

STORES & PURCHASE SECTION

भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद
धनबाद, झारखण्ड, भारत, पिन-826004
INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD
DHANBAD, JHARKHAND, INDIA, PIN-826004

(An Autonomous Institute under Ministry of HRD, Govt. of India)

Phone:(0326) 2235678 || Email : drps@ismdhanbad.ac.in || Website : iitism.ac.in

No. EE-500490-2016-17

Date: 20 March 2017

NOTICE INVITING TENDER

Subject: Supply & Installation of Experimental set up for Real-Time Monitoring, Control and Protection of Power System.

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

S No	Full Description of items/ store	Qty	Delivery
1	Supply & Installation of Experimental set up for Real-Time Monitoring, Control and Protection of Power System. (Detailed Specification is given in Annexure – II)	01 No	At the Earliest /Ex-Stock

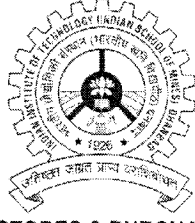
Tender Schedule

Particulars	Date & Time
Last date for seeking clarification/s (if any)	07.04.2017 at 3:00 P.M.
Last date and time for submission of tenders	11.04.2017 at 3:00 P.M.
Date and time of opening of tenders	11.04.2017 at 4.00 P.M.

1. You are requested to quote your lowest rates for the supply of above items in the attached format for C.B. (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
P: 0326-2235612
E: drps@ismdhanbad.ac.in

Per 3
22/3/17



भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद

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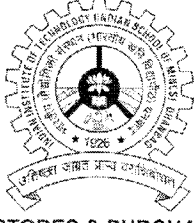
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- 1) The rates should be quoted for each item separately.
- 2) Conditional offer will not be accepted.
- 3) **Tender Cost of Rs. 500/- (non refundable) is to be paid by way of Demand Draft drawn in favor of Registrar, ISM payable at Dhanbad. Non-submission will lead to rejection of your bid.**
- 4) IIT (ISM) does not issue any Form 'C' or 'D' towards sales tax concessional rate. Hence, full rate of sales tax/VAT applicable should be quoted.
- 5) **Educational discount**, if any, should be clearly mentioned.
- 6) You are requested to submit your quotation strictly as per the specifications mentioned in the NIT.
- 7) Your tender must be valid for **minimum 90 days** from the date of opening of tender.
- 8) Please mention warranty/ guarantee in your offer clearly. Material/ equipment to be supplied must have minimum warranty/guarantee of **12 months**.
- 9) **Each page in the bid document must be numbered properly** and duly signed & sealed by the bidder on every page of the bid.
- 10) **The items/ materials shall be required to be delivered at EE Department/ Section through Purchase & Store Section, IIT (ISM) Dhanbad** at the risk and cost of the tenderer.
- 11) Unloading and installation shall be the complete responsibility of the supplier.
- 12) The stores are required to be delivered within 30 days. Late delivery may not be accepted.
- 13) The items offered should be of good quality confirming to BIS standards, wherever applicable.
- 14) **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.
- 15) 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.
- 16) Please send your offer by Regd.Post/ Speed Post/ Courier along with Courier receipt. Tender/ quotation will be received during IIT (ISM) working hours only (i.e. Monday to Friday). **Late or delayed tenders shall be summarily rejected.**
- 17) Any other information that you may like to obtain, you are free to contact IIT (ISM) before submission of tender.
- 18) IIT (ISM) reserves the right to accept and/or to reject any/ all tenders without assigning any reason.

Key
20/3/17
Deputy Registrar (Store & Purchase)



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Annexure - I

Format for Commercial Bid

Our NIT No.: EE-500490-2016-17

Dated:

Bidders Ref: No.

Dated:

Sub: Supply & Installation of Experimental set up for Real-Time Monitoring, Control and Protection of Power System.

Sl. No.	Full Description of Items	Qty.	Rate	Amount
			Packing & Forwarding (if any)	
			Total	
			CST/VAT (if any)	
			Freight (if any)	
			Installation (if any)	
	Amount should be in figure as well as word		Grand Total	

Note:

