

 INDIAN INSTITUTE OF TECHNOLOGY PALAKKAD	Indian Institute of Technology Palakkad भारतीय प्रौद्योगिकी संस्थान पालक्काड STORES & PURCHASE SECTION Email: purchase@iitpkd.ac.in Telephone: 04923-226586/87 GSTIN: 32AAAAI9910J1ZR
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GeM ARPTS No. GEM/GARPTS/11012022/VKOJOUKELTY & GEM/GARPTS/11012022/WV30690IIMMQ dated 11-01-2022

Tender No. IITPKD/PRJ/MKJ/2021-22/035

Date of Publication: 01-02-2022

Date/Time of Closing: 22-02-2022, 1500 hours

Indian Institute of Technology Palakkad Invites Tender under Two-bid system for the:

**SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF
Phasor Measurement Unit with GPS Antenna and Remote Terminal Unit (RTU) with
RTU configuration software**

Conforming to the specifications as in BoQ Technical.

Tender Documents may be downloaded from the e-Wizard Portal <https://mhrd.euniwizarde.com/>. Aspiring Bidders who have not enrolled / registered in e-Wizard should enroll / register before participating through the website <https://mhrd.euniwizarde.com/>. Bidders are advised to go through instructions provided at “**Procedure for Submission of E-tender**”. [Special Instructions to the Contractors/Bidders for the e-submission of the bids online through this e-Wizard Portal”].

Bidders can access tender documents on the website. For searching in the site, kindly go to Live Tenders option, Click “Advance Search” and select Department as ‘IIT Palakkad’. Thereafter, Click on “Search” button to view all IIT Palakkad tenders. Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <https://mhrd.euniwizarde.com/> as per the timeline below.

No manual bids will be accepted. All tender documents including Techno-Commercial, Technical and Financial bids should be submitted in the e-Wizard portal.

S. No.	Events	Date and Time
1	Publication of the Tender Document	01-02-2022
2	Last Date/Time for submission of ONLINE Bids	22-02-2022, 1500 hours
3	Opening of Technical Bids	22-02-2022, 1515 hours

Note:

- The bidder should be a Class-I / Class-II Local Supplier meeting the requirement as per the Order No. P-45021/2/2017-PP (BE-II) issued by the Public Procurement Section, DPIIT, Ministry of Commerce and Industry, GOI dated 16-09-2020.**
- Bidders other than Class-I / Class-II Local Suppliers, who may participate in this tender, may be doing so at their own risk. Such bids would not be considered and rejected outright**

