

**OFFICE OF THE REGISTRAR: DIBRUGARH UNIVERSITY
DIBRUGARH: ASSAM
PIN: 786 004**



Online Bid Document

FOR

NAME OF THE WORK: Upgradation of Campus Network and Security Infrastructure.

TENDER No: DU/RG/B.01.13(A)/2020/3919



OFFICE OF THE REGISTRAR :: DIBRUGARH UNIVERSITY :: DIBRUGARH
No. DU/RG/B.01.13(A)/2020/3919 **Date: 07/07/2020**

e-Tender Notice

Online bids (e-tender) in two bid system are invited from OEM / Authorized Distributors / Authorized Dealers for Supply, Installation and Commissioning of Campus Network and Security Infrastructure upgradation for common facility at Dibrugarh University as per Technical Specifications and Terms & Conditions mentioned in the Annexures below. Bid is to be submitted online only through the E-procurement portal <https://assamtenders.gov.in/> up to the last date and time of submission of tender. No manual bids will be accepted. All bids (Technical and Financial) should be submitted in the E-procurement portal.

Important Dates:

Date of Online Publication of Tender	10/07/2020 at 10:00 AM
Pre-Bid Meeting via Google Meet link below https://meet.google.com/pjy-shkj-nwi	17/07/2020 11:00 AM to 12:30 P.M.
Bid Submission Start Date	10/07/2020 at 11:00 AM
Bid Submission Close Date	31/07/2020 at 05:00 PM
Opening of Technical Bids	03/08/2020 at 11:00 AM
EMD	Rs. 5,00,000.00 MSME & SINGLE POINT NSIC registered vendor are exempted from payment of EMD.

The tender should be digitally sign and upload in two parts *i.e.* **Part - I TECHNICAL BID** and **Part – II FINANCIAL BID**. The technical bid shall be opened on above mentioned date and time and the financial bid of only those bidders who qualify in technical bid shall be opened on the same date or at a later date which shall be intimated to the tenderer whose technical bid are found to be valid. Dibrugarh University reserves all the rights to reject any or all the tenders without assigning any reason thereof.

Sd/-
Registrar
Dibrugarh University

Copy to:

1. The P.S to the Hon'ble Vice-Chancellor, D.U. for kind appraisal.
2. The Joint Registrar (Admin), D.U. for information.
3. The Deputy Registrar (F&A), D.U. for information.
4. The Technical Officer-I, USIC, D.U. for information.
5. The Programmer with a request to upload the Notice on the D.U. website
6. Office File
7. The Advertise Manager, The Assam Tribune, Chiring Chapori, Dibrugarh-786001 with a request to publish the advertisement in one issue of the esteemed daily on or before 20/07/2020 and submit the bills in triplicate for payment.

Sd/-
Registrar
Dibrugarh University

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Annexure-I - GENERAL INFORMATION

The tender duly complete in all respects, along with the necessary documents should be uploaded electronically at <https://assamtenders.gov.in/> using valid Digital Signature Certificates. The Technical Bids, shall be opened on **03/08/2020 at 11:00 A.M** at the Office of the Registrar, Dibrugarh University. The Financial bids of the Tenders shall be opened on the same date or at a later date to be intimated to the tenderers whose Technical Bids are found to be valid. Right to reject any or all Tenders, without assigning any reason thereof is reserved by Dibrugarh University.

Terms and Conditions of Supply:

1. The bidder should also give a brief profile about their company and the facilities available with them. Their turnover and important firms/ Government Institutes/ P.S.U.s etc. to which they are supplying quoted or similar items, should also be mentioned.
2. The bidder must be ISO Certified in relevance to the services provided by them.
3. The last date and time for the acceptance of the bids is **31/07/2020 up-to 05:00 P.M.**
4. All bids must be supported by technical leaflet/literature and the specifications mentioned in the bid must be reflected/supported by such technical leaflet/literature.
5. Bidders shall submit the following documents along with their quotations:
 - a) Valid GST Registration No.
 - b) Technical specifications offered by the Supplier.
 - c) Technical compliance sheet.
 - d) Technical literature regarding the offered products including diagrams.
6. Bidders shall submit the tender in two parts. The first part (Technical Bid) shall contain Scanned copy of Documents supporting pre-qualification eligibility of the bidder, Technical Specifications offered and Scan copy of EMD Draft. The second part (Commercial Bid) shall contain the **Schedule**, in which the supplier shall register the rates of supply. The Technical Bid shall be opened first to ensure that suppliers have submitted all the requisite documents. If the Technical Bids are not in order or are deficient in some respect, the commercial bids in respect of such tenders shall not be opened. The date and time of opening the financial bids shall be announced after opening all the Technical bids.
7. In the Commercial Bid rates should be mentioned as per BoQ. A standard BoQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BoQ file, open it and complete the unprotected cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the file name. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

