsuccessful Bidders will be returned once the successful bidder furnishes the performance bank guarantee or in case the tender is cancelled. The EMD shall be forfeited in the following events:
- a) If the Tender is withdrawn or modified or varied in a manner not acceptable to NGRI, or deviated from the terms and conditions of tender during the Bid Validity period or any extension thereof.
  - b) If a successful Bidder fails to sign the contract.
  - c) If a successful Bidder fails to furnish Performance Bank Guarantee within 10 days before expiry of Bank Guarantee /EMD.

## **8. RIGHT TO REJECT**

NGRI reserves the right to reject any or all quotations without assigning any reason whatsoever. NGRI also reserves the right to cancel this tender at any stage without assigning any reason whatsoever.

## **9. AUTHORISATION**

Bidders are at liberty to be present or to authorise their representative at the time of opening of Tender on the date specified. A letter of authorisation must be forwarded to COSP, NGRI along with the tender document and a copy of this letter must be produced in the office by the person attending the opening of Tender. Unless this letter is presented by him, and he may not be allowed to attend the opening of Tender.

## **10. PERFORMANCE BANK GUARANTEE**

The successful bidder has to furnish to CSIR-NGRI, a Performance Bank Guarantee for a sum equivalent to 10% of total contract value by way of Bank Demand Draft in favour of Director, NGRI, payable at Hyderabad **OR** Bank guarantee from a Nationalised / Scheduled Bank as per proforma attached. This Bank Guarantee shall be valid up to 60 days beyond the date of completion of the contract and shall be sent to Director, NGRI directly by the Issuing Bank.

## **11. GENERAL CONDITIONS**

- a. In case of an unscheduled holiday on the prescribed closing /opening day of the tender, the next working day will be treated as schedule prescribed day of closing / opening of the tender
- b. This tender being under two bid systems, only the techno-commercial bids will be opened on the opening date indicated. Price bids of the short listed bidders will be opened later on under intimation to the Bidders.



### SCHEDULE OF RATES

S.N	DETAILS	UNIT RATE	TOTAL
1	Annual rental charges of systems		
2	Mobilization charges	Lumpsum	
3	Demobilization charges	Lumpsum	
4	Data acquisition charges (per LKM) for a total of 5000 LKM		
5	Training charges (8 persons)	Lumpsum	
6	Technical support charges per day for 30 days		
7	Service Tax, applicable		
<b>TOTAL (figures and in words) (1 to 7)</b>			

Note: 1. Payment will be made for actual number of LKMs / Days

2. Comparison will be made on Consolidated charges i.e, Annual rental charges, mobilization, demobilization, Data acquisition charges for 5000 Line Kilometers, Training charges, Technical support charges for 30 days and Taxes as applicable.
3. Work order will be placed on this basis only for one year. However, this is subject to the condition that the actual Data acquisition LKM and their charges will be deemed to be amended as per the actual usage. No claim on this account will accrue on either side whatsoever.

Signature of the Bidder with Stamp





**BID EVALUATION CRITERIA**

<b>PARTICULARS</b>	<b>COMPLTED AND ACCEPTED /NOT ACCEPTED /NOT APPLICABLE</b>
<p>To meet specifications and other requisites given in scope of service.</p>	
<b>A. COMMERCIAL</b>	
<p><b>THE BID WILL BE EVALUATED BASED ON TOTAL COST AS STATED IN SCHEDULE OF RATES</b></p>	



## GENERAL CONDITION OF CONTRACT

### 1. ADDRESS:

For the purpose of this Contract, the addresses of the contracting parties will be as follows and all correspondences and notices in relation to the present contract sent to the parties to the addresses mentioned below shall be deemed to be sufficient for serving of Notice on the parties concerned.

Controller of Stores & Purchase  
National Geophysical Research Institute  
(Council of Scientific & Industrial Research)  
Uppal Road, Hyderabad – 500 606

PH: 040-27012887-27012370/ Fax: 040-2717 1564  
e-mail : purchase@ngri.res.in

### 2. Name & address of the Contractor & contract duration:

Name :

- a. **The duration and validity of the contract will be initially for a period of one year which may be extended for the next year if required, provided the services are found to be satisfactory, by the competent authority of NGRI.**
- b. NGRI reserves the right to change the period of contract, to instruct the contractor in respect of starting and closing of contract operation. NGRI will not be responsible for any compensation whatsoever on this account.

