Selection of Agency for implementation and management of Electronic Knowledge Network (100 Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology,
Govt. of Bihar.

Request for Proposal

NIT No. I/17539/2022

Dated:11/02/2022

Issued By

Bihar State Electronics Development Corporation (BSEDC)
(A Government of Bihar Undertaking)
BELTRON Bhawan, Shashtri Nagar, Patna, Bihar
Tel No: - 0612-2281242, 0612-2281857
Fax No: - 0612-2281857
E-mail: jitendra.tripathi@bihar.gov.in
Web Site: - www.bsedc.bihar.gov.in

Disclaimer

This Notice Inviting e-Tender (NIT) contains brief information about the project, qualification requirements and the selection process for the successful applicant (Bidder). The purpose of this NIT document is to provide applicants (Bidders) with information to assist the formulation of their bid application (the "application").

Whilst the information in this NIT has been prepared in good faith, it is not and does not purport to be comprehensive or to have been independently verified. Neither Bihar State Electronics Development Corporation (BSEDC)/ Department of Science & Technology, Govt. of Bihar, nor any of its officers or employees, nor any of their advisers nor consultants accept any liability or responsibility for the accuracy, reasonableness or completeness of the information contained in the NIT, or for any errors, omissions or misstatements, negligent or otherwise, relating to the proposed project, or makes any representation or warranty, express or implied, with respect to the information contained in this NIT is based or with respect to any written or oral information made or to be made available to any of the recipients or their professional advisers and, so far as permitted by law and except in the case of fraudulent misrepresentation by the party concerned, and liability therefore is hereby expressly disclaimed.

The information ('Information') contained in this NIT document or subsequently provided to interested parties (the "applicant(s)), in writing by or on behalf of BSEDC is provided to applicant(s) on the terms and conditions set out in this NIT documents and any other terms and conditions subject to which such information is provided.

This NIT document is not an agreement and is not an offer or invitation by BSEDC to any other party. The terms on which the project is to be developed and the right of the successful applicant shall be as set out in separate agreements contained herein. BSEDC reserves the right to accept or reject any or all applications without giving any reasons thereof. BSEDC will not entertain any claim for expenses in relation to the preparation of NIT submissions.

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1. Abbreviations

Abbreviations	Descriptions
DSC	Digital Signature Certificate
GM	General Manager
EMD	Earnest Money Deposit
GST	Goods & Service Tax
LOI	Letter of Intent
PAN	Permanent Account Number
PBG	Performance Bank Guarantee
PSU	Public Sector Undertaking
PO	Purchase Order
NIT	Notice Inviting e-Tender
SLA	Service Level Agreement
BSEDC	Bihar State Electronics Development Corporation
CAPEX	Capital Expenditure
CCTV	Closed Circuit Television
COTS	Commercial Off the Shelf Products
ICT	Information and Communication Technology
INR	Indian Rupees
IP	Internet Protocol
IT	Information Technology
LAN	Local Area Network
OPEX	Operating Expenditure
PC	Personal Computer
Purchaser	BSEDC, Patna
UPS	Uninterrupted Power Supply
SI	System Integrator
SLA	Service Level Agreement
BSP	Bandwidth Service Provider

2. Definition

In this document, the following terms shall have following respective meanings:

"Similar Works" shall comprise of implementation and management of large internet connectivity across the State or multiple locations on behalf of any State Government/ Government Department / PSU or any reputed large organizations in India.

"**Agreement**" means the Agreement to be signed between the successful Bidder and Bihar State Electronics Development Corporation Limited (BSEDC) including all attachments, appendices, all documents incorporated by reference thereto together with any subsequent modifications, the RFP, the bid offer, the acceptance and all related correspondences, clarifications, presentations.

"**Bidder**" means any firm having experience in implementation and management of network connectivity. The word Bidder when used in the pre-award period shall be synonymous with Bidder, and when used after award of the Contract shall mean the successful Bidder with whom BSEDC signs the agreement.

"Bid/Proposal" means offer by the Bidder to fulfil the requirement of the Client under the RFP/Contract for an agreed price. It shall be a comprehensive technical and commercial response to the Tender

"**Contract**" is used synonymously with Agreement.

"**Contract Price"** means the price to be paid to the Vendor for providing the services, in accordance with scope of work.

"**SI/Vendor**" means the Bidder whose bid to perform the Contract has been accepted by Tender Committee and is named as such in the Letter of Award.

"**Default Notice**" shall mean the written notice of Default of the Agreement issued by one Party to the other.

"**Fraudulent Practice**" means a misrepresentation of facts in order to influence a procurement process or the execution of a Contract and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive the BSEDC and eventually Govt. of Bihar of the benefits of free and open competition.

"GoB" / "Government" / "**Govt. of Bihar**" means the Government of Bihar.

"Go-Live" means the date of commencement of Operations and Maintenance phase after the successful completion of FAT and acceptance of the overall solution by the BSEDC.

"**Law**" shall mean any Act, notification, bye law, rules and regulations, directive, ordinance, order or instruction having the force of law enacted or issued by the Central Government and/or the Government of Bihar or any other Government or regulatory authority or political subdivision of government agency.

"LOI" means issuing of Letter of Intent shall constitute the intention of the BSEDC to place the Purchase Order with the successful Bidder.

"Material Breach" means a breach by either Party (Client or Bidder) of any of its obligations under this Agreement which has or is likely to have an Adverse Effect on the Project which such Party shall have failed to cure.

"Parties" means Client and Bidder for the purposes of this Agreement and "***Party***" shall be interpreted accordingly.

"Services" means the work to be performed by the Bidder pursuant to this Contract, as described in the detailed Scope of Work.

"**System Integrator(SI) / Implementation Agency (IA)/ Operator**" means the company providing the services under Agreement.

"**Requirements**" shall mean and include schedules, details, description, statement of technical data, performance characteristics, standards (Indian as well as International) as applicable and specified in the Contract.

"**BSEDC**" mean Bihar State Electronics Development Corporation Limited

"Termination Notice" means the written notice of termination of the Agreement issued by BSEDC.

"Service Level" Means the level of service and other performance criteria which will apply to the Services delivered by the Bidder.
"SLA" means the Performance and Maintenance SLA executed as part of the Master Service Agreement.
"Services" means the work to be performed by the vendor including the supply of related accessories, customization, training, technical support, and other services necessary for proper operation of the intended equipment to be provided by the Vendor and as specified in the Contract.
"Availability" shall mean the time for which the services and facilities offered by the Bidder are available for conducting operations.
"Downtime" is the time the services and facilities are not available to BSEDC and excludes the scheduled outages planned in advance.
"Helpdesk Support" shall mean the Bidder's 24x7x365 support at centralized helpdesk to be established at BSEDC/DST which includes online as well as telephonic support to handle different queries raised by the users.
"Incident" refers to any event / abnormalities in the functioning of the solution / Services that may lead to disruption in normal operations.
"Prime Business Hours (PBH)" means the time period from 8:00 am to 8:00 pm
"Non-Prime Business Hours" or "Extended Busines Hour (EBH)" means collectively (i) during a Business Day, the time periods from 12:00 am to 7:59:59 am and from 8:00 pm to 11:59:59 pm, and (ii) during any day that is not a Business Day, the time period from 12:00 am to 11:59:59 pm.
"Warranty" means Warranty is for a period of 5 years from the date of 'Go-Live .

3. Schedule of Bid Process

S. No	Information	Details
1.	RFP No. and Date	**Tender NIT No. BSEDC/I/17539/22, Dated: 11.02.22 at 5 pm**
2.	Last date for submission of written queries for clarifications	23.02.2022 till 5 PM Email: jitendra.tripathi@bihar.gov.in
3.	Date of pre-bid conference	24.02.2022 at 12 hours
4.	Bid validity period	180 days from the last date (deadline) for submission of proposals.
5.	Non-Refundable Tender Fee/ Cost	INR. 10,000 only (exclusive of taxes) (Rupees Ten thousand only) payable online through e-Procurement
6.	Non-Refundable Tender Processing Fee (TPF)	INR. 5,00 only (exclusive of taxes) (Rupees Five Hundred only) payable online through e-Procurement
7.	Earnest Money Deposit (EMD/Bid Security)	INR 15,000,000 only (Rupees one crores fifty Lakhs only) through online payment in eproc site or Bank Guarantee from a scheduled bank in India and payable at Patna in favour of BSEDC
8.	Last date (deadline) for submission of bids	15.03.2022 till 5 pm
9.	Opening of General & Technical Bids	16.03.2022 at 5.30 pm
10.	Technical Presentation by the Successful Bidders	"Will be intimated later"
11.	Place, Time and Date of opening of financial proposals received in response to the RFP notice	"Will be intimated later"
12.	Contact person for queries	Shri Jitendra Tripathi BELTRON Bhawan, Shastri Nagar, Patna, Bihar Tel No: - 0612-2281242, 0612-2281857 Fax No: - 0612-2281857 E-mail:jitendra.tripathi@bihar.gov.in
13.	Addressee and address at which any supporting/original bank guarantee etc. in response to RFP notice is to be submitted:	Managing Director BSEDC Ltd, BELTRON Bhawan, Shastri Nagar, Patna, Bihar Tel No: - 0612-2281242, 0612-2281857

- The Bidding process shall be conducted in an online (e-tendering) manner. Please visit https://eproc2.bihar.gov.in for further details regarding the e-Tendering process.
- All the clarifications / corrigendum to the queries, notification & details terms and conditions regarding, this tender notice hereafter will be published online on web site https://eproc2.bihar.gov.in

4. Introduction

4.1. About Bihar

Bihar is a state in East India. It is the 13th largest state, with an area of 94,163 km2 (36,357 sq. mi) and the 3rd largest by population. It is entirely land-locked state, which is bounded by West-Bengal in the east, Uttar Pradesh to its west, Nepal in the north and Jharkhand to the south. The Bihar plain is bifurcated into two unequal halves by the river Ganges which flows from west to east. Bihar was the center of power, learning and culture in ancient and classical India where the ruins of the worlds' earliest university slumbers in the void of time. State of Bihar is divided into 38 administrative districts.

4.2. Project Background

The Department of Science & Technology, Government of Bihar intend to provide high capacity, scalable and reliable network infrastructure to cater the need of Data & Video transmission simultaneously for the Engineering colleges & Polytechnic Institutes so that the current and future (5 years) digital need of the campuses could be facilitated. Department wants to create a knowledge network - an Internet based hybrid network infrastructure with Internet router-based solution and a fiber based high speed LAN & Wi-Fi facility at the edge location i.e. the Govt. Engineering & Polytechnic colleges across the State, so that education content could be shared to student internally and efficiently.

