



INDIAN INSTITUTE OF TECHNOLOGY, KANPUR
GT ROAD, KALYANPUR, KANPUR – 208016
UTTAR PRADESH, INDIA

TENDER REFERENCE NO: IITK/CSE/2020-2021/6

BID SUBMISSION END – 23-06-2020

TENDER DOCUMENTS

FOR

“Purchase of Numerical Relays, GPS Clock, Firmware/Hardware based PDC cum Gateway and Visualization Software for Synchro Phasor data”

BID DOCUMENT

Online bids (Technical & Financial) from eligible bidders that are valid for a period of 120 days from the date of Technical Bid opening (i.e. 24.06.2020) are invited for and on behalf of the Assistant Registrar, IIT Kanpur for **“Purchase of Numerical Relays, GPS Clock, Firmware/Hardware based PDC cum Gateway and Visualization Software for Synchro Phasor data.”**

Name of Work	Purchase of Numerical Relays, GPS Clock and Firmware/Hardware based PDC cum Gateway and Visualization Software for Synchro Phasor data
Date of Publishing	02.06.2020 (16:00 hrs)
Clarification Start Date and Time	02.06.2020 (16:00 hrs)
Clarification End Date and Time	23.06.2020(16:00 hrs)
Queries (if any)	No queries will be entertained after clarification end date and time
Bid Submission Start Date	02.06.2020(16:00 hrs)
Last Date and time of uploading of Bids	23.06.2020 (16.00hrs)
Last Date and time of submitting , EMD at IIT Kanpur (if any)	24.06.2020 (14.00 hrs)
Date and time of opening of Technical Bids	24.06.2020(16:00 hrs)
Date and time of opening of Financial Bids	Will be separately notified for Technically shortlisted/qualified bidders

Interested parties may view and download the tender document containing the detailed terms & conditions from the website <http://eprocure.gov.in/eprocure/app>

(The bids have to be submitted online in electronic form on www.eprocure.gov.in only. No physical bids will be accepted.)

INSTRUCTION FOR ONLINE BID SUBMISSION

The bidders are required to submit soft copies of their bids electronically on the Central Public Procurement (CPP) Portal ie <http://eprocure.gov.in/eprocure/app> , using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

REGISTRATION

- (i)** Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL:<https://eprocure.gov.in/eprocure/app>) by clicking on the link “Online Bidder Enrolment” option available on the home page. **Enrolment on the CPP Portal is free of charge.**
- (ii)** During enrolment/ registration, the bidders should provide the correct/ true information including valid email-id & mobile no. All the correspondence shall be made directly with the contractors/ bidders through email-id provided.
- (iii)** As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- (iv)** For e-tendering possession of valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) is mandatory which can be obtained from SIFY /nCode/eMudra or any Certifying Authority recognized by CCA India on eToken/ Smartcard.
- (v)** Upon enrolment on CPP Portal for e-tendering, the bidders shall register their valid Digital Signature Certificate with their profile.
- (vi)** Only one valid DSC should be registered by a bidder. Bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse and should ensure safety of the same.
- (vii)** Bidders can then log into the site through the secured login by entering their user ID/ password and the password of the DSC/ eToken.

SEARCHING FOR TENDER DOCUMENTS

- 1) 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.
- 2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
- 3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS:

- (i) For preparation of bid Bidders shall search the tender from published tender list available on site and download the complete tender document and should take into account corrigendum if any published before submitting their bids.
After selecting the tender document same shall be moved to the 'My favourite' folder of bidders account from where bidder can view all the details of the tender document.
- (ii) Bidder shall go through the tender document carefully to understand the documents required to be submitted as part of the bid. Bidders shall note the number of covers in which the bid documents have to be submitted, the number of documents – including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- (iii) Any pre-bid clarifications if required, then same may be obtained online through the tender site, or through the contact details given in the tender document.
- (iv) Bidders should get ready in advance the bid documents in the required format (PDF/xls/rar/dwf/jpg formats) to be submitted as indicated in the tender document/schedule. **Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.**
- (v) Bidders can update well in advance, the documents such as experience certificates, annual report, PAN, EPF & other details etc., under "My Space/ Other Important Document" option, which can be submitted as per tender requirements. This will facilitate the bid submission process faster by reducing upload time of bids.