### 3. DELIVERY PERIOD:

Delivery period means the deployment of requisite equipment at NGRI, Hyderabad.

Delivery period allowed is maximum 30 days from the date of issue of Contract by NGRI.

If the equipment is not delivered within 30 days at NGRI, Hyderabad, penalty will be levied @ of 0.5 (half percent) of contract value per week subject to maximum of ten weeks towards the late delivery thereafter CSIR/NGRI holds the option to cancel the contract and forfeit the entire Performance Bank Guarantee of the defaulting contractor.

Same way, if the equipment is not maintained properly and if it is down for more than 5 working days, penalty will be levied @ of 0.5 (half percent) of contract value per day subject to maximum of ten days towards the non-maintenance thereafter CSIR/NGRI holds the option to cancel the contract and forfeit the entire Performance Bank Guarantee of the defaulting contractor.

### 4. FLYING MILEAGE – Not applicable



## 5. TERMS OF PAYMENT

- a. Payment for annual rental charges, will be made on six monthly basis within 30 days, after completion of six month period.
- b. Payment for data acquisition charges, will be made within 30 days, after completion of data acquisition on actual basis (as per Note 3 of schedule of rates).
- c. Payment of technical support charges, will be made within 30 days, after completion of technical support.
- d. Payment of training charges, will be made within 30 days, after completion of technical support.

## FIRM RATES & CURRENCY OF PAYMENT

The rates payable under this contract herein above shall be firm throughout the period of the contract and no escalation shall be allowed under any circumstances.

All payments to the contractor under this contract shall be made only in the currency of contract, against invoices to be raised by the contractor. The payment will be made electronically directly to the contractor's bank.

## 6. DUTIES & TAXES

### Payment of Duty and Tax

- 6.1 The import of any materials/equipment/components as may be required for executing the contract will have to be arranged by the successful bidder who shall become the Contractor and CSIR-NGRI will not provide any import license. But CSIR-NGRI will provide Customs Duty Exemption Certificate, as per Customs Notification No. 51/96-Cus dated 23.7.1996. However, it will be the responsibility of the contractor to ensure that all the existing rules and regulations guiding the conduct of such business laid down by various competent govt. agencies are followed without any deviation.
- 6.2 Payment of all duties including **Excise Duty and Customs Duty** will be to the account of the successful bidder who shall become the Contractor.
- 6.3 The Contractor shall bear all **Indian Corporate Taxes** levied or imposed on the Contractor under the Agreement, under the provision of Income-Tax Act 1961 or any amendment thereof and under the Company's (profit) Surcharge/tax 1964 or any amendment thereof on account of payments received by it from the CSIR-NGRI for work done under the Agreement. It shall be the responsibility of the Contractor to submit to the concerned Indian Authorities the returns and all other connected documents required for this purpose.



6.4 The Contractor shall also provide CSIR-NGRI such information as it may require with regard to the Contractor's income and expenditure under the AGREEMENT for proper assessment of taxes and duties. Indian Income Tax Authority, the said interest/penalty shall be paid by the Contractor only.

6.5 CSIR-NGRI shall if so required by the applicable laws in force withhold from the amount due to the Contractor, income tax payable by the Contractor at the rate in force, and pay to the Indian Tax Authority directly. It shall be the Contractor's sole responsibility to determine the amount of Taxes as due and admissible and the likely rate at which the deductions will be made on account of taxes etc. by CSIR-NGRI for payment to the Indian Tax Authorities.