TERMS AND CONDITIONS

1	GENERAL	<ul style="list-style-type: none">(a) The responsibility of submission of the bids on or before the last date shall rest with the tenderer. The institute will hold no responsibility for the non-receipt of the bids or the bids received after the date/time specified. Any bid received by IITPKD after the bid submission deadline prescribed by IITPKD, shall be rejected and returned unopened to the Bidder.(b) Canvassing or offer of an advantage or any other inducement by any person with a view to influencing acceptance of a bid is an offence under the Laws of India. Such action will result in the rejection of bid, in addition to other punitive measures.(c) Each bidder shall submit only one bid, either by himself or as a partner in a joint venture or as a member of the consortium. If a bidder or if any of the partners in a joint venture or any one of the members of the consortium participate in more than one bid, the bids (of both the individual and the partnership/consortium/joint venture) are liable to be rejected.(d) The bidder shall bear all costs associated with the preparation and submission of his bid and IITPKD shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tender process.(e) IITPKD will respond to any request for clarification or modification of the Tender Document that are received up to TWO DAYS prior to the deadline for submission of bids prescribed by IITPKD. For this purpose, the prospective bidder(s) requiring clarification in the Tender Document shall notify IITPKD through the ONLINE Portal ONLY. Any such clarification, together with all the details on which the clarification had been sought, will be published in the ONLINE Portal ONLY. Deviations, if any, observed by the Institute in the submitted bids, from the Terms and Conditions of the Tender Document will not be accepted by the Institute.(f) Except for any such clarification by the Institute, which is expressly stated to be an addendum to the tender document issued by the Registrar, IIT Palakkad, no written or oral communication, presentation or explanation by any other employee of any of the Sections/Departments of the Institute, shall be taken to bind or fetter the Institute.(g) The bidder is expected to examine all instructions, forms, terms and conditions in the Tender Document. In the event of discovery of any missing pages, the bidder shall inform the same to the Section/Department concerned. Failure to furnish the information required by the Tender Document or submission of a tender not substantially responsive to the Tender Document in every respect will be at the bidder's risk and may result in rejection of the bid.(h) The bidder shall not make or cause to be made any alteration, erasure or obliteration to the text of the Tender Document.(i) The Supplier shall not, without the prior written consent of the IITPKD, assign to any third party, the Contract or any part thereof.
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2	COMPOSITION OF THE TENDER DOCUMENT	<p>(a) The Tender Document comprises of:</p> <p>Instruction to the bidders including terms and conditions</p> <ol style="list-style-type: none"> 1. Technical Specifications (Annexure-I) 2. Format For Self-Certification Under Preference To Make In India (Annexure-II) 3. Bid Security Declaration Form (Annexure-III) 4. Undertaking by the Bidder (Annexure-IV) 5. Fall Clause Notice Certificate (Annexure-V)
3	DOCUMENTS COMPRISING THE BID	<p>(a) The Technical, Techno-commercial and Commercial Bids (Cover One) and Commercial Bid (Cover Two) shall be submitted ONLINE through the e-Wizard Portal.</p> <p>(b) Bids submitted in any mode other than ONLINE will be rejected outright.</p> <p>(c) Documents establishing the conformity of the terms and conditions of the Tender Document shall be provided along with the bid. The offer/bids should be sent only for a system or that is available in the market and supplied to a number of customers. A list of customers in India and abroad with details must accompany the quotations. Quotations for a prototype machine will not be accepted.</p> <p>(d) Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be included in the Technical bid.</p> <p>(e) Compliance or Confirmation report with reference to the specifications and other terms and conditions should also be obtained from the principal.</p> <p>(f) Information related to the agency/bidder such as photocopies of the Registration/PAN/GST/TIN shall be furnished.</p> <p>(g) The technical bid should consist of all technical details along with commercial terms and conditions. No prices should be included in the technical bid. Mentioning of Prices in the Technical Bid shall lead to <u>DISQUALIFICATION</u>.</p> <p>(h) Bidders who are bidding for this tender shall,</p> <ol style="list-style-type: none"> 1) Should have implemented at least three orders of Phasor Measurement Unit with GPS Antenna and Remote Terminal Unit (RTU) with RTU configuration software (2018-19, 2019-20, 2020-2021) from Centrally Funded Technical Institutes (IITs, NITs, IISc, IISER), DRDO, ISRO, CSIR labs or Government Firms in India. Copies of the most recent purchase orders and user certificates of successful implementation must be included. Copies of financial statements or evidence of turnover must be furnished. 2) Have an Average Annual Turnover of Rs 25,00,000 (RUPEES TWENTY FIVE LAKHS) during each of the last THREE financial years (2018-19, 2019-20, 2020-2021). The bidder shall enclose the audited statements of the indicated financial years, which should have been certified by a Chartered Accountant or a Competent Authority. <p>1) Digitally signed Tender Document should be submitted in Cover One.</p>
4	EARNEST MONEY DEPOSIT (EMD)	<p>(a) The bidder shall furnish, as part of the technical bid, Bid Security Declaration Form as per the Annexure-II.</p>