8. Supplier should read carefully all the instructions and terms and conditions, etc before registering rates in prescribed schedule of the tender. Taxes and duties etc. should be shown separately.
9. The Technical Documents shall be opened, **03/08/2020** or on the next working day if the offices of the University remain closed due to any reason
10. Technical specifications of the instruments / equipment are given in **Annexure IV**.
11. The delivery and installation should be completed within 60 days or as specified from placing of the order. No extension shall be granted to the contractors/suppliers for the period of delivery, under any circumstances.
12. If the supplier fails to deliver the article as per the delivery schedule, the University shall be free to procure the balance/undelivered supply, at the risk and cost of the supplier, from other such suppliers.
13. The goods, articles, materials supplied by the supplier shall be accepted after inspection by an officer authorized by the competent authority. No articles/materials which do not conform to the specifications laid down in the terms and conditions or damaged in transit shall be accepted.
14. The bills of the suppliers shall be paid by the University after all the materials / articles / equipment have been received and installed, all civil work involved are completed satisfactorily, the equipments are configured, tested and commissioned, proper documentation of design layout and configuration are submitted, required training is provided and all other requirements mentioned in this document are satisfied.
15. Vendor must submit Compliance statement in tabular form comparing each specification of the quoted item with that given in the Tender Document **Annexure-II**.
16. The warranty period shall be for minimum Three year or more or as mentioned in the Tender Document.
17. This tender document is not transferable.
18. In the event of any breach of the terms and conditions of the supply, the University may terminate the contract placed with the supplier and forfeit the security deposit of the supplier.
19. If the bidder is not an OEM, a valid certificate of authorization of manufacturer shall be enclosed for all the items from the respective manufacturer mentioning the tender no.
20. Copy of product literature and catalogue, testing report, BEE rating, ISO etc., of all items must be submitted.
21. The quantity as mentioned at Annexure-II may be increased or decreased at the time of placing Order as per requirement.
22. Tenderers are advised to study all technical and commercial aspects, instructions, forms, terms and specifications carefully in the tender document. Failure to furnish all information required in the Tender Document or submission of a bid not substantially responsive to the Tender document in every respect will be at the bidders' risk and may result in the rejection of the bid.
- 23. Payment: 20% on supply of active and passive components, 25% on completion of OFC Laying and Civil Work, 50% on completion Configuration, Testing, Commissioning of active components, Documentation and Training. Balance 5% will be retained as security deposit for a period of 3 years from the date of completion of work. No advance payment or payment against Performa invoice will be made. No interest on security deposit will be paid.**
- 24. In case of failure of the supplier to comply with the terms and conditions of supply, warranty or services, university may forfeit the security deposit.**

INSTRUCTIONS FOR ONLINE BID SUBMISSION

This tender document has been published on the Assam Public Procurement Portal (<https://www.assamtenders.gov.in>). The bidders are required to submit their bids electronically on the above Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the Portal, prepare their bids in accordance with the requirements and submitting their bids online on the Assam Public Procurement Portal. More information useful for submitting online bids on the Assam Public Procurement Portal may be obtained at: (<https://www.assamtenders.gov.in>)

1. REGISTRATION:

- i)** Bidders are required to enrol on the e-Procurement module of the Assam Public Procurement Portal (<https://www.assamtenders.gov.in>) by clicking on the link “Online Bidder Enrolment”. Enrolment on the Portal is free of charge.
- ii)** As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- iii)** Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the Assam Public Procurement Portal.
- iv)** Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify/TCS/nCode/eMudhra etc.), with their profile.
- v)** Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
- vi)** Bidder then logs into the site through the secured log-in by entering their user ID/password and the password of the DSC/e-Token.

2. PREPARATION OF BIDS

- i)** Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- ii)** Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please 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)** Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document/schedule and generally, they can be in PDF/XLS/RAR formats. Bid documents may be scanned with 100dpi with black and white option.

SUBMISSION OF BIDS:

- i) Bidder should login to 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 due to other issues.
- ii) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- iii) Bidder has to select the payment option as “offline” to pay the tender fee / EMD as applicable and enter details of the instrument.
- iv) The bidder shall seal the original Bank Draft / Pay order / Bank Guarantee for EMD and processing fee in an envelope. The Bidder shall mark its name and tender reference number on the back of the Bank Draft / Pay order before sealing the same. The address of the **Registrar, Dibrugarh University**, name and address of the bidder and the Tender Reference Number shall be marked on the envelope. The envelope shall also be marked with a Sentence “**NOT TO BE OPENED BEFORE THE DATE AND TIME OF BID OPENING**”. If the envelope is not marked as specified above, the **Dibrugarh University** will not assume any responsibility for its misplacement, pre-mature opening etc.

The bidder shall deposit the said envelope either with the Office of the Registrar, Dibrugarh University in person or by post. In case the EMD fee is sent through Post, it must reach before date and time of opening of bids. Bidders are to retain a scan copy of the EMD payment for future reference.

Bidders, who are registered with NSIC, shall be considered for exemption from furnishing the EMD by the Competent Authority. In such cases, an attested copy of the VALID Registration Certificate from NSIC must be furnished.

- v) A standard BoQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BoQ file, open it and complete the unprotected cells with their respective financial quotes and other details (such as name of the bidder). Please note that total GST applicable in Rupees has to be entered by the bidder for each item respectively. No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the file name. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

Note:

- (a) Tenderers are advised to read carefully the Terms and Conditions of supply before recording the rates in this Schedule.
- (b) No erasures or overwriting shall be allowed, unless they are authenticated under the full signature and the seal of the tenderer.

(c) The University reserves the right to:

- (i) Accept/reject any/all tenders without assigning any reason thereof.
- (ii) Revise the quantities at the time of placing the order without change in the rate quoted by the bidder.
- (iii) Add/modify/relax or waive any of the conditions stipulated in the tender document whenever deemed necessary

Signature of the Tenderer
Seal of the Firm

Annexure-II: Bill of Materials

Product Components

SL No.	Item	Qty
1	Chassis based Modular Multilayer Core Switch	1 no.
2	Unified Threat Management, UTM	1 no.
3	20 KVA Online UPS	1 no.
4	24 Core Optical Fiber Cable Single mode OS2 Fiber	3600 Mtr.
5	24 Ports LIU Fully Loaded with LC-LC Coupler and adapter	10 no.
6	Optical Fiber Pigtails 1 Mtr.	300 no.
7	LC-LC Optical Fiber Patch Cord, Single Mode (OS2), LSZH Types, 3 Mtr.	50 no.
8	42 U rack	1 no
9	HDPE Conduit for Fiber Laying Industry Standard	3500 Mtr.
10	Weatherproof OFC Joint Enclosure Junction 24 Core in + 24 Core Out	8 no
11	Weatherproof OFC Joint Enclosure Junction Box 4 no. 6 Core in + 1 no. 24 Core Out	12 no.

Services Component:

SL No.	Items	Qty
1	24 Core OFC Laying and Trenching with HDPE	3500 Mtr.
2	OFC Splicing, Per Core	800 no.
3	Fiber Chamber Civil Works (5 Feet x 5 Feet x 5 Feet)	2 no.
4	Concrete OFC Route markers every after 50 mtr.	20 no.
5	Active Components Installation, Configuration and Implementation Documentation & Training	1 no.
6	Onsite technical support staff for minimum 1 Year	1 no.

