GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI
DELHI TECHNOLOGICAL UNIVERSITY
(FORMERLY DELHI COLLEGE OF ENGINEERING) Ph. 27871018
SHAHBAD DAULATPUR: BAWANA ROAD: DELHI-110 042

No. F. DTU/SP/211/12-05/18-19 Dated:

NOTICE INVITING TENDER

E- Tenders along with illustrated literature/leaflets for the supply/execution of item(s)/stores/work detailed below are invited from the Manufacturers or their Authorized Distributors/Dealer only in two-bids system through 'e' procurement solution only as per the guidelines and terms & conditions given in tender document - details of the NIT along with terms & conditions, specifications etc. can be seen/downloaded at/from the website.

The interested tenderers should upload duly signed tender form and their bids along with scanned copies of all the relevant certificates, documents etc. in support of their technical & price bids – all duly signed - on the: https://govtprocurement.delhi.gov.in. latest by **23/05/2019 at 2:30 P.M. An index prepared after pagination of all documents may also be uploaded.** The technical bids will be opened online on **23/05/2019 at 3:00 P.M.** {those bidders only whose original instrument of EMD amount is dropped in Tender Box placed in the office of Assistant Registrar(S&P)} in the presence of the bidders who wish to be present and will also be displayed on the website. For participation in the tender through e-procurement solution, the tenderers are required to have digital certificate and get registered with application Service Provider NIC.

Tender document is also available for viewing on the website of Delhi Technological University, Delhi at www.dtu.ac.in

Yours faithfully,

EMD: Rs. 80,000/-

Assistant Registrar(S&P)

S.no.	DESCRIPTION	QTY.
1.	Supply of Phasor Measurement Unit (Complete set as per Specification)	01 nos.

Detailed specification on next page…….

Specifications of Synchrophasor Equipment
(Phasor Measurement Units)

Setup/Architecture should have the following items:

Phasor measurement unit – 02 Nos, GPS Satellite Synchronized clock, Rack-Mount Rugged Computer, Phasor Data Concentrator, Monitoring software and Ethernet Switch.

Detailed specifications:

1. **PMU -1 (RELAY)**
   Protection, Automation, and Control System for high-speed distance and directional protection and complete control of a two-breaker bay, along with Phasor measurement application with wide-area measurement of voltage and current phase angles and magnitudes with TCP/IP, UDP/IP, or a combination thereof. Each connection should support unicast or multicast options for serving data to one or multiple clients simultaneously. Each data stream should support data streams at up to 50 frames per second.

TVE (total vector error) ≤ 1% for one or more of the following influence quantities:

- Signal Frequency Range: ±5 Hz of nominal (50Hz or 60Hz)
- Voltage Magnitude Range: 30 V to150 V
- Current Magnitude Range: (0.1–2) • Inom, (Inom = 1A or 5A)
- Phase Angle Range: –179.99 to 180°
- Harmonic distortion ≤10% (any harmonic)
- Out of band interfering signals ≤ 10%

Specification of PMUs:

- Format: IEEE C37.118
- Data rate: 1-50 messages per second (mps)
- Total Vector Error: less than 1 percent
- Frequency range: +/- 5% of nominal frequency

Synchrophasor data elements:

- 2 three phase current
- 2 three phase voltage
- 8 analogs like MW, MVAR, any derived quantities based on voltage and current
- Minimum 7 digital inputs
- Communication: serial and Ethernet

Features:

- Control Logic: The relay should include programmable logic functions for a wide range of user-configurable protection, monitoring, and control schemes. Logic should have the ability to use bay elements, math functions, comparison functions, and Boolean logic functions.

- IEEE 37.90: The relay output contacts should be rated to pass the IEEE 37.90-1989 contact standards.
- High-Accuracy Timing: The relay should time-tag event reports to an absolute accuracy of 1 ms. Relays at different system locations should have the same absolute timing accuracy.
- Overcurrent Fault Protection: The relay should incorporate selectable operating quantity time- overcurrent elements. Torque control capability (internal and external) should be provided.
- Voltage Transfer Capability: The relay should be able to change protection voltage source upon detection of loss of potential (LOP). Voltage should be capable of changing to a second source connected to the relay.
- Auto-Reclosing: The relay should incorporate three-pole reclosing with four separately-set open time intervals for reclosing. Separately-set reset times from reclose cycle and from lockout shall be available. Reclosing shall be selectable for one or two breakers.
- Synchronism Check: The relay should include two synchronism check elements with separate maximum angle settings. The synchronism check function should incorporate slip frequency and close angle settings and allow different sources of synchronizing voltage (VA, VB, VC, VAB, VBC, and VCA).
- Event Reporting and Sequential Events Recorder: The relay should automatically record disturbance events of up to 3 seconds at 8 kHz sampling rate and 24 seconds at 1 kHz sampling rate. Events should be stored in nonvolatile memory. The relay should also include a Sequential Events Recorder (SER) that stores the latest 1000 entries.
- Operator Controls. The relay should include operator control pushbuttons on the relay front panel. Each pushbutton should be programmable and accessible in the bay control logic.
- Independent Trip/Close Pushbuttons: The relay should include independently operated breaker trip/close switches and indicating lamps. The switches and breaker status lamps should be functional regardless of the relay status.
- Password Protection: The relay should have multilevel passwords to safeguard bay control, protection, and automation settings.
- Fault Locator: The relay should include a fault locating algorithm to provide an accurate estimate of fault location without communications channels or special instrument transformers.
- IRIG-B Time Input: The relay should include an interface port for either a standard or high-accuracy demodulated IRIG-B time-synchronization input signal.
- Environment: The relay should be suitable for continuous operation over a temperature range
- of –40° to +85°C.
- Communications: The relay should include four independent EIA-232 serial ports for external communications.
- PC Interface: The relay should be capable of being set by Windows-based graphical and ASCII terminal interfaces.
- EC 61850: The relay should provide IEC 61850-compliant communications. The IEC 61850 capability should include GOOSE messaging and defined logical node data points.