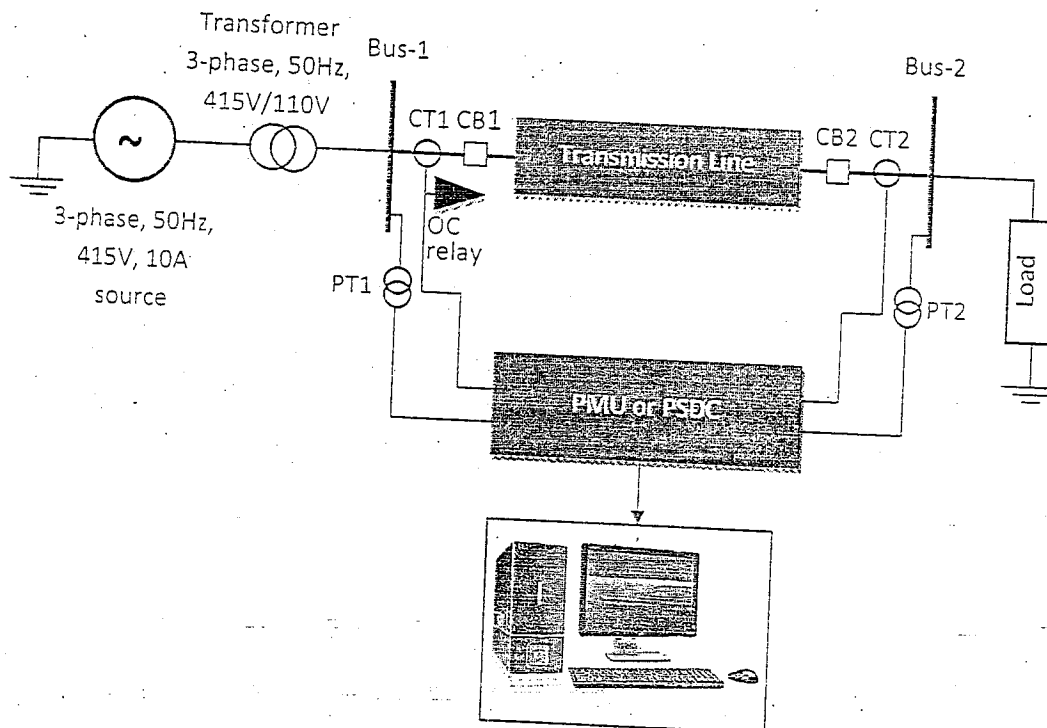
- 1) All the details must be provided as per prescribed format only
- 2) Prices quoted by the bidders should include all local taxes, VAT, service tax, duties, livies, transportation cost and insurance costs etc. if any
- 3) All the rates must be quoted in Indian Rupees.

Annexure-II

1. Project Objective:

- Real-time estimation of transmission line parameters of a two bus power system using synchronized voltage and current information from both ends of the line.
- Real time stability study of a two-bus power system.
- Transmission line fault study.

2. The schematics of the complete set up is shown in Fig. 1.



Workstation installed with PMU or PSDC compatible software for real time visualization of phasors.

Fig.1 Schematic of the experimental set up.

Abbreviation

PMU: Phasor Measurement Unit

PSDC: Power System Data Concentrator

Page 1.

3. Specifications of each individual components to be supplied by the vendor.

Sl. No.	Item types	Specification/Description	Quantity
1.	Isolated Source Transformer	440 / 110 V Isolated Source Transformer (Three-phase) at Generating side.	01
2.	Transmission Line	Length = 200 km (Twin Moose Conductor – with taps at 50, 100, 150 and 200km) Pi Section Current Ratings • Nominal Current – 1A • Fault Current – 5A (10 Sec), 10A (1.2 Sec)	01
3.	Current Transformer (CT)	Three phase current sensing device.	02
4.	Potential Transformer (PT)	Three phase voltage sensing device.	02
5.	Circuit Breaker (CB)	Breaker at the source and load end with manual controls.	02
6.	Over current Relay	Three-phase over current relay. Type: Digital or Electromechanical type (Internationally approved relay)	01
7.	Load	Three-phase lamp load with stepped control (up to 2 A current loading).	01
8.	Phasor Measurement Unit (PMU) or Power System Data Concentrator (PSDC)	<ul style="list-style-type: none"> To provide synchronized voltage and current phasors of both sending end and receiving end of the two bus power system. Both end voltage and current data should be synchronized to the same time (clock). Maximum time synchronization error should be restricted to 1µs while measuring the data at both ends. The data reporting rate on screen should be less or equal to 1 sec. PMU/PSDC should have a wired connection interface to the desktop. So that data can be downloaded to the desktop PC for viewing and analysis. 	01
9.	Visualization software	<ul style="list-style-type: none"> To see voltage, current and phasors (magnitude, angle), Voltage angle difference between sending end and receiving end, frequency in real time in the Desktop PC. Software should be installed in Windows operating system. 	01
10.	Miscellaneous	<ul style="list-style-type: none"> Three phase LED indication (R-phase, Y-phase, B-phase) MS Panel with Powder Coating Screen Printed Front Panel 	

Ref:

4. Other Requirements

4.1 Documentation

Complete documentation is required to support system setup, operation and maintenance.

4.2 Training

At least half day training to the lab personnel is required regarding the operation and maintenances. Training shall be conducted by contractors personal who are experienced instructor. All necessary training material shall be provided by the contractor.

4.3 Defect liability during Warranty

The entire system shall be covered under warranty for a period of 1 (one) year from date of taken over of the system by Indian Institute of Technology (Indian School of Mines), Dhanbad. During the period of warranty the contractor shall take all necessary step for repair / replacement of the faulty systems.

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