Indian Institute of Technology (Indian School of Mines)
Dhanbad – 826004, Jharkhand, India

REMINDER GLOBAL TENDER

No. CE-500358-16-17 Date: 2 February 2017

To
M/s

Sub: NIT No. CE-5000358-16-17 for Supply, Installation, testing and commissioning of **Data Acquisition System and Sensors.**

(Due date 24.02.2017)

Sir(s),

Indian Institute of Technology (Indian School of Mines), Dhanbad invites tenders/ quotations for Supply, Installation, testing and commissioning of **Data Acquisition Systemand Sensors.** - 03 No
of submission and opening of tenders are as under:

S No	Items	Particulars
1.	Tender cost	Rs.5,000.00 (Rupees Five thousand only)
2.	Earnest money deposit	Rs.2,00,000.00 (Rupees Two lakhs only)
3	Last date for seeking clarification(s), if any	**17.02.2017 at 3:00 P.M.**
4.	Date and time for submission of tenders	**24.02.2017 at 3:00 P.M.**
5.	Date and time of opening of tenders	**24.02.2017 at 4.00 P.M.**

Tender document containing following document is available in our website www.ismdhanbad.ac.in/tender_page), which may kindly be referred.

1. Technical specifications as per Annexure-I
2. General terms & condition as per Annexure-II
3. Acceptance of terms & conditions as per Annexure-III
4. Particular of Bank Guarantee as per Annexure –IV
5. Compliance Statement as per Annexure -V

Firms who do not want to quote may please intimate us along with reasons for same as it will help us to update our suppliers list.

Encl: As above

Sinha 02/02/17

Asst Registrar (P&S)
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Annexure I

Technical Specifications

Requirement: **Data Acquisition System and Sensors**

Quantity: **03 sets (Three sets)**

The specifications for data acquisition system and sensors for a single set are as following:

A	**DATA LOGGER: 01 NO.** Universal multi-channel data logger with built in modem for telemetry (SMS/GPRS). Type: Stand Alone Data Logger (Vibrating wire/Normal sensor)
1	**Supported Sensors:** Load cell, Strain gauge, 6 component force sensors, LVDT, Thermocouple, RTD, Thermister, Pressure cell, Torque sensor, IR sensors, Laser distance sensors, proximity switches, RPM sensors, Voltage , Current , Resistance , Frequency etc.
2	**Analog Channels :** • 16 analog input channels (expandable to 320) • Each channel is independent and supports : one isolated • 3 wire or 4 wire input, or two isolated 2 – wire inputs, or Three common referenced 2 – wire inputs. • Two wire with common reference terminal : 48 (expandable to 960) • Two wire isolated: 32 (expandable to 640) • Three and four wire isolated: 16 (expandable to 320)
3	**Analog Sensors :** • Thermocouple : Types : B, C, D, E, G, J, K, N, R, S, T and Calibration standard: ITS-90 • RTDs : Materials supported: Pt, Ni, Cu and Resistance range: 10 Ohm to 10K Ohm • Vibrating Wire : Frequency range : 500 to 5 KHz Coil resistance : 50 to 200 Ohm Simulation Method : Single Pulse Pluck • Thermistors : Types: YSI 400xx Series, other types and Resistance range: <10K Ohm
4	**Digital Channels :** Digital Input/Outputs • 8 bi-directional channels • Input Type: 8 logic level (max 20/30V) • Output Type : 4 with open drain FET (max: 30V, 100mA) , 4 with logic output Relay Output • 1 latching relay, contacts (max: 30Vdc , 1A)