4.3. Project Stakeholders

Sl. No	Stakeholder	Roles and Responsibilities
1	Department of Science & Technology, Government of Bihar	DPR approval, Budget allocation and necessary permissions and approvals; provide proper support and infrastructure for system deployment
3	Bihar State Electronics Development Corporation (BSEDC)	DPR acceptance, Budget allocation, RFP approval, Vendor selection, Project implementation, and monitoring,
4	Project Management Consultant (PwC)	System requirement analysis, System design, DPR Preparation, RFP Preparation, Bid Management, SI Selection, and Project Management with required verification for payment calculation.
5	System Integrator (SI) – To be selected for Implementation & management of Electronic Knowledge Network (100 Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar	Supply, Installation, Testing, Commissioning. Support and maintenance

4.4. Summary of the Scope of work

- The objective is purely for the selection of Bidder/SI/IT Company/Firm/ Agency to design and connect, through the proposed Electronic Knowledge Network (100Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of 82 Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar in such a way that Internet services can be catered to all end users and stake holders at each campus with minimum communication overheads in Network Bandwidth and throughput, low latency, full redundancy, scalable, reliable and high performance (QoS).
- Each college would have local WLC and AAA deployed at respective location so that colleges can create, edit and make necessary changes in policy both for wired and wireless without any involvement of BSEDC.
- Setup all Active & Passive network components as well as components such as Servers, OS, UPS, etc. as per Bill of Material (BoM).
- Some of the college already have bandwidth and existing network set-up, objective is to augment existing setup as per feasibility and new setup as per requirement.
- Planning & design for the proposed augmented Campus wide network setup along with dedicated redundant 100 MPBPS (50 X 2 MBPS) internet connectivity at 38 Engineering colleges with approximately 500 concurrent users at each college and at 44 Polytechnic colleges with approximately 350 concurrent users at each college.
- A separate temperature-controlled small server room (approximately 10'x10') to be created with a 32U rack and passive cable infrastructure to cater overall project scope.
- The network setup solution and supporting equipment must be scalable enough to cater bandwidth requirement (Network as well as Application) per user/per connection /per location and must not be bottlenecked in case of increasing number of connecting devices, number of users and concurrent users, number of concurrent connections per users, concurrent sessions and concurrent session per user.
- Apart from some Application services running in BSEDC SDC at Patna, all Application services hosted and running in college campus network will be available and utilized into College campus network. Also the educational content generating from the Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Government of Bihar shall reside in this server which will keep on updating as data from colleges in the form of audio, video, pdf, ppt, xls, word and another educational digital medium. Hence an end to end secure connectivity would be establish between BSEDC SDC and college campuses.
- The Application Bandwidth of these hosted services (such as access to Online contents, Smart Classes (video lectures, Quiz, tutorials), video conferencing, online examination, Digital Library, journal access from outside of College campus, Internal Website, etc.) in College Campus having either interactive or non-interactive session may vary between 200kbps to 15 Mbps or more upload / download depending upon application. The network setup solution and supporting equipment must be scalable enough to cater bandwidth requirement (Network as well as Application) without any degradation of Quality of Service (QoS) with minimum communication overheads in Network Bandwidth and throughput.
- Considering the availability / feasibility of services of BSP at 82 different locations within the State, it is recommended to have two BSP's that can cater to these locations and have a bandwidth of 50Mbps each. (2x50Mbps). Two separate agreement (3 party or 4 party between BSEDC, BSP & DST or BSEDC, BSP, SI & DST as required) will be made with the bandwidth service providers.
- The Application services will be extended to end to end user of Engineering Colleges and Polytechnic campuses using encryption protocols such as IPsec VPN, VPN Gateway over WIFI or any other connectivity suggested in proposed solution without any degradation of QoS, congestion, data loss, data breach, data limit, insecure access and DDoS Attacks.
- Secure WAN connectivity to be established with necessary security using URL Filtering, Application aware security, IPS, able to block malware, phishing, and non-compliance domain requests at DNS layer along

with Intelligent Proxy

- The network setup solution may be based on hybrid technology (LAN and Wi-Fi) or based on any other technology proposed in solution. In case of solution based on hybrid technology, both traffic (WIFI and LAN) from end to end user must be passed securely through same Access Switches, Core Switches, virtual Wireless Controller, Secure WAN Routers without any blocking and restriction.
- There will be 2 Smart Classrooms for each college in addition to the already existing Smart Classes. Smart-Boards are to be hardwired and the rooms must have a wi-fi access. In order to connect some network peripherals like laptop or any other device, there must be at least two LAN ports in each classroom and other staffrooms and associated offices within the Main Administrative Building.
- The access points inside the main building must be covered with a protective mesh that can withstand any manmade damages.
- The Workshop or any extension of Main Building Campus having classrooms and Computer Labs must be connected with OFC to ensure high-speed data transfer to support audio and video applications / content.
- The selected Bidder needs to perform Civil Works like Aluminum & Glass partitioning of server room, installation of 1.5 Ton Air Conditioner branded with 5-year warranty, Rack Earthing, customized bracket for all access points etc.
- The Bidder needs to install surveillance equipment like Camera and 8 Port Surveillance with NVR etc. for monitoring purpose.
- The Bidder needs to install all active components as per BoM at server side in coordination with the SDC team.
- The Network solution must be capable of handling security issues through Authentication (must have and support LDAP / Radius, AAA Authentication). The end to end encrypted secure content delivery must be ensured in deployed network infrastructures.
- Communication between switches should support 802.1ae encryption for switch-to-switch (inter-network device) and MKA-based key exchange protocol
- The Network Infrastructures in Network Designing must be capable of handling security issues in its core very efficiently. The Network Infrastructures used must be capable of handling about possible future cyber-attacks, vulnerabilities and threats in security of Network and services through patches and bugs removing in core and extensions and get informed in advance through issuing Security Bulletins time to time.
- Option in design using exclusive rings for each active device in fail-safe, high-availability configuration.
- Outline of the proposed solution under the following topics:
    a. Overview of the Proposed Solution
    b. Overall architecture
    c. Security architecture
    d. Scalability
    e. Redundancy
    f. Operations & Maintenance
    g. Training
    h. Quality assurance/process
    i. Any other additional requirement that the Bidder envisages is necessary for the success of the project.

Functional Requirements:

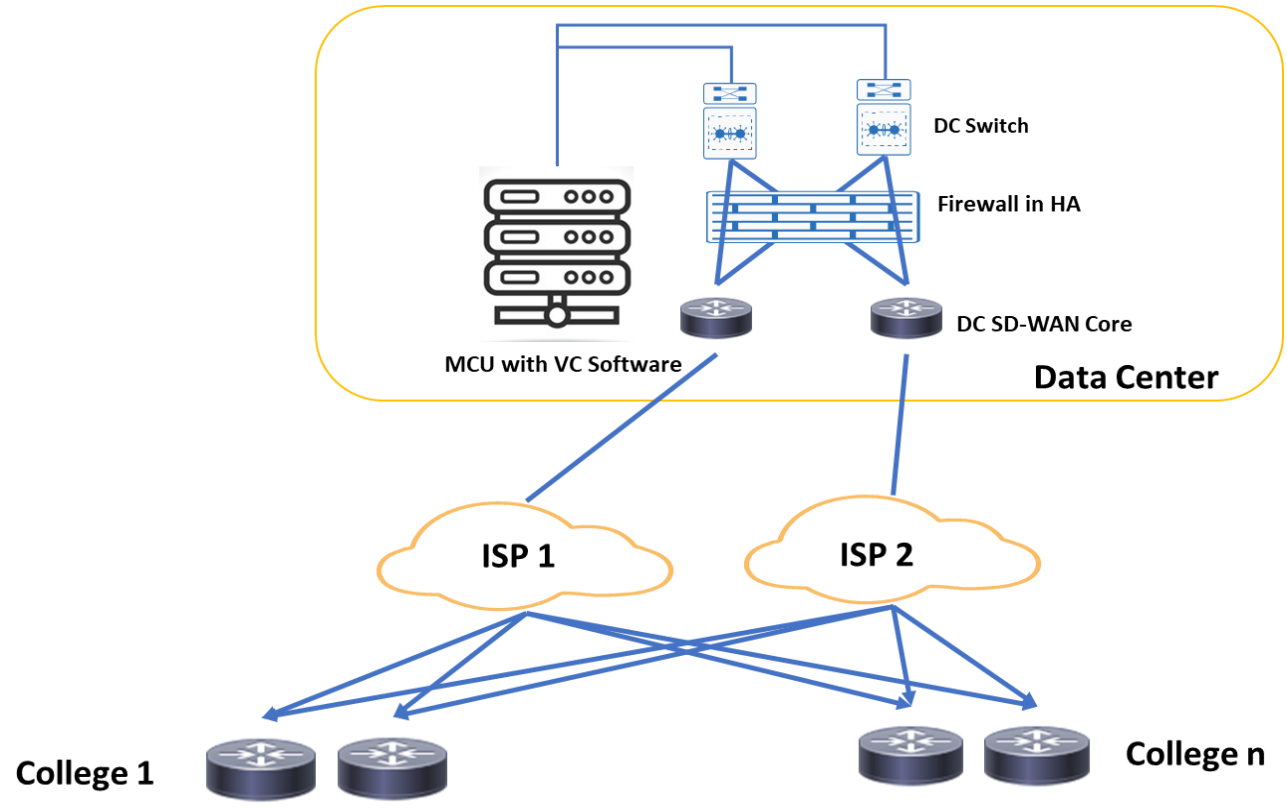
- Maximum use to be made of the components in the new network.
- Preparation of Detailed Network Plan & its approval from BSEDC or respective college authority.
- Plan extension of UPS power to all equipment in the new network.
- The Bidder will configure all Network equipment for meeting all functional requirements and central

manageability up to port level from Computer Centre cum server room through supplied NMS with core equipment.

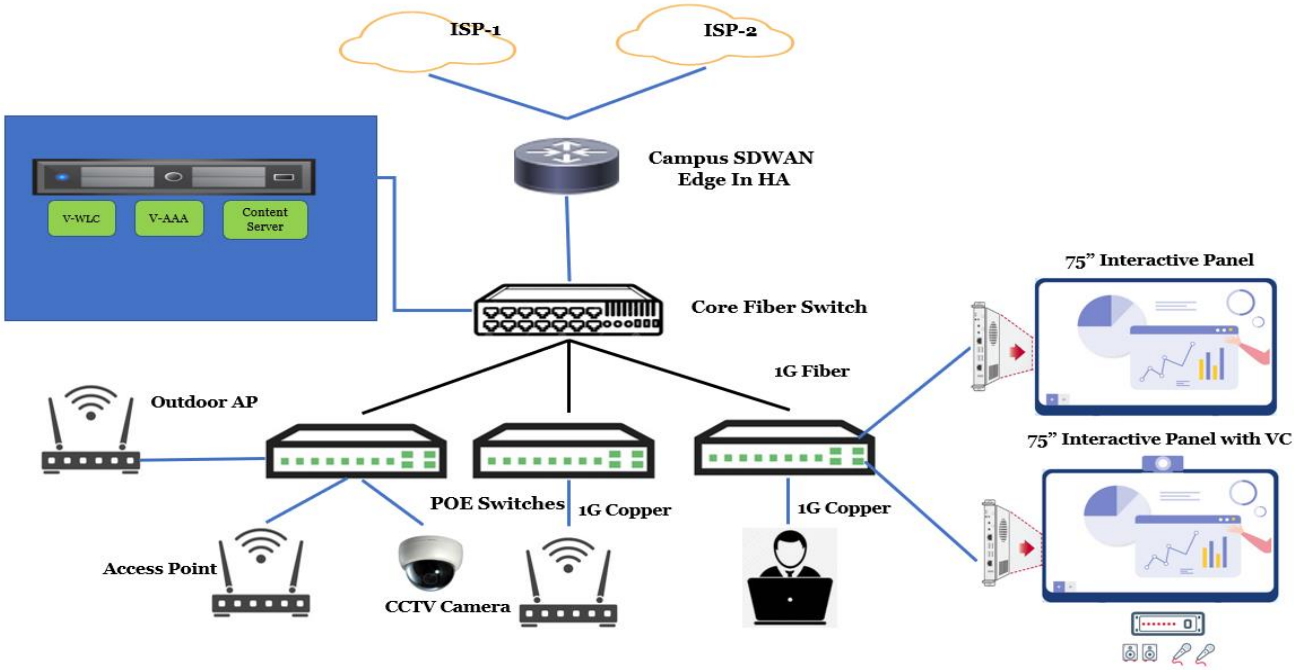
- The Bidder will provide onsite support, operation and maintenance for entire period of Warranty and Comprehensive Annual Maintenance Contract (CAMC) through his stationed Network Engineer/Network Administrator and resolve any day to day problems that may arise in the Network and catering end to end services.
- In campus, new Core equipment will be placed in the server room. Two core equipment will connect stack on a 10 Gbps uplink port. Necessary optics and patch chords /stack cables shall be provided by the supplier. One uplink port of all other equipment will connect to uplink ports of the core equipment at 1 Gbps on fiber.
- Prepare UPS Power extensions plan for all Network equipment and get the same approved from concerned personnel of respective colleges.
- Provide Fiber backbone cable from core equipment to each edge equipment.
- Install and configure all Active components for best performance of Network.
- Assign IP addresses & user-ids as desired by the respective colleges. All users (nodes) shall access the network in a secured manner using assigned user-ids & passwords.
- Submit all equipment configurations, password & testing reports to respective colleges/ DST/BSEDC.
- All servers, physical appliances, software and licenses required should be clearly mentioned in the solution document and included in the BoQ.
- New features, bug fixes, and enhancements need to be installed automatically and no manual intervention is advisable.

