

Tender Document
For
Procurement and Installation of
Control Systems Components in
Centre of Excellence-Complex & Nonlinear
Dynamical Systems (CoE-CNDS)



VEERMATA JIJABAI TECHNOLOGICAL INSTITUTE
(VJTI)

H R Mahajani Marg, Matunga, Mumbai – 400019

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**Procurement and Installation of Control Systems Components in
Centre of Excellence -Complex & Nonlinear Dynamical Systems (CoE-CNDS)**

(Tender No: VJTI/CoE-CNDS/Control System Component/2021:, dated :17/12/2021)

No editing /addition/deletion of matter (in document) is permitted. If such action is observed at any stage, such bidders are liable for rejection outright and decision of the Institute shall be final and binding for all the bidders.

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**CHECKLIST OF THE DOCUMENTS TO BE ATTACHED ALONG
WITH THE
TECHNICAL BID**

Sr. No	Name of the document	Yes/No
1.	EMD Rs. 75,000/- (Rs. Seventy Five Thousand) and Tender document Cost of Rs. 5,310/-(non-refundable), to be submitted separately. in favour of "The Director VJTI" Payable at Mumbai/Payment via NEFT (Please refer Annexure 1)	
2.	Letter of authorization from the manufacturer/parent company (In case of authorized dealer)	
3.	List of clients/customers with complete name, address and contact number during last 5 years	
4.	Documentary proof of experience in sale of equipment's and software in Automation and simulation of Power Plants.	
5.	Documentary proof of Goods and Service Tax (GST) Registration Certificate	

VEERMATA JIJABAI TECHNOLOGICAL INSTITUTE (VJTI)

H R Mahajani Marg, Matunga, Mumbai-400019

(Tender No: VJTI/CoE-CNDS/Control System Component/2021:, dated :17/12/2021)

Issue of Tender Document	On all working days from 17/12/2021 to 03/01/2022.
Tender Document Cost	Demand Draft of Rs. 5,310/- (Rs. Five Thousand Three hundred and Ten Rupees.) Non-Refundable in favour of "The Director, VJTI" payable at Mumbai to be submitted separately.
Earnest Money Deposit (EMD)	Demand Draft of Rs.75,000/- (Rs. Seventy Five Thousand only) in favour of "The Director, VJTI" payable at Mumbai to be submitted separately.
Last Date and Time for Submission of Tenders.	Up to 3:00PM on 03/01/2022
No tender document will be accepted after the date and time given above.	
Tender to be submitted to Inward Section of VJTI.	


REGISTRAR


CHAPTER-1

INVITATION OF THE BID

SCOPE OF THE WORK:

VJTI Invites sealed bids for supplying of **Control Systems Components in Centre of Excellence-Complex & Nonlinear Dynamical Systems(CoE-CNDS)** as per the specifications contained in Chapter-6 of this Tender Document. The bidder should be a reputed manufacturer or authorized dealer/distributor. The **Control Systems Components** will need to be supplied and installed at VJTI Matunga, Mumbai-400019.

DETAILS OF THE BID:-

Issue of tender documents	On all working days from 17/12/2021 to 03/01/2022
Last date and time of submission of bids	Upto 3.00 PM on 03/01/2022

BIDDING PROCEDURE:-

The prescribed document consisting of (i) Technical Bid and (ii) Financial Bid, sealed separately in two different envelopes, super-scribing “**Technical Bid**” and “**Financial Bid**”, as the case may be, and placed in a duly sealed big single envelop super-scribing “**Bid for Procurement and Installation of Control Systems Components in CoE-CNDS**” may be submitted in inward section of VJTI at main building Administrative Office, Matunga, Mumbai-400019 before 3.00 PM on **03/01/2022**. The bids may be sent through Post and ensure that it should to reach at the aforesaid address 3.00 PM on **03/01/2022**.

In case an acknowledgement of receipt of quotation is desired (applicable to bidders sent THROUGH POST ONLY), it should be sent under Registered Post with an acknowledgement due cover, so as to reach VJTI, Matunga, Mumbai -400019 , 3.00 PM on **03/01/2022**.