		(b) Bids not accompanied by Bid Security Declaration Form shall be DISQUALIFIED.
5	PERFORMANCE SECURITY	<p>(a) The performance security shall be submitted within FIFTEEN DAYS of receipt of the material by the IITPKD. The successful bidder shall furnish the Performance Security equal to 3% of the order / contract value (excluding the value of annual maintenance charges). The Performance Security shall be valid all along the warranty period and shall extend upto SIXTYDAYS after the date of completion of warranty period. It shall be ensured by the successful bidder that the validity of the Performance Security submitted is extended depending on the date of commencement of the Warranty.</p> <p>(b) The performance security shall be a bank guarantee (in the format as provided) issued by the Indian Scheduled bank acceptable to the IITPKD or a Demand Draft favoring, INDIAN INSTITUTE OF TECHNOLOGY PALAKKAD payable at PALAKKAD.</p> <p>(c) The performance security shall automatically become null and void once all the obligations of the Supplier under the Contract have been fulfilled, including, but not limited to, any obligations during the Warranty Period and any extensions to the period. The performance security shall be returned to the Supplier not later than fifteen (15) days after its expiration.</p> <p>(d) Failure of the successful Bidder to comply with the requirements shall constitute enough grounds for the annulment of the award and forfeiture of the EMD, in which event the IITPKD may make the award to the next lowest evaluated bid submitted by a qualified Bidder or call for new bids.</p>
6	BID PRICES AND CURRENCY	<p>(a) Prices must be quoted separately for each equipment/item identified.</p> <p>(b) Price quoted for equipment/items must include all costs associated with packing, transportation, insurance, delivery of equipment/items, taxes (separately), loading and unloading on DOOR DELIVERY basis to the institute including its installation, commissioning, integration and validation.</p> <p>(c) Prices quoted by the bidder shall be fixed during the validity of the bid.</p> <p>(d) Prices of the equipment/items shall be quoted in Indian Rupees (INR) only.</p>
7	PERIOD OF VALIDITY OF BIDS	<p>(a) Bids shall remain valid for a period of 180 DAYS after the date of the deadline for submission of bids prescribed by IITPKD.</p> <p>(b) If the deadline is extended due to unforeseen circumstances, the bid validity shall be deemed to have extended accordingly.</p>
8	TIME FOR SUPPLY, INSTALLATION, COMMISSIONING AND VALIDATION OF THE EQUIPMENTS/ITEMS	<p>(a) The Supplier shall supply the equipment/items within the period specified in the tender document i.e. within THREE MONTHS of signing the purchase order or within the period mutually agreed between IITPKD and supplier. All the equipment and accessories should be delivered at IIT Palakkad (Nila Campus), Kanjikode-Malampuzha Road, Pudusserry West, Kanjikode, Kerala 678623.</p> <p>(b) The Supplier shall thereafter proceed with the installation, commissioning, integration and validation and demonstrate operational acceptance of the equipment/items within the period specified. The equipment/items shall be installed and commissioned by the successful bidder within 20 to 25 days from the date of its receipt.</p>

		<p>(c) The tenderer should indicate clearly the time required for delivery of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.</p> <p>(d) In the event of failure of supply of the item/equipment/items within the stipulated delivery schedule, IITPKD has all the right to purchase the item/equipment/items from other sources on the total risk of the Supplier under the risk purchase clause.</p>
9	PRODUCT UPGRADES	The Supplier shall continue to support and maintain the version/model of the Equipment supplied by upgrading the software and the hardware as and when amendments are carried out in the existing version or the product is upgraded. Whereas upgrades to the software shall be supplied free of cost, the Supplier may charge for upgrade in hardware provided it is of major nature. An upgraded higher version of the instrument and software related with the instrument shall be supplied.
10	PENALTIES	If the Supplier fails to complete any of the activities in accordance with the time specified for it, or any extension of time granted by IITPKD, Liquidated Damages Clause shall be invoked.
11	UP-TIME GUARANTEE/ DOWNTIME PENALTY CLAUSE	<p>(a) The Supplier should provide up-time guarantee of 95% [24 (hours) X 7 (days) X 365 (days)] basis during the warranty period.</p> <p>(b) The Supplier should provide up-time guarantee of 95% (24 hours/day basis) both during warranty. If downtime exceeds the 5% limit, extension of the warranty period will be twice the excess down time period.</p>
12	LIQUIDATED DAMAGES	If a firm accepts an order and fails to execute the order, in full or part, as per the terms and conditions stipulated therein, it will be open to the Institute to recover liquidated damages from the firm at the rate of 1% of the value of the undelivered goods per month or part thereof, subject to a maximum of 5% of the value of the undelivered goods. It will also be open to the Institute alternatively, to arrange procurement of the required stores from any source, at the risk and expense of the firm, accepted and failed to execute the order according to stipulations agreed upon. This will also entail the removal of the defaulters' name from the approved/registered list of Suppliers.
13	EFFECT OF FORCE MAJEURE	<p>(a) If the Supplier is prevented, hindered, or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the IITPKD in writing of the occurrence of such event and the circumstances of the event of Force Majeure within FIFTEEN DAYS after the occurrence of such event.</p> <p>(b) The Supplier, when affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect of the event of Force Majeure upon its performance of the Contract and to fulfill its obligations under the Contract, but without prejudice to IITPKD's right to terminate the Contract.</p> <p>(c) No delay or non-performance by the Supplier caused by the occurrence of any event of Force Majeure shall:</p> <ol style="list-style-type: none"> i. Constitute a default or breach of the Contract; ii. Give rise to any claim for damages or additional cost or expense occasioned by the delay or non-performance. <p>(d) If the performance of the Contract is substantially prevented, hindered, or delayed for a single period of more than THIRTYDAYS or an aggregate period of more than SIXTY DAYS on account of one or more events of Force Majeure, the IITPKD shall have the right to terminate</p>