SUBMISSION OF BIDS:

- (i) Bidder should log into the site well in advance for bid submission so that he/ she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay.
- (ii) Bidder should prepare the EMD as per the instructions specified in the NIT/ tender document. The details of the DD sent should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- (iii) While submitting the bids online, the bidder shall read the terms & conditions (of CPP portal) and accepts the same in order to proceed further to submit their bid.
- (iv) Bidders shall select the payment option as offline to pay the EMD and enter details of the DD.
- (v) Bidder shall digitally sign and upload the required bid documents one by one as indicated in the tender document.
- (vi) Bidders shall note that the very act of using DSC for downloading the tender document and uploading their offers is deemed to be a confirmation that they have read all sections and pages of the tender document without any exception and have understood the complete tender document and are clear about the requirements of the tender document.
- (vii) Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document. For the file size of less than 1 MB, the transaction uploading time will be very fast.
- (viii) **If price quotes are required in XLS format, utmost care shall be taken for uploading Schedule of quantities & Prices and any change/ modification of the price schedule shall render it unfit**

for bidding.

Bidders shall download the Schedule of Quantities & Prices i.e. Schedule-A, in XLS format and save it without changing the name of the file. Bidder shall quote their rate in figures in the appropriate cells, thereafter save and upload the file in financial bid cover (Price bid) only.

If the template of Schedule of Quantities & Prices file is found to be modified/corrupted in the eventuality by the bidder, the bid will be rejected and further dealt as per provision of clause no 23.0 of ITB including forfeiture of EMD.

The bidders are cautioned that uploading of financial bid elsewhere i.e. other than in cover 2 will result in rejection of the tender.

- (ix) Bidders shall submit their bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). **The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders at the eleventh hour.**
- (x) After the bid submission (i.e. after Clicking “Freeze Bid Submission” in the portal), the bidders shall **take print out of system generated acknowledgement** number and keep it as a record of evidence for online submission of bid, which will also act as an entry pass to participate in the bid opening.
- (xi) Bidders should follow the server time being displayed on bidder’s dashboard at the top of the tender site, which shall be considered valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system.
- (xii) All the documents being submitted by the bidders would be encrypted using PKI (Public Key Infrastructure) encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology.

ASSISTANCE TO BIDDERS:

- (i) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contract person indicated in the tender. The contact number for the helpdesk is **0512-259-6344/purchase@cse.iitk.ac.in** between 10:30 hrs to 17:00 hrs.
- (ii) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24X7 CPP Portal Helpdesk. The 24 x 7 Help Desk Number 0120-4200462, 0120-4001002 and 0120-4001005. The helpdesk email id is support-eproc@nic.in

INSTRUCTION FOR e-PROCUREMENT

1. PREPARATION AND SUBMISSION OF BIDS :

- a. The detailed tender documents may be downloaded from <http://eprocure.gov.in/eprocure/app> till the last date of submission of tender. The Tender may be submitted online through CPP Portal <http://eprocure.gov.in/eprocure/app>
- b. The bidder should submit the bid online in two parts viz. Technical Bid and Financial Bid. Technical Bid should be upload online in cover 1 and Financial Bid in “.Xls” should be upload online in cover-2

2. SUBMISSION OF THE BID : All interested eligible bidders are requested to submit their bids online on CPP Portal: <http://eprocure.gov.in/eprocure/app> as per the criteria given in this document:

- a. Technical Bid should be uploading online in cover-1.
- b. Financial Bid should be upload online in cover-2

Both Technical and Financial Bid covers should be placed online on the CPP Portal (<http://eprocure.gov.in/eprocure/app>).

3. TECHNICAL BID: Signed and Scanned copies of the Technical bid documents as under must be submitted online on CPP Portal: <http://eprocure.gov.in/eprocure/app>.

a) **List of Documents to be scanned and uploaded (Under Cover-1) within the period of bid submission:-**

- i. Scanned copy of registration certificate and Authorization certificate.
- ii. Scanned copy of work experience.
- iii. Scanned copy of certificate of GST and Bank Details.
- iv. Scan copy of tender acceptance letter.
- v. Scanned copy of specifications or brochures.
- vi. Scanned copy of Our Technical Sheet duly signed and stamped by the firm.
- vii. Scanned copy of No Deviation Certificate (This certificate is to state that there shall be No Deviation in your bid as compared to what we have asked for in our tender document both technically and otherwise. This is to be written on your letter head and signed stamped as well)

***NOTE - no indication of the rates/amounts be made in any of the documents submitted with the TC-BID.**

4. **Financial Bid**

- a. The currency of all quoted rates shall be Indian Rupees. All payment shall be made in Indian Rupees.