6.6 **TDS as applicable will be deducted from the invoices, as per rules in force.,**

## 7. **FORCE MAJEURE**

Neither party shall be held responsible for non- fulfilment of their respective obligations under this agreement due to the exigency of one or more of the force majeure events such as but not limited to Act of God, War, Flood, Earthquake, Strike, Lockouts, Epidemics, Riots, Civil commotion, Instrument breakdown either due to accident or otherwise etc. Provided on the occurrence and cessation of any such events, the party affected thereby shall give a notice in writing to the other party within one week of such occurrence or cessation, If the force-majeure conditions beyond two weeks, the parties shall then mutually decide about the future course of action.

In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under the contract, the relative obligation of the party affected by such Force Majeure shall upon notification to the other party be suspended for the period during which such cause lasts.

## 8. **TERMINATION**

a. In the event of the Contractor at any time during the term of this contract becomes insolvent or makes a voluntary assignment of its assets for the benefit of creditors or is adjudged bankrupt, then, NGRI shall by a notice in writing have the right to forthwith terminate this contract.

b. In all cases of termination the obligation of NGRI to pay charges shall be limited to the period up to the date of termination. Notwithstanding the termination of this contract the parties shall continue to be bound by the provisions of this contract that reasonably require some action or forbearance after such termination.

c. If NGRI considers that the performance of the contractor is unsatisfactory or not up to the expected standard, NGRI shall notify the contractor in writing and specify in details the causes of dissatisfaction. NGRI shall have the option to forthwith terminate the contract, if contractor fails to comply with the requisitions contained in the said written notice issued by NGRI within ten days of the receipt thereof.



d. In case the contractor's right and/or obligations under this contract are transferred or assigned without prior written consent of NGRI, NGRI may at its absolute discretion terminate this contract, without prejudice to the other rights it has under the contract.

## **9. LIABILITY AND INDEMNITY**

- a. The Contractor agrees to indemnify, defend and hold NGRI harmless from and against any and all claims, suits or causes of action for injury to or worth of contractor's personnel and for loss or damage to property of contractor or his personnel arising from or related to performance of this contract, and without regard to the negligence or fault of any party.
- b. Except as otherwise specified in Article 11.1, NGRI agrees to indemnify defend and hold contractor harmless from and against any and all claims, suits or causes of action for injury to or death of loss of damages to the property or persons belonging to its employees arising from or related to performance of this contract and without regard to negligence or fault of any party.

## **10. DISCHARGE OF PERFORMANCE BANK GUARANTEE**

On receipt of certificate from the NGRI representative that the contractor has satisfactorily performed the contract, the Performance Bank Guarantee will be released.

## **11. JURISDICTION AND APPLICABLE LAW**

This contract shall be governed by the laws of India and shall be subjected to the jurisdiction of courts in Hyderabad.

## **12. SEVERABILITY**

Should any provision of this contract be found to be invalid, illegal or otherwise not enforceable by any court of law, such finding shall not affect the remaining provision and they shall remain binding on parties hereto.

## **13. FAIRNESS AND GOOD FAITH**

Good Faith

The Parties undertake to act in good faith in respect to each other's rights under this Contract and to adopt all reasonable measures the realization of the objectives of this Contract.



#### **14. ARBITRATION**

Except as hereinbefore provided, all disputes arising out of or in connection with this contract shall be amicably settled or else the same be referred to the sole arbitration of a person nominated by Director General, CSIR as such Arbitrator. The arbitration proceedings shall be held under the Indian Arbitration and Conciliation Act, 1996 and the statutory modification or re-enactment thereof, if any, and the rules made there under for the time being in force shall apply to such arbitration and this deed shall be deemed to be submission to arbitration within the meaning of the said Act. The cost of the arbitration shall be shared between the Parties. The award of the Arbitrator shall be final and binding on the parties. The venue of the arbitration shall be Hyderabad, India.

#### **15. ASSIGNMENT**

The rights and obligations of the Contractor shall not be assigned without the prior written consent of NGRI.

#### **16. INTERPRETATION**

The title and headings given in this Contract are inserted for convenient reference only and shall not be construed as limiting or extending the meaning of any provisions of this contract.