The Technical Bid shall be accompanied by a Demand draft/NEFT (for NEFT Details please refer Chapter 8) of EMD Rs. 75,000/- (Rs. Seventy Five Thousand) and Tender document Cost of Rs 5,310/-(non-refundable) drawn in favour of “The Director, VJTI” payable at Mumbai. Technical Bids received without the demand draft or not fulfilling the prescribed conditions will be summarily rejected and decision of the Institute in this regard shall be final and binding. Only those bidders, whose technical bids are complete in all respects and satisfy all laid down terms and will be considered for financial bids.

Note: Fax/Telex and incomplete offers will be rejected. VJTI reserves the right to accept or reject any or all bids at its absolute discretion without assigning any reason, whatsoever or any notice.

PRE-BID MEETING:-

A Pre-Bid meeting will be held on **Monday, 27th December 2021** to clarify and offer comments on any items mentioned in the Tender. Bidders should make sure to attend the meeting for any clarifications. The meeting will be held in CoE-CNDS Lab, Veermata Jijabai Technological Institute, Matunga , Mumbai - 400019 at **05:00 pm**.

In case Bidder wants to attend Meeting in Online Mode, they will have to send their request for meeting link by **25th December 2021 on Email id: coe.cnds@vjti.org.in**

CHAPTER – 2

INSTRUCTIONS TO BIDDERS

1. The bid document can be obtained from Stores section or can be downloaded from VJTI website, <http://www.vjti.ac.in>. No editing, addition/deletion of matter is permitted. If such action is observed at any stage, such tenders are liable for outright rejection.
2. Only enclosed formats as provided in original should be used. All sheets need to be submitted after affixing seal of the Company and Signature of the authorized signatory. Additional sheets, duly authenticated, may be attached to elucidate specifications or clarify the specific issues.
3. The prescribed documents consisting of (i) Technical Bid and (ii) Financial Bid, sealed separately in two different envelopes, super-scribing “Technical Bid” and “Financial Bid”, as the case may be, and placed in a duly sealed big single envelop super-scribing **“Bid for Procurement and Installation of Control Systems Components in CoE-CNDS”** may be submitted to inward section of administrative office, main building of VJTI, Matunga, Mumbai – 400019 or sent through Post at the same address before 3.00 PM on **03/01/2022**.
4. Bidders has to submit EMD Rs. 75,000/- (Rs. Seventy Five Thousand) and Tender document Cost of Rs 5,310/-(non-refundable) along with the technical bid. Bids received without EMD shall be summarily rejected. The EMD shall be refunded (without interest) after the execution of the contract. The earnest money shall be deposited by crossed Pay Order / Demand Draft/ Bank Guarantee in favour of Director VJTI payable at Mumbai. Cheques, Bearer Bonds, Promissory Note, Cash Certificate etc. will not be acceptable towards the EMD. VJTI reserves the right to forfeit the EMD amount on non-acceptance/ non-compliance of offer in full or part or if VJTI feels that has bidder miss-guided in any way.
5. Relevant product literature may be enclosed with the bid along with media (if any).
6. Corrections/Alterations, if any, in the offers should be attested properly duly signed by authorized signatory and affixing seal by the vendor, failing which the tender will be rejected.
7. The items can be supplied by the manufacturer directly or through their authorized dealer/authorized channel partners/distributors. Letter of authorization from the manufacturer/parent company to be enclosed in case of authorized dealer/distributor.

8. The bidder shall quote the prices in INR of goods and services inclusive of all duties and all taxes, freight, levies, or charges.
9. In case of any discrepancy between the unit price and the total price, the unit price shall prevail and total price shall be corrected unless it is lower than the sum total of unit prices. If there is any variation between amount written in figure & words and then amount whichever is lower shall be taken into consideration.
10. All the terms and conditions for the supply, delivery, payment, warranty, penalty, etc. will be as given herein and no change in any term or condition by the vendors will be acceptable.
11. The firms should also submit a list of their clients/customers (with complete name, address of the firms and telephone number of the contact person therein) including in Govt. educational institutions & public sectors with details of the equipment supplied by them for information of the Institute.
12. Canvassing in any form will be viewed seriously and if any bidder is found to be resorting to such practice, the tender of such firm will be rejected.
13. The vendor should comply with the COVID-19 related safety health practices as laid by the Govt. of India, during completion of work.