- b. In preparing the financial bids, bidders are expected to take into account the requirements and conditions laid down in this Tender document. The financial bids should be uploaded online as per the specified “.Xls” format i.e. Price Bid Excel sheet attached as ‘.Xls’ with the tender and based on the scope of work, service conditions and other terms of the Tender document. It should include all costs associated with the Terms of Reference/Scope of Work of the assignment.
- c. The Financial Proposal should be inclusive of all applicable taxes, duties, fees, levies, and other charges imposed under the applicable laws. The rates quoted in the Tender are inclusive of all applicable taxes, duties etc. **except service tax**. The service tax component shall be re-immersible by the department after receipt of paid challans etc. if applicable.

5. Last Date for Submission of Tender:

- a. Online bids complete in all respects, must be submitted on or before the last date and time specified in the schedule of events.
- b. The IIT, Kanpur may, at its own discretion, alter/extend the last date for submission of tenders.

6. Bid Validity

- a. All the Bids must be valid for a period of 120 days from the last date of submission of the tender for execution of Contract. However, the quoted rates should be valid for the initial/extended period of the Contract from the effective date of the Contract. No request will be considered for price revision during the original Contract period.
- b. A bid valid for a shorter period shall be declared as non-responsive.
- c. In exceptional circumstances, prior to expiry of the original time limit, the IIT may request the bidders to extend the period of validity for a specified additional period beyond the original validity of 120 days. The request and the bidders' responses shall be made in writing. The bidders, not agreeing for such extensions will be allowed to withdraw their bids without forfeiture of their Bid Security.

7. Modification / Substitution/ Withdrawal of bids:

- a. No Bid shall be modified, substituted or withdrawn by the Bidder after the Bid's due Date.
- b. Any alteration/ modification in the Bid or additional information supplied subsequent to the Bid's due Date, unless the same has been expressly sought for by the Authority, shall be disregarded.

8. Rejection of the Bid: The bid submitted shall become invalid and tender fee shall not be refunded if:-

- a. The bidder is found ineligible.
- b. The bidder does not upload all the documents as stipulated in the bid document.

9. Selection Criteria:

Phase-I: Technical Evaluation & Sample Approval

Technical evaluation will be done on the basis of information given by technical bid submitted by the bidders. Bid containing partial, incomplete, uncleared and superfluous and unwanted information will be summarily rejected.

Technical declaration must be supported with relevant document. Discrepancy in relevant supporting document and technical compliance sheet shall lead to rejection of technical bids.

Sample Approval:

Bidders should have to display their samples (if asked) on _____ at the Central Store & Purchase Section of IIT Kanpur. Non-display of sample shall be considered as non-responsive technical bids.

Phase-II

1. Financial bids of technically qualified and approve samples bidders shall be opened.
2. Financial evaluation is purely done on the total financial implication.
3. Any superfluous, unreasonable assets rate quotes will be summarily rejected.

Late Delivery:

Delivery must be completed within the period mentioned in tender document from the date of receipt of the order. Penalty @ 1% per week or part thereof subject to a maximum of 10% of the delivery price will be deducted from the balance payment if supply is not completed within stipulated period.

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

Tender Document

Department of Computer Science & Engineering
Indian Institute of Technology Kanpur (UP) 208016

Enquiry Number: IITK/CSE/2020-2021/6

Enquiry Date: 02.06.2020

E-tender /Online bids are invited from OEMs or their authorized resellers/channel partners for **Purchase of Numerical Relays, GPS Clock, Firmware/Hardware based PDC cum Gateway and Visualization Software for Synchro Phasor data for CSE IIT Kanpur.**

The scanned copies of the online bids complete in all respects along with Demand draft for **Rs. 1,48,500.00 towards Bid Security/ EMD in favour of Registrar, IIT Kanpur** must reach **Room No.RM-410,CSE Department,IIT Kanpur-208016** latest by **02.00 PM Hrs** on the bid opening day i.e. **24-06-2020**.