Annexure-III: Scope of the Work

SL. No.	Parameters
1	Bidder has to understand the current Network Infrastructure of Dibrugarh University, of accessing Internet, Intranet and hosting Websites and Application and their traffic flow in the existing DU Network Environment.
2	Bidder has to submit a High-Level Design Document, Proposed Approach & Methodology and has to give a proper Technical Presentation with work plan in front of the concerned technical authority.
3	Installation, Commissioning & integration of security equipment, till project sign off has to be done by OEM Network Security Associate / Engineer / Administrator Level Certified Personnel.
4	Bidder has to configure Building-Wise VLANs for smooth operation and maintenance of the Dibrugarh University campus network.
5	Bidder has to ensure smooth migration from the OLD setup to the NEW setup and complete Integration with the existing infrastructure with minimum downtime possible.
6	Bidders has to configure AAA Service on Existing Server of Dibrugarh University for Central User based Internet Authentication
7	Bidder has to keep provision for implementing 2 (Two) no. UTM in Active-Active High Availability (HA), Load Balancing and Failover to prevent single point of failure in future.
8	All Servers has to be connected to the DMZ zone of the New Firewall and Policies accessing the server (bi-directional) has to be configured.
9	Bidder has to create Firewall Rules / Policies and apply various threat prevention Technique like IPS, Web and Application Filtering, Antimalware Scanning Profiles etc. as per industry standard and configuration has to be vetted by OEM's Technical Team.
10	Bidder has to submit Low Level Post installation document as well as demonstration of testing of Rules, Policies and configuration after complete Implementation
11	Bidder has to Provide technical training to Dibrugarh University's concerned Technical Officials after successful Implementation
12	Bidder has to deploy one Onsite Technical Support staff on full time basis for minimum 1 Year and the university may renew the contract as per its Requirement. Minimum Qualification: B.Tech/B.Sc(IT)/BCA/Gradualtion with Diploma like PGDCA or Equivalent.

Annexure-IV: Technical Specification

A. ACTIVE COMPONENTS

1. Core Chassis Based Modular Multilayer switch (Qty: 1 no.)

SL No.	Specifications
1	General Features & Performance:
1.1	Chassis based switch with at least 5 payload slots/Line card
1.2	Switch should have additional two slot to accommodate two nos. of switch processor from day 1
1.2	The proposed switch will have redundant CPUs from day 1 and it should be x86 based Quad Core CPU @ 2.4 Ghz. Should support Non-Stop Forwarding and Stateful Switchover to ensure information between supervisor engines are fully to allow the standby supervisor engine to take over in sub second time if the primary supervisor fails.
1.3	Redundant Power supply from day 1.
1.4	Switch should support field replaceable components such as Supervisor, Line cards, Power-supply and Fan trays. Switch Should have embedded RFID tag which facilitates easy asset/inventory management using commercial RFID readers.
1.5	Switch should support integration with SDN platform and SDN controller can be added as and when required
1.6	Should have 16 GB DRAM & 10 GB Flash with support of optional SSD to host 3rd party container-based application.
1.7	The switch will have at least 1.4 Tbps switching capacity,
1.8	The switch should support minimum forwarding rate of 900 Mpps for IPv4 and 450 for IPv6
1.9	Switch should support IPv4 Routing entry support: 110K and IPv6 Routing entry support: 55K
1.1.2	Multicast Routing entry support: 16K
1.1.3	Switch should support minimum 64K MAC addresses
1.1.4	Switch should support minimum 4K VLANs ID
1.1.5	Switch should support minimum 18K for ACL entry and 18 K for QoS entry support
1.1.6	Switch should support minimum 95 MB Packet buffer
1.1.7	The device should be IPv6 ready from day one
2	Functionality:
2.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z & 1588v2.
2.2	Switch must have functionality like static routing, RIP, PIM, OSPF, VRRP, PBR and QoS features from Day1
2.3	Should support advance Layer 3 protocol like BGPv4, MPLS, VRF, VXLAN, IS-IS, OSPFv3 from day 1
2.4	STP, PVLAN, First Hop Security, Link Aggregation Protocol (LACP)
2.5	STP, Trunking, Private VLAN (PVLAN), Q-in-Q, Shaped Round Robin (SRR) scheduling, Committed Information Rate (CIR), and eight egress queues per port
2.6	Should support AES-256 support with MACSEC-256 encryption algorithm on hardware across all ports
2.7	During system boots, the system's software signatures should be checked for integrity. System should capable to understand that system OS are authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic.

2.8	OS should have support for Management automation vis Netconf/Yang or equivalent
2.9	Should support Streaming Telemetry, Netflow/Sflow/Jflow, SPAN, RSPAN or equivalent
3	Interface
3.1	Should have capabilities to seamless upgrade/replacement (without interrupting running processes and services) for modular interfaces. The Switch will be populated with:
3.2	Two number 24 x 10G (SFP+) Ports line cards
3.3	One Number 48 x 1 G (SFP) Ports line card
3.4	Core Switch & Transceiver module should be from same OEM.
3.5	1) Total of 45 no. 1 Gig Single Mode LX SFP OFC Transceiver should be populated from day 1 2) Total of 16 no. 1 Gig Copper RJ45 Transceiver populated from day 1 3) Total of 4 no. 10 Gig Multimode SR SFP+ OFC Transceiver should be Populated with from Day 1
4	Certification:
4.1	The switch should be CE Marking, UL 60950, EN 60950 and ROHS5
4.2	The switch should be EAL / NDPP certified from day1
4.3	OEM should be listed in Gartner Leader Quadrant for Wired and Wireless LAN Infrastructure from last 3 years before releasing this RFP.
5.	Warranty: 5 Years OEM 24x7 technical support with advance Next Business Day Hardware replacement/shipment.