CHAPTER –3

TERMS & CONDITIONS OF CONTRACT

1. Bidder should have registration of Goods and Service Tax (GST) documentary proof the same will need to be enclosed.
2. All the terms and conditions for the supply, delivery, payment, warranty, penalty, etc. will be as given herein and no change in any term or condition by the vendors will be acceptable.
3. To assist the examination, evaluation, and comparison of bids, VJTI may at its discretion, ask the bidders for clarification of bids including price. The request for clarification and the response shall be in writing.
4. Delivery and Installation period: Maximum Eight (8) weeks from the date of purchase order. Penalty for late delivery @ 1% per day after due date will be charged (maximum charges will be \leq 5%). The installation report should be signed by the firm engineer jointly with authorized VJTI personnel/representative. The items shall be delivered and installed at VJTI, Matunga, Mumbai-400019.
5. Payment terms: 100% of the payment shall be released on successful satisfactory delivery and installation of Equipment's and same to be certified by firm's engineer jointly with authorized VJTI representative and successful Training and satisfactory acceptance as per acceptance criteria by authorized VJTI representative with submission of irrevocable 5% Public Bank Guarantee (PBG) from a recognized public sector bank valid for 1 year. Please refer Site Acceptance Test requirements given at point no.17.
6. The supplier's request for payment shall be made in writing accompanied by relevant document such as proper invoice and satisfactory installation reports duly signed by VJTI's representative.
7. VJTI reserves the right to accept or reject any or all offer(s) in part or full without assigning any reason thereof, and to amend the terms and conditions before award of the contract.
8. Warranty period as and where applicable shall be mentioned with free services.
9. Any disputes arising out of this tender will be under the jurisdiction of court of Mumbai only.
10. The Supplier shall not without the VJTI's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the VJTI in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.
11. The VJTI or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the VJTI.
12. The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at point of delivery and/or at the Goods final destination. If conducted

- on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data shall be furnished to the inspectors at no charge to the VJTI.
13. Any inspected or tested Goods fail to conform to the specifications, the VJTI may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the VJTI.
 14. The VJTI's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at Project Site shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the VJTI or its representative prior to the Goods shipment.
 15. The Control Systems Components shall be accepted after Configuration of all devices and drivers and demonstration of exchange of data from one device to another device, installation and commissioning of these components in the Panels provided by VJTI and submission of technical documentation.
 16. All the necessary Casing and Cabling required for Installation, Commissioning and Site Acceptance Test is in the Scope of Bidder.
 - 17. Site Acceptance Test (SAT):**
 - a. Demonstration of Relay Communication on C37.94 Protocol over IP/MPLS Backbone using CISCO Routers ASR903U. Bidder should include all necessary signal conditioning/conversion devices/ data porting to relevant devices. CISCO routers shall be provided by VJTI. All necessary accessories are to be included in the Bid document while quoting.
 - b. Tricon/SIS System should work in parallel to any Modbus Communication PLC available at VJTI with fail safe architecture on failing of existing PLC SIS should perform its function. Without demonstration of above said task, components will not be accepted. All necessary accessories are to be included in the Bid document while quoting.
 18. The Supplier warrants that the Goods supplied under this Contract are new, unused, of the most recent or current models and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship or from any act or omission of the Supplier that may develop under normal use of the supplied Goods in the conditions prevailing in India.
 19. This warranty shall remain valid for at least 36 months after the Goods or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Contract, unless specified otherwise.
 20. The VJTI shall promptly notify the Supplier in writing of any claims arising under this warranty.
 21. Upon receipt of such notice, the Supplier shall with all reasonable speed, repair or replace the defective Goods or parts thereof, without any extra cost to the VJTI.
 22. If the Supplier having been notified fails to remedy the defect(s) within a reasonable period, the VJTI may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other right, which the VJTI may have against the Supplier under the Contract.

23. The Supplier shall indemnify the VJTI against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in India.
24. The VJTI at any time, by written order given to the Supplier, make minor changes within the drawing & design.
25. The Supplier is required under the Contract to transport the Goods within India defined as Project site, transport to such place of destination in India including insurance, as shall be specified in the Contract, shall be arranged by the Supplier, and the related cost shall be included in the contract Price.
26. The supplier should, at his responsibility check and ascertain the existing rail/ road limitations for safe transport of the equipment to the site. Each package shall be limited to size and weight that are permissible under the existing rail and road limitation.