Proposed Core Network Architecture

- A state-of-the-art intelligent campus wide network architecture with high level of self-convergence, resiliency and availability.
- 2-tier switching network architecture with 10 Gbps backbone between Core and distribution layer and minimum 1 Gbps distribution and access layer.
- Secure 802.1AE based secure architecture across the layer
- A modular, scalable and SDN enabled architecture for enabling and supporting high speed connectivity within the campus on both wired and wireless.
- Architecture for deployment of IP based services such as voice, video, collaboration tools, CCTV surveillance, smart and safe campus application integration and other multimedia application across the Campus Network.
- Converge IT network to run the voice, video, collaboration tools, CCTV surveillance, smart & safe campus application integration and other multimedia application needs for the next ten years covering complete campus network.
- The Firewalls at SDC will be integrated with the solution to control the traffic from colleges and communicate between colleges. The VC MCU available at centralized location at SHQ will be integrated with the proposed VC Codec by the SI to conduct VC between colleges.

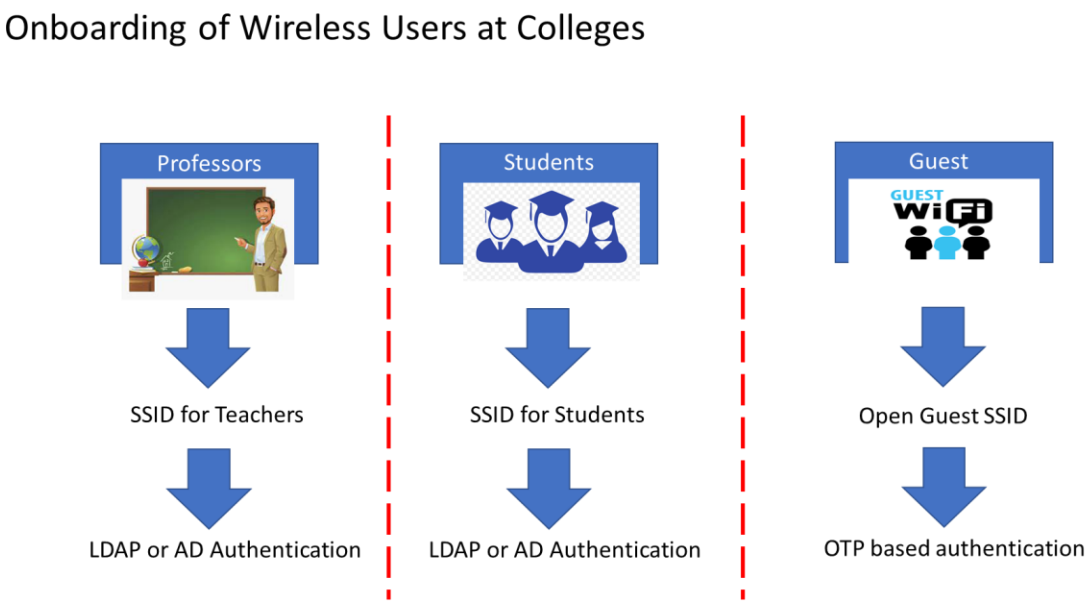


Network Architecture at Colleges



Proposed Wireless Architecture

- Consistency policy between Wired and Wireless users
- Segregate Professor, Staff, Student and Guest policies through stateful Layer 3-7 policies distributed roaming for Large Campus deployments with managed controllers.
- Indoor Access Point Quad Radio Architecture for wireless performance and efficiency for indoor AP - 4x4:4 with MU-MIMO and OFDMA with minimum 1G Ethernet for High Density Support.
- Outdoor Access Point Quad Radio Architecture for wireless performance and efficiency for indoor AP - 4x4:4 with MU-MIMO along with fiber link.
- Radio-Profiles for automated location specific deployment such as cafeteria, auditoriums and classrooms thus providing efficient Network Baselining
- Deep Packet Inspection for User, application, and device analytics and policy creation
- Deploy based device access control with built-in device profiling
- Self Service Page for Guest device enrolment using OTP. Less burden on admins
- Check associated and un-associated user data for influx of visitors during events



Management and Monitoring system

- Web based user interface (secured).
- Should support full configuration, fault and performance management.
- Ability to present graphical view of the network.
- Should support various privilege levels.
- Capability to view the network topology.
- The management and monitoring system should be able to manage all the active components, Wired and Wireless elements, of the network.
- The management and monitoring system should have the capabilities to support all the manageable elements in the existing Network irrespective of OEM.

4.5. Project Timelines

The project to be completed within the overall proposed timelines mentioned below:

S. No.	Milestone	Timeline (in weeks)
1.	Mobilization of resources and submission of Project Inception Report, System Study Report, detailed Project Management Plan and Exit Management Plan	T+2
2.	Preparation of detailed Technical Architecture of the Overall System in consultation with all the Stakeholders as well as site survey	T+8
3	**Supply & Installation -** Supply & Installation of all hardware & software in BoQ.	T+22
4.	**FAT and Go-Live -** Commissioning of all supplied hardware, software & Link from BSPs and Go Live of network solution after approval from BSEDC	T+30
5.	O&M Support - Post Go-Live Handholding & Maintenance Support as per Scope of Work	5 years post Go-Live support

 # T: Date of the Signing of Contract with successful Bidder

* Site survey report has to be approved by competent authority of college/sites.

* LLD for components to be installed at SDC has to be approved by BSEDC.

4.6. Payment Schedule

CAPEX Payment

The process of payment will be made on back-to-back basis and initiated only after receiving a satisfactory certificate by the Acceptance Committee to be formed for this purpose after completion of supply/execution of work. The mode of payments to be made on back-to-back basis in consideration of the work to be performed by the Bidder shall be as follows:

Payment Milestone		
#	**Milestone**	**Supporting documents & Acceptance Criteria**
1	40% of the total CAPEX cost of the delivered material – On completion of supply at warehouse in Patna. • Please refer "Clause – 12 - Supply of all Materials as per final BoM"	SI shall submit the invoice along with following documents- • Delivery challan/Courier receipt for the warehouse to be shared by the SI to BSEDC for verification. • Document clearly mapping list of all the materials with Make, Model, Serial number and Part code number for each College/Sites. • If applicable, for the material/s which need to be delivered directly at the site/s; prior approval communication copy of BSEDC along with delivery receipt signed by competent authority from college/Sites to be submitted. **Acceptance Criteria:** Payment would be made after successful completion of following activities by BSEDC/Consultant & upon issuance of inspection report by BSEDC (Inspection report will be issued basis the outcome of following activities): • Inspection of all materials in boxed condition to check the quantity • one quantity from each category of item as per BoQ will be checked in unboxed condition. • Serial number and part code will be checked on sample basis (10% of each line item as per BoQ supplied at the warehouse) • Submission of approval copy & delivery receipt of items delivered directly at sites.
2	30% of the total CAPEX cost for applicable sites and BoQ – On completion of Supply and installation • Please refer "Clause – 13 Supply of all Materials, Installation & Commissioning at sites	SI shall submit the invoice along with following documents- • Delivery challan signed by competent authority of college/sites. • Installation report • For passive components Bidder to provide self-declaration on the installed components with their quantity. BSEDC reserves the right to verify the same (before commencing of Go-Live) for 10 colleges on random basis. If any discrepancy found, payment may be deducted on pro-rata basis for all the colleges. This deduction will be beyond any capping/limitations/penalty mentioned in this RFP & will be deducted from subsequent outstanding payment of the SI. **Acceptance Criteria:** Payment would be made after successful completion of following

		activities by BSEDC/Consultant & upon verification of the delivery challan, installation report and self-declaration by the bidder for installation of passive components.
3	On completion of FAT and Go-Live of all locations (except site not ready and hold sites) **30% of the Capex Cost for applicable BoQ of the respective completed sites.**	SI shall submit the invoice along with following documents- • Link commissioning report (both the link) signed off by competent authority of colleges/sites • Report from centralized management server (availability, reachability, latency, sample helpdesk incident reports) • Link commissioning report (both the link) signed off by competent authority of colleges/sites **Acceptance Criteria:** Payment would be made after successful completion of following activities by BSEDC/Consultant & upon verification of- • Verification of link commissioning report (both the link) • Verification of reports from centralized management server • Site visits for physical check/functionality checks of the commissioned devices/software at sites • FAT report Go-Live certificate to be issued by BSEDC. For successful Go-Live, issuance of FAT and Acceptance certificate by the BSEDC is mandatory. Site wise asset register needs to be submitted along with SOP and other documents mentioned in the scope of work in the RFP.

If material is delivered at Patna warehouse or at colleges/sites and after Go-Live of the project, if any site (college) found to be not ready or installation and commissioning work is on hold due to reasons not solely attributable to SI (within T+30 weeks timeline for installation and commissioning); in such a scenario the SI can submit the invoice for 30% of the Capex value of the respective site. However, in such scenario if BSEDC requests the bidder to install and commission the colleges at later stage of the project, the bidder shall be bound to install and commission the devices and FAT for those sites should be completed within total 10 weeks of timeline from the date of request made by BSEDC for installation and commissioning. Upon issuance of the FAT certificate by BSEDC, the site/s will be declared operational and but the effective O&M for applicable sites (where FAT is completed) start date will be as per "start date of the next O&M QGR of the project".

Note:

- The BoQ quantity mentioned in the RFP is for the entire scope of work and duration mentioned in this RFP. However, in case of any additional / augmented requirement, the SI may submit additional requirement referring to the discovered rates and the same will be verified/surveyed by BSEDC/appointed Consultant and accordingly the request may be approved/accepted. Bidders are requested to do site visits to check the feasibility and to ensure achievement of the objective and scope of work of this RFP in entirety with their proposed solution, technical and financial proposal to execute the project.
- After implementation / installation of line items, payment will be done on actual basis based on the price discovered through this tender.
- The effective date of Go-live will be considered based on the FAT completion date based on the FAT certificate issued by BSEDC. For additional sites or for sites where the FAT could

not be completed due to reasons not solely attributable to SI, FAT for those site/s will be completed at later stage when implemented and commissioned, but the effective O&M start date will be as per "start date of the next O&M QGR of the project".