Please note all bid related documents scanned copy is to be submitted on the online portal, only Demand draft has to physical reach the aforementioned address.

The tender document along with other details may be downloaded from the CPP Portal:
<http://eprocure.gov.in/eprocure/app>

IIT, Kanpur reserves the right to accept or reject any or all the tenders without assigning any Reasons thereof.

Tender Document

Department of Computer Science & Engineering
Indian Institute of Technology Kanpur
Kanpur (UP) 208016 India

Enquiry date: **02.06.2020**

Enquiry No: **IITK/CSE/2020-2021/6**

Online quotations are invited for “**Purchase of Numerical Relays, GPS Clock, Firmware/Hardware based PDC cum Gateway and Visualization Software for Synchro Phasor data**” The detailed specification of the **Purchase of Numerical Relays, GPS Clock, Firmware/Hardware based PDC cum Gateway and Visualization Software for Synchro Phasor data** is described below.

Scope: This specification covers supply, erection, testing, installation, commissioning & integration of lab scale Numerical relays, GPS clock, Firmware / Hardware based PDC cum Gateway, Visualization Software for Synchro Phasor data.

S.N.	Item Description	Quantity
1	Distance Protection Relay	6
2	Transformer Differential protection relay	3
3	Firmware/hardware based PDC cum Gateway	1
4	GPS Clock	1
5	Visualization Software for Synchro phasor data	1

General Requirement for Numerical Relays, GPS Clock and Firmware/Hardware based PDC cum Gateway;

- Operating Temperature
IEC Performance Rating: -40° to $+85^{\circ}\text{C}$ (per IEC/EN 60068-2-1 and 60068-2-2)
- Type Tests compliance
Enclosure protection: IEC 60529:2001
Dielectric strength and impulse test: IEC 60255-5:2000, IEEE C37.90-2005
RFI and interference test: IEC 61000-4-2:2008, IEC 60255-26:2012
- Warranty period
The device shall include a minimum one-year warranty for all material and workmanship defects from the date of supply of items.
- Standard Contacts
Pickup/Dropout Time: ≤ 8 ms (coil energization to contact closure)
- Communication protocol for numerical relays.
Modbus, DNP, FTP, TCP/IP, Telnet, SNMP, IEC 61850, and Device Net
- AC Current Input: $I_{\text{NOM}} = 1$ A, Continuous rating: 3 times I_{NOM} @ 85°C , linear to 20 A symmetrical and 4 times I_{NOM} @ 55°C , linear to 20 A symmetrical
- 1-Second Thermal: 100 A

Distance Protection Relay

Distance relay shall require following protection features.

- The relay shall incorporate four zones of mho distance protection for detection of phase faults. Both positive-sequence memory polarized, and compensator-distance phase distance elements shall be available.
- The relay shall detect CCVT transients and block the operation of overreaching Zone 1 distance elements.
- The relay shall have Out-of-Step Characteristics including blocking & tripping, Zero-Sequence Compensation Factor, Overcurrent Fault Protection.
- The relay shall include operation as a phasor measurement unit (PMU) compliant with IEEE standard C37.118.
- Ground Fault Distance Protection. The relay shall incorporate four zones of mho distance and four zones of quadrilateral distance protection for ground fault protection.
- The relay shall have Phase Over- and Undervoltage Elements, & Sequence Overvoltage Elements
- The relay shall incorporate breaker failure logic for three-pole tripping.
- The relay shall incorporate a four shot recloser with four independently set open time intervals.
- The relay shall include two synchronism-check elements with separate maximum angle settings.
- The relay shall have Selectable Wye or Delta Three-Phase Voltage Inputs, Frequency Elements.
- Event Reporting and Sequential Events Recorder. The relay shall be capable of automatically recording disturbance events of 15, 30, 60, or 180 cycles at as many as 128 samples per cycle. The relay shall also include a Sequential Events Recorder that stores the latest 1024 entries.
- The relay shall have Circuit Breaker Monitor, Substation Battery Monitor and built in fault locator facility.

