



Indian Institute of Technology Madras
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REF: OEC/2019/003/PROJECT/RSUR
Due date: 29/08/2019

1. 1. Quotations are invited for the items shown below/overleaf/enclosed list (Annexure I).
2. Two bid system: Technical bid and Commercial bid.
3. Vendors should give the technical presentation/demonstration on the equipment before the department purchase committee if required.
4. The quotations duly sealed and superscribed on the envelope with reference no. and due date, should be addressed to the undersigned so as to reach him on or before the due date stipulated above
5. A brochure detailing technical specifications and performance, a list of industrial and educational establishments where the items enquired have been supplied must be provided.
6. Fax and Email quotations are not acceptable.
7. Quotations should be valid for 60 days from the due date and period of delivery required, warranty terms, etc. should also be clearly indicated. A minimum of one year warranty is required from the date of commissioning.
8. Imported supplies should be quoted for CIF Madras.
9. Local firms to quote for free delivery to this Institute. If quoted for Ex-Godown delivery charges be indicated separately.

10. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples/machine/equipment if called for should be submitted/demonstrated at free of charges and collected back at the supplier's expense. Compliancy certificate is to be provided indicating conformity to the technical specifications

11. Sales Tax/General Taxes/ED if applicable and such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. If this is not indicated no such claim will be admitted at any stage. The taxes leviable should take into consideration that we are entitled to have concessional Sales Tax applicable to Non-Government Educational Institutions run with no profit motive for which a concession is given. Sales Tax Certificate will be issued at the time of final settlement of the bill.

12. Goods should be supplied carriage paid and insured.

13. Goods shall not be supplied without an official supply order.

14. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send a copy of the RC.

15. The Guarantee period of the item may be indicated clearly.

16. In the case of LC. Payment, 90% of the payment will be made after completion of the supply. The balance of 10% of the payment will be made after the satisfactory installation of the equipment.

17. IIT Madras is exempt from payment of Excise Duty and is eligible for the concessional rate of customs duty. The necessary certificate will be issued on demand. IIT Madras will make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges.

18. Acceptance and Rejection: I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

Annexure I

Specifications of the microcontroller with accessories:

1. Requirement- A real time controller to control speed of a propulsion motor (BLDC Motor) and position of a stepper motor to run a ship model autonomously in an indoor environment. The controller should fulfill computational requirement for control in real time and should be provided with sufficient storage capacity for data logging.
2. Application – the controller will be used for motion control applications in real time.
3. Operating system (OS) - Controller should have Linux real time OS.
4. Processor- The processor must be capable of executing simple algorithms to advance level algorithms like model predictive control (MPC), Adaptive model predictive control (AMPC) etc. in real time. Processor should have dual core with min speed of 1.3 GHz.
5. Grade – Controller should be rugged, reliable, high-performance, industrial-grade with industry standard certification.
6. Programming – The controller should support LabVIEW FPGA programming.
7. Communication –Input to the controller will be through wireless mode and it should also have ports for Ethernet, USB 3.1, RS-232, RS-485, I/O modules to communicate with other peripheral devices.
8. Stepper motor – Controller should be compatible with the stepper motor **model-NI ISM 7413** from National instruments and it should also be compatible with **BL750** BLDC motor drive (a drive supplied by third party which has RS232 communication protocol) and should be provided with necessary interface modules.
9. Controller should provide controlled power input to an inertial measurement unit (IMU) which is interfaced with it and collect and store data from IMU.
10. Slots – Number of slots on the device shall be 4 or 8 slots.
11. The controller should have the provision to interface with any third party peripheral device using standard protocols.
12. Operational temperature range- The device should work well in the temperature range of -5° Celsius to 60° Celsius.
13. The device should have Random memory access (RAM) of 2 GB and hard disc capacity of min 2GB.
14. Company should provide warranty of minimum 2 years.

Additional Requirements:

1. Vendors should provide continuous technical support and maintenance of equipment.

2. Vendors must have sufficient experience in supplying equipment in reputed organizations for research purposes. They must provide references of the end-users whom we can contact for their experience with the supplied machine. Experience of the end-users may also be used as a criterion for the selection of bids that meet technical requirements.
3. Vendors must provide detailed documentation for the equipment.
4. Vendors must provide training to our technical staff for using the equipment.
5. All the expenses for installation, training and post-sales technical support will be borne by the vendor.