5	**Alarms:** • Condition: high, low, within range and outside range • Delay: optional time period for alarm response • Actions: set digital outputs, transmit message, and execute any data taker command.
6	**Data Storage :** Internal Store • Capacity: 128MB = approx 10,000,000 data points Removable USB store device: Collecting data using pen drive Types: compatible with USB 1.1 or USB 2.0 drives, e.g. Flash drive. Resolution: 18bits
7	**Communication Interfaces:** **Ethernet Port** • Interface: 10BaseT (10Mbps) • Protocol: TCP/IP, Modbus (Master & Slave) **USB Port** • Interface: USB 1.1 (virtual COM port) • Protocol: ASCII command **Host RS232 Port** • Speed: 300 to 115,200 baud (57,600 default) • Protocols: ASCII command , TCP/IP (PPP) • Modbus (Master & Slave), Serial Sensor **Serial Sensor Port** • Interface: RS232, RS422m, RS485 • Speed: 300 to 57,600 baud • Flow Control: Hardware (RTS/CTS), • Software (XON/XOFF) , None • Protocols: Modbus (Master & Slave) , Serial Sensor **Modem**: Built in Modem for Telemetry (SMS/GPRS), (if required shall be able to send SMS and E-mail to multiple users) **FTP Server:** Access logged data from any FTP client or web browser. **FTP Client:** Automatically upload logged data direct to an FTP server. **Display and Keypad:** • Type: LCD, 2 line by 16 characters, backlight. • Display Functions: channel data, alarms, system status. • Keypad: 6 keys for scrolling and function execution. • Status LEDs: 4 for sample, disk, attention and power.
8	**Calculated Channels:** Combine values from analog, digital and serial sensors using expressions involving variables and functions.

	Functions: An extensive range of Arithmetic, Trigonometric, Relational, Logical and Statistical functions
9	**Console for Data logger and Charge Controller:** Should be very robust in construction. Size: 500 x 400 x 250 mm Material: MS Sheet Thickness: 2 mm Locking arrangement: Separate locking arrangement Paint: 75 Micron Powder coating paints IP 65 Protected Gasket: Double gasket protected. Required Power Supply for DC Voltage Output should be included All Console Accessories should be included
B	**ACCELEROMETER (LOW FREQUENCY): 03 NOS.**
	DC response Type. Amplified Output Voltage. Stud or bolt Mounted Output : Either **4 mA to 20 mA** range, 12 mA @ 0 g with sensitivity scaled to a full range output, i.e. ±5 g = 1.6 mA/g or **mV/g** Sensitivity : 100 mV/g (if accelerometer o/p is 4 to 20 mA, then it shall not be applicable) Transverse Sensitivity : Less than 5 % Temperature Sensitivity : 0.145 / Deg F Frequency Range : Dynamic Range : DC to 1 Khz : +/- 50 g Amplitude Linearity : Better than 1% Linearity Mounted Base Resonance : 18 Khz Acceleration limits : x20 of Dynamic Range Operating Temperature : - 18 Deg C to 82 Deg C Sealing : IP65 / NEMA2 If Accelerometer O/P is in mV then Signal Conditioner is required to convert it from 0 to 10 VDC ; Electrical Input : Voltage Supply Voltage : 12 V to 24 V @ 7mA if Accelerometer is having mV O/P else 10 V to 30 V Out Impedance : 3000 Ohm if it's a 4 – 20 mA O/P , else in case of mV O/P it should be 50 Ohm ; Cable : Stainless Steel over-braided PTEE Minimum Integral Cable Length : 16 ft Electrical Noise : 10 mg Isolation : Base Isolated Material : Stainless Steel
C	**DC-DC LONG STROKE LVDT: 06 NOS.**
	Captive guided armature DC-DC long stroke displacement transducer should have an improved internal circuit which incorporates both reverse polarity protection and voltage