## Description of Scope of work

<b>A</b>	Leasing of heliborne Multi/dual-moment/Multi-pulse TEM system including one Mobilization & Demobilization.
<b>B</b>	Useful data acquisition as detailed in Schedule of Rates.
<b>C</b>	Technical Support for the data acquisition including training to the CSIR-NGRI personnel on survey system maintenance, software and hardware (in field as well as in lab), data acquisition, QA&QC, health, safety and security, etc.
<b>D</b>	<u>Systems</u> Multi/Dual-Moment/multi-pulse TEM and Magnetometer sets including auxiliary systems such as altimeter, DGPS, navigation system, etc.



**Special conditions of contract (SCC)**

1	<b>Heliborne Multi/dual-moment / Multi-pulse TEM System</b>	
1.1	General	<p>The Heliborne multi/dual-moment / Multi-pulse TEM system (also referred to as 'The system' at some place in the following text) should have complete set including a transmitter capable of transmitting pulses in multi moment (low and high) mode, a receiver to <a href="#">measure ground response</a>.</p> <p>The TEM <a href="#">transmitter/receiver assembly should be configured to a helicopter-mounted under slung operation</a>.</p>
1.2	Transmitter and Receiver	<p>To achieve high degree of lateral resolution, it is desirable to have transmitter coil area as small as possible (preferably <math>\leq 400 \text{ m}^2</math>) to ensure minimal lateral averaging of resistivity.</p> <p>System should be able to transmit multi/dual-moment/multi pulse EM signal with the transmitter/receiver loop towable at low level (<math>\sim 30 \text{ m}</math> above ground surface) as well as capable of collecting data above any terrain. <a href="#">The receiver should have 15 or more number of gates for both the moments</a>.</p> <p>The orientation and geometry of the transmitter/receiver coils to be recorded accurately during the data acquisition using suitable DGPS and inclinometers, to account for the errors due to orientation and change <a href="#">in transmitter/receiver loop geometry</a> in the final processing. If external generator is used as a power source, it should be placed at a sufficient distance from EM transmitter <a href="#">and no noise affecting the receiver signal</a>.</p> <p>The system should be capable of data collection at survey speeds in the range of 60 to 150 km/h ensuring that the geometry of the transmitter loop remains horizontal (within <math>\pm 10^\circ</math>) for various geophysical applications to acquire high resolution and cost-effective data optimally. The deviations of the transmitter loop from horizontal plane should be measured precisely (<math>\leq 1^\circ</math>) for processing/modeling corrections.</p> <p>For high moment the system <a href="#">dipole moment</a> should be configurable in the range from 250,000 NIA to <math>\geq 500,000 \text{ NIA}</math> using the same <a href="#">transmitter geometry</a>.</p> <p>The low moment should range between 3000 to 5000 NIA with usable time gates <a href="#">in the range of</a> <math>\leq 10 \mu\text{s}</math> to <math>\sim 2 \text{ ms}</math> in order to obtain very shallow information around 5 m bgl.</p>
1.3	Resistivity Range	System should be capable of mapping features with a wide range of resistivity preferably $10^{-1} \Omega\text{m}$ to $10^3 \Omega\text{m}$ encountered in aquifer mapping facilitating effective discrimination between weak geological contrasts in the top layers concurrently with those at depth
1.4	Accessories	The system must be complete in all respects including the essential accessories for high-resolution multi-moment TEM data collection, and quality check. The major accessories are listed.