		the Contract by giving a notice to the Supplier.
14	EXTENSION OF TIME LIMITS FOR SUPPLY AND MAKING OPERATIONAL, THE EQUIPMENT	<p>(a) The time limit for supply, installation & commissioning, integration & validation shall be extended if the supply is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:</p> <ol style="list-style-type: none"> i. Any occurrence of Force Majeure; ii. Any other matter specifically mentioned in the Contract; <p>(b) By such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Supplier.</p>
15	GOVERNING LAW AND SETTLEMENT OF DISPUTES	<p>(a) The Contract shall be governed by and interpreted in accordance with the laws of India.</p> <p>(b) Any dispute or claim arising out of/relating to this Contract of the breach, termination or the invalidity thereof, shall be settled by the Hon'ble Courts of Justice at Palakkad.</p> <p>(c) The page number should be marked in all pages serially (including all supporting documents enclosed with the tender document) and the declaration for the same shall be submitted by the bidder as in Annexure-IV.</p> <p>(d) IITPKD reserves the right to accept or reject any or all the tenders in part or whole or may cancel the tender at its sole discretion without assigning any reason whatsoever. No further correspondence in this regard will be entertained.</p>

AWARD OF CONTRACT

1	AWARD CRITERIA	<ol style="list-style-type: none">1. IITPKD will award the Contract to the Bidder whose bid has been determined to be substantially responsive and as per the Order No. P-45021/2/2017-PP(BE-II) dated 16-09-2020 from Department for Promotion of Industry and Internal Trade (Public Procurement Section), Ministry of Commerce and Industry, Govt. of India.2. The Institute reserves the right to buy different items/quantities from different bidders considering price of individual/group of equipment/items or any other factors as decided by the Committee. <u>The bidder should be a Class-I / Class-II Local Supplier meeting the requirement of minimum 20% Local Content in line with the Public Procurement (Preference to Make in India) Order 2017 No. P-45021/2/2017-PP(BE-II) dated 16-09-2020.</u>
2	AWARD OF PURCHASE ORDER	<ol style="list-style-type: none">1. Prior to the expiration of the period of bid validity, IITPKD will issue the Letter of Intent / Purchase Order to the successful Bidder in writing.2. Any amendment(s) in the Purchase Order will be permitted within SEVEN DAYS of its issuance. No amendments will be permitted beyond this period.3. The Purchase Order will constitute the foundation of the Contract.
3	CONTRACT AGREEMENT	<ol style="list-style-type: none">1. Within SEVEN DAYS of receipt of the Purchase Order, the successful Bidder shall sign and date its copy on each page and return it to the Purchaser.2. Copy of Purchase Order duly signed and dated by the successful Bidder on each page shall constitute the Contract Agreement.
4	CONTRACT DOCUMENTS / AMENDMENT TO CONTRACT	<ol style="list-style-type: none">1. All documents forming part of the Contract (and all parts of these documents) are intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole.2. The order of precedence of the Contract documents shall be as follows:<ol style="list-style-type: none">(i) Contract Agreement/Purchase Order(ii) All Forms/Annexures(iii) equipment/items and their requirement(iv) Supplier's Bid(v) Tender Document3. No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract and is signed by a duly authorized representative of each party to the Contract.

