

**Indian Institute of Information Technology,  
Design and Manufacturing, Kurnool  
Jagannathagattu, Dinnidevarapadu, Kurnool.**



**Tender Document for**

**Supply and Installation of Real-time Lab Platform for Matlab**

**at**

**Indian Institute of Information Technology, Design and  
Manufacturing Kurnool Jagannathagattu,  
Dinnidevarapadu-518007 Andhra Pradesh**

**Telephone: 08518-289115      Websites: <http://iiitk.ac.in/home>**

## INVITATION FOR BID (IFB)

<b>Tender Enquiry No</b>	<b>:</b>	<b>IIITDMK/19-20/S&amp;P/Electronics /Control System real-time Lab Platform for Matlab /21 Date: 20-02-2020</b>
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IIITDM KURNOOL invites Bids on two bid system for Supply and Installation of Real-time Lab Platform for Matlab from reputed & registered agencies/company/firm. Tender forms can be downloaded from the CPP Portal <https://eprocure.gov.in/epublish/app> & <http://iiitk.ac.in/home>

The bidders are requested to read the tender document carefully and ensure compliance with all specifications/instructions herein. Non-compliance with specifications/instructions in this document may disqualify the bidders for the tender exercise. The Director IIITDM Kurnool, reserves the right to select the firm or to reject any bid wholly or partly without assigning any reason. Incomplete tenders, amendments and additions to tender after opening or late tenders are liable to be ignored and rejected.

Scope of Work	Amount of Bid Security (EMD) in Rs.
Supply and Installation of Real-time Lab Platform for Matlab	Ten Thousand Only (13000)

### CRITICAL DATE SHEET

Publication of the Tender Document	<b>20.02.2020</b>
Downloading of Bid Document Start Date	<b>20.02.2020</b>
Bid Submission Start Date	<b>21.02.2020</b>
Bid Submission End Date	<b>12.03.2020 (1:00 PM)</b>
Clarification Start Date	10.03.2020 (9:00 AM)
Clarification End Date	11.03.2020(5:00 PM)
Bid Opening Date	12.03.2020(2:00 PM)

Bidder may also download the Bidding Documents from the web site <http://iiitk.ac.in/home> & CPP Portal of Govt. of India i.e. <http://eprocure.gov.in/eprocure/app> Bidders shall ensure that their Bids, complete in all respect should be submitted before the closing date and time as indicated in the critical date sheet above on CPP Portal <http://eprocure.gov.in/eprocure/app>

4. SEARCHING FOR TENDER DOCUMENTS: There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.

**Sd/-**

**Director**

**Important :**

All communications are to be addressed to in the name of Registrar I/c, IIITD&M Kurnool only and not in the name of any officer and mails has to be sent to official purchase email id [purchase@iiitk.ac.in](mailto:purchase@iiitk.ac.in)

**Terms and Conditions**

The Bidders are requested to give detailed tender in two bid format.

**Envelope-I** : **Technical Bid**  
**Envelope-II** : **Commercial Bid**

The bidder has to accept all terms and conditions of the Institute and conditional offers will not be accepted.

The tender document can be downloaded from the IIITDM Kurnool website [www.iiitdmkl.ac.in](http://www.iiitdmkl.ac.in) at free of cost. The duly filled tenders should be submitted to The Registrar, Indian Institute of Information Technology, Design and Manufacturing, Kurnool, Jagannathagattu, Dinnidevarapadu, Kurnool-518007 **on or before 09.03.2020( 01.00 PM)**. Extension of due date will not be entertained.

Tenders which are submitted without following the two bid offer system will summarily be rejected.