The invoices should be submitted as per the applicable milestone and for actual quantity of materials.

OPEX Payment

The OPEX payment will be done post Go-Live O&M phase for appliable sites where FAT is completed.

#	Activity/ Task	Deliverables	Payment Milestone
1	Deployment of Manpower	Timesheet (as per format agreed and approval by the nodal officer from BSEDC)	In equal QGRs, based on actual deployment from the date of Go Live
2	Extended Warranty and O&M Support of hardware starting from Go Live	Preventive maintenance report certified by college authorities. Support Report like reports from centralized management solution including helpdesk reports, availability reports, reports on latency, reachability of links, asset register etc. duly signed by Project Manager of the bidder. Extended warranty cost of hardware quoted for each year divided quarterly	In equal QGRs, based on the actual sites and quantity for which FAT is completed
3	Bandwidth cost for locations (82 No.s)**	Link reachability, bandwidth utilization report from the centralized management solution	Quarterly, based on the actual sites for which FAT is completed

Successful Bidder must submit all the required documents (availability, reachability reports, helpdesk reports, latency, reports from ISPs, 'manpower availability approved by authorized personnel from BSEDC' and preventive maintenance report approved/signed off by authorized personnel from colleges) with invoice for processing of payment. Successful Bidder needs to submit tax invoices in triplicate for processing of payment. All payments are subject to deductions of applicable penalty or any other deductions based on the clauses of the RFP.

Note:

- All payments are linked with SLA as mentioned in the Section-9

** Successful Bidder must submit all the required documents with invoice for processing of payment. Successful Bidder needs to submit tax invoices in triplicate for processing of payment. All payments are subject to punitive deductions as and when applicable. Application of correct taxes including GST for each and every product, service during the entire project is the sole responsibility of the Bidder. BSEDC will have no responsibilities on the applicability and authenticity of the taxes applied/claimed by the Bidder. BSEDC will process the invoices as per the tax information provided by the Bidder. Bidder to submit a PG of* ***10% of total Contract value valid for next 5 years 7 months*** *or 5 years from the date of Go-Live whichever is later.* ***Operations and Maintenance phase of the project will be started after Final Acceptance Test***

(FAT). SI will also be required to provide full time O&M support for 60 months from the date of Go-Live.

Payment to the BSPs : -

After the end of each QGR, Bandwidth Service Providers need to submit soft copy of invoices for each circuit ids (colleges) with detailed SLA documents/reports to System Integrator, who, post due validation, submit to BSEDC marking copy to the Consultant. Hard copies of the invoices to be submitted separately to the respective colleges. Payment of BSPs under the project will be done by the College Principal/ DST based on the recommendations and verification of SLA reports by BSEDC/ Consultant after deducting the penalty (if any) as per the agreement. If there will be any payment related issue, DST will serve as single point of contact to resolve the same.

5. Instructions to the Bidders

5.1 General Instructions

While every effort has been made to provide comprehensive and accurate background information and requirements and specifications, Bidders are free to assess and propose the solution needed to meet the requirements and project objective. All information supplied by Bidders may be treated as contractually binding on the Bidders, on successful award of the assignment by the BSEDC on the basis of this RFP.

No commitment of any kind, contractual or otherwise shall exist unless and until a formal written contract has been executed by or on behalf of the BSEDC. Any notification of preferred Bidder status by the BSEDC shall not give rise to any enforceable rights by the Bidder. The BSEDC may cancel this public procurement at any time prior to a formal written contract being executed by or on behalf of the BSEDC without giving any reason.

This RFP supersedes and replaces any previous public documentation & communications, and Bidders should place no reliance on such communications.

5.2 e-Procurement 2.0 PROCESS related instructions.

- Submission of Proposals (Through electronic mode only)

1. The Bidder shall submit his bid/tender on e-Procurement 2.0 platform at https://eproc2.bihar.gov.in.
2. The Bidder must have the Class II/III Digital Signature Certificate (DSC) and e-Tendering User-id of the e-Procurement website before participating in the e-tendering process. The Bidder may use their DSC if they already have the DSC. They can also take DSC from any of the authorized agencies. For user-id they have to get registered themselves on e-procurement website https://eproc2.bihar.gov.in and submit their bids online on the same. Offline bids shall not be entertained by the Tender Inviting Authority for the tenders published in e-Procurement 2.0 platform.
3. The Bidders shall submit their eligibility and qualification details, Technical bid, Financial bid etc., in the online standard formats given in e-Procurement 2.0 website. The Bidders shall upload the scanned copies of all the relevant certificates, documents etc., in support of their eligibility criteria / technical bids and other certificate /documents in the e-Procurement 2.0 web site. The Bidder shall digitally sign on the supporting statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity. The Bidder shall attach all the required documents for the specific tender after uploading the same during the bid submission as per the tender notice and bid document.
4. All the required documents should be attached at the proper place as mentioned in the e-forms otherwise the tender of the Bidder will be rejected.
5. Tender Processing Fee (TPF)to be paid through **e-Payment** mode (i.e. NEFT / RTGS, Net Banking, Credit / Debit Card) only.
6. Cost of BOQ/ Form Fee to be paid through **e-Payment** mode (i.e. NEFT / RTGS, Net Banking, Credit / Debit Card) only.
7. “Earnest Money Deposit (EMD) can be paid either through online mode or manual mode (BG). In case of manual mode of payment of EMD, the original hardcopy of the EMD i.e. BG that should be submitted in the tendering authority office within the next working day after tender closing date.”

   Note: "Bids along with necessary online payments must be submitted through e-Procurement portal https://eproc2.bihar.gov.in before the date and time specified in the NIT/RFP. The

department/Tendering Authority doesn't take any responsibility for the delay / Non-Submission of Tender / Non Reconciliation of online Payment caused due to Non-availability of Internet Connection, Network Traffic / Holidays or any other reason."

8. The tender opening will be done online only.
9. Any corrigendum or date extension notice will be given on the e-Procurement website only.
10. For support related to e-tendering process, Bidders may contact at mentioned below:

Toll Free No. 1800 572 6571,
Email Id: - eproc2support@bihar.gov.in

Note: "Bids along with necessary online payments must be submitted through e-Procurement portal https://eproc2.bihar.gov.in before the date and time specified in the NIT/RFP. The department/Tendering Authority doesn't take any responsibility for the delay / Non Submission of Tender / Non Reconciliation of online Payment caused due to Non-availability of Internet Connection, Network Traffic / Holidays or any other reason."

5.3 Bid Documents

Bidder is expected to examine all instructions, forms, terms, and requirements in the bid document. Failure to furnish all information required by the bid document or submit a Bid not substantially responsive to the bid document in every respect may result in the rejection of the Bid. The bids should be submitted in three parts as mentioned hereunder on or before last date and time of submission mentioned in this RFP or through any corrigendum.

- Pre-qualification bid as per eligibility criteria specified
- Technical Bid
- Cost Bid

Bidders should enclose with their offer's full details of all the equipment and services offered as well as their latest equipment and services available with full documentation and descriptive literature supplementing the description and point out any special feature of the equipment and services. All documentation is required to be in English.

5.3. Completeness of Response

I. Bidders are advised to study all instructions, forms, terms, requirements and other information in the RFP documents carefully. Submission of the bid shall be deemed to have been done after careful study and examination of the RFP document with full understanding of its implications.

II. Failure to comply with the requirements of this paragraph may render the Proposal non-compliant and the Proposal may be rejected. Bidders must:

(A) Include all documentation specified in this RFP;
(B) Follow the format of this RFP and respond to each element in the order as set out in this RFP
(C) Comply with all requirements as set out within this RFP.

5.4. Pre-bid Conference (PBC) & Clarifications

BSEDC shall hold a pre-bid meeting with the prospective Bidders on the mentioned date through VC and the link will be provided to the Bidder later. The Bidders will have to ensure that their queries for Pre-Bid meeting should reach to the Nodal officer as per the schedule of bids by email only in editable excel format.
The responses will be transmitted to the prospective Bidders through appropriate means. However, it will be Bidder's responsibility that they collect all responses. Non-attendance at the Pre-Bid Conference will not be a cause for disqualification of a Bidder. The queries should necessarily be submitted in the following format in editable excels.
For each Bidder, maximum of 2 representatives are allowed. The representatives should be employees of the Bidding Company.

S. No.	RFP Document Reference(s)	Section & Page Number(s)	Content of RFP requiring Clarification(s)	Points of clarification
1.				
2.				
3.				
4.				

BSEDC shall not be responsible for ensuring that the Bidders' queries have been received and / or addressed by them. Any requests for clarifications after the indicated date and time may not be entertained by the BSEDC

5.4.1. Responses to Pre-Bid Queries and Issue of Corrigendum:

Tenderer reserves the right not to respond to any/all queries raised or clarifications sought if, in their opinion and at their sole discretion, they consider that it would be inappropriate to do so or do not find any merit in it. The corrigendum shall be uploaded on the website www.beltron.in and www.eproc.bihar.gov.in.
BSEDC will endeavor to provide timely response to all queries. However, BSEDC makes no representation or warranty as to the completeness or accuracy of any response; nor does BSEDC undertake to answer all the queries that have been posed by the Bidders.
At any time prior to the last date for receipt of bids, BSEDC may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the RFP Document through a corrigendum. The Corrigendum (if any) & clarifications to the queries from all Bidders will be posted on the website https://eproc2.bihar.gov.in .
Any such corrigendum shall be deemed to be incorporated into this RFP. In order to provide prospective Bidders reasonable time for taking the corrigendum into account, BSEDC may, at its discretion, may extend the last date for the receipt of Proposals.

5.4.2. Bid security i.e. Earnest Money Deposit (EMD)

a. Bidders shall submit, along with their Bids, EMD of INR 15,000,000/- (One Crore Fifty Lakhs only), in the form of a Bank Guarantee (in the format specified in Annexure X issued by any nationalized/scheduled commercial bank in favor "Bihar State Electronics Development Corporation Ltd', payable at Patna and should be valid for 6 months from the date of submission of technical bid response. No interest shall be payable on Bid Security under any circumstance. Bidders can also make the EMD payment through the online at eproc site.
b. EMD of all unsuccessful Bidders would be refunded by BSEDC within sixty (60) days of the Bidder being notified as being unsuccessful. The EMD, for the amount mentioned above, of

successful Bidder would be returned upon submission of Performance Bank Guarantee as per the format provided in Annexure IX.

c. The successful Bidder's Bid security shall be discharged upon the Bidder signing the Agreement.
d. The EMD amount is interest free and will be refundable to the unsuccessful Bidders without any accrued interest on it.
e. The bid / proposal submitted without EMD, mentioned above, will be summarily rejected.
f. The EMD may be forfeited:
   i. If a Bidder withdraws its bid during the period of bid validity.
   ii. In case of a successful Bidder, if the Bidder fails to sign the contract in accordance with this RFP.

5.5. RFP Document Fees

a) RFP document can be purchased from the office of BSEDC by paying a non-refundable bank amount of INR 10,000/- (INR Ten thousand) (excluding taxes) online.
b) The Bidder may also download the RFP documents from the website https://eproc2.bihar.gov.in. In such case, RFP document fees should be paid online through e-payment mode i.e. NEFT/RTGS/ Credit Card/ Debit Card on https://eproc2.bihar.gov.in . Proposals received without or with inadequate RFP Document fees shall be rejected.