2. Unified Threat Management (UTM) (Qty: 1 no.)

S.No	Technical Specification
1	Network security appliance should support "Stateful" policy inspection technology. It should also have application intelligence for commonly used TCP/IP protocols like telnet, ftp etc.
2	The proposed vendor must have successfully completed NSS Labs' NGFW Methodology v9.0 testing (2019) with a minimum exploit blocking rate of 97%
3	OEM should be in Leaders quadrant of Gartner's – in Network Firewall / UTM Magic Quadrant as per the latest report
4	Appliance shall be ICSA certified for Firewall
5	The platform must be supplied with minimum 8 x GE RJ45 inbuilt interfaces, 6 x 1GE SFP interface, 2x 10GE SFP+ interface slots from day one. Should be populated with 2 no. 1 Gig SFP SX Optical MM Transceiver and 2 no. 10 Gig SFP+ SR Optical MM Transceiver from day one
6	The Appliance should have separate USB & Console Ports
7	Appliance hardware should have dual redundant hot swappable AC power supply from day 1
8	The Firewall should provide minimum 34 Gbps of Firewall throughput & support of 7,000,000 concurrent sessions, and 400,000 new sessions per second from day one
9	Appliance should support built in local user database for user based authentication from day one
10	Minimum IPS throughput of 9 Gbps for real world traffic or enterprise mix traffic

11	The Firewall should have NGFW Throughput of 8 Gbps
12	Minimum Threat Prevention Throughput (measured with Application Control and IPS and Anti-Malware enabled) of 6 Gbps for real world traffic or enterprise mix traffic
13	IPSec VPN throughput: minimum 12 Gbps
14	Simultaneous Client-to-Site IPSec VPN tunnels: 2000
15	Proposed solution must support minimum 2000 SSL VPN users from day one
16	Proposed solution must support minimum 10 virtual firewall from day one
17	UTM should support Static Routing, Policy Based Routing, dynamic routing protocol like RIP, OSPF, BGP
18	Firewall should provide application inspection for LDAP, SIP, H.323, SNMP, FTP,SMTP, HTTP, DNS, ICMP, DHCP, RPC,SNMP, IMAP, NFS etc
19	IPv6-enabled inspection services for applications based on HTTP, FTP, SMTP, ICMP, TCP, and UDP
20	Allows secure deployment of next-generation IPv6 networks, as well as hybrid environments that require simultaneous, dual stack support of IPv4 and IPv6
21	The firewall should support transparent (Layer 2) firewall or routed (Layer 3) firewall Operation
22	The Firewall should support ISP link load balancing.
23	Firewall should support link aggregation functionality to group multiple ports as single port.
24	Firewall should support minimum VLANS 2048
25	Firewall should support static NAT, policy based NAT and PAT
26	Firewall should support IPSec data encryption
27	It should support the IPSec VPN for both site-site and remote access VPN
28	Firewall should support IPSec NAT traversal.
29	Support for standard access lists and extended access lists to provide supervision and control
30	control SNMP access through the use of SNMP and MD5 authentication.
31	Firewall system should support virtual tunnel interfaces to provision route-based IPSec VPN
32	The Firewall should have integrated solution for SSL VPN
33	Should support LDAP, RADIUS, Windows AD, PKI based Authentication
34	IPS should have DDoS and DoS anomaly detection and protection mechanism with threshold configuration.
35	Support SYN detection and protection for both targets and IPS devices.
36	The device shall allow administrators to create Custom IPS signatures
37	Should have a built-in Signature and Anomaly based IPS engine on the same unit
38	Signature based detection using real time updated database & should have minimum 10000+ IPS signature database from day one
39	Supports automatic security updates directly over the internet. (ie no dependency of any intermediate device)
40	Signature updates do not require reboot of the unit.
41	Configurable IPS filters to selectively implement signatures based on severity, target (client/server) and operating systems
42	Should support IPS Actions: Default, monitor, block, reset, or quarantine. IDS sniffer mode
43	Should support packet capture option, IP(s) exemption from specified IPS signatures

44	UTM should support antimalware capabilities, including antivirus, botnet traffic filter and antispyware from day 1
45	Solution should be able to detect and prevent unique communication patterns used by BOTs i.e. information about botnet family
46	The solution should support sandboxing for prevention from zero-day threats from day one
47	Should have antivirus protection for protocols like HTTP, HTTPS, IMAPS, POP3S, SMTPS protocols etc.
48	Solution should have an option of packet capture for further analysis of the incident
49	Solution should uncover threats hidden in SSL links and communications
50	Solution should provide minimum 6 Gbps of SSL Inspection Throughput from day 1
51	The AV should scan files that are passing on CIFS protocol
52	The proposed system shall provide ability to allow, block attachments or downloads according to file extensions and/or file types
53	The proposed system should be able to block or allow oversize file based on configurable thresholds for each protocol types and per firewall policy.
54	Should support features like IPS, Cloud Sandboxing, Web-Filtering, Application-Control & Gateway level DLP from day 1
55	The proposed system should have integrated Enterprise-class Web Content Filtering solution with database which should support over 250 Million URLs in 72+ categories and 68+ languages without external solution, devices or hardware modules.
56	Should support detection over 4,000+ applications in multiple Categories: Botnet, Collaboration, Email, File Sharing, Game, General Interest, Network Service, P2P, Proxy, Remote Access, Social Media, Storage Backup, Update, Video/Audio, VoIP, Industrial, Special, Web (Others)
57	The solution should have the flexibility to write security policies based on IP Address & User Name
58	QoS features like traffic prioritization, differentiated services, Should support for QoS features for defining the QoS policies.
59	It should support the VOIP traffic filtering
60	The firewall must support Active-Active as well as Active-Passive redundancy in HA Mode
61	Solution must support VRRP clustering protocol.
62	Support for Built-in Management Software for simple, secure remote management of the security appliances through integrated, Web-based GUI.
63	Support accessible through variety of methods, including console port, Telnet, and SSHv2
64	Support for both SNMPv2 and SNMPv2c, providing in-depth visibility into the status of appliances.
65	The solution should have minimum 450 GB of internal SSD storage for logging & reporting functionality
66	Should have capability to import configuration and software files for rapid provisioning and deployment using Trivial File Transfer Protocol (TFTP), HTTP, HTTPS
67	Should capable to provide a convenient method for alerting administrators when critical events are encountered, by sending e-mail alert messages to administrator defined e-mail addresses
68	Solution must allow administrator to choose to login in read only or read-write mode

69	All required Subscriptions/Licenses for day one features and Hardware Warranty should be provided for 5 years with 24x7 OEM Remote Support.
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3) 20 KVA/KW N+1 Modular Online UPS (Qty: 1 no.)