Transformer Differential Protection Relay

The transformer protection relay includes various features such as

- (i) Restrained differential for two windings with fixed or variable percentage characteristic using one or two settable slopes with adjustable intersection point and minimum pickup values
 - (ii) Second and fifth-harmonic blocking or second- and fourth-harmonic restraint (pick-up range: 5% to 100% of fundamental) and dc blocking
 - (iii) Unrestrained differential protection
 - (iv) Zero sequence removal
 - (v) Automatic tap calculation of LV and HV tap quantities
 - (vi) Overcurrent fault protection with adaptive phase overcurrent element getting stability against CT saturation, dc offset, and off frequency
 - (vii) CT phase angle compensation
 - (viii) Status and trip target LEDs
 - (ix) Volt per hertz's protection
 - (x) Undervoltage / Over voltage protection.
- The relay shall include programmable logic functions, fully programmable opto-isolated inputs and output contacts, three trip variables and two close functions.
 - Relay shall capable to monitor through fault function. Relay shall be capable of reporting fault current level, duration, and date/time for overcurrent events through the differential protection zone. A settable I² t alarm shall indicate an excess of accumulated through-fault energy.

- The relay should include metering capabilities for real-time current and differential quantities, phase demand, peak demand current values, second and fifth-harmonic content.
- The relay shall be capable of automatically recording disturbance events of 15 cycles with user defined.
- The relay shall include a real-time clock, with battery backup, synchronization with demodulated IRIG-B input, to provide accurate time stamps for event records.
- The relay shall provide high-accuracy ($\pm 10 \mu\text{s}$ or better) phasor measurements for voltages and currents if an IRIG-B signal is available.
- The relay shall have Touchscreen Display, metering and monitoring data, targets, summary and SER information, relay status and configuration, controllable relay operations, and editable settings.
- The relay shall be capable of monitoring the breaker contact wear of as many as four breakers. Relay shall have Fault type and trip data, including time of tripping.

GPS Clock

Satellite Signals for Time Input. With a GNSS antenna, the device shall receive signals from GPS and GLONASS and, when configured, use GLONASS information to verify the GPS signals.

- The device shall include inbuilt eight standard BNC outputs, all of which can be configured individually for demodulated IRIG-B, PPS or kPPS. As many as four of the BNC ports can be configured for modulated IRIG-B.
- The device shall provide nine demodulated IRIG-B or pulse output with an average accuracy of $\pm 40 \text{ ns}$ to UTC and a peak accuracy of $\pm 100 \text{ ns}$ to UTC.
- The device shall include inbuilt four standard Ethernet ports on the rear that are 10/100BASE-T standard and can be configured as single-mode or multimode LC fiber ports in pairs.
- The device webpage includes a dashboard display of satellite signals for both GPS and GLONASS satellites. Bar charts indicate signal strengths, and the Sky View displays the present satellite overhead positions, useful information for troubleshooting potential signal and antenna installation issues
- The Ethernet management port shall support a DHCP server that is enabled by default and can be disabled. The port shall support HTTPS web interface configuration
- The device shall include a standard TCXO holdover oscillator with average accuracy of $36 \mu\text{s}$ per day at constant temperature.
- The device shall include one port with DB-9 connector for IRIG-B or pulse output. The device shall include one standard Form C alarm contact and one standard Form A Time Contact output with $1 \mu\text{s}$ accuracy.
- The device shall allow cable delay compensation for the antenna cable and for time outputs on a per port basis. The device shall have Graphical User Interface (GUI)-Based Secure Management. The device shall provide a secure HTTPS GUI-based management interface.
- The device shall monitor health and functions and report state changes. The device shall support importing and exporting device settings.
- The device shall support authentication of firmware through digital signatures.
- The device shall authenticate and authorize users by using role-based accounts and Lightweight Directory Access Protocol (LDAP).
- The device shall log locally and forward event messages across an Ethernet network by using Syslog to as many as three Syslog destinations.
- The device shall use SNMP traps to notify users of certain preset conditions, such as GPS loss or security events. The device also supports SNMP read for monitoring clock diagnostics.

- The device shall meet IEEE 1613 Class 2, IEC 61850-3, and IEC 60255 standards. The device shall operate within a temperature range of -40° to $+85^{\circ}\text{C}$
- The manufacturer will endeavor to support a 72-hour turnaround on all warranty repairs. The device shall include a minimum one-year warranty for all material and workmanship defects.

