



# भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद

धनबाद, झारखण्ड, भारत, पिन-826004

(मानव संसाधन विकास मंत्रालय, भारत सरकार के अधीन राष्ट्रीय महत्व का एक संस्थान)

INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD

DHANBAD, JHARKHAND, INDIA, PIN-826004

(An Institute of National Importance under Ministry of H.R.D., Govt. of India)

STORES & PURCHASE SECTION Phone:(0326) 2235678 || Email : purchase@ismdhanbad.ac.in || Website : www.iitism.ac.in

NIT No. CE-500150-2017-18

Date: 18<sup>th</sup> July, 2017

## NOTICE INVITING TENDER

### **Subject: Supply & Installation of Data Acquisition (DAQ) System.**

Indian Institute of Technology (Indian School of Mines), Dhanbad invites quotations for the following to be supplied and delivered in Civil Department.

Sl. No	Description of item(s)	Quantity
1.	<p><b>Specification of Data Acquisition System:</b></p> <p>1. Multi-channel Data logger</p> <p>Analog Channels :</p> <ul style="list-style-type: none"> <li>• 5 analog input channels ( expandable to 100)</li> <li>• Each channel is independent and supports : one isolated</li> <li>• 3 wire or 4 wire input , or two isolated 2 – wire inputs , or Three common referenced 2 – wire inputs.</li> <li>• Two wire with common reference terminal : 15 ( expandable to 300 )</li> <li>• Two wire isolated: 10 ( expandable to 200 )</li> <li>• Three and four wire isolated: 5 ( expandable to 100)</li> </ul> <p>Analog Sensors :</p> <ul style="list-style-type: none"> <li>• Thermocouple : Types : B , C, D, E, G, J, K, N, R, S, T and Calibration standard: ITS-90</li> <li>• RTDs : Materials supported: Pt, Ni, Cu and Resistance range: 10 Ohm to 10K Ohm</li> <li>• Thermistors : Types: YSI 400xx Series, other types and Resistance range: &lt;10K Ohm</li> <li>• Monolithic Temperature Sensor &amp; Strain Gauge and Bridge Sensors : Configurations: ¼ , ½ &amp; full bridge</li> <li>• Current &amp; Voltage Sensor</li> <li>• Excitation: voltage or current</li> </ul> <p>Digital Channels :</p> <p>Digital Input/Outputs</p> <ul style="list-style-type: none"> <li>• 8 bi-directional channels</li> <li>• Input Type: 8 logic level ( max 20/30V )</li> <li>• Output Type : 4 with open drain FET ( max: 30V, 100mA) , 4 with logic output Relay Output</li> <li>• 1 latching relay, contacts ( max: 30Vdc , 1A )</li> </ul> <p>Low Speed Counters : Minimum 8 counters shared with digital inputs ;</p>	01



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	<p>Dedicated Counter Inputs : Minimum 4 high speed or 2 phase encoder (quadrature) inputs</p> <p>Liner Resolution : 18 bits</p> <p>Linearity: Minimum 0.01%</p> <p>Common mode rejection: &gt;90dB</p> <p>Line series mode rejection: &gt;35dB</p> <p>Inputs</p> <p>Inter-Channel Isolation: 100V (relay switching)</p> <p>Analog Section Isolation: 100V (opto-isolated)</p> <p>Input impedance: 100K<math>\Omega</math>, &gt;100M<math>\Omega</math></p> <p>Common mode range: <math>\pm 3.5V</math> or <math>\pm 35V</math> on 30V range</p> <p>Alarms:</p> <ul style="list-style-type: none"> <li>• Condition: high, low, within range and outside range</li> <li>• Delay: optional time period for alarm response</li> <li>• Actions: set digital outputs, transmit message, and execute any data taker command.</li> </ul> <p>Data Storage :</p> <p>Internal Store</p> <ul style="list-style-type: none"> <li>• Capacity: 128MB = approx 10,000,000 data points</li> <li>• Larger storage available refer to technical support</li> <li>Removable USB store device ( optional accessory)</li> <li>• Types: compatible with USB 1.1 or USB 2.0 drives , e.g. Flash drive.</li> </ul> <p>Real Time Clock : Normal resolution: 200<math>\mu</math>s</p> <p>Operating Temperature range: <math>-45^{\circ}C</math> to <math>70^{\circ}C</math></p> <p>Communication Interfaces:</p> <p>Ethernet Port</p> <ul style="list-style-type: none"> <li>• Interface: 10BaseT ( 10Mbps)</li> <li>• Protocol: TCP/IP, Modbus ( Master &amp; Slave )</li> </ul> <p>USB Port</p>	
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	<ul style="list-style-type: none"> <li>• Interface: USB 1.1 ( virtual COM port )</li> <li>• Protocol: ASCII command</li> </ul> <p>Host RS232 Port</p> <ul style="list-style-type: none"> <li>• Speed: 300 to 115,200 baud ( 57,600 default)</li> <li>• Flow control: Hardware ( RTS/CTS )</li> <li>• Modbus ( Master &amp; Slave ), Serial Sensor</li> </ul> <p>Serial Sensor Port</p> <ul style="list-style-type: none"> <li>• Interface: RS232, RS422m, RS485</li> <li>• Protocols: Modbus ( Master &amp; Slave ) , Serial Sensor</li> </ul> <p>SDI-12</p> <ul style="list-style-type: none"> <li>• 4 SDI-12 inputs , shared with digital channels. Each input can support multiple SDI-12 sensors.</li> </ul> <p>Internal battery: 6Vdc 1.2Ahr lead acid</p> <p>Peak Power: 12W (12Vdc 1A)</p> <p>Scheduling of Data Acquisition Number of schedules: 11 Schedule rates: 10ms to days</p> <p>Software :</p> <ol style="list-style-type: none"> <li>1. Runs directly from Web Browser</li> <li>2. Access current data and status from any web browser.</li> </ol> <p>FTP Server : Access logged data from any FTP client or web browser FTP Client : Automatically upload logged data direct to an FTP server</p> <p><b>**An extensive range of Arithmetic, Trigonometric, Relational, Logical and Statistical functions should available.</b></p>	
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## Tender Schedule