S. No.	SPECIFICATIONS
1	This technical specification relates to the supply, installation and commissioning of Capacity 20 KVA/20KW N+1 On-Line Uninterruptible Power System (rack-mounted modular UPS). Each 20 KVA/KW UPS shall be with modular architecture with minimum 3 nos. Hot Swappable UPS Modules of 10 KW capacity (2 to support the load and 1 for redundancy) placed in a 19" rack (frame). The 20 KW UPS shall also be scalable up to 40 KW by inserting additional hot swappable power modules as and when necessary. There shall be a combined battery bank of 60 minutes back-up comprising of 31,200 VAH using VRLA Sealed Maintenance Free Batteries.
2	The UPS should be based on a Decentralized Parallel Architecture for maximum availability and should be free of single points of failure. The UPS shall have IGBT Rectifier & IGBT based Inverter with SNMP Card enabled. It should be built of self-contained power modules that include the entire UPS hardware and software. Each module should operate fully independently, and all modules should be fully redundant with each other.
3	In the unlikely event of any one UPS module failing, the overall system will continue to operate normally, but with one less module of capacity but still supporting the full load. The failed module will be fully disconnected and will not impact the operating modules. Insertion and removal of modules should be possible without powering down the load & UPS and without transferring load to bypass.
4	UPS COMPONENTS: The UPS shall consist of the following main components:
A	Appropriate nos. of Uninterruptible Power System Module (UPM) of 10KW each and max 3U height, placed in a standard 19" Server Rack. Each UPM power module shall include a rectifier, charger, inverter, independent control, logic circuitry, static bypass switch and LCD display. There should be no common controller (either single or redundant) outside the modules. The UPM shall be hot swappable. Each UPM shall be able to operate and share the load independently, despite the status of the other UPMs. UPS shall also include a maintenance bypass switch (MBS) switch to isolate the load from UPS. MBS shall be internal or external. In case of external MBS, proper wall mounting shall be provided by the vendor.
B	Communication Module with SNMP and USB Ports. In addition to individual LCD display in each power module, there shall be a 5~6" Graphical LCD display on the UPS frame for displaying the entire power flow, UPS controls, Measurement of vital parameters of Input, Output, Bypass, Load and Battery, Setup including Alarms, Language, Time, Password, System Settings, UPS Identification, Events & Historical Data etc.
C	There shall be a combined battery bank comprising of 31,200 VAH using VRLA Sealed Maintenance Free Batteries. The vendor has to supply the necessary battery rack and interconnecting cables. The UPS shall interface with an external battery cabinet or battery shelves to extend reserve time capabilities. The UPS should have minimum 10 Amps DC charging current for adequately charging the battery bank and for future expansion of Battery bank.
D	Isolation Transformer of 40 KVA should be provided with each UPS for providing galvanic isolation between input & output. Isolation Transformer should be external to the UPS and placed inside a suitable enclosure with powder coated paint and provided with cast iron wheels at bottom and hooks for lifting the unit.
5	DETAILED SPECIFICATION SHEET
	MODEL RATING (1.0 p.f.)
	20 KVA/KW N+1 Modular On-Line UPS

	Make & Model	To be Specified
	Configuration	20 KVA/KW N+1 True modular On-Line Double Conversion UPS System (VFI SS111) configurable as internal redundant mode using minimum 3 UPM (power) modules of 10KW each.
	Scalability	Vertical modularity by simply plugging a power module into the existing modular system (up to at least 40 KW).
	MECHANICAL	
	UPS dimensions (Footprint)	Space Savings should be less than 0.7 sq meters as per standard 19" rack – (having footprint dimensions Width = 450 mm, Depth = 900 mm; ±5% in all sides). Each UPS module shall be 3U high
	Weight UPS module	~ 20 kgs
	UPS Degree of protection	IP 20
	ENVIRONMENTAL	
	Acoustic noise at 1 m, in 25 °C ambient temperature	< 60 dBA
	Ambient service temperature range	0°C to + 40°C without output power derating
	Relative humidity range	5 to 95%, no condensation allowed
	ELECTRICAL CHARACTERISTICS INPUT	
	Rated input voltage Voltage tolerance	380 V; 400 V; 415 V 305 ~ 478 VAC at 100% load; 200 ~ 478 VAC at 50% load
	Rated input frequency Frequency tolerance	50 or 60 Hz, user configurable 40 to 70 Hz
	Number of input phases Rectifier input	3 phases + neutral
	Input power factor, double conversion @100% load	> 0.99
	Input current distortion at rated input current THDi	< 5%, 100% load
	ELECTRICAL CHARACTERISTICS OUTPUT	
	Number of output phases	3-phase
	Crest factor	3:1
	Rated output voltage	380 V; 400 V; 415 V, configurable
	Output voltage variation, steady state	± 1% (balanced load); ± 2% (unbalanced load)
	Total voltage harmonic distortion 100% linear load 100% non-linear load	< 2% < 5%
	Rated output frequency Output frequency variation	50 or 60 Hz, configurable ± 0.1 Hz
	Overload capability (On inverter) Overload capability (Bypass Mode)	10 mins for 110%, 1 min for 125% 120% continuous (in Bypass mode)
	AC-AC Efficiency	95%
	TRANSFER TIME	Mains to battery - 0 millisecond Inverter to bypass -Synchronization mode - 1 millisecond
	CONTROL MECHANISM	