Firmware/hardware based PDC cum Gateway

The information processor shall provide the following protocols:

- Server: CDC Type 2, FTP, SFTP, DNP3 serial, DNP3 LAN/WAN, IEC 61850 MMS, Modbus RTU, Modbus TCP, LG 8979, IEEE C37.118, IEC 60870-5-101/104, and SES-92.
- Client: CP2179, Flex Parse, ASCII and Binary, eDNA, SNMP, DNP3 serial, DNP3 LAN/WAN, IEC 61850 MMS, Modbus RTU, Modbus TCP, LG 8979, IEEE C37.118, IEC 60870-5-101/104, SES-92, and EtherCAT1
- Peer-to-Peer: IEC 61850 GOOSE transmit and receive messages, Parallel Redundancy Protocol
- The information processor shall use a processor with Error Correcting Code (ECC) RAM
- The system shall include an integrated IEC 61131-3 programming environment for the information processor, with the ability to monitor and control every protective.
- The information processor shall incorporate independent user-based security with strong passwords, role-based accounts, and settable account expiration dates.
- The PDC shall supports minimum 100,000 tags.
- Protection Against Malware and Other Cybersecurity Threats- Protect your RTAC system with exe-GUARD®, which uses advanced cryptographic algorithms to authorize the execution of any program or service on the system. Any tasks not approved by the whitelist are blocked from operation
- Broad operating temperature range of -40° to $+75^{\circ}\text{C}$ ensures reliable performance. Continuous operation over a temperature range of at least -40° to $+75^{\circ}\text{C}$ (-40° to $+167^{\circ}\text{F}$) for wide-temperature options, to allow mounting in an outdoor control cubicle. Storage temperature range of -40° to $+85^{\circ}\text{C}$.
- Manufactured and tested in accordance with IEC 60255 relaying standards including IEC 60255-21-1, IEC 60255-21-2, IEC 60255-21-3, IEC 60255-26:2013, EN 61000-4-2, EN 61000-4-4, and IEEE C37.90.1. Type tested to IEC 60068-2-1:2007 (Test Ad 16 hrs. at -40°C), IEC 60068-2-2:2007 (Test Bd 16 hrs. at maximum operating temperature), and IEC 60068-2-30:2005 (Test Db 12 + 12-hour cycle at 25° to 55°C , 6 cycles) for temperature.
- Use the IEEE C37.118 client protocol to integrate synchro phasor messages from relays or PMUs in your system. These messages can be used for logic and control in the station or converted to DNP3 or other protocol for SCADA usage
- The device shall include a minimum one-year warranty for all material and workmanship defects.

Visualization Software for Synchro phasor data

- Visualization Software shall provide both real-time situational awareness and historical analytics of time-synchronized synchro phasor data and relay event reports for electric power system engineering, operations, and planning.
- Shall support different method of representation of phasor data like trend, phasor diagram, bar chart and numerical display for real time and historical or offline data.
- Shall have a Convenient to use a web browser-based interface so it can be accessed from any computer on the network.
- Should provide Individual authentication for secure access for all users.

- Determine the order of operations of system events with instant access to real-time and historical data.
- Improve situational awareness by viewing live, sub second, and time-aligned information from across the entire power system. Understanding dynamic behaviour enhances decision-making.
- Improve operator situational awareness with phase angle difference measurements across key transmission lines.
- Software shall share customized views and events with engineers and operators throughout the company for faster event analysis.
- Software shall combine streaming synchro phasor data with time-aligned relay event reports to improve event analysis response times and understanding. Search historical data to aid in determining the event's root cause. View system data over large periods of time and zoom in for sub second-level detail.
- Monitor events in real time while simultaneously seeing trended signal behaviour. Gain insight into conditions prior to the present state.
- Locate events by viewing long-term data, searching, and zooming in on points of interest. Multiple views help you gain insight into system behavior
- Minimum features shall include in software.
- Real-Time\Historic Trending.
- Historian
- Phasor Scope
- Data Export in binary COMTRADE, ASCII COMTRADE, and CSV
- Event Timeline
- Software shall connect multiple phasor data concentrator (PDC) and phasor measurement unit (PMU) devices for synchro phasor visualization by using the PDC input capability.
- Plot relay oscillography, display phasor magnitudes and angles, and monitor the digital status.
- Authenticate users with Microsoft® Active Directory® and role-based access.
- Should have the facility to easily export exactly what is on the screen to COMTRADE or CSV files or take a snapshot or print of the event. Online snapshot of data.