1.5	5 Laser Altimeter	2 nos., Digital, Class 1 Laser, complying the regulations with respect to the safe use of laser equipment, Resolution: ~ 20 cm, Accuracy: ~ 10 cm or better. <a href="#">The range should be around 1 to 250 m or higher</a>
1.6	Differential GPS and Navigation	-2 nos or more., including 1 rover and 1 base <a href="#">station</a> with high accuracy (better than $\pm 1$ -metre). In addition, they should supply <a href="#">navigational support system with suitable software which facilitates creation of blocks, survey lines and provides onboard navigational aid to the pilot. Required position accuracy is around <math>\pm 2</math> m. The real time differential corrections may be obtained from either a GPS reference station or from a satellite system or any other way practiced internationally for such operation.</a>
1.7	Data and Format	The system should provide TEM data in a format ready for inversion in processing software <a href="#">platform</a> 'Aarhus Workbench' for layered inversion and also in other formats, if required.  System description, settings files, importing data, system parameters, etc. required for data processing should be provided
1.8	Calibration	The geophysical (at least multi-moment TEM) system should be calibrated at an established test site and supportive documents to this effect should be provided.
1.9	Data Quality, Control, Security & processing	Data QA/QC needs to be done at field site / base camp under secure condition by CSIR-NGRI officials/scientists. In this regards necessary software and training for QA/QC need to be provided by the contractor before the actual surveys start.  All the acquired data is confidential and is absolute property of CSIR-NGRI, Govt. of India. It needs to be handed over to NGRI in secure condition. Afterwards the collected data, if any, should be deleted from system/devices of the field personnel provided by the supplier to ensure that no data is transmitted elsewhere.  To achieve better field data QA & QC, the heliborne TEM system must be able to facilitate 1D inversion of the collected data within 48 hours of flight completion.
1.10	Other system	The system should also include a high-resolution airborne magnetometer and a ground magnetometer to record diurnal variations. The specifications are provided below.



2	<b>Magnetometer</b>	
2.1	Airborne magnetometer	
2.1.1	Number	1
2.1.2	Error envelope	Not exceeding $\pm 0.2$ nT for more than 10% of any flight line.
2.1.3	Sensitivity	Typically 0.002 nT at a 0.1 second sample rate.
2.1.4	Operating range	~20,000 to 100,000 nT
2.1.5	Heading error	< 2 nT
2.1.6	Absolute accuracy	Better than 3 nT throughout range.
2.1.7	Operating temperature	-5°C to +50°C
2.1.8	Synchronization	The counter is to be synchronized with the TEM system. The system should record magnetic data only during the TEM off time.
2.2	Ground based magnetometer	
2.2.1	Numbers	1
2.2.2	Magnetic base station	User selectable sample interval ranging from 0.2S to 1S and a sensitivity ~ 0.1 nT
2.2.3	Digital recordings	Digital data should include standard parameters like: the date, an absolute value of the total magnetic field and GPS time, etc. with accurate synchronization to the airborne data acquisition system. The system should have sufficient memory to store 10-12 hours data
2.2.4	Resolution	0.01 nT or better
2.2.5	Absolute Accuracy	$\pm 0.1$ nT or better
3	<b>Other Requirements/Conditions</b>	
3.1	System Engineer/ Operator	A system engineer will be needed at the time of DGCA inspection for assembly and during the field surveys
3.2	Insurance	The supplier should ensure the insurance of all the systems and their personnel for entire period
3.3	Service and maintenance	Necessary time bound/earliest possible service and maintenance including spare parts have to be ensured by the supplier without attracting any additional cost. Service and maintenance, in case of major changes, should not exceed more than a week. Delay will attract penalization depending upon the resultant loss to CSIR-NGRI.



3.4	Experience	<p>The aquifer mapping requires high-resolution data from very shallow (~ 5 m to map reliably the upper soil essential for recharge zones) to deeper horizons (aquifers and bedrock). Therefore, the contractor must supply essential documents of Heiborne multi moment/pulse TEMsystem to support their adequate experience on groundwater related studies in various geological terrains.</p> <p>The company should have experience of at least 50,000 line kilometer data collection using multi moment/pulse TEM system for groundwater investigations.</p> <p>It will be preferred if the supplier has experience of leasing the system successfully in the past. Supportive documents to this effect may be provided.</p>
3.5	Age of the system	<p>The Multi moment/pulse system should be preferably new. In any case it should not be more than 2 years old and in good condition.</p>
3.6	Technical support and Training	<p>The supplier needs to provide technical support for the data acquisition including training to the CSIR-NGRI personnel (~8 nos.) on survey system maintenance, software and hardware (in field as well as in lab), data acquisition, QA&amp;QC, system health, safety and security, etc.</p> <p>Training schedules as below:</p> <ol style="list-style-type: none"> <li>1) One week training prior to surveys on field operations, data acquisitions and AQ/QC</li> <li>2) One week post survey on data processing, noise reduction calibration, troubleshooting etc.</li> </ol>
3.7	Back up	<p>Additional alternative devices/essential major spares may be ensured as standby for backup reasons.</p>



## AGREEMENT FORM

This agreement made and entered into on \_\_\_\_\_ day of \_\_\_\_\_, 2016

Between

CSIR (Council of Scientific & Industrial Research) a Society registered under the Societies Registration Act (XXI of 1860), having its registered office at 'Anusandhan Bhavan'2, Rafi Marg, New Delhi -110 001 (hereinafter called CSIR which expression shall where the context so admits include its successors and permitted assigns) of the one part.