	I/P Mode	ON/OFF
	O/P Mode	ON/OFF
	By-Pass Mode	ON/OFF
	Emergency Shutdown and normal Shutdown	LOCAL AND REMOTE LOCATION
	BYPASS	
	Type of bypass	Static (Automatic) & Manual
	PROTECTION	Battery Over Voltage/Under Voltage, Output AC Over/Under Voltage, Input Over/Under Voltage, Bypass abnormal Output Overload, Short Circuit, Over Temperature, Battery Deep Discharge,
	BATTERY CHARACTERISTICS	
	Battery technology	Advanced Glass Mat Valve Regulated Sealed Lead Acid Battery Construction (AGM or VRSLAB)
	Battery quantity	32~40 blocks of 12V each
	Nominal VAH capacity	31,200 VAH
	End of discharge voltage	1.75 VPC
	Boost Charging Voltage	2.35V / Cell
	Battery Make	Shall be reputed make of batteries
	COMMUNICATION CIRCUITS	
	Standard connectivity ports	USB, RS-232, SNMP card
	Remote UPS Monitoring through SNMP	There shall be facility for remote monitoring of the UPS over a LAN/wide area network. The vendor shall provide proper software to support graceful shutdown and remote monitoring of the UPS through a graphical interface.
	System Display	5~6" Graphical LCD display (one per frame)
	COMPLIANCE WITH STANDARDS	
	Quality	ISO 9001, ISO 14001, OHSAS 18001, ISO 27001
	UPS - General and safety requirements	IEC 62040-1
	UPS - Electromagnetic compatibility (EMC) requirements.	IEC 62040-2 IEC 61000-4-2/3/4/5
	UPS - Method of specifying the test and performance requirements.	IEC 62040-3
	E-Waste	EPR authorisation from Central Pollution Control Board (CPCB), Govt of India (certificate to be provided)
6	WARRANTY	5 years comprehensive on UPS and 2 years on Batteries

B. PASSIVE COMPONENTS

1. 24 Core Optical Fiber Cable Single mode OS2 Fiber (Qty: 3600 Mtr. approx)

Characteristic	Minimum Required Specification	
GENERAL:	24F Unitube Armoured with water blocking tape. Rodent Proof, UV Protection. Direct Burial. Embedded Strength members as 2 steel wires od 1.0 mm. Polyester based yarns below Armor tape for easy ripping Thermoplastic Material Tube Excellent Waterproof Layer and Moisture Resistance Excellent Crush Resistance Performance Light Weight and Compact Structure The fiber type is a Matched Cladding Single Mode	
	Low water peak fiber G.652D	
	Extremely high bandwidth. Optimized to support transmission at 1310 nm,1550 nm. Virtually unlimited Modal Bandwidth at 1310 nm	
	Should fulfill the requirements of: IEC 60793-1/60794-1.2 ITU-T REC G.652D Telecordia GR-20 Core	
	Testing methods are in accordance with the following standards: ITU-T G.652.D IEC 793-1	
GEOMETRICAL PROPERTIES	Nominal mode field diameter	9.2 μm
	Mode field diameter tolerance	$\pm 4 \mu\text{m}$
	Cladding diameter	125
	Cladding diameter tolerance	$\pm 1 \mu\text{m}$
	Mode field concentricity error	$< 1 \mu\text{m}$
	Cladding non-circularity	(= $<$) 1.0
ENVIRONMENTAL CHARACTERISTICS	Change of Temperature Attenuation increase, -60°C to +85°C	$\leq 0.05 \text{ db/km}$
	Dry Heat Attenuation increase, 30 days at 85°C	$\leq 0.05 \text{ db/km}$
	Damp Heat Attenuation increase, 30 days at 85°C/ 85%R.H.	$\leq 0.05 \text{ db/km}$
	Damp Heat Attenuation increase, 30 days at 85°C/ 85%R.H.	$\leq 0.05 \text{ db/km}$
MATERIALS	CORE	Germanium doped core with no phosphorus i.e. reduced tendency for hydrogen degradation.
	COATING	UV-curable dual layer acryl ate coating, which ensures excellent micro bending and abrasion resistance.

	Coating Strip Force (typical)	
	Min.	1.3 N
	Max.	8.9 N
	Stripping force after ageing in water at 70 ± 5 °C for 168 h.	
	Min.	1.0 N
	Max.	3.5 N
OPTICAL PROPERTIES	Attenuation (of cable with fibers):	
	At 1310 nm	≤ 0.35 dB/km
	Atten. At 1383nm (OH-Peak)	≤ 0.35dB/km
	At 1550 nm	≤ 0.25 dB/km
	Cut-off wavelength λ_c :	
	High limit	1330 nm
	Low limit	1180 nm
	Cut-off wavelength λ_{cc}	
	High limit	1260 nm
	Loss increase at 1550 nm for 100 turns of fiber loosely wound with a 37.5 mm radius:	
	Max.	0.1 dB
	Dispersion:	
	Zero dispersion wavelength	1310 nm
	Tolerance of zero dispersion	
	Wavelength	-10/+12 nm
	Zero-dispersion slope: $1295 \leq \lambda_0 \leq 1300$	
	Max.	≤ 0.092 at λ_0
	Chromatic dispersion coefficient:	
	In 1285 nm - 1330 nm interval:	
	Max.	3.5ps/km • nm
	In 1270 nm - 1340 nm interval	
	Max.	6 ps/km • nm
	At 1550 nm	
	Max.	18 ps/km • nm
	Polarisation Mode Dispersion (PMD):	
	Max.	≤ 0.2 ps/km
In homogeneity of OTDR trace for any two 1000 meter fiber lengths		
Max.	0.1 dB/km	
Proof test level		
		1 %

2. 24 Ports LIU Fully Loaded with LC-LC Coupler and adapter (Qty: 10 nos.)