Note:

1. Bidder shall submit No deviation of tender document including technical specification duly with signed & stamp.
2. All hardware shall be manufactured, fabricated, assembled, finished, and documented with workmanship of the highest production quality and shall conform to all applicable quality control standards of the original manufacturer and the bidder. All hardware and software components shall conform to latest products based on industry standard.
3. The specifications contain minimum hardware requirement. However, the bidder shall provide hard ware with configuration equal or above to meet the technical, functional & performance requirement. Any hardware / software that are required to meet functional, performance & availability requirement shall be provided by bidder & the same shall be mentioned in the BOQ at the time of bid.
4. The proposed system shall be designed for an open & scalable configuration, to ensure the inter compatibility with other systems of the utility, the future smooth expansion as well as the easy maintainability.

5. Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids by the nature of the site which may influence or affect their bid.
6. Supplier shall be responsible to integrate proposed system with existing SCADA system [Wonderware].
7. Supplier shall supply all programming software + programming cable, and other accessories required for the trouble-free operation of the system.
8. Bidder has to highlight the technical specification in the catalogue as per our technical specification against each and every item.
9. Supplier will organize FAT at her own expense. In order to ensure that the FAT will be successfully and expeditiously completed, it shall commence only after the successful completion of a preliminary FAT (Pre-FAT). The intent is for the bidder to detect and correct most design, integration and performance problems before the principal investigator come to the factory for the FAT. The Pre-FAT shall be supervised by the person designated to serve later as the bidder's inspector of the FAT and each test shall be formally signed off by that person. The signed off test results shall be sent to the principal investigator for review 01 week before the principal investigator came to bidder's factory for FAT.
10. Supplier will organize SAT at her own expense. In order to ensure that the SAT will be successfully and expeditiously completed, it shall commence only after the successful completion of a preliminary SAT (Pre-SAT). The intent is for the bidder to detect and correct most design, integration and performance problems before the principal investigator come to the site for the SAT. The Pre-SAT shall be supervised by the person designated to serve later as the employer's inspector of the SAT and each test shall be formally signed off by that person. The signed off test results shall be sent to the principal investigator for review 01 week before the principal investigator came to site for SAT.
11. The system shall declare commissioned, when the system runs satisfactorily for a period of 3 days at site. If the system fails to perform for more than 1 hour, then the process is to be repeated again. This process should continue till the system gets commissioned.
12. Supplier shall supply 02 sets (hard-copy) of finally approved drawings(i.e. System architecture along with description, Bill of Material indicating make, model, quantity etc., Technical specifications of the PLC / RTU system and other items offered along with detailed product literature, Panel drawings, Quality Assurance Plan, Factory acceptance test procedure, Functional design specifications, IO-List, wiring-termination details, cable-schedule) & 01 set (soft-copy) along with all programming software. Supplier shall obtain approval on following documents before start of the work. However, the approval of drawings shall not absolve the bidder from his responsibilities for the correctness and completeness.
13. Hands on training of development & configuration, operation & maintenance & trouble shooting aspects of the supplied system to be imparted for a period of 07 Man-Days before hand-over.
14. Vendor/ Supplier will provide minimum 12 months warranty from the date of delivery of supplied items. Supplier shall supply, at its own expense, all consumables required for use through the warranty period.
15. All hardware's and equipment's shall be provided with proper identification labels and danger signs.