And

\_\_\_\_\_(Name of the Party) a \_\_\_\_\_ (Company) registered in India under the \_\_\_\_\_(Act No.& Year) and having its registered office at \_\_\_\_\_(Address)(hereinafter called the PARTY which expression shall where the context so admits include its successors and permitted assigns)of the other part.

### Preamble

Whereas CSIR through its National Geophysical Research Institute, Hyderabad, hereinafter referred to as CSIR-NGRI invited competitive bids vide its Tender Enquiry No. \_\_\_\_\_ and the bidding documents thereof.

And whereas the Contractor/Firm has submitted its offer vide \_\_\_\_\_ dated \_\_\_\_\_ claiming it has sufficient technical and management know-how and has offered to deploy its Helicopter / crew and services as detailed in this agreement for subject work for CSIR/NGRI.

And whereas CSIR-NGRI has issued a firm Letter of Intent No. \_\_\_\_\_ on \_\_\_\_\_.

NOW THEREFORE, The parties hereby agree as follows:-

The following documents attached hereto shall be deemed to form an integral part of this contract.

- (i) The General Conditions of Contract
- (ii) Scope of service
- (iii) Original Tender document
- (iv) Price Bid
- (v) Acceptance Letter
- (vi) Any Other document

The mutual rights and obligations of CSIR/NGRI and the Contractor shall be as set forth in the contract, in particular:



- (i) The Contractor shall carry out the Services in accordance with the provisions of the contract; and.
- (ii) The NGRI shall make payments to the Contractor in accordance with the provisions of the Contract.

IN WITNESS THEREOF, EACH PARTY HAS EXECUTED THIS CONTRACT AS OF THE DAY AND YEAR FIRST ABOVE WRITTEN.

SIGNED, SEALED AND DELIVERED

On behalf of the Contractor

On behalf of the CSIR/NGRI

( )

( )

WITNESSESS:

(1) \_\_\_\_\_

(1) \_\_\_\_\_

(2) \_\_\_\_\_

(2) \_\_\_\_\_



## PROFORMA FOR BANK GUARANTEE FOR EMD

Whereas \_\_\_\_\_ (hereinafter called the "tenderer") has submitted their offer dated \_\_\_\_\_ (date of submission of tender) for the supply of \_\_\_\_\_ (name and/or description of the goods) (hereinafter called the tender")

KNOW ALL PEOPLE by these presents that WE \_\_\_\_\_ (name of bank) of \_\_\_\_\_ (name of country), having our registered office at \_\_\_\_\_ (address of bank) (hereinafter called "the Bank"), are bound unto \_\_\_\_\_ (name of Purchaser) (hereinafter called "the Purchaser") in the sum of \_\_\_\_\_ for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

THE CONDITIONS OF THIS OBLIGATION ARE:

- (1) If the tenderer withdraws or amends, impairs or derogates from the Tender in any respect within the period of validity of this tender.
- (2) If the tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity:-
  - (a) If the tenderer fails to furnish the Performance Security for the due Performance of the contract.
  - (b) Fails or refuses to accept/execute the contract.

WE undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it, owing to the occurrence of one or both the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including forty five (45) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the above date.

\_\_\_\_\_  
(Signature of the authorized officer of the Bank)  
Name and designation \_\_\_\_\_  
of the Officer  
Seal, name & address of \_\_\_\_\_  
the Bank



## INDEMNITY BOND

We M/s \_\_\_\_\_ having Registered Office at hereby indemnify NGRI, Hyderabad, India and acting with regard to Contact No. \_\_\_\_\_ dated \_\_\_\_\_ for \_\_\_\_\_ we fully indemnify NGRI against any future claims with regard to the pending payments to be made by us and thus indemnify NGRI from all future claims if any payments in this regard pending between us and other party.