**Envelope No-1 : Technical Bid**

- EMD for Rs. 13,000 /- (Thirteen Thousand only) in the form of Demand Draft/ Bankers Cheque /Bank guarantee drawn in favor of **“The Registrar, IIITD&M Kurnool” payable at Kurnool.** (The EMD without interest shall be returned to the unsuccessful bidders after finalization of the tender).
- The firms registered and having valid NSIC / MSME Certificate are exempt from submission of EMD.
- The leaflet / catalogue of the product quoted.
- The copies of purchase orders received from Industry / Educational / Research Institution etc.
- Bids should have a validity of **90 days.**
- The technical offer **should not contain any price information.**
- Certificate of Incorporation/ Registration Certificate of the firm / Company/Agency
- Income Tax returns filed for the last three financial years 2016-17, 2017- 18, 2018-19.
- PAN No.
- GST Registration certificate

- Bidder/Agent who quotes for items manufactured by the other manufacturer shall furnish scanned copy of Manufacturer's Authorization Form as per Annexure-I
- The tenders not meeting the eligibility criteria will be similarly rejected. Hence the tenderers are advised to attach relevant documents in support of their eligibility

### **Envelope No-2: Commercial Bid**

This should contain only the price information along with commercial terms and conditions.

Financial offer should be submitted as per the format as per Annexure-II

The bidder shall state the basic price inclusive of all levies, transportation, delivery, GST, & all other charges. The basic unit price needs to be indicated individually against the items, the bidder proposed to supply. It is the responsibility of Bidder to go through the Bidding Document to ensure furnishing of all required documents in addition to above, if any. No condition shall be attached to the Financial Bid. Such a bid shall be summarily rejected. **The price quoted shall be for supply, delivery and Installation at specified room of IIITDM KURNOOL, Kurnool District, and Andhra Pradesh.**

### **Opening of Technical Bids**

The technical bids will be opened on the scheduled date in the presence of the bidders or their authorized representatives who choose to attend the technical bid opening. In case the specified date of Bid opening falls on or is subsequently declared a holiday or closed day for the purchaser, the Bids will be opened at the appointed time and place on the next working day.

Authorized representatives of the Bidders, who have submitted Bids on time may attend the Bid opening provided they bring with them letters of authority from the corresponding Bidders acknowledgement letter of bid submission.

### **Scrutiny of Bids**

The Tender Inviting Authority will examine the Bids to determine whether they are complete, whether the documents have been properly signed, stamped and whether the Technical Bids are generally in order.

Prior to the evaluation of Financial Bids, the Tender Inviting Authority will determine the substantial responsiveness of each Bid to the Bidding Document. For purposes of these clauses, a substantially responsive Bid is one, which conforms to all the terms and conditions of the bid document. If a Bid is not substantially responsive, it will be rejected by IIITDM Kurnool.

### **Technical Evaluation**

- i) All the technical aspects of the bids received will be evaluated for suitability and specification. If required, the Institute may seek additional clarification from the bidders.
- ii) The technical recommendation shall be final and binding on all the parties.
- iii) The technically qualified firms will be intimated about Price Bid opening by email.

### **Opening of Commercial Bids**

IIITD&M Kurnool will open commercial bids of only the shortlisted bidders in technical evaluation in the presence of the bidders or their authorized representatives who

choose to attend the commercial bid opening. The representatives of shortlisted firms only will be allowed for commercial bid opening.

### **Delivery Period / Timelines**

The deliveries and installation must be completed **within 03 weeks** from the date of purchase order. The time is the essence of the contract. It is mandatory for the bidders who respond to this bid to meet this expectation, as this is linked to student's admission.

### **Locations for the supply / services**

The bidders may note that the items covered by this document is required to be supplied and installed at

**IIITDM Kurnool,  
Jagannathagattu,  
Near Pullareddy Engineering College  
Dinnidevarapadu village,  
Kurnool  
Kurnool District  
Andhra Pradesh - 518007.**

### **Installation**

- i) Bidder shall be responsible for installation as applicable and for after sales service during the warranty and thereafter.
- ii) Installation to be arranged by the supplier free of cost and the same is to be done within 15 days of the arrival of the item at site.