- Synchrophasor: The relay should include operation as a Phasor measurement unit (PMU) following the IEEE C37.118-2005 Standard for Synchrophasor for Power Systems.
- HMI Display: The relay shall include custom configurable display information to display status, analog quantities with units, user-defined labels, and alarm information.

2. PMU-2 (Modular Real-Time Automation Controller)

Stream and process IEEE C37.118.1 compliant Synchrophasor messages via the Module, which has 4 CT and 4 PT inputs, as well as the Digital Input Module, which has 24 digital inputs. Send voltage or current phasors, breaker status, or nontraditional analog input quantities, such as temperature or pressure.

Chassis to provide accurate P and M class measurements in remote locations as far as 5 km apart, and because the Ether CAT network distributes sub microsecond time to each chassis.

The integrated Ethernet card in the PMUs should provide two independent connections using TCP/IP, UDP/IP, or a combination thereof. Each connection supports unicast or multicast options for serving data to one or multiple clients simultaneously.

Features:

- Synchronized CT/PT Measurements for Advanced Control-Employ synchronized CT/PT measurements from multiple chassis distributed across a substation and from multiple systems for advanced time-deterministic control applications, including load shedding and microgrid control.
- System Security-Enable encryption for any engineering access channel or SCADA link. Implement system security auditing, logging, and password restrictions to enforce government standards
- Flexible Synchrophasor Measurement Unit (PMU) as a scalable and distributable PMU. A single module in the primary node to serve IEEE C37.118.1a-2014 synchrophasor data from remote PMU nodes. Remote nodes use the Metering Module located at the measurement points.
- Industrial Control System and PID Control, ultra-rugged programmable logic controller (PLC) system by combining the standard IEC 61131 logic engine, integrated database, and flexible I/O. Use ladder logic, structured text, or function chart programming for custom control strategies. Support advanced process control strategies by implementing control function blocks, such as proportional integral derivative (PID).
- Substation Battery Monitoring-Monitor substation battery levels and issue alarms using the Analog Input Extended-Range Module.
- Automatic Trip Coil Monitoring-Assess the health of a circuit breaker by capturing trip coil performance in real time. Record trip coil dynamics, including current, voltage, and temperature during operations, and run automatic diagnostics to issue alerts for scheduling preventative maintenance.
- SCADA Data Concentrator-Take advantage of multiprotocol support to collect SCADA information and process control commands, and obtain SNTP/NTP time synchronization through a single communications link to each Ethernet device.

- Remote I/O Expansion-Increase the number of I/O points with as many as 60 modules or six nodes connected to one resident. Through Ether CAT connectivity, provide rapid data acquisition rates to the expanded I/O points within your automation system.
- Event Recording to record high-accuracy COMTRADE events with the analog modules. Record up to 24 kHz event records with AC Metering Modules and up to 1 kHz event records from the Analog Modules.
- Protocol Gateway to Collect downstream data with client protocols. Then, send these data to an upstream human-machine interface (HMI), RTU, or SCADA master with server protocols, converting the data from one protocol to another in the process. Alarm Output-There shall be an alarm contact output to signal internal errors and malfunctions. The alarm contact shall be programmable so that the alarm conditions that activate the output can include additional conditions.
- Environmental Testing-All system modules to be tested to IEEE 1613-2003 for communications and networking equipment in electric power substations. The system modules shall also to be tested to the same standards as those used for protective relays.
- Synchrophasors- The system CPU shall be capable of receiving synchronized phasor measurement data via the IEEE C37.118 protocol on all serial and Ethernet ports at rates as fast as 60 messages per second. Additionally, as many as 14 phasor measurements may be served to a master at rates as fast as 60 messages per second.
- Retained Memory- The system CPU shall have nonvolatile memory available for user-programmable retained variables.