	regulation. These features should eliminate the danger of permanent damage if supply voltage is accidentally reversed and ensure that sensitivity will remain constant over large variations in supply voltage. Features: • Stroke Range:0-101.6 mm • Construction: Stainless Steel, Case Material: Stainless Steel, Probe Material: Stainless Steel Armature Type : Captive Guided • Non-linearity: ±0.25% • Isolation: 1000V input to output • Output type: DC-DC type • Output : ±5 VDC and 0 VDC to 10 VDC (Field Selectable) Output load (min): 2000 Ohm with three wire supply ; 20000 Ohm with floating Supply Output Impedance: 2 Ohm Polarity : Output positive for outward stroke • Power Supply: Single : 24VDC to 40 VDC @ 30mA Dual : ± 12 VDC to ± 20 VDC @ 30mA • Electrical termination: Multiconductor shielded cable, 1.83m • Reverse polarity protection • Armature type: Captive guided • Dimension: Dia. 20.82mm Length of body: 190mm • Weight: 342gram • Power supply: 24 VDC • Operating Temperature : - 50 Deg C to 70 Deg C Temperature effect zero (max) : 0.006 % full scale / Deg F • Element Type : DC to DC Displacement Transducer Enhanced life cycle Ripple : 30 mV Peak to Peak
D	**PIEZOMETER: 02 NOS.**
	Type: Vibrating Wire Range: 0-3, 10,25,50 and 100 Bar Diameter: 20 mm Accuracy: +/-0.5% FS Coil Resistance: 140-160 Ohm Operating: -10 to + 70 Deg C Material: Stainless Steel Maximum: 150% of Range Filter Type Standard Ceramic: High Air Entry Ceramic Coating: Polyster Coating Sealing: Hermetically sealed with inert Gas.IP-68 Cable: 4-Core Shielded.
E	**EXTENSOMETER: 04 NOS.**
	Type: Vibrating Wire Measuring Range: 150 mm/ 200 mm

	Linearity: 1% of FS Hysteresis: 2% of FS Material: Cadmium plated Steel Cable: 4-Core Shield, 1m
F	**4 CORE ARMOURED CABLE:** Considering 1000 meter cable length
G	**SOLAR PANEL & BATTERY WITH JB: 01 NOS.**
	Solar Cell: Should be from Reputed make Current at Pmax I (A) : 2.8 A Open Circuit Voltage(V) : 21.77 V Number of Cells : 36.0 Module Dimension (L x W x T) : 650×550×30 mm Operating Temperature Range (°C) : - 40°C to + 85°C **Battery:** Should be from Reputed make viz : Exide/Amron Type: Maintenance free Power: 56 Amp hour Voltage: 12V **Solar PV Charge Controller:** From Reputed manufacturer viz : Pilot Solar System/ TATABP Power : 60AH/ 10AH/ 15AH LED indication: Green – Charging on Yellow - Normal Red - Battery Low / Load Off **Power Supply Console:** Should be very robust in construction. Size: 400 x 400 x 250 mm Material : MS Sheet Thickness: 2 mm Locking arrangement: Separate locking arrangement Paint: 75 Micron Powder coating paints IP 65 Protected Gasket: Double gasket protected

NOTE	
✓	This is package purchase which includes data acquisition system with complete accessories, required nos. of sensors with supporting cables and accessories, software for data acquisition and **complete installation at site (Talcher, Odisha)**. Hence an **integrated price for complete specification** as above may be quoted.
✓	Demonstration and training is a must and should be included in the basic integrated cost.

Annexure-II

GENERAL TERMS & CONDITIONS
NIT No. CE-500358-16-17

Sealed tenders under **two-bid system** are invited from manufacturers/ their authorized dealers/ agents for supply and installation in IIT (ISM) Dhanbad of items specified in *Annexure-I.*