### **Warranty / Support**

- i) The items supplied shall carry a minimum of one year warranty from the date of acceptance of item.
- ii) The defects, if any, during the guarantee / warranty period are to be rectified free of charge by arranging free replacement wherever necessary. This includes cost, insurance, freight, custom duty, octroi, local taxes if any and should be borne by the beneficiary or his agent.
- iii) The bidder should arrange for technical support during warranty period within 24 Hours of lodging of complaint.

### **Indemnity**

The vendor shall indemnify, protect and save IIITDM Kurnool against all claims, losses, costs, damages, expenses, action suits and other proceeding, resulting from infringement of any law pertaining to patent, trademarks, copyrights etc., or such other statutory infringements in respect of all the items supplied by them.

### **Freight and Insurance**

The items to be supplied will be insured by the vendor at his cost against all risks of loss or damage from the date of shipment till such time it is delivered at IIITDM Kurnool, Kurnool District, and Andhra Pradesh.

### **Bid Validity**

The Bid shall remain valid for acceptance for a period of 90 days after the date of Bid opening prescribed in the Bidding Document. Any Bid valid for a shorter period shall be treated as unresponsive and rejected. Bid Security of a Bidder will be forfeited, if the Bidder withdraws or amends its Bid or impairs or derogates from the Bid in any respect within the period of validity of its Bid without prejudice to other rights of the IIITDM KURNOOL. The successful Bidder's Bid Security will be forfeited without prejudice to other rights of IIITDM KURNOOL if it fails to furnish the required performance security within the specified period

In exceptional cases, the Bidders may be requested by the Tender Inviting Authority to extend the validity of their Bids up to a specified period. The Bidders, who agree to extend the Bid validity, are to extend the same without any change or modification of their original Bid and they are also to extend the validity period of the Bid Security accordingly. A Bidder, however, may not agree to extend its Bid validity without forfeiting its Bid Security.

In case the day up to which the Bids are to remain valid falls on or subsequently declared a holiday or closed day for IIITDM KURNOOL the Bid validity shall automatically be extended up to the next working day.

### **Payment**

100% payment after delivery, and acceptance by IIITDM on submission of Bank Guarantee for an equivalent value of 10% of PO value valid till warranty period plus 2 months.

The bidders may note that **other modes of payment like advance payment and payment against delivery is not considered.**

### **Penalty for delayed services / LD**

- i) As time is the essence of the contract, delivery period mentioned in the purchase order should be strictly adhered to. Otherwise the LD clause will be applied / enforced.
- ii) If the supplier fails to supply, and fix the item as per specifications mentioned in the order within the due date, the supplier is liable to pay liquidated damages of 1% of order value for delay of every week or or part thereof subject to a maximum of 10% beyond the due date. Such money will be deducted from any amount due or which may become due to the supplier.
- iii) IIITD&M Kurnool reserves the right to cancel the order in case the delay is more than 04 weeks and the contractor is not eligible for any damage from the Institute and contractor will forfeit his claim for EMD.

### **Purchaser's right to vary quantities at the time of award**

IIITDM Kurnool reserves the right at the time of award of contract to increase or decrease the quantity of items specified in the schedule of requirements without any change in price or other terms and conditions.

### **Jurisdiction**

The disputes, legal matters, court matters, if any, shall be subject to Courts in the district of Kurnool Jurisdiction only.

### **Force Majeure**

- a) IIITDM Kurnool may consider relaxing the penalty and delivery requirements, as specified in this document, if and to the extent that the delay, in performance or other failure to perform its obligations under the contract, is the result of a force majeure.
- b) If the due date of submission of tender / tender opening is declared a holiday for the Institute, the due date for submission of tender / tender will be extended to same time on next working day.

### **Arbitration**

All disputes of any kind arising out of supply, commissioning, acceptance, warranty maintenance etc., shall be referred by either party (IIITDM Kurnool or the bidder) after issuance of 30 days' notice in writing to the other party clearly mentioning the nature of dispute and will be referred to the arbitrator to be nominated by The Registrar, IIITDM Kurnool. The Venue for arbitration shall be Vijayawada India.