3. GPS Satellite Synchronized clock

Receive Global Navigation Satellite System (GNSS) time signals and distribute precise time via multiple output protocols, including IRIG-B and the Network Time Protocol (NTP). To provide Parallel Redundancy Protocol (PRP) support as a Dual Attached Node (DAN) device for NTP time distribution. With an optional upgrade, to serve as a Precision Time Protocol (PTP) grandmaster clock, as defined by IEEE 1588and for substations with multiple time synchronization requirements.

Features:

- Time Distribution - Configure Satellite-Synchronized Network Clock's eight BNC ports for demodulated IRIG-B, time pulse, or modulated IRIG-B (up to four ports). IRIG-B provides time output for protection applications, synchronizing relays, phasor measurement units, and other intelligent electronic devices (IEDs) to within ±40 ns. Ethernet ports to distribute time using the Network Time Protocol (NTP) to devices on the substation local-area network (LAN), such as servers, computers, and other devices that set their time through NTP or the Simple Network Time Protocol (SNTP). With purchase of the Precision Time Protocol (PTP) option, should act as a PTP grandmaster clock, supporting both the default profile (IEEE 1588-2008) and power system profile (IEEE C37.238-2011). Serve NTP or PTP to four independent Ethernet networks.
- Cable Delay Compensation - Provide time delay compensation for antenna cables and output cables on a per-port basis to preserve accuracy. The Clock's cable delay compensation ensures high-accuracy time distribution in large facilities with dispersed IEDs or in installations where antennas must be mounted high on towers.

- Syslog - Log and forward event messages across an Ethernet network using standard Syslog event messaging. Store up to 60,000 Syslog messages locally and send messages to three remote Syslog destinations.
- Reliability - Choose a second, hot-swappable power supply to increase dependability. To operate from –40° to +85°C (–40° to +185°F); is certified to IEEE 1613 Class 2, IEC 61850-3, and IEC 60255;
- Authentication - Authenticate and authorize users with role-based user accounts and the Lightweight Directory Access Protocol (LDAP), increasing security and simplifying management efforts.
- GNSS Vulnerability Mitigation - Maintain accurate time if Global Navigation Satellite System (GNSS) time signals become unavailable as a result of solar flares, jamming, or an antenna failure. In the event of a signal loss, switches time source to the standard TCXO holdover, with 36 µs/day accuracy, or to the optional OCXO holdover, with 5µs/day accuracy. Both of these holdover accuracy specifications are based on a constant temperature. In the case of a GPS spoofing attack, in which a satellite system receiver locks to a counterfeit signal, GPS/GLONASS Precise-Time Antenna use signals from the GLONASS satellite constellation to validate GPS signals and identify the mismatches in timing information that this type of attack causes.
- Easy and Secure Commissioning - Easily configure with an HTTPS web interface via the front Ethernet management port, which provides a graphical SkyView display for troubleshooting signal or antenna issues. The port is enabled by default and can be disabled if desired.
- Accurate - Synchronize with precise time accuracy to within ±40 ns to Coordinated Universal Time (UTC) for power protection applications. Cable delay compensation can be configured for antenna cables and output cables per port to preserve high accuracy. If a GNSS lock is temporarily lost, the standard TCXO holdover accuracy is 36 µs/day and the optional OCXO holdover accuracy is 5 µs/day.
- Powerful Time Distribution - Distribute time from eight time BNC outputs and one DB-9 output, which are configurable for IRIG-B or time pulse outputs. The DB-9 port to be used with Fiber-Optic Transceivers to send IRIG-B long distances over fiber-optic cable. Also include four standard Ethernet ports, which provide NTPv4. With purchase of the PTP option act as a PTP grandmaster clock, supporting both the default profile (IEEE 1588-2008) and power system profile (IEEE C37.238-2011). Should distribute NTP and PTP to four independent networks. Ethernet ports to be in pairs and available in copper as well as single- or multimode fiber.
- Secure - Secure access through X.509 certificates, user-based accounts, Lightweight Directory Access Protocol (LDAP) authentication, and complex passwords. Supports Syslog, a standard for event record logging that integrates with existing log management systems. With Satellite Signal Verification, when installed with a dual-constellation antenna, uses signals from two satellite constellations to validate GNSS time signals, providing a layer of protection from spoofing attacks. Reliable - Add power source redundancy with an optional second, hot-swappable power supply. Operates in a broad temperature range of –40° to +85°C (–40° to +185°F) and meet IEEE 1613 Class 1, an electric transient and interference standard for communications products in electric utility substations.

- Easy to Use - Commission and manage through a secure HTTPS web interface with SkyView and acSELerator QuickSet Software. The front panel of the include an LCD multi-information display plus LEDs for status and an Ethernet management port, which supports DHCP Captive Portal for simplified access to the device web interface.