1. Offer should be submitted under **TWO-BID** system in two separate sealed covers i.e. "***Techno-commercial bid***" and "***Price bid***".
2. *a) In a tender, either the Indian agent on behalf of the principle/ OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.*
   b) If an agent submit bid on behalf of the principle/ OEM, the same agent shall not submit a bid on behalf of another principle/ OEM in the same tender for the same item/product.
3. **Techno-commercial Bid**: should contain the following documents/information:
   a. **Tender Cost**: Cost of the tender document is to be paid by way of an A/C payee demand draft for an amount indicated in Page No 01 and drawn in favor of Registrar, ISM Dhanbad and payable at SBI, ISM campus branch or any other Bank/ Branch located in Dhanbad. Tender cost is non-refundable and non-transferable. Alternatively, intending tenderers may **download** the complete set of tender document from IIT (ISM) website (www.ismdhanbad.ac.in) and submit the same duly signed on all pages by the tenderers along with demand draft for tender cost
   b. **Earnest Money Deposit (EMD)**: Should be submitted in form of A/C payee demand draft drawn in favor of Registrar, ISM and payable at SBI, IIT (ISM) campus branch or any other Bank/ Branch located in Dhanbad. It can also be submitted in the form of bank guarantee issued by a Nationalized Bank in India in the format given in Annexure-IV.
   c. Tenders without payment of tender cost and EMD will not be considered, unless the tenderer is exempt from such payment under Govt. Rules/ Regulations as amended from time to time and claims such exemption along with relevant and valid supporting documents.
   d. All relevant technical specifications/details of offered items, drawings, printed technical leaflets, and commercial details which are necessary to ensure that offer is complete in all respects should be attached with the technical bid documents.
   e. *A 'Compliance Statement' along with a certificate and duly signed that the tenderer satisfies the technical requirements given in* ***Annexure-I****. The said statement should be in a tabular form with the columns: sl. no., (2) technical requirement as per NIT; (3) what is offered by the tenderer; and (4) status of compliance: Complied/Not complied).*
   f. IIT(ISM) does not bind itself to offer any explanation to those bidders whose Technical Bids have not been found acceptable by the Evaluation Committee of the Institute.
4. **Further the following documents have to be furnished by the tenderers**:
   a) Self attested copies of credentials in support of capability to undertake the supply/work.
   b) Technical literature/catalogue with the detail specification of the material
   c) Satisfactory performance certificate from their customers for same/similar supply/service must be enclosed alongwith the technical bid.
   d) Income tax PAN, Sales tax regn. Nos. (VAT/CST/TIN), & Bank A/c no., name of bank & branch.
5. **Price should be quoted on FOR, IIT(ISM) Dhanbad basis in case of Indigenous supply and Ex-works/FOB, Port of loading/CIF, Kolkata basis in case of foreign supply**. The packing, forwarding, freight and transit insurance charges, if any must be included in the price and should not be claimed separately. Duties & taxes, if applicable, are to be shown separately clarifying whether those are extra or included in the price. Price should be quoted in composite form for all the three sets of the equipment. ***Price bids of only technically short-listed tenderers shall be opened in their presence on a pre-notified date and time.***
6. **Educational discount, if any, should be clearly mentioned.**
7. The Institute is generally at present paying concessional custom duty @9.36% for all items as per Govt of India notification. ISM is also entitled for Excise Duty Exemption under Govt of India notifications and is registered with DSIR, Govt of India for this purpose. This may be taken into consideration while quoting minimum possible rate. *Exemption Certificates* can be issued in favour of manufacturers only. It will not be issued any Indian Agent/dealer or distributor at any circumstances. ISM will provide only custom duty

exemption certificate for availing concessional custom duty. ISM will not pay any extra custom duty other than duty exemption certificate.