CHAPTER – 4

SCOPE OF SUPPLY AND SERVICES

1. Scope of Supply

- The Supplier shall arrange at its own cost the necessary consumables, accessories, equipment, tools & tackles required for execution of the job under this work order/contract. The Supplier shall also arrange transportation, lodging, boarding of its personnel deployed for executions of the work at site.
- Supplier shall provide all test reports like Calibration reports. Supplier shall also collect the Manufactured test certificate, Inspection reports, Equipment drawing, wiring received along with equipment/packages and submit the same to VJTI.

2. Scope of Services

- Complete System delivery

Design, manufacturing, installation, wiring, testing and commissioning of complete system consisting of:

- Components and Software procured by the supplier as per the particulate
- Equipment free issued by VJTI as per the list enclosed shall be mounted, wired, tested/commissioned by the supplier.

Sr. No.	Equipment
1.	CISCO Routers ASR903U
2.	Modbus Communication PLCs

- Components to be supplied shall be manufactured with 100% new OEM parts.
- The selected supplier shall include in his scope all necessary equipment and materials, its labeling, including all hardware and cables, including f/o cables there splicing termination (via compatible SFP cards), communication cables necessary and labor for integration and operation of complete test bed system
- Supplier shall carry his own Tools and Tackles required for cable termination, installation, testing and commissioning of the test bed system.
- Supplier shall arrange drinking water, lodging, boarding, transportation for all workers at their cost as per COVID related guidelines.

Mounting

- All components on and in panels shall be mounted and completely wired to the terminal blocks ready for external connection. The equipment in front of the panel shall be mounted flush.
- Components shall be mounted such that removal and replacement can be accomplished individually without interruption of service to adjacent devices and are readily accessible without use of special tools. Terminal marking shall be clearly visible.
- All the components connections and cabling shall be designed and arranged to minimize risk caused by fire hazard.
- PLC/DCS/Switches/Electronic Power supplies shall be mounted on isolating bushes to electrically separate them from cubicle and to facilitate separate electronic grounding.

Nameplates and Markings

- All components mounted on front and rear side as well as components mounted inside the panels shall be provided with individual name plates with equipment designation engraved. Also, on the top of each panel on front as well as rear side large and bold name plates shall be provided for panel designation. These circuit labels shall be larger than the other name plates.
- All front mounted components shall also be provided at the rear with individual name plates engraved with tag numbers corresponding to the one shown in the panel internal wiring to facilitate easy tracing of the wiring. The name plates shall be mounted directly by the side of the respective components and shall not be hidden by the component wiring.
- All relays and other devices shall be clearly marked with manufacturer's name, manufacturer's type, serial number and electrical rating data.

Testing and Support

- Supplier must provide maintenance and support services for components installed under this proposal to keep the test bed system running 24x7 for next three years.
- Supplier to note that acceptance of the equipment's and the system by VJTI or exemption of inspection & testing shall in no way absolve the Supplier of his responsibility to deliver the system meeting all the requirements specified in the specification. Supplier shall be responsible till the completion of the warranty, for any corrections/ modifications including supply and implementation of hardware & software to fulfil the requirements of the contract/ up gradation including supply and implementation of hardware & software to meet the functionality and performance of the contract.

- All component's tests shall be carried out at the Supplier's works, testing laboratory and work sites at Supplier's cost. The Supplier shall provide assistance; instruments, labour and materials as are normally required for the examining, measuring and testing any workmanship as may be selected and required.
- These tests will encompass all the material, components delivered, and software pertaining the components and software supplied by Supplier.

Soft services

- Installation and configuration of all components and programming software and OS where applicable
- Configuration of all devices and drivers and demonstrate exchange of data from any device to any other device.
- The supplier is required to handover all the hardware and/ or software licenses at the time of supply.

Training of Researchers for use of system

- The Selected Supplier shall provide the onsite overall Control System training for up-to 20 Students and 5 Staff members.
- The selected supplier shall provide a comprehensive training manual by designing use-case experiments consulting with the project PI and team.
- The selected contractor shall provide a comprehensive technical manual that will be used to maintain, modify, enhance and upgrade the control system platform.