REGISTRAR

ANNEXURE-I
Technical Specifications

Standard Warranty	TEN (10) YEARS for the equipment from the date of commissioning/installation of the equipment.
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Phasor Measurement Unit with GPS Antenna		
1	Phasor Measurement Unit with GPS Antenna	Voltage Inputs -- 3-Phase AC Voltage (300 Vac)
2		Current Inputs -- 1 Amp Phase, 1 Amp Neutral
3		Synchrophasors : The device shall include operation as a phasor measurement unit (PMU) following the IEEE C37.118 2011 Standard for Synchrophasors for Power Systems.
4		IEC 61850: The device shall support inclusion of IEC61850 protocol edition1 and edition2 in future through firmware upgradation. And, the device should have IEC 61850 test mode support with standard operating modes for easy commissioning.
5		Repair and Rectification. The offered device shall include support for repair or replacement for a period of ten-year for all material and workmanship defects free of cost.
6		MTBF : The device should have mean time between failures of more than 540 years.
7		PC Interface. The device shall be capable of being set by Windows-based software and ASCII terminal interfaces.
8		IEEE 1588-2008 PTP : The device should support firmware based PTP IEEE 1588-2008
9		Web Server. The device shall allow inspection of settings, metering reports, self-test status via a guaranteed read-only integrated Ethernet web server.
10		Event Reporting and Sequential Events Recorder. The device shall be capable of automatically recording oscillography record. the voltage, current, and element status information contained in each event report. The device should stores an oscillography record of up to 180 cycle of both filtered as well as unfiltered event. The device should store minimum 8numbers of180 cycle length event in device. Events shall be stored in nonvolatile memory. The device shall also include a Sequential Events Recorder (SER), in which as many as 96 elements can be selected.
11		The satellite-synchronized clock shall provide high-accuracy time in multiple formats. Self-checking functions shall be included. Specific requirements are as follows:
12		High Accuracy. IIRIG-B demodulated outputs shall be within ± 100 nanoseconds (average) and ± 500 nanoseconds (maximum) of UTC time.

13	Holdover Stability. The clock shall have a Stability of ± 0.08 ppm for 20 minutes (over the entire operating temperature range) while the clock is not locked to the GPS satellite reference.
14	Time Outputs. The clock shall have four demodulated IRIG-B with high-current drivers. Any of the demodulated time outputs can be programmed for UTC or local time. Demodulated IRIG-B000 and IRIG-B002, TTL: 5 V nominal, 4 V (min) into 50 W.
15	IEEE Extended Control Functions. IRIG-B outputs shall be capable of adding the extended control functions specified by IEEE 1344 and IEEE C37.118.
16	Alarm Contact. The alarm contact shall be programmable to include loss-of-satellite lock, loss of power supply, and processor self-test failure. The alarm contact shall be of Form A type with current carry capacity of 100mA
17	Display. Front-panel LEDs shall display UTC or local day and time as well as clock operational status. Displays time or date. Time displays in either 12- or 24-hour format modes. Bright, easy-to-read, 3-in (76-mm) digits display time or date.
18	Settings. Settings shall be accomplished through easily accessible control (DIP) switches.
19	Software. No proprietary software shall be required to communicate with the clock. Standard PC-compatible terminal emulation programs, such as HyperTerminal®, shall be sufficient to establish communication, provide commands and settings, and download data.
20	Security. Password security shall be provided to control clock access. Security features shall include a 12-character password length, requiring old password entry before changing to a new password, never showing the password on communications ports, and providing a lockout for failed password-entry attempts.
21	Wide-Range Power Supply. The clock shall have a power supply with an operating range of 75–250 Vdc or Vac.
22	Operating Temperature. The clock shall have an operating range of -40° to $+80^{\circ}\text{C}$ with rated accuracy.
23	Robust Hardware. The clock shall meet and be tested for EMI, RFI, shock, vibration, and environmental compliance per the IEEE C37.90, IEC 60255, IEC 61000, and IEC 60068 standards.
24	Safety. The clock shall have Dielectric Strength standard of IEC 60255-5:2000, IEEE C37.90-2005, Severity Level: 2500 Vac on contact inputs, contact outputs, and analog inputs. Type tested for 1 minute.
25	Standards. Exceeds IEEE C37.90 and IEC 60255 protective device standards
26	Reliability. The vendor shall supply the actual measured mean time between failures (MTBF) for the device upon request.
27	Service. The device shall include no-charge technical support for the life of the product.
28	Conformal Coating. The device shall have optional conformal coating to protect the circuit boards from harsh environments.