8. IIT (ISM) does not issue form 'C' or 'D' for concessional Sales tax/VAT. Hence, full rate of sales tax as applicable to educational institutions against the form of certificate (enclosed as Annexure V) should be indicated.
9. **Warranty**: Minimum 01 years from the date of installation and commissioning at the site.
10. **Validity**: Offer must be valid for a period of **240 days** from the date of opening of tender
11. **Performance Bank Guarantee (PBG)**: A bank guarantee issued by a Nationalized Bank in India towards PBG for an amount equal to 20% of basic value of purchase order and valid from date of installation/ commissioning to end of two months after the completion of warranty period should be submitted in favor of Registrar, IIT (ISM) Dhanbad.
12. **Delivery Period and Liquidated Damage**: The ordered materials/work complete in all respects are required to be delivered and installed within the period stipulated in the purchase order failing which liquidated damages of 1% per week for the delayed period subject to maximum of 5% of the total basic value of the order shall be deducted from the invoice of the supplier.
13. **Inspection:** Inspection shall be carried out at IIT (ISM), Dhanbad after arrival of the materials and decision of the Institute in this regard shall be final.
14. **Rejection and Replacement**: Rejection, if any, shall be notified to the supplier within 30 days of receipt and inspection of the material/workmanship. Rejected materials/work is to be removed by the supplier at his own risk and cost from IIT (ISM). Campus within 14 days of intimation of rejection. Defective Supplies are required to be replaced within 15 days of the removal of the rejected materials/work.
15. **Risk Purchase:** IIT (ISM) shall be at liberty to realize from the supplier the differential amount, if any, which it shall have to incur on purchase of the material/work at higher price(s) from elsewhere in the market, if the supplier, due to their fault, fails to supply the ordered quality and quantity of the material/work within the stipulated time.
16. Conditional offer will not be accepted.
17. **Payment**: will be made within 30 days (In case of inside in India)/ outside India through LC only) after satisfactory supply, inspection, installation/commissioning & acceptance and on submission of pre-receipted tax invoice, delivery challan, warranty certificate and installation report in triplicate and Performance Bank Guarantee. The invoice should be duly certified by the Head of Dept to which supply is made or any other IIT (ISM) official authorized for this purpose.
18. Your full address for correspondence and name address of the beneficiary's banker should be clearly indicated in the offer. **Institute does not make any advance payment**. However, as a special case 90% Letter of Credit Payment term is accepted only in case of foreign supplier and balance 10% after satisfactory, installation report received from the user department.
19. **Country of origin and port of shipment should be stated** in your offer clearly.
20. Name and address of Indian Agent, percentage of agency commission, if any and role of the Agent with respect to the subject supplies and a statement thereon that "Agency Commission is included in the
21. FOB/CIF price of the offer" should be clearly indicated in your offer.
22. Earliest/ expected delivery period should be clearly indicated.
23. Packing should be suitable for 'Air freight'.
24. Please note that no part shipment/transshipment/third party shipment is acceptable to us.
25. **Last date** for receipt of tenders and date & time for opening of the same is given in annexure-III. The tenders will be opened in the presence of representatives of tenderers present. ***In the event last date is a holiday/declared as a holiday, next working date will be the last date for submission/ opening of tender.***
26. Tender should be submitted in a sealed cover/envelope and must be superscribed as under:
    i) "Tender No. CE-500358-16-17 (Supply, Installation, testing and commissioning of **Data Acquisition System and Sensors (*24.02.2017* at 4.00 p.m.).**
    ii) All tender shall be received upto to the time and date as stated in the tender notice, after which no tender shall be accepted in any circumstances.
    iii) All tender must be send by Registered Post/Speed Post/Courier along with Courier receipt, during IIT (ISM) working days only (i.e. Monday to Friday). Please note that no hand delivery of tender will be received at any circumstances.

27. The Institute at its discretion may change the quantity/quality/parameters/upgrade the criteria/drop any item(s) or part thereof at any time before placing the order. In case of any dispute, the decision of IIT(ISM) shall be final and binding on the bidders/tenderers.
28. The Institute reserves the right to accept or reject any or all the bids in part or in full without assigning any reason and does not bind himself to accept the lowest bid.

ABOVE TERMS AND CONDITIONS OF THE NIT ARE ACCEPTED

1	Name and address of the tenderer	
2	Telecom nos. of the tenderer i.e. phone fax, & email id.	
3	Signature, name & designation of the person signing on behalf of the tenderer & his/her office seal	
4.	Name & designation of the contact person & his phone/mobile no.	

Annexure-IV

FORMAT OF BANK GUARANTEE

Whereas_____(hereinafter called "the Bidder") has submitted its bid dated _____ (date of submission of bid) for the supply of ..... (name and/or description of the goods) (hereinafter called "the Bid") against Tender Document No._____ of the Indian School of Mines, Dhanbad.

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 will 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 _____ 2009.

THE CONDITIONS of this obligation are:

1) If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or

2) If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity:

(a) fails or refuses to execute the Contract Form if required; or
(b) fails or refuses to furnish the performance security, in accordance with the Instruction to Bidders;

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 of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to six months from the date of opening of tender or the period of the bid validity whichever is later and any demand in respect thereof should reach the Bank not later than the above date.

Signature of the Bank

Annexure-V

Compliance Statement

Sl. No	Technical requirement as per NIT	What is offered by the tenderer	Status of Compliance Complied/Not Complied