

DEPARTMENT OF ELECTRICAL ENGINEERING, IIT DELHI

Date: 22/03/2013

Minutes of the meeting of the purchase committee to purchase “Real time controller platform with hardware in loop testing facility for Power Electronics and Electric Drives applications” to decide specifications and NIQ:

Members Presented: Prof. G. Bhuvaneswari, Prof. Bhim Singh, Prof. Sukumar Mishra, Dr. Amit Kumar Jain.

The following specifications were decided for the Real time controller board for Power Electronics & Motor Control applications to be purchased under project no. RP2341/MI00740 from NR budget.

- Quad core with 2 GHz CPU clock real time embedded controller workstation for Power Electronics and Motor Control applications with hardware in loop (HIL) testing facility - HIL facility being a MUST.
- Real-time interface and programming using graphical language (block diagram) of MATLAB/Simulink/SimPowerSystem software. The Simulink models should be converted into the corresponding code for target hardware implementation.
- Should have unique multi-rate solvers that ensure simulation of the highest number of switches while making no compromise on accuracy.
- Option for solver should be there to make use of trapezoidal rule of integration method upto 5th order.
- Should be optimized for parallel and real-time simulation of interconnected multi-drive systems with Power Electronic switches.
- Inbuilt Simulink library for graphically configuring all peripherals like PWMs, GPIOs, ADCs, DACs, serial communication interfaces and other IOs.
- High speed real-time data communication between host PC and target hardware with Graphical User Interface (GUI) software which should support for OS Windows XP (32-bit), Windows Vista (32-bit and 64-bit) and Windows7 (32-bit and 64-bit).
- Ultra speed and accurate IOs like PWMs, GPIOs, ADCs, DACs with step-size precision in range of 10 ns in a separate connector board.
- Minimum 16-channels of 16-bit ADCs with up to input voltage range of ± 10 V, over voltage protection of ± 15 V and 500 ns conversion time.
- 16-channels of 16-bit DACs with output voltage range of ± 10 V and 1 μ s sampling time.



- Provision for the customizable signal generation & signal processing functions such as PWM with dead-band, quadrature decoders & encoders, time stamped DIO, frequency/duty measurement etc.
- PWM generation should not be dependent on simulation sampling time.
- 64-channels parallel digital input/output channels with TTL input/output levels and optical/galvanic isolated.
- TCP/IP communication interface for communicating the data transfer between host and target with 1 Gbps.
- Provision for future extension of IOs and core licenses up gradation.

Purchase Committee Members:



Prof. G. Bhuvaneshwari



Prof. S. Mishra



Prof. Bhim Singh



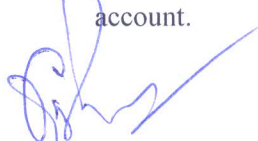
Dr. Amit Kumar Jain


TERMS & CONDITIONS

1. Please submit the TECHNICAL and FINANCIAL bids in separate sealed envelopes. Mark the two envelopes clearly as "Technical Bid" and Financial Bid". Both the sealed envelopes should be sent in a single sealed envelope, with clearly marked as "Real time controller platform with hardware in loop testing facility for Power Electronics and Electric Drives applications". The quote should reach the following address on or before **12/03/2013 upto 5:00 PM.**

Name : Dr. G. Bhuvaneshwari
Address : Professor, Room No. II-102,
Deptt. of Electrical Engineering,
Indian Institute of Technology, Delhi
Hauz Khas, New Delhi-110016 (India)

2. Please quote prices at FOB/CIF New Delhi, inclusive of installation charges.
3. Quote should be in Indian Rupees as well as US Dollars and to valid for at least three months.
4. Attach all the technical literature and a list of similar installations done in India.
5. A minimum of one year comprehensive onsite warranty.
6. Mention if you can provide any technical support like training of IIT Delhi personnel at IIT Delhi or in your factory and providing a technical person for operation of the machine for the initial period of 2 years. Kindly mention about this in technical bid.
7. If the quote is being submitted by the representative of the Principals/manufactures themselves, a valid Agency ship/Dealership Certificate authorizing the agent to quote to IIT Delhi on behalf of the Principals should be enclosed.
8. The Institute reserves the rights to accept/reject any/all quotations without assigning any reasons thereof.
9. Complete set of manuals for the operation and servicing of equipment should be given. All circuit diagrams, other mechanical and electrical schematics must be provided to Main unit, sub systems and accessories.
10. Delivery as early as possible in weeks on receipt of PO.
11. Clearly specify the installation requirements – such as space, power, frequency, environment (Temperature and humidity) etc.
12. If the items quoted are proprietary in nature, please enclose proprietary certificate from the principals stating "Certified that ----- is a proprietary item of M/s ----- and no other manufacture make these items".
13. If the bidder is Indian agent, the agency certificate should be enclosed.
14. Please produce compliance certificate for the specification.
15. Please ensure that the Indian agent has been enlisted with the Department of Expenditure, evidence may please be attached.
16. All bank charges payable in India are to buyer's account and bank charges in seller's country to seller's account.


(Principal Investigator)


(Chairman, Purchase Committee)

Purchase Committee Members:

Prof. G. Bhuvaneshwari

Prof. S. Mishra

Prof. Bhim Singh

Dr. Amit Kumar Jain