4. Rack-Mount Rugged Computer

Built to withstand harsh environments in utility substations and industrial control and automation systems. By eliminating all moving parts, including rotating hard drives and fans, and using error-correcting code (ECC) memory technology, Computers to have over ten times the mean time between failures (MTBF) of typical industrial computers.

Features:

- Industrial Automation Platform - Deploy complete automation control and operator station functionality in a single package directly to the plant floor without the concern of environmental conditions. Powerful and reliable computing platforms that support soft programmable logic controllers (PLCs) and operator human- machine interface (HMI) control engines.

Standard Features to Include:

21' monitor, keyboard and mouse Intel Core i7 quad-core CPU, 4 GB DDR3 ECC RAM, Front-facing 2.5" SATA drive bay for up to four 2.5" SATA drives, One load-sharing, high-voltage, hot-swappable ac/dc power supply, Three types of high-definition display interfaces: DVI-I, DVI-D, and DisplayPort, Two 10/100/1000 Mb copper Ethernet interfaces, Two front-facing and four rear-facing USB 2.0 ports, Speaker, line-in, and microphone audio jacks, Two EIA-232 serial ports, Programmable Form C alarm contact, Four PCI Express (PCIe) and one PCI (legacy) expansion slots

4, 8, or 12 GB additional DDR3 ECC RAM (for a total of 16 GB), Industrial-grade SSDs in 30, 60, 120, and 250 GB capacities (for a total of four SSDs and a maximum of 1 TB of storage), Second load-sharing, high-voltage, hot-swappable ac/dc power supply

Windows® 10 (x64)-or-Windows Server® 2008 R2 (x64) or higher version

5. Phasor Data Concentrator:

General Operating Systems Supported

Windows XP Professional (32- and 64-bit)/Windows Embedded Standard/Windows 2003 Server® (32- and 64-bit)/Windows 2008 Server® (32- and 64-bit)/Windows 2008 Server R2 (64-bit)/Windows 7 (32- and 64-bit)/Windows Vista® (32- and 64-bit)/Windows 8/8.1 (32- and 64-bit)/Windows 2012 Server R2 (64-bit)/Windows 10 (32- and 64-bit)

System Hardware Requirements: Disc Space for Archiving: 60 GB or larger

Account Management: LDAP for centralized management of user access, Role-based accounts, and Strong passwords

Supported Communications Protocols:

Inputs: EIA-232, TCP, UDP, UDP_U, UDP_T, UDP_S (unicast and multicast)

Outputs: TCP, UDP_U, UDP_T, UDP_S (unicast and multicast)

Compatible with C37.118-2005 and C37.118-2011 clients/servers

Archiving (optional): Conforms to IEEE C37.232 naming practice for time-sequence file names, Secure ODBC API for use with database management systems, Supports ASCII COMTRADE and CSV formats, Local and remote archive file management, Continuous and Triggered archiving

Calculations: Support power; sequence; analog and phasor scaling; derivative; and latency calculations

Diagnostics and Status: Up to 10 syslog outputs (RFC 3164), Remote log retrieval, secure status connection

PMU Inputs: Up to 20 inputs (standard), >500 inputs (optional)

Configurable Outputs: 6 fully configurable outputs

6. **Monitoring software:**

Viewing and analysis of both real-time and historical synchrophasor data, allow operators and engineers to seamlessly switch between these two modes. Archive all incoming synchrophasor data, so engineers and operators can view past events on the system.

Features:

- Automated Oscillation and Disturbance Detection: Quickly analyze power system oscillations and disturbances automatically detected. For each detected oscillation and disturbance, information is provided to help operators and engineers determine the location and impact. Email notification of detected disturbances keeps everyone informed of current events on the power system.
- Configurable Alarms: Configure alarms with both warning and alert thresholds. Selecting an asserted alarm provides a trend of the signal with alarm limits so operators can easily determine the current state of the system.
- Geographic Map: The geographic map provides an early warning system for disturbances on the grid. Upon setup, operators can define the regions, devices, and interconnecting locations they would like displayed. The geographic map displays voltage magnitude contours in addition to angle differences and power flow between key PMU locations, providing operators and engineers with a system-wide view at a glance.
- Chart Trending: Charts can display frequency, voltage, current, power, analog, and digital signals for trended analysis over time to obtain a more detailed understanding of the event. Operators and engineers can zoom in on various parameters for an in-depth view of the system response.

- Search: Quickly find similar events that meet your specified criteria. For example, search for under frequency events that have occurred over the past month to determine if there are commonalities between past events.
- Export Data: Send data to others for analysis or export the data to another application. All data shown on the display can be exported using the "Data Export" button. The archived system response to a generation trip can be exported for comparison to model responses for validation. Similar analysis is possible for capacitor switching, load shedding, or other significant power system events.
- Save and Share Snapshots: Save and share events of interest with colleagues for analysis at a later time. Saving and comparing similar events helps identify potential areas of weakness and hidden failure modes in the system. All snapshots to be saved permanently in the database.