5.6. Cost of Bidding

The Bidder shall bear all costs associated with the preparation and submission of its Bid and The BSEDC shall in no event be held responsible or liable for these costs, regardless of the conduct or outcome of the bidding process

5.7. Right to Terminate the Process

(a) BSEDC may terminate the RFP process at any time and without assigning any reason. BSEDC makes no commitments, express or implied, that this process will result in a business transaction with anyone.
(b) This RFP does not constitute an offer by BSEDC. The Bidder's participation in this process may result BSEDC selecting the Bidder to engage towards execution of the contract.

5.8. Authentication of Bids

The Proposal should be accompanied by a board resolution/power-of-attorney in the name of the signatory of the Proposal.

5.9. Site Visit

It is the responsibility of the Bidder to visit the proposed sites at their own cost and assessing the feasibility and requirement of BoQ before submitting their technical solution and offer to get a clear idea about the work and preparation of requirement across the sites. BSEDC will facilitate Bidders to get access to the sites upon prior intimation.

5.10.Bid Validity

All bids should remain valid for a period of 180 days (i.e. 6 months) from the Last date (deadline) for submission of bids and BSEDC reserves the right to reject a bid valid shorter than 6 months considering as non-responsive without any correspondence.

In special circumstances, BSEDC may solicit extension of the period of validity from a Bidder. The request and the response thereto shall be made in writing. Extension of validity period by the Bidder shall be unconditional. The EMD provided shall also be sufficiently extended. Bidder granting extension of validity will not be permitted to modify its technical or financial bid.

5.11. Language

The Proposal should be filled by the Bidder in English language only. If any supporting documents submitted are in any language other than English, translation of the same in English language is to be duly attested by the Bidders

5.12. Handwritten documents, Erasures or Alterations

The offers containing erasures or alterations will not be considered. There should be no hand-written material, corrections or alterations in the offer. Filling up of the information using terms such as “OK”, “noted”, “as given in brochure/manual” is not acceptable and may lead to the dis-qualification of the Bid.

5.13. Fraud and corruption

BSEDC require that Bidder must observe the highest standards of ethics during the entire process of tendering and during execution of the contract. In pursuance of this policy, The BSEDC define, for the purpose of this provision, the terms set forth as follows:

(a) “Corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of the Department in contract executions.

(b) "Fraudulent practice" means a misrepresentation of facts, in order to influence a procurement process or the execution of a contract, to Department, and includes collusive practice among Bidders (prior to or after Proposal submission) designed to establish Proposal prices at artificially high or non-competitive levels and to deprive The BSEDC of the benefits of free and open competition.

(c) “Unfair trade practices” means supply of services different from what is ordered on or change in the Scope of Work which is given by the BSEDC in this Tender.

(d) “Coercive Practices” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the execution of contract.

The BSEDC shall reject the Bid proposal for award of contract, if it determines that the Bidder recommended for award, has been found to have been engaged in corrupt, fraudulent of unfair trade practices. Once the contract is signed and if it is noticed that the SI has indulged into the Corrupt / Fraudulent / Unfair / Coercive practices, it will be a sufficient ground for The BSEDC for termination of the contract and initiate blacklisting of the Bidder.

5.14. Tender Opening

The Proposals submitted before the last date and time of submission will be opened as per the schedule of bid process mentioned in the data sheet of this RFP or notified by a corrigendum through the e-proc site.

5.15. Rejection criteria

Besides other conditions and terms highlighted in the Tender Document, bids may be rejected under following circumstances:

5.15.1. General rejection criteria

i Conditional Bids;

ii If the information provided by the Bidder is found to be incorrect / misleading / fraudulent at any stage / time during the Tendering Process;

iii Any effort on the part of a Bidder to influence the bid evaluation, bid comparison or contract award decisions;
iv Bids without signature of person (s) duly authorized on required pages of the bid;
v Bids without power of attorney/ board resolution.

5.15.2. Pre-Qualification rejection criteria

i Bidders not complying with the Eligibility Criteria given in this Tender
ii Failure to furnish all information required by the Tender Document or submission of a bid not substantially responsive or clarification sought by BSEDC is not adequately addressed and complied by the Bidder;

5.15.3. Technical rejection criteria

i Technical Bid containing commercial details;
ii Revelation of Prices in any form or by any reason before opening the Commercial Bid;
iii Failure to furnish all information required by the Tender Document or submission of a bid not substantially responsive to the Tender Document in every respect;
iv Bidders not quoting for the complete scope of Work as indicated in the Tender Documents, addendum (if any) and any subsequent information given to the Bidder;
v Bidders not complying with the Technical and General Terms and conditions as stated in the Tender Documents;
vi The Bidder not confirming unconditional acceptance of full responsibility of providing services in accordance with the Scope of work and Service Level Agreements of this tender
vii Each Bidder should offer/ quote single make and models against each item. Bidder quoting multiple make and models in their technical bid will lead to rejection at the discretion of BSEDC.
viii Bidder along with all OEMs should disclose all the information (during bid submission) required for evaluation of the submitted bids. In case of Bidders or OEMs not disclosing the required information and found at a later stage may lead to rejection of the bid/product/OEM at the discretion of BSEDC.

5.15.4. Commercial Rejection Criteria

i Incomplete Price Bid;
ii Price Bids that do not conform to the Tender's price bid format;
iii If there is an arithmetic discrepancy in the commercial Bid calculations the Technical Committee shall rectify the same. If the Bidder does not accept the correction of the errors, its bid may be rejected.
iv Bidder exceeding the CAPEX cost >60% of the 'total quoted value excluding the total cost of bandwidth in their price bid'

5.16. Licensing

The Implementing Agency will follow the following licensing conditions:

i The SI shall procure the licenses of the third-party software in accordance with its procedures by payment of applicable license fees on behalf of Department of Science & Technology, Government of Bihar. The licenses thus procured would be in the name of Department of Science & Technology, Government of Bihar. The SI shall ensure that third party vendors provide standards-based customer interface and also takes into account other factors like regular updates and support etc.

ii The SI should provide adequate licenses for all the modules mentioned in the scope so that all users can access their respective functionalities as per their role without any constraints.
iii All licenses should be either supported by OEMs/subscription providers for entire contract period.
iv All the aforesaid products should have a roadmap for updates and patch management either from OEM or Subscription provider and providing the same would be the responsibility of the SI for the contract period.

5.17. Clarifications

If deemed necessary, BSEDC may seek clarifications on any aspect from the Bidder. However, that would not entitle the Bidder to change or cause any change in the substance of the tender submitted or price quoted. BSEDC may, if so desire, ask the Bidder to give a presentation for the purpose of clarification of the tender. All expenses for this purpose, as also for the preparation of documents and other meetings, will be borne by the Bidders.

5.18. Preliminary Examination

BSEDC will examine the bids to determine whether they are complete, whether required bid security has been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
Bids from agents without proper authorization from the manufacturer shall be treated as non-responsive.
A bid determined as not substantially responsive will be rejected by BSEDC and may not subsequently be made responsive by the Bidder by correction of the non-conformity.
BSEDC may, if necessary, waive any minor informality or non-conformity or irregularity in a bid, which does not constitute a material deviation, provided such a waiver does not prejudice or affect the relative ranking of any Bidder

5.19. Joint Venture, Consortium or Association

Consortium or associations of companies is not allowed.

5.20. Concessions permissible under statutes

Bidder, while quoting against this tender, must take cognizance of all concessions permissible, if any, under the statutes and ensure the same is passed on to the BSEDC, failing which it will have to bear extra cost. In case Bidder does not avail concessional rates of levies like customs duty, excise duty, sales tax, etc. The BSEDC will not take responsibility towards this. However, The BSEDC may provide necessary assistance, wherever possible, in this regard.

5.21. Inspections and Tests/POC

- As per the necessity BSEDC shall have the right to inspect and test the solution to confirm their conformity to the Technical specifications, in which the bidder will have to provide necessary support.
- Conducting Inspection//Tests/POC is solely on BSEDC's discretion.

6. Criteria for Evaluation

I The overall objective of this evaluation process is to select the capable and qualified firm to Supply, Installation, Testing, Commissioning & management of Electronic Knowledge Network (100 Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar. First the Pre-Qualification Proposal will be evaluated and only those Bidders who qualify the requirements will be eligible for next set of evaluations. Technical Proposal and Commercial Proposal of Bidders who do not meet the Pre-Qualification criteria will not be considered.

II The technical score of all the Bidders would be calculated as per the criteria mentioned above. All the Bidders who will achieve **75** or more marks in the technical evaluation would be eligible for the next stage, i.e. Financial Bid opening.

III Proposals of Companies would be evaluated as per Technical Evaluation Criteria. Bidders should clearly indicate, giving explicit supporting documentary evidence, with respect to the below, in absence of which their proposals will be rejected summarily at the qualification stage itself.

6.1. Pre-qualification / Eligibility criteria:

The Bidder must meet the following pre-qualification requirements to become eligible for the Technical & Commercial Evaluation.

Sr. No.	Qualification Criteria	Documents/Information to be provided in the submitted proposal
1.	The responding firm/agency (a) Should have made a payment of INR. 10000 (Rupees Ten Thousand) (non-refundable) for the Tender Fee (b) Should have submitted EMD of INR. 1,50,00,000 (Rupees One Crore Fifty Lakhs only)	(a) Cost of tender document must be submitted through E-payment only; else bid will be summarily rejected. (b) EMD should be in favor of "Bihar State Electronics Development Corporation Ltd' Payable at Patna and issued by any nationalized/scheduled commercial bank in the form of an original bank guarantee. Bidders can also deposit the EMD through online payment in state e-procurement site.
2.	Legal Entity • The Company should be in the IT/ITES/Telecom business for at least last 5 (five) years as of 31st March 2021 and should be registered under Companies Act, 1956	a) Copy of Certificate of Incorporation b) Copy of Registration Certificate Copy of all documents listed above should be attested by authorized signatory and must be submitted along with the response
	• Registered with the Income Tax and GST	Copy of all documents listed below should be attested by authorized signatory and must be submitted along with the response a) Copy of PAN Card

		b) Copy of GST Certification
3.	The Net Worth of the Bidder must be positive for each of the last 3 audited financial years i.e., 2018-19, 2019-20, and 2020-2021	Separate Chartered Accountant Certificate for positive Net worth of the Bidder
4.	The Bidder must not be blacklisted by any Government/Public Sector organization /department in India at the time of submission of the response to this RFP	A declaration as per the format prescribed in Form - "Declaration that the Bidder has not been blacklisted" to be given by the authorized signatory of the Bidder – Annexure – VIII
5.	Bidder's average annual turnover must be INR 250 Crores or above for last three financial years	A certificate with extracts from the filed BS & PL with annual turnover for last three financial years, signed by Chartered Accountant/Statutory Auditor to be submitted by the Bidder. Copy of filed BS and PL for respective years should also be submitted by the Bidder.
6.	The Bidder must have successfully completed/ running projects which comprises the establishment of network connectivity for a Central / State Government Organization / Public Sector Unit (PSU) in India, during the last 5 years (as on 31.03.2021), amongst which the following value specified has to be included in the criteria mentioned herein: 1. One project of value not less than INR 60 crores including taxes OR 2. Two projects of value not less than INR 30 crores including taxes each OR 3. Four projects of value not less than INR 15 crores including taxes each.	Ref Annexure VI: - "Project Citation Format" supported with Work order or Purchase Order (PO) or 'Letter of Intent (LoI) with extract from signed contract showcasing the project value and scope of work' for each project along with completion certificate (if the project is completed) or Go-Live certificate (if the project is still running). Project which has not gone live will not be considered. Project completion/Client satisfactory certificates must be signed by the authorized official from client mentioning the scope of work and project value. BSEDC may check the authenticity of the documents provided by the Bidder.
7	The Bidder should be ISO 9001:2015 & ISO 20000 certified.	Copy of certification which is valid on date of submission.
8	The Bidder must have at least 50 IT professionals (B.E/B.Tech/MCA) on its payroll as on bid submission date	Certificate from HR Department for number of technically qualified professionals employed by the company
9	The Bidder should have direct authorization from the Original Equipment	Refer: Annexure XIII: - "Manufacturers'/Producers' Authorization