### **Acceptance of the terms and conditions of tender document**

The bidders has to accept all the terms and conditions of this tender document and it is made known that the bidders quoting for this tender had impliedly accepted the terms and conditions of this tender.

### **Interpretation of the clauses in the Tender Document**

In case of any ambiguity / dispute in the interpretation of any of the clause in this tender document, interpretation of The Registrar, IIITD&M Kurnool shall be final and binding on all parties. The IIITD&M Kurnool reserves the right to accept the offer in full or in parts or reject the offer summarily or partly without assigning any reasons.

**Sd/-  
Registrar I/c**

**IIITDMK/19-20/S&P/Electronics /Control System real-time Lab Platform for Matlab /21**

**Dated: 20-02-2020**

<b>S.No</b>	<b>Description of the Items</b>	<b>Item Details</b>	<b>Quantity</b>
1	Real-time Lab Platform for Matlab/Simulink	Board and related Software, Simulink Library, Power Supply and Other Accessories	5
2	Magnetic Levitation System	Coil: 15 mH coil with ferrite core Magnet: 40 g magnet with 2.54 cm diameter Sensor: 50 V/T linear Hall effect sensor Air gap: ~ 2 cm Size: ~ 2.5" x 2.5" x 6.0" (6.4 cm x 6.4 cm x 15.2 cm)	1
3	DC Motor System with Encoder	Motor: 12 V PM motor with carbon brushes Encoder: 1024 cpr encoder with index Shaft: 3 mm shaft diameter No-load speed: ~ 4400 rpm Size: ~ 1.7" x 1.3" x 3.3" (4.2 cm x 3.2 cm x 8.9 cm)	1
4	Digital Magnetometer unit (MAG)	Real-time 3-axis measurements Up to 7.0 kHz sampling rate Azimuth (heading) dip (inclination) measurements	1
5	Digital Inertial Measurement Unit (IMU)	Real-time 6 DoF measurements Up to 7.0 kHz sampling rate Kalman filter (time-varying and time-invariant)	1
6	Stepper Motor with Gearbox	Step angle: 360° / 48 stepper motor * 25 / 6 gear ratio = 1.8° Resolution: 48 steps / revolution stepper motor * 6 / 25 gear	1
7	Incremental Encoder with Commutator	Incremental encoder with index pulse and three phase commutation signals 4.54.75 V to 5.25 V operating voltage range, 150 mA maximum operating current	1
8	RC Servo		1
9	Temperature Sensor	19.5 mV/°C sensitivity	1
10	Hall Effect Sensor	50 V/T sensitivity	1
11	Photoresistor (Light Dependent Resistor)	Light resistance: ~ 10 kΩ at 10 lx Dark resistance: >1 MΩ	1



12	Infrared Distance Sensor	10 cm to 80 cm (4" to 32") range	1
13	Ultrasonic Distance Sensor	2 cm to 450 cm (0.8" to 177") range	1
14	Hall Effect Current Sensor	Output: $v = 0.185 * i + 2.5$ , v in V, i in A	
15	Incremental Encoder	Quadrature (A and B) outputs 100 pulses per revolution, 0.9 deg accuracy	1
16	Relay Module	4.5 V to 5.5 V operating voltage range, 60 mA operating current 10 A, 250 V AC relay, optical isolation Normally closed and normally open contacts	1