Characteristic	Minimum Required Specification
	24 Ports Adapter Interface available without any adapter plates.
	Consist of Top Cover and Bottom Panel
	Easy to Assemble and Disassemble
	Three Types of Inlet Holes
	Cable Entry Through Waterproof Cable Glands
	Splice Max 24 Fibers per Splice Tray
	Patch Cord with Bend Radius Guides Minimize Macro Bending
	Install 6 Cable Management Rings Inside to Ensure Flexibility

	Comprehensive Accessory Kits for Cable Entry and Fiber Management
	Dimensions (mm) : 430 X 220 X 1U
	Body Material: SPCC Black Powder Coating
LC-LC ADAPTORS	
Features	LC adaptors should be Simplex and duplex type. Telcordia GR-326-Core. RoHS Compliance Low Insertion and Return Loss Adaptors should have compact design & high precision
	Telcordia, TIA/EIA, IEC compliance
Insertion Loss	<= 0.20 db for Zirconia Sleeve Durability (1000 Matings): <= 0.2db Main Body Material: PBT/ABS
Sleeve/Ferrule Withdrawal Force	SC / FC Adapter 2.0N ~ 5.9N, LC Adapter-1.0N ~ 2.5N

3. Optical Fiber Pigtails 1 Mtrs (Qty: 300 nos.)

Characteristic	Minimum Required Specification
Features	LSZH Jacket-Reduced Toxic Gasses Emitted During Combustion 100% Factory Tested Low Insertion Loss and Return Loss Available with Corning Fiber Available in PC/APC Type Options High Precision Ceramic Ferrule with Good Concentricity LC options
	Technical Specifications:
	Connector Type: LC Fiber Type: OS2 (9/125 Corning Clear Curve) Tight Buffer Material: LSZH Tight Buffer Diameter (mm) : 0.9 +/- 0.05 Jacket Colour: Yellow for OS1/OS2 Jacket Material: LSZH Minimum Bending: 30 (static) Radius (mm) Attenuation (db/km): <= 1.5 at 1300nm, <= 3.5mm at 850nm Short Term Tensile (n): 160 Crush Resistance (n/100mm): 500 Operation Temperature: Minus 20 ~ Plus 70 (degree)
	Optical Specifications
	Insertion Loss: <= 0.2 db, Max 0.3db/MTRJ: Max 0.5db Return Loss: PC>= 45db, UPC>=50db, APC>=60db
	Mechanical Specifications
	Apex Offset: <50µm Fiber Height: (+/-)100nm End Face Radius of Curvature: 7mm <R<25mm (Excluding MTRJ) Repeatability : <= 0.2db 1000 Times Mating Cycles Working Temperature: (minus 40 Degree ~ Plus 85 Degree) Storage Temperature: (minus 40 Degree ~ Plus 85 Degree)

4. LC-LC Optical Fiber Patch Cord, Single Mode (OS2), LSZH Types, 3 Mtrs (Qty: 50 nos.)

Characteristic	Minimum Required Specification
Features	LSZH Jacket-Reduced Toxic Gasses Emitted During Combustion. Simplex and Duplex Options 100% Factory Tested Low Insertion Loss and Return Loss Available with Corning Fiber Available in PC/APC Type Options High Precision Ceramic Ferrule with Good Concentricity LC options
	Technical Specifications:
	Connector Type: LC Fiber Type: OS2 Tight Buffer Colour: yellow Tight Buffer Material: LSZH Tight Buffer Diameter (mm): 0.9 +/- 0.05 Strength Member: Aramid Yarn Jacket Colour: Yellow Jacket Material: LSZH Jacket Thickness (mm): 0.45 +/- 0.05 Cable Diameter (mm): 1.8(+/-0.1) X 5.9(+/-0.2) Minimum Bending: 30 (static) Radius (mm) Attenuation (db/km): <= 1.5 at 1300nm, <= 3.5mm at 850nm Short Term Tensile (n): 160 Crush Resistance (n/100mm): 500 Operation Temperature: Minus 20 ~ Plus 70 (degree)
	Optical Specifications
	Insertion Loss: <= 0.2 db, Max 0.3db/MTRJ: Max 0.5db Return Loss: PC>= 45db, UPC>=50db, APC>=60db
	Mechanical Specifications
	Connector Ferrule: Ceramic, Apex Offset: <50µm Fiber Height: (+/-)100nm End Face Radius of Curvature: 7mm <R<25mm (Excluding MTRJ) Repeatability: <= 0.2db 1000 Times Mating Cycles

5. 42 U rack (Qty: 1 nos.)

NETWORKING RACK	
Enclosure Type	42 U Floor Stand Alloy Aluminium extruded frame fully Allen bolted construction all x,y,z axis, metal top vented all along the width and depth , 4 fan provision and cable entry provision covered with cover plate edge protected rubber grommet provide/bottom cover cable entry provision covered with cover plate edge protected rubber grommet provide , 3 pairs of support channel and castor provision at bottom side.