Terms and Conditions:

1. Quotation must be valid for 120 days.
2. All prices are to be FOR IIT Kanpur.
3. The vendor must provide official email address for communication and should notify that clearly in the quotation description, just referring to letterhead will not be accepted as sufficient proof of official email of communication.
4. Delivery period must be within 8 weeks from purchase order date.
5. The institute is exempted for payment of Excise duty under notification No. 10/97 & partially custom duty (@5.15%), under notification 51/96 and a road permit will be provided, if applicable. The Concessional Form 'C/D' have been abolished w. e. f. Apr 01, 2007.
6. Our standard payment terms and conditions is 90% on installation and 10% after inspection and approval.
7. The Penalty @1% per week or part thereof subject to max 10% of the delivery price will be deducted from the balance payment, if supply is not completed within aforesaid delivery period.
8. Preference will be given to only those vendors who have Service/ Repairing center stationed at Kanpur (Single point of contact in Kanpur for any service related issues)
9. No Call Locking will be entertained (in/out stationed). If at all it is required then it will be performed by local Maintenance Engineer.
10. Testing of the product onsite is mandatory
11. In no case, the suppliers shall be provided with remote access of the servers/machines.
12. It is mandatory to quote for optional items; else the quotation may be rejected.
13. Reporting time should not be more than 2 hours
14. Resolving time should not be more than 2 days
15. At any time prior to the deadline for submission of bid, the Institute may, for any reason, at its own initiative, modify the bid document by amendments. Such amendments shall be uploaded on the website through corrigendum and shall form an integral part of bid document. The relevant clauses of the bid document shall be treated as amended accordingly. It shall be the sole responsibility of the prospective bidders to check the website from time to time for any amendment in the tender document. In case of failure to get the amendments, if any, the Institute shall not be responsible for it.
16. Vendor is expected to submit only one best bid per tender specifications.
17. **Only original equipment manufacturer /Authorized channel partners/Authorized system integrators having letter of support from OEM are eligible to bid.
18. A higher warranty may be given preference.
19. The Institute reserves the right for accepting and rejecting any quotation without assigning any reason thereof. Also, IIT Kanpur 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.
20. Vendors are requested to quote only in Indian currency (Rupees). If the vendor wants to quote in an alternate currency, the vendor should seek an explicit permission from the department before sending the bid.

21. If all or any of the components of the equipment is/are to be imported, the vendor holds its full responsibility for its delivery at IIT Kanpur and that too in the stipulated time period. If for any reason the vendor does not want to deliver to IIT Kanpur, the vendor needs to seek an explicit permission from the department, before sending the bid.
22. Maximum educational discount should be offered wherever applicable.
23. IIT Kanpur is partially exempted from payment of GST (@5% only), IIT Kanpur will provide GST exemption certificate for the same. Institute is partially exempted from GST and the same should be offered in your bid as well. Items used for research & development purpose as specified in column 3 of notification no. 45/2017 & 47/2017 dated 14 Nov 17 will be partially exempted for GST.
24. Every communication must be received at IIT Kanpur within 2 business days from the date stamped on the letter if posted via conventional postal email.
25. Any communication letter if posted via conventional postal mail must also be sent on following email purchase@cse.iitk.ac.in and email of the PI (Project Investigator)/Head.
26. If taxes & duties are not quoted separately by the bidder, the final figure/price will deem to be inclusive of taxes & duties.
27. The basic Price/rate, GST, Packing & Forwarding charges and Freight charges must be mentioned separately & specifically. The offer quoted inclusive of Taxes, Packing & Forwarding charges and freight charges will summarily be rejected. The same is essential keeping in view the applicability of GST. The impact (%age) of GST on item,/items will be admissible as applicable on the basic rate being statutory levy only during currency of Purchase Order/Contract against party's request along with necessary documents in support of their claim/amendments.

Dr Sandeep K Shukla

Contact person:

Nagendra Yadav

Contact- [0512-259-6344](tel:0512-259-6344)

Mailing Address: purchase@cse.iitk.ac.in

RM-410, Rajeev Motwani Building

Department of Computer Science & Engineering

Indian Institute of Technology Kanpur

Kanpur 208 016, India

TENDER ACCEPTANCE LETTER
(To be given on Company Letter Head)

Date: _____

To,

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No: _____

Name of Tender / Work: - _____

Dear Sir,

1. I / We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely:

_____ as per your advertisement, given in the above mentioned website(s).

2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc .), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.

3. The corrigendum(s) issued from time to time by your department/ organisation too has also been taken into consideration, while submitting this acceptance letter.

4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.

5. I / We do hereby declare that our Firm has not been blacklisted/ debarred/ terminated/ banned by any Govt. Department/Public sector undertaking.

6. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organisation shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,
(Signature of the Bidder, with Official Seal)