7. Ethernet Switch

- VLANs: Supports tagged and untagged 802.1Q VLANs to separate SCADA and IEC 61850 GOOSE messages from other traffic.
- Traffic Prioritization: Features IEEE 802.1p traffic prioritization through configurable CoS and DiffServ mappings to four service levels to support critical substation messaging.
- Captive Portal: Easily connect to a laptop computer during initial setup using the front-panel 0/100BASE-T Ethernet port, which by default functions as a Dynamic Host Configuration Protocol (DHCP) server.
- Security: Restrict access to select end stations via IEEE 802.1X MAC-based port security. Ports can be disabled through settings. Manage the switch via an HTTPS secure web server. SNMPv3 provides secure network management. The switch should forward syslog security logs to up to three central servers.
- User Authentication Access: using both local and centralized user accounts with LDAP or RADIUS.
- Failover and Redundancy Enable fast network recovery after a topology change due to a link failure, via IEEE 802.1D-2004 RSTP.
- Nonintrusive Port Monitoring and Statistics: Monitor ingress and egress traffic for each port and view network statistics via an encrypted connection. Port mirroring support mirroring ingress and egress frames to a target port.
- Multicast MAC Filtering: Enhance network performance by supporting the filtering of multicast MAC addresses.
- Simple Network Management Protocol (SNMP) Supports SNMPv1/v2c/v3 network management protocols.
- Link Layer Discovery Protocol (LLDP) Allow devices across the local-area network to identify themselves and their capabilities via IEEE 802.1AB.

- Graphical User Interface (GUI)-Based Secure Management: Uses a secure GUI-based management interface for all switch settings.
- Secure Firmware: Upgrades Supports authentication of firmware through digital signatures.
- Network Time Protocol (NTP) Time Synchronization and Distribution: Synchronizes with system time using NTP or can use its own internal clock.
- User-Based Accounts Authenticates and authorizes users via user-based accounts.
- Automated Diagnostics and Reporting Monitors health and function, and reports state changes.
- System Logging Maintains logs locally and forwards event messages via the Ethernet network.
- Rate Limiting Filters Ethernet traffic volume on individual ports and ensures reasonable data throughput on ingress/egress traffic.
- BPDU Guard BPDU Guard add protection from network degradation caused by spurious BPDU packets with a user-configurable action, such as disabling the Ethernet port for a period of time.
- Far-End Fault Indication (FEFI) In case of a single fiber failure in an RX/TX pair, the remote end to sense the loss of the RX link and notify, which can notify operators and optionally shut down the port.

General:

- Minimum of 2-year warranty
- Operating temperature -20deg C to +65-degree C
- Manufactured and tested in accordance with IEC 60255 relaying standards
- PMUs complying with IEEE C37.118 Synchrophasor standard with capability of decoding IEEE1344/IEEE C37.118 IRIG-B signals
- All items should be rack mounted or build suitably as a standalone system
- All items to be from one manufacturer compatible with each other, should install and demonstrate the working at the installation site of Delhi Technological University.

(TO BE SUBMITTED ALONG WITH TECHNICAL BID)

TENDER NOTIFICATION NO: ----------

Phone No:- 27871018

U N D E R T A K I N G

The Registrar,
Delhi Technological University,
Bawana Road,
Delhi-110042

We the undersigned (herein after called as Contractor/Vendors/Suppliers) hereby offer to execute supply of items as per specification against which we have quoted over rates and for which this tender may be accepted at the rates stated there in and subject to the terms & conditions set forth for such items as may be ordered by the Registrar, Delhi Technological University or officer acting on his behalf.

Date this _____ Day of_____

Signature of Contractor _____

Address_____

_____

_____

Guidelines/Procedure to be followed in introduction of 'e'-procurement solution:

1.**Payment of cost of Tender documents**: The collection of cost of Tender documents is dispensed away with, as there is no physical supply of tender documents and also to have absolute anonymity of bidder participating in e-procurement solution. The bidders can view/download the tender documents from the: https://govtprocurement.delhi.gov.in. .

2.Submission of bids: The bidders who are desirous of participating in 'e'- procurement shall submit their price bids in the standard formats prescribed in the Tender documents, displayed at : https://govtprocurement.delhi.gov.in. The bidder should upload the scanned copies of all the relevant certificates, documents etc. in the: https://govtprocurement.delhi.gov.in. in support of their price bids. The bidder shall sign on all the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity and copies thereof may also be submitted in the office of the Assistant Registrar(S&P), DTU along with original EMD before the specified date & time. In the event of the specified date for physical submission of EMD along with copies of bid documents is declared a holiday, the same will be received up to the appointed time on the very next working day. However, documents of the bidders downloaded online or requisitioned subsequently only will form the basis for deciding the tender.