We indemnify NGRI against any penalties / claims arising arising from any default on our part in complying with the provisions and obligations under Contract Labour (Regulation and Abolition) Act, 1970 and rules hereunder.

We further indemnify NGRI to the effect that all wages / due of the workman engaged by us or our sub-contractor have been fully paid for the entire contract period by us. We indemnify NGRI against any default on our part in complying with the status / laws of the local authorities, State and Central Government. We further indemnify NGRI and hold it harmless in respect of all or any expenses arising from any and all injury to the persons, animal or things and for all damages to the structural and or decorative part of property which may arise from the operations or our neglect. Whether such injury or damage Arisen from carelessness, accident or any other cause whatever in any way connected with the carrying out of the compensation or damages consequent upon such claim. We further indemnify NGRI against all claims which may be made against NGRI by any member of the public or their party in respect of anything which may arise in respect of the work or in consequence thereof and caused by our negligence or negligence of our representative / employees.

We further indemnify the NGRI in respect of any costs, charges or expenses arising out of any claim or proceeding at law and also in respect of any award of compensation or damages arising there from. NGRI shall be at liberty and is herby empowered. To deduct the amount of damages, compensations, costs charges and expenses as above said from sums may be due to us. We further indemnify NGRI in respect of any claims/issues arising out of the execution of the contract and no claims are pending with NGRI against the contract referred as above.

This indemnify Bond executed this day the \_\_\_\_\_



## PERFORMANCE BANK GUARANTEE

To

The Director  
National Geophysical Research Institute  
(Council of Scientific & Industrial Research)  
Uppal Road, Hyderabad-500 007.

1. In consideration of Council of Scientific & Industrial Research (hereinafter called 'the Council') having award to M/s. \_\_\_\_\_, a company registered under the said contract under the terms and conditions of an Agreement dated \_\_\_\_\_ made between the Council and the Contractor hereinafter called the said Agreement and Council agreed to accept a Deed of Guarantee as herein provided for Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) from a Scheduled Bank towards due performance of the contract by the Contractor as per terms and conditions of the Contract on the condition that the Bank on demand from the Council and demur pay to the Council the aforesaid amount.
2. We, \_\_\_\_\_ Bank Ltd., (hereinafter) referred to as the 'Bank' do hereby undertake to pay to the Council an amount not exceeding Rs. \_\_\_\_\_ against any loss or damage caused to or suffered or would be caused to or suffered by the Council by reasons of any breach or breaches of any of the terms of conditions of the said Agreement by the said Contractor.
3. We, \_\_\_\_\_ Bank Ltd., do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on a demand from the Council by stating the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Council for reasons of any breach by the said Contractor(s) of any of the terms and conditions contained in the said Agreement or by reason of the Contractor(s) failure to perform the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. \_\_\_\_\_.





4. This guarantee shall come into force immediately and continue in force and remain valid up to completion of all works under the said contract, which according to the terms of the said contract, should be from the probable date of commencement viz., the (day) .....If, however, the period of the completion of the works under the said contract is for any reason extended and upon such extension if the Contractor fails, before the terms of this guarantee expires, to furnish a fresh or renewed guarantee for the extended period, the bank shall pay to the Council the said sum of Rs. \_\_\_\_\_ or such lesser sum as Council may demand.
5. This Guarantee shall not be affected by any change in the constitution of the Bank or of the Contractor.
6. Notwithstanding anything hereinbefore contained, the liability of the Bank under this guarantee is restricted to Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) and the guarantee shall remain in force till \_\_\_\_\_ unless claim or demand under this guarantee is presented to the Bank on or before \_\_\_\_\_, from that date all the right of Council under this guarantee shall be forfeited and the Bank shall be released and discharged from all obligations hereunder.

For \_\_\_\_\_ BANK LTD.,