CHAPTER-5

SITE CONDITIONS

- Electric supply
 - i. 3 Phase, 3 wire, 415 V AC +/- 10%, 50 Hz +/- 3% and UPS supply
 - ii. Fault level: 25 kA
- Environment
 - i. Location (Indoors) : Mumbai, Maharashtra
 - ii. Max ambient air temperature(°C) : 45
 - iii. Minimum ambient temperature(°C) : 15
 - iv. Environment Type : Non-corrosive
 - v. Average daily ambient air temp(°C) : 35 - 40
 - vi. Maximum relative humidity (%) : 95%
 - vii. Average annual rainfall(mm) : 242.2 cm
 - viii. Maximum wind measure(kg/m²) : 200
 - ix. Max attitude above mean see level(m) : 1000m
 - x. Seismic Zone : Zone – 3

CHAPTER -6
SPECIFICATION FOR PROCUREMENT OF CONTROL SYSTEMS
COMPONENTS

Sr.No.	Item Description	Qty.
1.	CONTROL SYSTEM COMPONENTS Control System components consist of following specifications:	1 Set
1.a	GE/Schneider MICOM P54X/ABB Protection Relay /Equivalents : 3 Nos. having <ul style="list-style-type: none"> ● Line Differential Protection Relay having 61850,GOOSE,SV,MMS c37.94 communication is must. MODBUS and DNP3 Protocol ● Current differential Protection ● UFR Detection ● ROCOF Detection ● Distance Detection Along with all necessary accessories and components to complete the Site Acceptance Test	
1.b	Schneider TRICON or Equivalent Safety Instrumented System: 1 Set having <ul style="list-style-type: none"> ● TRICON Modules: <ol style="list-style-type: none"> I. CPU with Ethernet Port II. Digital I/O for Modbus III. Analog I/O ● TRICON Chasis ● Connector Boards Along with all necessary accessories and components to complete the Site Acceptance Test	
1.c	Multi-mode Optical fiber ST ST Type: 6 Nos. <ul style="list-style-type: none"> ● 25 Meters, 850 nm Ruggedised 50/125µm 	
1.d	IRIG B AM Cable 25 Meters: 5 Nos.	

Bidder to submit offer in following format:

Sr. No	Name of Component	Quantity (Nos)	Specification as per tender Document	Bidders Specifications	Deviation (if any)	Remark
1						

Date:-

Name and Signature with seal of Bidder

CHAPTER – 7

FINANCIAL BID

Price should be quoted in INR inclusive of Goods and Service Tax (GST).

Sr. No	Name of Component	Quantity	Rate per No.	Amount (Rs)	Taxes: Goods and Service Tax (GST)(Rs)	Total Amount (Rs)
1	2	3	4	5	6	(5+6)
1						

Total Bid Price in Rs (figure)	
Total Bid Price in Rs (word)	
Signature of Bidder with seal	
Business Address	
Tel No	
Mobile No.	
Email Id:	
Fax No.	

We accept all terms & conditions of the contract.

Place:

Date:

Name and Signature of Bidder with seal.

CHAPTER – 8

ANNEXURE-1

Procedure of Submitting EMD and Tender Fees via NEFT

Steps to be followed for making online payment through “STATE BANK COLLECT”

- Log On to <https://www.onlinesbi.com>
- Home Page STATE BANK COLLECT
- Click on State Bank Collect
- Click Checkbox to Accept ‘Terms & conditions’
- Then click on ‘Proceed’
- Select State as ‘Maharashtra’
- Select Type of Category as ‘Educational Institutions’
- Click on ‘Go’
- Select the Name of the institution as ‘Veermata Jijabai Technological Institute’.
- Select the ‘Payment category’ ‘EMD and/or Tender Processing Fee’ on next screen Enter Name Of firm, Place, PAN, GST No., Enter appropriate Tender Number, Enter appropriate EMD or Tender Fees Amount in Rupees.
- Proceed as instructed and Click on ‘Submit’.
- On next screen verify details and click on ‘Confirm’.
- You will be taken to payment gateway.
- Select appropriate payment mode.
- Check the charges/commission applicable for selected ‘Mode of Payment’.
- Follow instructions to Print Challan and pay at any branch of SBI Bank in Cash / Pay ‘online’ Using Internet Banking / Credit / Debit card.
- Print e-receipt and submit along with Tender.