3.**Payment of Bid Security (Earnest Money Deposit):** The EMD shall be in the form of the **DD/BG/Fixed Deposit Receipt only** of a scheduled bank issued in favour of Registrar, Delhi Technological University, Delhi and the zerox copy thereof is to be scanned and uploaded along with the bid, and the original shall be sent to DTU so as to reach before the date & time of closing of the bids; failing which bid will be rejected. The Bid Security (EMD) of unsuccessful bidders will be discharged immediately after finalization of the order/contract without any interest. However, firms registered with NSIC etc., are exempted from submitting EMD provided such registration includes the item(s) they are offering are manufactured by them and not for selling products manufactured by other companies.

4.Price Bid Opening: The Price Bids of only technically qualified bidders (whose bids satisfy the prescribed technical specifications/parameters and have also submitted all requisitioned documents & EMD) will be opened online at the specified date & time and will subsequently be evaluated to determine the lowest bidder. The result will be displayed on the: https://govtprocurement.delhi.gov.in. which can be seen by all the bidders who participated in the tenders. There shall not be any negotiation normally. However, in exceptional cases, negotiations can be held with the lowest evaluated responsive bidder only. Counter offers tantamount to negotiations and shall be treated at par with negotiations.

5.Processing of Tenders: The concerned officer/officers will evaluate and process the tenders as done in the conventional tenders and will communicate the decision to the bidder online.

6.**Payment of Performance Security**: The successful tenderer shall furnish a Bank Guarantee/FDR of the value of 05% of the basic cost of the item for a period of 60 days beyond the warranty period from a nationalized bank to ensure the satisfactory performance of item supplied. The performance guarantee is to be submitted at the time of installation / demonstration of equipments. In case the performance of the item is not found satisfactory, the amount of Performance Security will be forfeited & credited in university account.

7. **Participation of Bidders at the time of opening of bids**: Bidders have two options to participate in tendering process at the time of opening of Bids:

(i). Bidders can come at the place of opening of bids (electronically) as done in the conventional tender process.

(ii). Bidders can visualize the process online.

8.Participation Financial Rules for e-procurement: The e-procurement system would be applicable for purchase of goods, outsourcing of services and execution of work as prescribed in GFRs.

ASSISTANT REGISTRAR(S&P)
DELHI TECHNOLOGICAL UNIVERSITY,
SHAHBAD DAULATPUR, BAWANA ROAD,DELHI – 110 042

TERMS AND CONDITIONS

Procedure for submission of bids: The bidders who are desirous of participating in 'e'-procurement shall submit their technical and price bids in the standard formats prescribed in the Tender documents, displayed at: https://govtprocurement.delhi.gov.in. The bidder should upload the scanned copies of all the relevant certificates, documents etc. after page-numbering all documents and tender document and prepare an index thereof in the: https://govtprocurement.delhi.gov.in. in support of their price bids. The bidder shall sign on all the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity and copies thereof may also be submitted in the office of the Assistant Registrar(S&P), DTU along with original EMD. However, documents of the bidders downloaded online or requisitioned subsequently only will form the basis for deciding the tender.

1. Manufacturers (OEMs) only should submit their bids. In case an OEM participate through its authorized dealer or dealers, the OEM has to be explicitly certified that it does not sell products directly and participates in tendering process through its authorized dealer only. The OEM is required to submit a list of its authorized dealers.

2. ALTERATION IN THE SPECIFICATION.
   (i) The specifications mentioned/issued with this form of tender must not be altered by the Suppliers.
3. INCOMPLETE TENDERS
4. The Bidder is expected to examine all instructions, forms, terms and specifications in the bidding documents. Failure to furnish all information/documents, as asked for in the NIT, or submission of a bid not substantially responsive to the NIT in every respect, will be at the Bidder's risk and may result in rejection of its bid.
5. CANCELLATION OF TENDER/ CONTRACT/ IN PART OR IN FULL IN CASE OF DEFAULT IN CONTRACT/SUPPLY:
   If the Supplier, in the opinion of the Institute, fails or neglects to comply with any of the terms & conditions forming, part of the order issued, the head of institute shall without prejudice to any other right or remedies under the contract, has the right to cancel the contract /order by giving 15 days notice in writing to the Suppliers/firms without being liable to pay compensation for such cancellation.
6. Tender shall be uploaded as per guidelines indicated for e-procurement solution.
7. Demonstration of equipments has to be arranged by the suppliers, if desired by the institute. The technical committee may visit production facility if so desired for sample verification.
8. **The quotation should be valid for a period of one year from the date of opening of the tender**.
9. Rates are to be quoted in INR (Rupee terms) only and any revision thereof is not allowed after the tenders have been opened.
10. The delivery period should be clearly mentioned against each item, incase, the items are not readily available, ex-stock offer will be preferred.
11. Rates should be quoted F.O.R Institution. Taxes and Duties namely Sales tax/VAT/Custom Duty (against Custom Duty Exemption Certificate)/Excise Duty should be mentioned clearly.
12. Consignment will not be insured at the Institute/University Cost.
13. **Bidder, if is not the Original Equipment Manufacturer (OEM), must submit OEM's or their Distributor's Authorization to quote/sell the product(s).** Preference will be given to quotation pertaining to indigenous products. However, where suitable substitutes are not available and item need to be imported the following clarification/information should be given.
    - Whether the item will be imported by the intended tenderers against its own import license or university will have to provide Custom Duty Exemption Certificate (CDEC).
    - Name and address of the foreign supplier, make & model of the offered product and authorization to sell from OEM or their Distributor/Authorized Chanel Partner.