29	Repair and Rectification. The offered device shall include support for repair or replacement for a period of ten-year for all material and workmanship defects free of cost.	
Remote Terminal Unit (RTU) with RTU configuration software		
30	Remote Terminal Unit (RTU) with RTU configuration software	The offered RTU shall operate a serial and Ethernet communications network. It shall provide a combination of functions that include deterministic logic processing, automatic transmission of outgoing messages and processing of responses, data scaling, data aggregation, simultaneous collection of data from multiple server devices, and simultaneous data access for multiple client (master) devices. The device shall conform to various industry standards, operate in harsh environments, and provide the operational and functional requirements as described below
31		Application: The device shall allow the user to perform complex math and logic calculations on synchrophasor data collected from other IEEE C37.118-compliant devices.
32		<p>Protocols. The offered RTU shall provide the following protocols:</p> <p>Server: FTP, SFTP, DNP3 serial, DNP3 LAN/WAN, Inclusion of IEC 61850 MMS in future through firmware upgrades, Modbus RTU, Modbus TCP, IEEE C37.118, IEC 60870-5-101/104</p> <p>Client: SNMP, DNP3 serial, DNP3 LAN/WAN, IEC 61850 MMS, Modbus RTU, Modbus TCP, IEEE C37.118, IEC 60870-5-103, IEC 60870-5-101/104, and Ether CAT field bus.</p> <p>Peer-to-Peer: Inclusion of IEC 61850 GOOSE in future through firmware upgrades, Parallel Redundancy Protocol Inclusion of IEC 61850 MMS shall be available in future through firmware upgrades</p>
33		IEC 61131-3 Programming. The system shall include an integrated IEC 61131-3 programming environment for the offered RTU, with the ability to monitor and control every protective device and Ethernet-distributed I/O module in the substation continuously. The IEC 61131-3 programming environment shall be integrated in one software package with the communications protocol mapping environment.
34		The offered RTU should be able to Configure up to 100 IEEE C37.118 clients. Each client should be able configured with up to 100 phasor measurement unit (PMU) data sets. Subject to total maximum of 100 C37.118 connections to the device. The data rates should be configured for up to 200 messages per second for 50Hz system.
35		Processor. The offered device shall use an Intel Atom x5-E3940 Quad Core Processor operating at a clock speed of at least 1.6 GHz.

36	RAM. The offered device shall support 8 GB of DDR3L RAM with error correction code (ECC) operating at a clock speed of at least 800 MHz.
37	Embedded Real-Time Operating System- The offered device shall use embedded Linux based operating system for high speed, flexibility, and functionality along with increased security.
38	Power Supply. The offered device shall have a power supply with an operating range of 85–300 Vdc, 85–264 Vac.
39	Temperature. The offered device shall be capable of continuous operation over a temperature range of at least –40° to +85°C (–40° to +185°F) for wide-temperature options, to allow mounting in an outdoor control cubicle. The device shall be type tested to IEC 60068-2-1:2007 (Test Ad 16 hr at –40°C), IEC 60068-2-2:2007 (Test Bd 16 hr at maximum operating temperature), and IEC 60068-2-30:2005 (Test Db 12 + 12-hour cycle at 25° to 55°C, 6 cycles).
40	Environmental Testing. The offered device shall be tested to the same standards as protective devices including IEC 60255-21-1, IEC 60255-21-2, IEC 60255-21-3, IEC 60255-26:2013, IEC 61000-4-2, IEC 61000-4-4, IEEE C37.90.1, and IEC 60529:1989+A1:1999+A2:20013 IP4X on all sides except IP2X on SFP cage and contact I/O IP1X on power supply terminals.
41	Video Port. The offered device shall provide a DisplayPort 1.2 compatible video output capable of streaming a single 4096 x 2160 @ 60 Hz display or three 1920 x 1200 @ 60 Hz displays.
42	Communications Ports. The offered device shall come standard with two front-panel USB ports, four rear-panel USB ports, sixteen rear-panel RJ45 serial ports, one front-panel Ethernet port, and four rear-panel Ethernet ports. Each serial port shall be EIA-232/EIA-422/EIA-485 compatible and capable of 300–115,200 bps. The serial ports shall have a selectable +5 Vdc output. The front Ethernet port (RJ45 copper) shall be independently capable of 10/100/1000 Mbps. The four rear Ethernet ports (RJ45 copper) shall be independently capable of 10/100/1000 Mbps. All communications ports shall be ESD and RFI protected.
43	The offered device shall be of firmware-based type device. Firmware upgrades must be provided free of cost as and when a new firmware is released.
44	IRIG. The offered device shall provide an IRIG-B002 or IRIG-B004 compatible BNC input. The device shall provide one IRIG B004 compatible BNC output and sixteen IRIG-B004 serial port outputs.
45	Contact Input. Device shall have an input capable of measuring 24–250 Vdc or 110–240 Vac (50/60 Hz). The device shall have a user-definable threshold for the universal input with independent set and reset settings to