Characteristics value Indicated	H x W x D (Height x Width x Depth)
Mounting Angle	2mm sheet steel, equipment mounting angles is provided with square slots to accommodate M6 cage nuts at a universal pitch pattern along the height, powder coated texture finish.
Compliance with standards	UL 2416., DIN 41494, IEC EN 60529, IEC EN 62262, IEC EN 60068-2-11, ISO 9001:2008
Degree of Protection	IP 20 according to IEC 60529, IK08 according to IEC EN 62262
Electrical Continuity	Copper plated earth stud on main Metal parts for better electrical continuity
Weight Capacity	Load Capacity of up to 1000 Kg.
Corrosion Resistance	Salt spray test according to ISO 9227 (NSS test) and IEC EN 60068-2-11 (Ka test) for 168 hours: degree of Rusting Ri1 according to ISO 4628-3, propagation ≤ 1 mm according to ISO 4628-8.
Material & Features	
Enclosure	Modular Construction of the rack made of 4 vertical, 4 horizontal & 4 depth aluminum alloy extruded multifold hollow profiles bolted and joined together with Links and Corner Block. 3 pairs of support channel to equate the load evenly and castor provision at bottom side
Top and Bottom	Top & bottom Cover has gland plate with round cutout of 56mm for cable entry provision and edges of cutouts are protected with rubber grommets. Top cover has four fan mounting provision.
Mounting Angle	19" Upright adjustable in depth, equipment mounting angles with square slots to accommodate M6 cage nuts at a universal pitch pattern along the height as per DIN-41494 parts 1.5. & mounting dimensions to IEC 297-3 for all electronic equipment, powder coated texture finish. It contains U printing pattern which can be read from down to up and vice versa.
Accessories	
Glass door	0.9 mm sheet steel, with foamed-in seal, 4mm thick toughened glass. Single point and multi point locking rod. Door hinge may be swapped from right to left. Door opening angle 160° .
Rear door	0.9 mm sheet steel, with foamed-in seal, Single point and multi point locking rod. Door hinge may be swapped from right to left.
Perforated door	1.2 mm sheet steel, with foamed-in seal, special honeycomb punching pattern, Sheet steel, with foamed-in seal, special honeycomb punching pattern Single point and multi point locking rod. Door hinge may be swapped from right to left. Door opening angle 125° .
Side Panel	0.9 mm sheet steel, Removable Side panels, single point locking with quick release latches sheet steel, Removable Side panels, single point locking with quick release latches
Cooling Fans	Fan's -230V AC - 90 CFM, dB 42
Power box	Power Distribution Unit - 06/13 Amp Multi-Standard - 06 Socket (Britzy) - Single Pole / Screw Mountable / 06 Amp MCB / Alternating Current - 06 Amp 3 Pin Plug with Power Cable 0.75 sq.mm 3-meter Length - Black Fine Tex. - Assembly
Castor	Set of 4 castors (2"/3" height), 2 of brakes on front side and 2 without brakes

Mounting Hardware	Mounting Hardware Packets with set of M 6 screw, Cage Nuts and Washer set of 10 or 20
Optional Accessories	
Leveling Leg	4 sets of levelling legs M12 size with check nut.
Fix Shelf	Sheet steel, duly powder coated texture finish - 375D, 475D, 600D and 700D
Horizontal Cable Manager	19"Horizontal sheet steel powder coated texture finish cable manager with PVC cable loops
Blank Panel	19"Horizontal Metal Blank Panels
Base Plinth	2mm C shape folded sheet steel, With Grouting facility
Earthing Strip	Copper bare finish Earthing strip provided for achieving electrical ground
Support angle	supporting any 19" equipment if the equipment is heavy or needs extra support
Keyboard Drawer	sheet steel, rotating type, duly powder coated texture finish with telescopic slide rail.
Sliding Shelf	sheet steel, duly powder coated texture finish with heavy duty telescopic slide rail
Characteristics value Indicated (H x W x D)	(Height x Width x Depth)
Floor stand with Dual side panels	
42U	600W x 1000D
Doors	Available with Glass door (Single) and Mesh door (Single/ double)
Warranty and support	Warranty and Support for 5 years

6. **HDPE Conduit for Fiber Laying: 3500 mtr (approx.)**
7. **Weatherproof OFC Joint Enclosure Junction 24 Core in + 24 Core Out, Qty: 8 no**
8. **Weatherproof OFC Joint Enclosure Junction Box 4 no. 6 Core in + 1 no. 24 Core Out, Qty: 12 no.**
9. **Fiber Chamber Civil Works (5 Feet x 5 Feet x 5 Feet), Qty: 2 nos.**
10. **Concrete OFC Route markers should be installed at every 50 m of Digging.**

Annexure-V: OEM's Criteria and Bidder's Eligibility Criteria

SL. No.	OEM's and Bidder's Eligibility Criteria for Qualification
1	The OEM for the Switch must be listed Leaders in Gartner Magic Quadrant for Wired & Wireless LAN infrastructure as per last 3 years reports.
2	UTM / Firewall OEM must be rated as leaders in the latest Magic Quadrant for Enterprise Firewall / UTM published by Gartner.
3	All Core Switch Components like SFP Transceivers and Power Supply should be from the same OEM
4	All UTM / Firewall Components like SFP Transceivers and Power Supply should be from the same OEM
5	OEM Should Provide Warranty, Remote 24x7 support and hardware replacement for next five years.
6	Bidder must be a registered Private Limited Company incorporated under the Indian Companies Act 1956. Documentary evidence to be submitted.
7	Bidder should be in the business of Information Technology / System Integration and should have a registered office for the last 10 years' in India.
8	The Bidder must have valid ISO Certified for IT Support / Services.
9	The bidder must submit valid GST Certificate, PAN and PF Registration Certificate
10	The bidder should be financially sound to undertake the project and provide efficient after sales support. Annual turnover of the bidder in India from IT Sales & services, should be not less than Rs. 5 crores each year of the during last five financial years. (year ending March'2019) Audited Balance Sheets for the said years to be enclosed. Bidder must have a positive net worth from IT business in each of the last five financial years, year ending March,2019. (Certificate from Chartered Accountant to be furnished).
11	It is essential that the bidder is well acquainted with the working condition of Assam and should be able to provide after sales support for next 5 years as per requirement of Dibrugarh University. A declaration confirming the same by authorized signatory of the bidder to be submitted.
12	Bidder has to submit Authorization Letter from the Manufacturer (OEM) for quoted products mentioning the Tender No & Date.
13	Bidder should have good support infrastructure in Assam. The bidder should have its own IT service support office in Assam. (relevant valid documentary evidence like Tax Registration etc. from respective Govt. agency should be submitted). In case bidder do not have IT service support office in Assam, a resident technical staff to be posted in the University for the entire warranty period.
14	The bidder should not have been blacklisted or debarred by any organization in India and abroad. A declaration by authorized signatory of the bidder to be submitted.
15	Bidder should have previous experience of executing Networking Projects in India. Bidder must have successfully executed supply and installation of min. 2 no. networking (Wired/ Wireless Networking) orders of value not less than of Rs.1 Cr each. in any Central/ State Government Organizations/ Educational Institutions in India within in last 3 years.
16	MSME Bidders having valid registration certificate in requisite Products or Services will be exempted from paying EMD, Tender fee, Performance Bank Guaranty etc. for the Entire Project