Particulars	Date & Time
Last date and time for submission of tenders	<b>11.08.2017 at 3:00 P.M.</b>
Date and time of opening of tenders	<b>11.08.2017 at 4.00 P.M.</b>



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Date: 18<sup>th</sup> July, 2017

1. You are requested to quote your lowest rates for the supply of above items in the attached format for Financial Bid (Annexure – I)
2. Clarification(s) sought after the prescribed date shall not be entertained.
3. You may send your representative in the office of the undersigned at the scheduled date and time of opening of tender.
4. Tender should be submitted in sealed cover only superscribed with Enquiry No. and due date at the following address only:

*The Deputy Registrar (P&S)  
Indian Institute of Technology (Indian School of Mines),  
Dhanbad – 826 004 (Jharkhand)*

## Terms & Conditions

- 1) The rates should be quoted for each item separately.
- 2) Conditional offer will not be accepted.
- 3) IIT (ISM) Dhanbad does not issue any Form 'C' or 'D' towards sales tax concessional rate. Hence, full rate of sales tax/VAT applicable should be quoted.
- 4) **Educational discount**, if any, should be clearly mentioned.
- 5) You are requested to submit your quotation strictly as per the specifications mentioned in the NIT.
- 6) Your tender must be valid for **minimum 90 days** from the date of opening of tender.
- 7) Please mention warranty/ guarantee in your offer clearly. Material/ equipment to be supplied must have minimum warranty/guarantee of **1 years warranty**.
- 8) Each page in the bid document must be numbered properly and duly signed & sealed by the bidder on every page of the bid.
- 9) **The items/ materials shall be required to be delivered at Civil Department/ Section through Purchase & Store Section, IIT (ISM) Dhanbad** at the risk and cost of the tenderer.
- 10) Unloading and installation shall be the complete responsibility of the supplier.
- 11) The stores are required to be delivered within 30 days. Late delivery may not be accepted.
- 12) The items offered should be of good quality confirming to BIS standards, wherever applicable.
- 13) **Advance payment is not admissible**. Payment shall normally be made within 3-4 weeks subject to receipt and acceptance & installation (as per Purchase Order Terms) of the ordered materials/items.
- 14) In the event date on which the tender is opened for acceptance is declared to be a holiday, the tenders shall be deemed to remain open for acceptance till the next working day.
- 15) Please send your offer by Regd.Post/ Speed Post/ Courier along with Courier receipt. Tender/ quotation will be received during IIT (ISM) Dhanbad working hours only (i.e. Monday to Friday). *Late or delayed tenders shall be summarily rejected.*
- 16) Any other information that you may like to obtain, you are free to contact IIT (ISM) Dhanbad before submission of tender.
- 17) IIT (ISM) Dhanbad reserves the right to accept and/or to reject any/ all tenders without assigning any reason.

Deputy Registrar



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Annexure - I

## Format for Financial Bid

NIT No.: CE-500150-2017-18

Dated: 18.07.2017

Bidders Ref: No.

Dated:

**Subject: Supply & Installation of Data Acquisition (DAQ) System.**

Sl. No.	Full Description of Items (With HSN Code/ SAC Code)	Qty.	Rate	Amount
			Packing & Forwarding (if any)	
			<b>Total</b>	
			GST(if any)	
			Freight (if any)	
			Installation (if any)	
Amount should be in figure as well as word			<b>Grand Total</b>	

### Note:

- 1) All the details must be provided as per prescribed format only
- 2) Prices quoted by the bidders should include GST, HSN Code, SAC Code, duties, livies, transportation cost and insurance costs etc. if any
- 3) All the rates must be quoted in Indian Rupees.