	Manufacturer (OEM) for selling and supporting the equipment offered	Form" for the MAF and complete the associated table provided with the form.
10	Bidder should have registered office in Bihar. Alternatively, if the Bidder doesn't have an office in Bihar, then they have to furnish an undertaking that an office would be established in Bihar, within 1 (one) month of signing the contract, to provide warranty and post warranty services.	A self-certified declaration by the authorized signatory of the Bidder should be submitted along with the proposal.
11	Authorized signing authority	Refer Annexure-XI- Separate "Copy of Board resolution" or POA for the Bidder authorizing the person to sign on behalf of the company or Power of Attorney for the designated person to be provided as per the format prescribed in Form "Bidder's Authorization Certificate". (Must be on a Non-Judicial INR 100/- Stamp Paper or higher)"
12	a) The Bidder has to provide a consent on affidavit (in non-judicial stamp paper) related to the MoU signed with BSPs at the time of bid submission b) Land Border Clause-: Bidder shall ensure compliance to the Office Memorandum for insertion of Rule 144 (xi) in the General Finance Rules (GFR)-2017 bearing reference number F.No. 6/18/2019-PPD dated 23 July 2020 including amendments thereon, by the Public Procurement Division, Department of Expenditure, Ministry of Finance. Non- compliant bid(s) will be summarily rejected.	a) Consent on affidavit (in non-judicial stamp paper) related to the MoU signed with BSPs b) Self-declaration as per the clauses mentioned in Land Border Clause.

- Consortium or associations of companies is not allowed.
- After selection of eligible Bidder there will be two separate agreements (3 party or 4 party between BSEDC, BSP & DST or BSEDC, BSP, SI & DST as required) with the BSPs.

Eligibility Criteria for OEM

Sr. No.	Qualification Criteria	Documents/Information to be provided in the submitted proposal

1	OEM should be Quality Management System ISO 9001:2015 certified.	Copy of certificate which is valid on date of submission.
2	Tender Specific Authorization Certificate from Manufacturer/Authorized Dealer should be submitted for all products to be supplied otherwise the bid may be rejected.	Copy of the of the authorization certificates as per Annexure-XIII of this document
3	The Country of origin of the OEM should not have strained trade relation with India. Else OEM should be registered under competent authority in India.	A self-certified declaration by the authorized signatory of the OEM. Copy of the valid registration certificate by the competent authority in India.
4	Should have existence in India for more than 5 years in India	Certificate of incorporation
5	OEM must not be blacklisted or banned by any State/Central Government, Semi-Government or PSU and any other GOVT. organization in India	A declaration as per Annexure – VIII to be given by the authorized signatory of the OEM
6	OEM for networking solutions should have at least 50 employees on its payroll in India. This is required to understand that the OEM has made investment in India and is serious about its business in India which will ensure long term after sales support and spare support from the OEM.	Certificate from HR Department for number of technically qualified professionals employed by the company.
7	All systems and components must be in compliance with UL/EN/BIS certifications	Copy of the UL/EN/BIS certificates which is valid on date of submission.

Note:

- Self-certificate from OEMs needs to be submitted for above clauses wherever applicable which may be cross verified. BSEDC may ask for more details or documentary evidence to cross verify the self-certificates. In absence of any of the above, the bid will be treated as non-responsive and may be summarily rejected.
-

Eligibility Criteria for Bandwidth Service Providers (BSP)

Sl. No.	Criteria	Documents Required
1.	The BSP should be a Registered Company in India under the Companies Act, 1956 or 2013.	Certificate of incorporation
2.	The BSP should either be a Layer 3 MPLS VPN Service Provider under the License of Government of India or a	Submit attested copy of the appropriate license.

Sl. No.	Criteria	Documents Required
	National Long Distance (NLD) / Basic Service Operator or Unified License (UL) having own MPLS VPN network.	
3.	The BSP should have capacity to provide NLD/MPLS VPN services and should have valid Telecom License for a period of at least 3 years	Submit attested copy of the appropriate license or work order / agreement showing experience in providing MPLS VPN services to the customer
4.	The BSP should have the following experience: ➢ 100+ operational MPLS PoPs across India on its own fiber network. ➢ The Carrier should have its own STM 16 or 10 Gbps level bandwidth at the core and DS3 or 100 Mbps /STM1 or 1 Gbps level bandwidth at access network. ➢ Its own fiber based backbone network of more than 100,000 Km. ➢ BSP should have been operating in Bihar having more than 5000 km fiber infrastructure layout across the state	Self-declaration certificate by authorized signatory on company letter should be submitted with contact details.
5.	The BSP should have it's own Centralized NOC 24x7x365 support and backed by redundant NOC in different seismic zone.	Self-declaration certificate by statutory auditor or company secretary should be submitted
6.	The BSP must have MSCP / Tier 1 / ISO 27001 / TL 9000 certification.	Submit attested copy of the appropriate license.
7.	The BSP should have executed 1 order for commissioning of MPLS network for any organization connecting a minimum of 100 locations.	Work Order / agreement of successful commissioning/e-mail confirmation with references list with contact details.
8.	The BSP should not have been blacklisted by any State Govt. Central Govt./ PSU and its agencies. The BSP shall not be under a declaration of ineligibility for corrupt or fraudulent practices.	Self-declaration certificate by authorized signatory should be submitted
9.	The responding firm should hold Copy of Valid License following valid licenses to operate (any of the following): • Class 'A' ISP license • National Long-Distance License • Unified Access License or UL (Unified License) The license should be valid for at least 5 years from the date of Bidding	Submit attested copy of the appropriate license.
10.	The BSP should have minimum 100 fiber PoPs in Bihar.	A Self Certified letter with addresses of own Optical Fiber Network with PoPs to be

Sl. No.	Criteria	Documents Required
		submitted

- SI has to sign MoU with BSPs before submission of bid document and necessary supporting documents need to be furnished by the SI at the time of bidding
- Note:- Self-certificate from BSPs need to be submitted as mentioned in the above table which will be cross verified. BSEDC may ask for more details or documentary evidence to cross verify the self-certificates. In absence of any of the above, the bid will be treated as non-responsive and may be summarily rejected.

7. Qualifying Criteria for Technical Bid

Prior to the detailed evaluation of the Technical Bids, BSEDC shall determine whether each bid is (a) complete, (b) is accompanied by the required information and documents and (c) is substantially responsive to the requirements set forth in the RFP documents.

BSEDC has formed a Technical Committee, which will evaluate both technical & commercial bids received in response to this RFP. The findings of the said Committee and subsequent decision of State Government shall be final and binding on all the Bidders. Only those Bidders, who fulfill all the criteria / requirements mentioned in the bid, shall be eligible and qualified for technical scrutiny as per the Evaluation Framework given below.

BSEDC may in its sole discretion, waive any informality or non-conformity or irregularity in a Bid Document, which does not constitute a material deviation, provided such a waiver does not prejudice or affect the relative ranking of any Bidder.

7.1. Technical Evaluation Criteria

A detailed evaluation of the bids shall be carried out in order to determine whether the Bidders are competent enough and whether the technical aspects are substantially responsive to the requirements set forth in the RFP. Bids received would be assigned scores based on the parameters defined in table below.

#	Technical Evaluation Criteria	Description	Max Marks
A	**Past Experience of the Bidder**		**75**
A1	Average Annual Turnover in last three financial years (i.e. 2018-19, 2019-20, and 2020-2021)	=250 Cr to <= 275 Cr = 12 Marks > 275 Cr to <= 300 Cr = 14 Marks > 300 Cr to <= 325 Cr = 16 Marks > 325 Cr = 20 marks	20
A2	Project Experience	Experience of Bidder in establishment of network connectivity for a Central / State Government Organization / Public Sector Unit (PSU) in India, during the last 5 years (as on 31.03.2021), amongst which the following value specified has to be included in the criteria mentioned herein:	20

		Minimum 1 project with order value >= 60 Cr including taxes or 2 orders value not less than 30 Cr including taxes each or 4 orders value not less than 15 Cr including taxes each = 10 Marks including taxes Each additional 1 project having order value of Rs. 15 Cr including taxes and above will get 2.5 marks up to Max 10 Marks.	
A3	Project Experience	Experience in Setting Up Campus Network with minimum 100 active network nodes in each project in the last five financial years (Value of one project – Rs 15 Cr including taxes or more) i. One Project - 12 Marks ii. Two Projects - 15 Marks iii. Three Projects or more – 20 Marks	20
A4	ISO certification (valid as on bid submission date)	● ISO 9001 = (1 mark) ● ISO 20000(latest) = (2 mark) ● ISO 27001 = (2 marks)	5
A5	Overall regular staff strength with experience as on 31.03.2021 on firm's payroll.	● =50 to < 100 employees = 3 Marks ● >100 to <= 200 employees = 4 Marks ● >200 employees = 5 Marks	5
A6	Presence in Bihar	● Only have GST Registration in Bihar- 3 marks. ● Involved in a running Govt. project in Bihar - 4 marks ● Involved in a running Govt. project in Bihar and also have an office and GST Registration in Bihar – 5 marks	5
B	**Approach & Methodology and Technical Presentation/ Demonstration**		**25**
B1	Overall Approach & Methodology	To be evaluated from the technical proposal documentation and technical presentation to BSEDC. BSEDC shall evaluate the Approach and Methodology for the Implementation & Post-Implementation comprehensive warranty support proposed by Bidder and evaluate the same on the following parameters: ▪ Completeness of the A&M to meet the requirements of the RFP – 2.5	10

		marks ▪ Any unique project implementation strategy (i.es) proposed, which can impact projects outcomes in positive manner- 2.5 marks ▪ Risk's identification and proposed mitigation plan- 2,5 marks ▪ O&M plan-2.5 marks	
B2	Presentation of the proposed solution	The eligible Bidders as per pre-qualification criteria will be asked to give a demonstration on the proposed solutions. The Proof of Concept should depict how the technical solutions using Internet router-based solution and the fibre based high speed LAN & Wi-Fi facility system will fulfil the objective of the project. The Bidder's technical proposal would be evaluated on the basis of the documents submitted along with this presentation on the following aspects ▪ Understanding of the Scope of Work – 3 Marks ▪ A&M to meet the requirements of the RFP – 3 marks ▪ Any unique project implementation strategy (ies) proposed, which can impact projects outcomes in positive manner- 3 marks ▪ Risk's identification and proposed mitigation plan- 3 marks ▪ O&M plan-3 marks	15

Note: - The technical score of all the Bidders would be calculated as per the criteria mentioned above. All the Bidders who will achieve **75** or more marks in the technical evaluation would be eligible for the next stage, i.e. Financial Bid Evaluation.

7.2. Commercial Bid Evaluation

Commercial Bid of only those Bidders who obtain minimum 75% in the overall technical score shall be opened. Bidder quoting the lowest price (L1) will be declared as the successful Bidder. The lowest evaluated bid price will be the total of lowest quoted CAPEX & OPEX cost inclusive of applicable taxes.
In the event that there are 2 or more Bidders have offered the same lowest Evaluated Bid Price, the Bidder securing the highest technical score will be adjudicated as the "Best responsive bid" for award of the Project. The successful Bidder would be awarded the letter of Intent followed by Work Order (s).