	provide threshold hysteresis.
46	Contact Output. The device shall have a contact output that can be used to control external equipment with hard-wired control signals. The output shall be rated for continuous carry of at least 6 A @ 70°C, 4 A @ 85°C @ 24–250 Vdc
47	Role-Based Security. The offered device shall incorporate independent user-based security with strong passwords, role-based accounts, and settable account expiration dates. The system shall provide a mechanism to map security-related system tags into SCADA reports.
48	Protection Against Malware and Other Cybersecurity Threats- The real time automation controller should be equipped with exe-GUARD®- using advanced cryptographic algorithms to authorize the execution of any program or service on the system. Any tasks not approved by the whitelist should be blocked from operation.
49	Alarm Output. There shall be an alarm contact output to signal internal errors and malfunctions. The alarm output shall be supervised by an internal watchdog system that independently monitors the operating system.
50	Industrial Solid-State Drives. The offered DEVICE shall have user accessible, high quality, industrial-temperature rated, single-level cell (SLC) solid-state drives with at least 30 GB storage capacity. The Industrial Grade SLC SSDs shall have a 10-year warranty.
51	Moving Parts and Vent Holes. The offered device shall not include any rotating disk drives, fans, moving parts, or vent holes.
52	Reliability. The manufacturer shall supply the actual measured mean time between failures (MTBF) for the device upon request.
53	Service. The offered device shall include no-cost technical support for the life of the product.
54	Conformal Coating. The device shall offer conformal coating as an optional feature to protect the circuit boards from harsh environments
55	The device should also include a 24-port unmanaged ethernet switch with the following specifications: Ports. The offered device shall have upto 24 ports in ethernet switch. It shall support four Gigabit Ethernet ports, Sixteen 10/100 Mbps ports either copper or fiber as required and four SFP cages. Configurable Alarm Contact. The device shall support configuring the alarm contact behavior for each event category.

		<p>Far End Fault Indication (FEFI). The offered shall support far end fault indication (FEFI) on the 10/100 fiber ports. The offered shall support Switching Latency of less than 7 microsecond.</p> <p>The offered device shall have minimum throughput of 19 Gbps.</p> <p>Suitable for Harsh Environments. The device shall meet IEEE 1613 Class 1, IEC 61850-3, and IEC 60255 standards.</p> <p>Reliability. The manufacturer shall supply the actual measured mean time between failures (MTBF) for the device upon request.</p> <p>Dual redundant power supply. The device shall have option for selecting redundant hot-swappable power supply.</p> <p>Power supply. The offered device shall support the operating input voltage range 88–300 Vdc or 85–264 Vac.</p> <p>Operating Temperature. The offered device shall have an operating range of –40° to +80°C.</p>
56		<p>Repair and Rectification. The offered devie shall include support for repair or replacement for a period of ten-year for all material and workmanship defects free of cost.</p>
<p>NB: Annexure I of tender document to be read along with above details and complied in all respect.</p>		
<p style="text-align: right;">Warranty(10 YEARS)</p>		

ANNEXURE-II

FORMAT FOR SELF-CERTIFICATION UNDER PREFERENCE TO MAKE IN INDIA
(TO BE SUBMITTED ONLY THROUGH ONLINE MODE IN APPROPRIATE FORMAT)

Format for Affidavit of Self-Certification regarding Minimum Local Content in line with “Make in India” Policy vide GoI Order no. P-45021/2/2017-PP (B.E.-II) dated 15.06.2017 (subsequently revised vide orders dated 28.05.2018, 29.05.2019 and 04.06.2020)

Date: _____

I/We _____ S/o, D/o, W/o, _____

Resident of _____

Hereby solemnly affirm and declare as under:

That I will agree to abide by the terms and conditions of the Public Procurement (Preference to Make in India) Order, 2017 (hereinafter PPP-MII order) of Government of India issued vide Notification No:P-45021/2/2017 -BE-II dated 15/06/2017, its revision dated 28/05/2018 and any subsequent modifications/Amendments, if any and

That the local content for all inputs which constitute the said goods/services/works has been verified by me and I am responsible for the correctness of the claims made therein.