**Specifications  
of Real-time  
Lab Platform  
for**

**Matlab/Simulink**

1. Compatible with Matlab R2007b through Matlab R2019b
2. Power supply: 6 – 15 V, minimum 0.25 A, regulated
3. Interface: USB, serial port or wireless link
4. 8 analog inputs: A0 – A7, 0 – 5 V analog, 12 bit resolution (unipolar or bipolar mode, 610.3516  $\mu$ V or 1220.7031  $\mu$ V resolution)
5. 8 analog outputs: B0 – B7, 0 – 5 V analog, 12 bit resolution (unipolar or bipolar mode, 610.3516  $\mu$ V or 1220.7031  $\mu$ V resolution)
6. 8 digital inputs: C0\_c0 – C0\_c7, 0 – 5 V digital, 8 lines (selectable digital lines)
7. 8 digital outputs: D0\_d0 – D0\_d7, 0 – 5 V digital, 8 lines (selectable digital lines)
8. 4 encoder inputs: E0 – E3, 0 – 5 V digital, 16 bit resolution (position or velocity mode,  $\pi/2/n$  rad maximum position quantization error and 153541.6667  $\pi/n$  rad/s maximum measurable angular speed, where n is the encoder resolution)
9. 4 stepper output: F0 – F3, 0 – 5 V digital, 16 bit resolution (position or velocity mode,  $\pi/2/n$  rad maximum position interpolation error and 899.6582  $\pi/n$  rad/s maximum achievable angular speed, where n is the stepper resolution)
10. 4 capture inputs: G0 – G3, 0 – 5 V digital, 16 bit resolutions (period or frequency mode, 2.1710  $\mu$ s resolution, 7.0286 – 28789.0625 Hz frequency range)
11. 4 frequency outputs: H0 – H3, 0 – 5 V digital, 16 bit resolution (period or frequency mode, 2.1710  $\mu$ s resolution, 7.0286 – 28789.0625 Hz frequency range)
12. 4 sensor inputs: I0 – I3, 0 – 5 V digital, 16 bit resolution (width or duty mode, 2.1710  $\mu$ s resolution, 7.0286 – 1799.3164 Hz frequency range)
15. 4 servo outputs: J0 – J3, 0 – 5 V digital, 16 bit resolution (width or duty mode, 2.1710  $\mu$ s resolution, 7.0286 – 1799.3164 Hz frequency range)
16. 4 pulse inputs: K0 – K3, 0 – 5 V digital, 16 bit resolution (normal or shifted mode, 271.3704 ns resolution, 56.2286 – 14394.5313 Hz frequency range)
17. 4 pulse outputs: L0 – L3, 0 – 5 V digital, 16 bit resolution (normal or shifted mode, 271.3704 ns resolution, 56.2286 – 14394.5313 Hz frequency range)

18. 4 fast pulse inputs: M0 – M3, 0 – 5 V digital, 16 bit resolution (normal or shifted mode, 33.9213 ns resolution, 449.8291 – 115156.25 Hz frequency range)
19. 4 fast pulse outputs: N0 – N3, 0 – 5 V digital, 16 bit resolution (normal or shifted mode, 33.9213 ns resolution, 449.8291 – 115156.25 Hz frequency range)
20. 4 general pulse inputs: O0 – O3, 0 – 5 V digital, 16 bit resolution (period and width, period and duty, frequency and width, or frequency and duty mode, 2.1710  $\mu$ s or 271.3704 ns resolution, 7.0286 – 1799.3164 Hz or 56.2286 – 14394.5313 Hz frequency range)
21. 4 general pulse outputs: P0 – P3, 0 – 5 V digital, 16 bit resolution (period and width, period and duty, frequency and width, or frequency and duty mode, 2.1710  $\mu$ s or 271.3704 ns resolution, 7.0286 – 1799.3164 Hz or 56.2286 – 14394.5313 Hz frequency range)
22. 1 logic input: Q0, 0 – 5 V digital, 8 input lines (or, nor, and, nand, exor, exnor, buffer and inverter)
23. 1 logic output: R0, 0 – 5 V digital, 8 output lines (or, nor, and, nand, exor, exnor, buffer and inverter)
24. 4 counter inputs: S0 – S3, 0 – 5 V digital, 16 bit resolutions (rising or falling mode, 271.3704 ns separation)
25. 4 timer outputs: T0 – T3, 0 – 5 V digital, 16 bit resolution (rising or falling mode, 488.2972  $\mu$ s separation)
26. 16 file inputs: LOG Yy, float64, float32, int64, uint64, int32, uint32, int16, uint16, int8 or uint8 data format (to read data from a file)
27. 16 file outputs: LOG Zz, float64, float32, int64, uint64, int32, uint32, int16, uint16, int8 or uint8 data format (to write data to a file)
28. 256 UDP inputs: UDP y.y.y.y, float64, float32, int64, uint64, int32, uint32, int16, uint16, int8 or uint8 data format (to read data from an UDP port)
29. 256 UDP outputs: UDP z.z.z.z, float64, float32, int64, uint64, int32, uint32, int16, uint16, int8 or uint8 data format (to write data to an UDP port)
30. 256 COM inputs: COM y, float64, float32, int64, uint64, int32, uint32, int16, uint16, int8 or uint8 data format (to read data from a COM port)
31. 256 COM outputs: COM z, float64, float32, int64, uint64, int32, uint32, int16, uint16, int8 or uint8 data format (to write data to a COM port)
32. 4 H-bridge outputs: P0 – P3, 0 – 12 V digital, 5 A
33. Peripheral: SPI, IIC, CAN, DCI, WRT (optional)
34. 1 voltage regulator output: VDD, 5 V, 0.25 A, regulated power supply
35. Sampling rate: up to 1024 Hz with USB, 15200 Hz with serial port, 9200 Hz with wireless link