- Delivery period including information about mode of dispatch and possible duration (after dispatch) for receipt of item at the port.
- Whether the item required any special preparation for installation. In case yes, full details should be given regarding operation maintenance of the items.
- In case of costly/sophisticated items whether the tenderers will arrange any special training regarding operation / maintenance of the items.
- Nature of assurance for the supply of spares after the warranty period.

14. The payment will be made within 30 days after the successful demonstration/installation of the equipment and fulfilling of other obligations (like training etc., if any) as per the purchase/work order, against a Bill/Invoice; containing therein details of goods delivered/services performed. Rejected items/goods should also be removed within 30 days after which no responsibility will be accepted by University.
15. In the event of the item(s) being imported product(s), Custom Duty Exemption Certificate (CDEC) will be issued by the University on the written request of the supplier; who, in turn, will furnish copies of relevant Customs Related Documents namely Airways Bill, Packing List, TR-6 challan etc. along with Bill/Invoice.
16. Conditional quotations and/or incomplete quotations in any respect will be rejected.
17. In case you cannot quote for one or more of the items asked for in the tender the word "NOT QUOTED" (in the rate column) should be indicated.
18. The specification of the item quoted by the firm should confirm to the University specifications. Confirmation, in this respect should be specifically mentioned in the tender. Where the tenderer feels that the specification of the item not fully given or differ, from the specification of the item mentioned by the university, the exact specification of such item should be attached with the tender indicating the item quoted.
19. The Firm is required to link the University specifications with catalogues & leaflets/literature and also **mention Make and the Model for each item**. Detailed features, for compliance of specification should be provided on specification sheet & appropriate reference i.e. page no. & para of literature, leaflet wherefrom the relevant information has been checked, should be indicated.
20. **EARNEST MONEY**:- EMD should be attached with the technical bid**.** The EMD shall be in the form of the **DD/BG/Fixed Deposit Receipt** of a scheduled bank issued in favour of Registrar, Delhi Technological University, Delhi. Zerox copy thereof is to be scanned and uploaded along with the bid, and the original instruments shall be sent to DTU so as to reach before the date of closing of the bids. Failure to furnish the original instrument before the closing of the bid, will entail rejection of bid. **If the tenderer after acceptance of the tender refused to take up the purchase order, his Earnest Money will be forfeited**. Any tender received without / less Earnest Money deposit shall be summarily rejected.
21. The Purchase Order/Contract will be awarded to the successful Bidder whose bid has been determined to be responsive and has been determined to be the lowest evaluated bid, provided further the Bidder is determined to be qualified to execute the Order/Contract satisfactorily.
22. There shall not be any negotiation normally. However, in exceptional cases, negotiations can be held with the lowest evaluated responsive bidder only. Counter offers tantamount to negotiations and shall be treated at par with negotiations.
23. The Competent Authority reserves the right to reject any or all the tenders and annual the bidding process at any time prior to award of Contract, without assigning any reason, without thereby incurring any liability to the affected Bidder or Bidders, and his decision will be final.
24. The supplies shall have to be made within the period specified in the purchase order failing which the order shall be cancelled and the Earnest Money will be forfeited. However, in exceptional circumstance and, on written request, from the supplier/tenderer, extension of date for supply of the material will be considered. Extension in supply period is at the sole discretion of the competent authority.
25. Service manuals, wherever available/ required, should be provided along-with the Equipments.