In case more than one Bidder have offered the same lowest Evaluated Bid Price and they have the same technical score, BSEDC will determine the Successful Bidder out of such Bidders in a manner as considered appropriate by BSEDC and his decision in this regard shall be final and binding on all Bidders. In the above process, if there are only two eligible Bidders scoring qualifying marks, BSEDC reserves the right to go ahead with Commercial Bid evaluation with those two Bidders only.

In financial bid evaluation if L1 Bidder does not agree or found incapable to take order then subsequently L2 and L3 will be given chance to execute the order provided they matches the L1 Bidders price. Any figures (price) if left blank by the Bidder in Financial e-form will be taken '0' (zero) by BSEDC.

7.3. Conditional offers by the Vendors

The vendor should abide by all terms and conditions specified in the RFP Document. Conditional offers shall be liable for dis-qualification.

7.4. Late Tender offers

Any tender offer received by BSEDC after the deadline for submission of tender offer prescribed by BSEDC, will be summarily rejected.

7.5. Offer validity Period

Proposals shall be valid for a period of 180 days (one hundred and eighty days) from the last date (deadline) for submission of bids. A Proposal valid for shorter period may be considered as non-responsive. In exceptional circumstances, at its discretion, BSEDC may solicit the Bidder's consent for an extension of the validity period. The request and the responses thereto shall be made in writing or by fax or email.

7.6. Address of Communication

Offers should be addressed to the BSEDC and submitted at below given address:

Managing Director
BSEDC Ltd, BELTRON Bhawan, Shastri Nagar, Patna, Bihar
Tel No:- 0612-2281242, 0612-2281857

7.7. Opening of Offers

Offers received within the prescribed closing date and time will be opened on the date, time to be communicated separately to all the Bidders who have purchased the RFP documents.

The dates for opening of Technical would be communicated subsequently, as and when the Pre-qualification scrutiny is completed. Vendors would be given sufficient notice to make technical presentation with respect to the Evaluation Framework and their proposed solution. Duration of the presentation would be about 1 hour. Vendors who qualify in the Technical Evaluation will be informed of the location, date, and time set for opening of financial proposals.

7.8. Clarification of Offers

To assist in the scrutiny, evaluation and comparison of offers, BSEDC may, at its discretion, ask some or all vendors for clarifications with regards to their offer. The request for such clarifications and the response will necessarily be in writing (by letter / fax / email). Failure of a Bidder to submit additional information or clarification as sought by BSEDC within the prescribed period will be considered as a non-compliance and the proposal may get evaluated based on the limited information furnished along with the bid proposal.

7.9. Right to Accept Any Offer and to Reject Any or All Offers

BSEDC, reserves the right to accept or reject any tender offer, and to annul the tendering process and reject all tenders at any time prior to award of control, without thereby incurring any liability to the affected vendor(s) or any obligation to inform the affected vendor(s) of the grounds for such action.

7.10. Notification of Award

BSEDC will notify the successful Bidder via letter / fax /email of its intent of accepting the bid. Within 7 days of receipt of the Letter of Intent issued by the BSEDC, the successful Bidder shall be required to sign the LoI and return the same to the address specified above as a token of acceptance of the LoI.

7.11. Performance Guarantee

As a condition precedent to execution of the Agreement, the successful Bidder shall ensure submission of the requisite unconditional irrevocable Bank Guarantee, in the prescribed format within 15 days of receipt of the LoI as a Performance Guarantee for the services to be performed under the resultant Agreement. The Bank Guarantee shall be equivalent to 10% of the total Order value and must be issued by a Nationalized/ Scheduled commercial Bank. The Performance Guarantee shall be valid for the term of the resultant Agreement and shall be renewed and maintained as necessary by the SI for the term of the resultant Agreement, and extensions if any.

Earnest Money Deposits (EMD) submitted by the Bidders along with their proposal shall be refunded to all Bidders, except the successful Bidder, within 30 days of issuance of the LoI. EMD of the successful Bidder shall be returned on successful execution of the resultant Agreement.

The Performance Guarantee may be liquidated by the BSEDC as penalty / liquidated damages resulting from the System Integrator's (SI) failure to complete its obligations under the resultant Agreement. The Performance Guarantee shall be returned by BSEDC to the vendor within 90 days of the term/expiration of the resultant Agreement after applicable deductions as per the Agreement, if any.

7.12. Signing of Contract

Subsequent to BSEDC's notification to the successful Bidder by way of a LoI, acceptance of the LoI and submission of the Performance Guarantee, the successful Bidder shall execute the Agreement with the BSEDC. Failure of the successful Bidder to furnish the Performance Guarantee or execute the Agreement within 15 days from issue of LoI shall cause the EMD of the successful Bidder to be liquidated. In such event, BSEDC shall negotiate with the next eligible Bidder. The successful Bidder will be liable to indemnify BSEDC for any additional cost or expense, incurred on account of failure of the successful Bidder to execute the Agreement. LoI will be issued to Bidder on basis of L1 value and RFP BOQ. However final BOQ and order value may vary which shall be acceptable by the Bidder. Thus, work order shall be issued based on the final order value and BOQ only.

Notwithstanding anything to the contrary mentioned above, the BSEDC at its sole discretion shall have the right to extend the timelines for execution of Agreement on the request of the successful Bidder, provided the same is bona fide.

7.13. Concessions permissible under statutes

Bidder, while quoting against this tender, must take cognizance of all concessions permissible, if any, under the statutes and ensure the same is passed on to the Purchaser, failing which it will have to bear extra cost. In case Bidder does not avail concessional rates of levies like customs duty, excise duty, sales

tax, etc. BSEDC will not take responsibility towards this. However, BSEDC may provide necessary assistance, wherever possible, in this regard.

7.14. Taxes

The Bidders shall fully familiarize themselves about the applicable domestic taxes (such as GST, income taxes, duties, fees, levies, etc.) on amounts payable by the Purchaser under the resultant Agreement. All such taxes must be included by Bidders in the financial proposal. (Bidder to find out applicable taxes for the components being proposed.)

7.15. Right to vary the scope of the work at the time of Award

The Purchaser reserves its right to make changes to the scope of the work at the time of execution of the resultant Agreement. If any such change causes an increase or decrease in the cost of, or the time required for the SI's performance of any part of the work under the resultant Agreement, whether changed or not changed by the order, an equitable adjustment (if required) shall be made in the Contract Value or time schedule, or both, and the Agreement shall accordingly be amended. Any claims by the SI for adjustment under this Clause must be asserted within thirty (30) days from the date of the SI's receipt of the BSEDC changed order.

7.16. Change Management

i. The Purchaser/Client/BSEDC reserves the right to alter the requirements specified in the Tender. Client/BSEDC also reserves the right to delete one or more items from the list of items specified in the Tender. BSEDC/Client will inform all Bidders about changes, if any. The Bidder agrees that the client/BSEDC has no limit on the additions or deletions on the items for the period of the contract. Further the Bidder agrees that the prices quoted by the Bidder would be proportionately adjusted with such additions or deletions in quantities

ii. The Purchaser reserves its right to make changes to the scope of the work at the time of execution of the resultant Agreement. If any such change causes an increase or decrease in the cost of, or the time required for the SI's performance of any part of the work under the resultant Agreement, whether changed or not changed by the order, an equitable adjustment (if required) shall be made in the Contract Value or time schedule, or both, and the Agreement shall accordingly be amended. Any claims by the SI for adjustment under this Clause must be asserted within thirty (30) days from the date of the SI's receipt of the BSEDC changed order.

iii. As it's known, constant changes / updates happen in technology, and it is very important to keep the pace with the technology. BSEDC would want the successful Bidder to submit a report, every 6 months, on the advancements available in technology to make the best use of the existing infrastructure. Any upgradation / augmentation suggested by the SI would be analyzed by BSEDC and appropriate decision would be taken after the final confirmation from BSEDC.

iv. If for reasons beyond the control of the Bidder, the same is untenable during the project term, the Implementation Agency may be allowed to provide alternate hardware, provided the hardware

should meet/better all RFP requirements, without any cost escalation subject to following restrictions:

- Product should meet all functionalities listed in the RFP.
- In case of only model change, OEM must provide a representation that the new product is a newer version of the proposed product.

Change in OEM, if inevitable (such as Company closure, OEM is no longer in market with the similar product, proposed product supply is a challenge to meet the project timeline, issue in quality), may be allowed with approval of the BSEDC. Bidder should provide all the required information in this regard as may be asked by BSEDC from time to time to take a final decision.

7.17. Terms and Conditions of the Tender

Bidder is required to refer to the general terms and conditions and other clauses mentioned in this RFP including project timelines to be adhered by the successful Bidder during Project Implementation and Post implementation period.

8. Special Terms and Conditions of the Tender

8.1. Liquidated Damage

Subject to clause for Force Majeure if the Bidder fails to complete the project before the scheduled completion date or the extended date or if any.

- Vendor repudiates the contract before completion of the work, the BSEDC at its discretion may without prejudice to any other right or available remedy, may recover 0.5% of the CAPEX of the contract value per week for first 4 weeks and 1% per week for 4 subsequent weeks and 2% per week for subsequent 2 weeks as Liquidity Damages (LD) If the penalty reaches 10% of the total contract value, BSEDC may invoke termination clause. LD will be addition to the any other penalty applicable during the contract period.

- In the case it leads to termination, the BSEDC shall give 30 days' notice to the vendor of its intention to terminate the contract and shall so terminate the contract unless during the 30 days' notice period the vendor initiates remedial action acceptable to the BSEDC.

- The BSEDC may without prejudice to its right to affect recovery by any other method deduct the amount of liquidated damages from any money belonging to the vendor in its hands (which includes the BSEDC right to claim such amount against vendor's Performance Bank Guarantee) or which may become due to the vendor. Any such recovery or liquidated damages shall not in any way relieve the vendor from any of its obligations to complete the works or from any other obligations and liabilities under the Contract.

8.2. Consequences of Breach and Penalties

In the event of breach of SLA, BSEDC shall have the right to recover any loss, damage or cost of hardship caused due to the breach of the terms of this RFP/Agreement (1. Penalty, 2. Security Breach as per SLA 3. Breach in supply of Technical manpower 4. Explanation notes for SLA Matrix), from the payment due to the Service Provider. Notwithstanding the above, in the event the amount due to the Service Provider fall short of the costs incurred or suffered by BSEDC on account of loss, damage or cost of hardship, the Service Provider shall also be liable to make good all such losses, damages or cost of hardship caused to BSEDC.

8.3. Penalty

It should be noted that suitable penalty, mentioned under 'Penalties' clause of this RFP would be charged to the agency/ System Integrator in case of delay from their end.

8.4. Patents & Copyright

If a third-party claim that a product delivered by the Vendor to BSEDC under this project, infringes that party's patent or copyright, the Vendor shall defend BSEDC against that claim at Vendor's expense and pay all costs, damages, and attorney's fees that a court finally awards or that are included in a settlement approved by the Vendor.

8.5. Governing Laws

This contract shall be governed by and interpreted in accordance with Laws in force in India. The courts at Patna shall have exclusive jurisdiction in all matters arising under the contract. The Vendor shall keep himself fully informed of all current national, state and municipal law and ordinances. The Vendor shall at their own expense, obtain all necessary permits and licenses and pay all fees and taxes required by law. These will be Vendor's entire obligation regarding any claim of infringement.