All the specifications provided are minimum requirement

**Manufacturer's Authorization Form**

To

Director  
IIITDM KURNOOL  
JAGANNATHAGATTU,  
ANDHRAPRADESH

Ref: Bid Reference No.: **IIITDMK/19-20/S&P/Electronics /Control System real-time Lab Platform for Matlab /21** **Date: 20-02-2020**

We, ..... Who are proven and reputable Manufacturer/exclusive distributors of ..... (Name and description of the goods offered in the Bid) having factories/office at ..... hereby authorize M/s ..... (name and address of the agent) to submit a Bid, against your requirement as contained in the above referred Bidding Documents for the above goods manufactured/ distributed by us.

We further confirm that no supplier or firm or individual other than Messrs. (name and address of the above agent) is authorized to submit a Bid, against your requirement as contained in the above referred Bidding Documents for the above goods manufactured by us

We also hereby extend our full warranty of \_\_\_\_\_ from acceptance of goods by Purchaser as per Clause 8 of General Terms & Conditions. We further confirm that we shall continue to supply spare parts, software up- gradation for 03 years after guarantee/warranty.

Yours faithfully,

[Signature with date,  
name and  
designation]  
For and on behalf of  
Messrs  
[Name & address of  
the manufacturers].

Note: 1. this letter of authorization should be on the letter head of the manufacturing firm and should be signed by a person competent and having the power of attorney to legally bind the manufacturer.

Annexure-II

FINANCIAL BID/ PRICE BID  
(To be enclosed with price bid in a separate cover marked "Cover- 2")

IIITDMK/19-20/S&P/Electronics /Control System real-time Lab Platform for Matlab /21 Date: 20-02-2020

BidderName&Address:.....

S.No	Description of the item	Qty	(A) Unit Price per Item	(B) GST (In Rs.) if applicable	(B) Freight/F.O.R/ transport/delivery & all other charges (In Rs.) If applicable	(A+B+C) Offered Price (In Rs.)
1.	Analog Sysytem Lab Trainer.	20 No				

COMMERCIAL TERMS

1. We hereby undertake that no extra charges on any account will be claimed except as mentioned above.
2. We hereby undertake to strictly abide by the Commercial and other terms laid down in the Tender.

(AUTHORIZED SIGNATORY]  
NAME IN BLOCK LETTERS  
SEAL OF THE TENDERER

Sd/-

Registrar I/c