26. The University reserves the right at the time of award of PO/Contract to increase or decrease the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions. Further, the quantities in the PO/Contract may be enhanced by 30% within the delivery period.
27. In the case of purchase of many items against one tender, which are not inter-dependent or where compatibility is not a consideration, comparison would be made on the basis of prices quoted by the firms for identifying the lowest quoting for each item.
28. WARRANTY: **All products must have a minimum of Two Years Warranty**. A Warranty Certificate should invariably be supplied along with the item at the time of delivery. If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the supplier shall rectify the defects, errors or omissions by repair or by partial or complete replacement on free of cost basis.
29. The Competent Authority reserves the right to levy liquidated damages up to 2% of the value of the order for delayed supply. If the supply is delayed beyond the extended period, the University reserves the right even to cancel the order and forfeit the EMD of the firm/ tenderer.
30. PERFOMANCE SECURITY DEPOSIT:- The successful tenderer shall furnish Performance Security Deposit of the value of 05% of the basic cost of the item in the shape of Bank Guarantee/FDR/DD from a nationalized bank pledged to Registrar, DTU, for a period of 60 days beyond the warrantee period to ensure the satisfactory performance of item supplied. The performance guarantee is to be submitted at the time of installation / demonstration of equipments. In case the performance of the item is not found satisfactory and/or the Supplier fails to complete its obligation under the contract/purchase order, the amount of Performance Security will be credited in University account.
31. DEFAULT: - In the event of default and unsatisfactory service of the contractor/Supplier firm, the DTU will be at liberty to repair/get the item serviced from other party at the cost of supplier/ contractor/ tenderer.
32. In case of software items, the suppliers should ensure that:-
    - Legal software is supplied in original sealed pouches / P. K. T.
    - A license agreement is enclosed with it.
    - A registration card is available for software.
33. FAILURE AND TERMINATION: - If the Contractor / Supplier fails to deliver the stores or any installment thereof within the period fixed for such delivery or at any time repudiates the contract before the expiry of such period, DTU may without prejudice to the right of the purchaser recover damages for breach of the contract.
34. The technical & financial bids of only those bidders will be opened who fulfill the eligibility criteria and whose documents are found in order. If any of the date earmarked for opening of technical or financial bids happens to be a holiday, the bids will be opened on the very next working day.
35. Terms & conditions for Comprehensive Annual Maintenance Contract (CAMC) will be as per Annexure -1.(N/A).
36. Notwithstanding the provisions relating to extension of time, penalty and cancellation of tender/contract for default, the vendor shall not be liable for forfeiture of its performance security/ liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure (i.e. an event or situation beyond the control of the vendor that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the vendor; such as wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes etc.). If the performance in whole or in part or any obligation under the contract is prevented or delayed by any reason of force-majeure for a period exceeding 60 days, either party may at its option terminate the contract by sending a written notice without any financial repercussions on either side.

37. For any query/clarification in r/o technical aspect of the enquiry, **HOD (Electrical Engg. Deptt.), DTU** may be contacted.
38. Proof of GST Registration no. and VAT/GST Return copy of fourth quarter for last three financial year from the date of opening of tender bid.
39. PAN No (Copy PAN no. Attached)
40. Purchase Order (PO) copies having executed similar items (3 POs of 80% each or 5 POs of 60% each of estimated cost of items) in the name of bidder of last three financial years from the date of opening of tender.
41. Authorization certificate from Original Equipment Manufacturer (OEM) or their Distributor to quote/sell the product, in case the bidder is not the OEM.
42. Disputes, if any, arising out of this tender shall be subject to exclusive jurisdiction of Courts of Delhi/New Delhi only.
43. The bidder is required to be submitted an undertaking in firm letter pad that it has not been blacklisted by any Govt./Instt/autonomous body.
44. The OEM is required to submit a list of its authorized dealers, if not participating directly in the tender bid.

ASSISTANT REGISTRAR(S&P)
DELHI TECHNOLOGICAL UNIVERSITY,
SHAHBAD DAULATPUR, BAWANA ROAD,DELHI – 110 042

CHECK LIST OF DOCUMENTS TO BE SENT WITH TECHNICAL BID.

S.No.	Particulars of documents	Page no.	No. of pages
1.	Proof of EMD (mention amount with instrument number and date)		
2.	Proof of PAN no. (mention no……)		
3.	Proof of GST Registration No and GST/VAT Return copy of fourth quarter (January to March) for last three financial year from the date of opening of tender bid.		
4.	Brochure/Leaflets/Technical Information, including Make & Model, Imported/Indian of the item(s)		
5.	UNDERTAKING as per page no. 11 of Tender Document, duly signed.		
6.	Technical specifications, terms & conditions and delivery period etc. to be submitted on firm's letter head		
7.	Warranty Certificate from manufacturer or authorized dealer of manufacturer		
8.	Purchase Order (PO) copies having executed similar items (3 POs of 80% each or 5 POs of 60% each of estimated cost of items) in the name of bidder of last three financial year from the date of opening of tender bid.		
9.	Authorization Certificate from Original Equipment Manufacturer (OEM) or their Distributor to quote / sell the product, in case the Bidder is not the OEM		
10.	The bidder has submit an undertaking in firm letter pad that it has not been blacklisted by any Govt./Instt/autonomous body.		
11	The OEM is required to submit a list of its authorized dealers, if not participating directly in the tender bid.		

Note: All copies of above documents should be duly signed and stamped by the tenderer before uploading.

Signature of tenderer: ……..
Name: ……...…..……..
Name of firm: ……..
Telephone No…….

I N D E X

S.No.	Particulars of documents	No. of pages

Pagination must be completed properly .