Tick (✓) and Fill the Appropriate Category	
<input type="checkbox"/>	I/We _____ [name of the manufacturer] hereby confirm in respect of quoted items(s) that Local Content is equal to or more than 50% and come under “ Class-I Local Supplier ” category.
<input type="checkbox"/>	I/We _____ [name of the manufacturer] hereby confirm in respect of quoted items(s) that Local Content is more than 20% but less than 50% and come under “ Class-II Local Supplier ” category.
<input type="checkbox"/>	I/We _____ [name of the manufacturer] hereby confirm in respect of quoted items(s) that Local Content is less than or equal to 20% come under “ Non-Local Supplier ” category.

For and on behalf of..... (Name of firm/entity)

Authorized signatory (To be duly authorized by the Board of Directors)

<Insert Name, Designation and Contact No.>

[Note: In case of procurement for a value in excess of Rs. 10 Crores, the bidders shall provide this certificate from statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.]

ANNEXURE-III

BID SECURITY DECLARATION FORM
(TO BE SUBMITTED ONLY THROUGH ONLINE MODE IN APPROPRIATE FORMAT)

Date: _____

Tender No. _____

To (insert complete name and address of the purchase)

I/We. The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

- a) Have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or
- b) Having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i) fail or reuse to execute the contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: _____ (insert signature of person whose name and capacity are shown)
in the capacity of _____ (insert legal capacity of person signing the Bid Securing Declaration)

Name: _____ (insert complete name of person signing he Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of (insert complete name of Bidder)

Dated on _____ day of _____ (insert date of signing)

Corporate Seal (where appropriate)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)

Note:

This letter should be on the letterhead of the quoting firm and should be signed by a Competent Authority. Non-submission of this will lead to DISQUALIFICATION of bids.

ANNEXURE-IV

UNDERTAKING BY THE BIDDER (TO BE SUBMITTED ONLY THROUGH ONLINE MODE IN APPROPRIATE FORMAT)

We here by accept all the Terms and Conditions of the Tender Document and strictly adhere to the same in the event of getting Purchase order. We also declare that the Technical and Financial Bids submitted by us has NO DEIVATION from the Tender Terms and Conditions.

We here by accept that the PRICES OF THE EQUIPMENT/ITEMS QUOTED IS IN INDIAN RUPEES ONLY (INR). I am aware that if the price is not in INR, the application shall be summarily rejected.

We hereby undertake that there are _____ pages, serially numbered, in the submitted tender including the supporting documents. (Please serially number all the pages including blank page, if any).

We have submitted our principal's exclusive authorization letter which is specific for this tender No. _____ dated _____.

Note:

This letter should be on the letterhead of the quoting firm and should be signed by a Competent Authority.

ANNEXURE-V

FALL CLAUSE NOTICE CERTIFICATE (TO BE SUBMITTED ONLY THROUGH ONLINE MODE IN APPROPRIATE FORMAT)

This is to certify that we have offered the maximum possible discount to you in our Quotation No. _____ dated _____ (Please do not reveal the prices here, which will lead to outright rejection of your bid).

The prices charged for the Stores supplied under tender should under no event be higher than the lowest prices at which the party sells the items of identical description to any other Govt. organization/PSU's/Central Govt, /State Govt. Autonomous bodies/Central/state Universities/Central/State Educational Institutions, failing which the "FALL CLAUSE" will be applicable. The institute will look into a reasonable past period to ensure this.

In case, if the price charged by our firm is found to be more, **IIT Palakkad** will have the right to recover the excess charged amount from the subsequent/unpaid bill of the supplier.

Note:

This letter of authority should be on the letterhead of the quoting firm and should be signed by a Competent Authority and having the power of attorney.