8.6. Termination for Default

BSEDC may without prejudice to any other remedy or right of claim for breach of contract by giving not less than 30 days written notice of default sent to the Vendor, terminate the order in whole or in part. If the Vendor materially fails to render any or all the services within the time period specified in the contract or any extension thereof granted by BSEDC in writing and fails to remedy its failure within a period of thirty days after receipt of default notice from BSEDC. If the project delivery, commissioning as well as maintenance support is not carried out as per terms of the contract, BSEDC will invoke the amount held back from the Vendor as PBG. In such cases next responsive Bidder will be asked to perform the assignment for remaining period of contract at identified L1 price through this tendering process and so on.

8.7. Bankruptcy

If the Vendor becomes bankrupt or have a receiving order made against him or compound with his creditors or being a corporation commence to be wound up, not being a voluntary winding up for the purpose only or amalgamation or reconstruction, or carry on their business under a receiver for the benefit of their creditors or any of them, BSEDC shall be at liberty to terminate the engagement forthwith without any notice in writing to the Vendor or to the liquidator or receiver or to any person in whom the Vendor may become vested and without any compensation to give such liquidator or receiver or other person the option of carrying out the engagement subject to their providing a guarantee for the due and faithful performance of the engagement up to an amount to be determined by BSEDC.

8.8. Force Majeure

- The Vendor shall not be liable for forfeiture of its performance security, liquidated damages, or termination for default if and to the extent that it's delays in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- For purposes of this clause, "Force Majeure" means an event beyond the control of the Vendor and not involving the Supplier's fault or negligence and not foreseeable mentioned as blow-

a) War, Hostilities or warlike operations (whether a state of war be declared or not), invasion, act of foreign enemy and civil war.
b) Rebellion, revolution, insurrection, mutiny, usurpation of civil or military, government, conspiracy, riot, civil commotion and terrorist area.

c) Confiscation, nationalization, mobilization, commandeering or requisition by or under the order of any government or de facto authority or ruler, or any other act or failure to act of any local state or national government authority.
d) Strike, sabotage, lockout, lockdown, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage of power supply epidemics, pandemics, quarantine and plague.
e) Earthquake, landslide, volcanic activity, fire flood or inundation, tidal wave, typhoon or cyclone, hurricane, nuclear and pressure waves or other natural or physical disaster.

- If a Force Majeure situation arises, the Vendor shall promptly notify the BSEDC in writing of such condition and the cause thereof. Unless otherwise directed by the BSEDC in writing, the Vendor shall continue to perform its obligations under the Contract as far as is reasonably practical and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

8.9. Indemnity & Limitation of Liability

a) Clause 1 :

Successful System Integrator (the "Indemnifying Party") undertakes to indemnify BSEDC (the "Indemnified Party") from and against all Losses on account of bodily injury, death or damage to tangible personal property arising in favour of any person, Board or other entity (including the Indemnified Party) attributable to the Indemnifying Party's negligence or wilful default in performance or non-performance under this Agreement. If the Indemnified Party promptly notifies Indemnifying Party in writing of a third party claim against Indemnified Party that any Service provided by the Indemnifying Party infringes a copyright, trade secret or patents incorporated in India of any third party, Indemnifying Party will defend such claim at its expense and will pay any costs or damages that may be finally awarded against Indemnified Party. Indemnifying Party will not indemnify the Indemnified Party, however, if the claim of infringement is caused by (a) Indemnified Party's misuse or modification of the Service; (b) Indemnified Party's failure to use corrections or enhancements made available by the Indemnifying Party; (c) Indemnified Party's use of the Service in combination with any product or information not owned or developed by Indemnifying Party; (d) Indemnified Party's distribution, marketing or use for the benefit of third parties of the Service; or (e) information, direction, specification or materials provided by Indemnified Party or any third party contracted to it. If any Service is or likely to be held to be infringing, Indemnifying Party shall at its expense and option either (i) procure the right for Indemnified Party to continue using it, (ii) replace it with a non-infringing equivalent, (iii) modify it to make it non-infringing. The foregoing remedies constitute Indemnified Party's sole and exclusive remedies and Indemnifying Party's entire liability with respect to infringement.

b) Clause 2 :

The indemnities set out shall be subject to the following conditions:

i.) The Indemnified Party as promptly as practicable informs the Indemnifying Party in writing of the claim or proceedings and provides all relevant evidence, documentary or otherwise;
ii.) The Indemnified Party shall, at the cost of the Indemnifying Party, give the Indemnifying Party all reasonable assistance in the defence of such claim including reasonable access to all relevant information, documentation and personnel provided that the Indemnified Party may, at its sole cost and expense, reasonably participate, through its attorneys or otherwise, in such defence; and such cost borne by the indemnified party shall be deducted from the payment due to the Indemnifying party.
iii.) if the Indemnifying Party does not assume full control over the defence of a claim as provided in this Article, the Indemnifying Party may participate in such defence at its sole cost and expense, and the Indemnified Party will have the right to defend the claim in such manner as it may deem appropriate, and the cost and expense of the Indemnified Party will be included in Losses.

iv.) The Indemnified Party shall not prejudice, pay or accept any proceedings or claim, or compromise any proceedings or claim, without the written consent of the Indemnifying Party.

v.) All settlements of claims subject to indemnification under this Clause will:
a) be entered into only with the consent of the Indemnified Party, which consent will not be unreasonably withheld and include an unconditional release to the Indemnified Party from the claimant or plaintiff for all liability in respect of such claim; and
b) include any appropriate confidentiality agreement prohibiting disclosure of the terms of such settlement.

vi.) The Indemnified Party shall account to the Indemnifying Party for all awards, settlements, damages and costs (if any) finally awarded in favour of the Indemnified Party which are to be paid to it in connection with any such claim or proceedings.

vii.) The Indemnified Party shall take steps that the Indemnifying Party may reasonably require to mitigate or reduce its loss as a result of such a claim or proceedings.

viii.) In the event that the Indemnifying Party is obligated to indemnify an Indemnified Party pursuant to this Article, the Indemnifying Party will, upon payment of such indemnity in full, be subrogated to all rights and defences of the Indemnified Party with respect to the claims to which such indemnification relates; and

ix.) if a Party makes a claim under the indemnity set out under Clause 15.1 above in respect of any particular Loss or Losses, then that Party shall not be entitled to make any further claim in respect of that Loss or Losses (including any claim for damages).

The liability of SI (whether in contract, tort, negligence, strict liability in tort, by statute or otherwise) for any claim in any manner related to this Agreement, including the work, deliverables or Services covered by this Agreement, shall be the payment of direct damages only which shall in no event in the aggregate exceed the total contract value. The liability cap given under limitation of liability clause shall not be applicable to the indemnification obligations set out here.

In no event shall either party be liable for any consequential, incidental, indirect, special or punitive damage, loss or expenses (including but not limited to business interruption, lost business, lost profits, or lost savings) nor for any third-party claims (other than those set-forth in this section) even if it has been advised of their possible existence.

The allocations of liability in this Section represent the agreed and bargained-for understanding of the parties and compensation for the Services reflects such allocations. Each Party has a duty to mitigate the damages and any amounts payable under an indemnity that would otherwise be recoverable from the other Party pursuant to this Agreement by taking appropriate and commercially reasonable actions to reduce or limit the amount of such damages or amounts.

8.10. Warranty

1) The warranties and remedies provided in this clause are in addition to, and not in derogation of, the warranties provided in the RFP and two are to be read harmoniously.
2) Extended Warranty can be treated as Warranty or extended warranty for five years from the date of Go-live.
3) The SI shall provide warranty certificate for 5 years from the date of Go-Live.
4) Warranty for Equipment- The System Integrator warrants and covenants that

a) That BSEDC shall acquire good and clear title on the Equipment, free and clear of any and all charges and encumbrances and shall have right to uninterrupted use of such Equipment.
b) That the Equipment and all of its parts and components are new and unused.

c) That the Equipment are free from defects in material and workmanship under normal use and that the Equipment shall remain in good working order during the warranty period.
d) That the Equipment are and shall remain throughout the warranty period eligible for maintenance under the OEM's standard maintenance agreement.
e) That the Equipment are fit for the purpose of successfully implementing the Project.
f) That the Equipment shall be consistent with the established and generally accepted standards for materials of the type ordered, shall be in full conformity with the specifications, drawings of samples, if any, and shall operate as designed.

5) Warranty for Services: The System Integrator represents, warrants and covenants that all services under this Agreement will be performed with promptness and diligence and will be executed in a workmanlike and professional manner, in accordance with the practices and high professional standards used in well-managed System Integrator performing services similar to the services under this Agreement. The System Integrator represents, warrants and covenants that it shall use adequate numbers of qualified individuals with suitable training, education, experience and skill to perform the services hereunder.
6) Warranty for Software: The System Integrator represents, warrants and covenants that the Software will be free of material programming errors and will operate and conform to the specifications as laid down in the RFP. The System Integrator also represents, warrants and covenants that the medium on which the Software is contained when delivered to BSEDC will be free from defects in material or workmanship and shall be free from any viruses, bugs, Trojan, spywares etc.
7) Warranty' is for a period of 5 years from the date of Go-live or. With regard to Equipment which has not been installed or tested or for which 'Go Live' has not happened for reasons not solely attributable to the System Integrator, the Parties agree that the warranty and O&M period for such Equipment shall commence from the date of 'Go Live' of that equipment and till project period i.e. 5 years from the date of Project Go-live.

8.11. Assumptions

- This Agreement is created considering the following assumptions. BSEDC/DST shall issue necessary access/ROW/passes and provide requisite assistance for contractors' personnel to enter and carry out the work at the project site without hindrance even during holidays as required. SLA calculation time shall be extended by the time (duration) taken by BSEDC for necessary approvals for work authorization, work permits etc. from the time contractor has requested for the same, wherever applicable.
- BSEDC/DST shall Provide required raw Power source within the college premises.

- BSEDC/ DST to make work front available at all colleges wherever feasible & SI team to be allowed to work round the clock without any prior approvals however SI to intimate one day in advance before scheduling such work. In case there is a girl's hostel in the same campus, SI to take prior approval from College authority for access to the same campus to carry out any work after business hours.
- BSEDC / DST would ensure that the departmental staff deployed in the college shall handle the equipment with due care, in strict compliance with standard operating instructions. The safety and security of the installed equipment will be the responsibility of the user.

8.12. Confidentiality

1) The System Integrator shall not, without prior written consent from GoB/BSEDC/DST, disclose/ share/use the Agreement or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the GoB/BSEDC/DST in connection therewith, to any person other than a person employed by the System Integrator in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance provided such person have agreed to abide by the terms and conditions of this Agreement and agree that they shall not disclose/share/use the Agreement or information furnished by or behalf of GoB/BSEDC/DST to any third party without the prior written consent of GoB/BSEDC/BELTRON.
2) The System Integrator shall not, without prior written consent of GoB/BSEDC/DST, make use of any document or information made available for the Project, except for purposes of accomplishment of the Services under this Agreement.
3) All Project related document issued by GoB/BSEDC/DST, other than this Agreement, shall remain the property of the GoB/BSEDC/DST and shall be returned (in all copies) forthwith to the GoB/BSEDC/DST on completion of the System Integrator's performance under the Agreement if so, required by the GoB/BSEDC/DST.
4) System Integrator shall maintain strict confidence of all the information and documents provided to the System Integrator by GoB/BSEDC/DST pursuant to this Project with the same degree of care as it would treat its own confidential information of similar nature, which degree of care in no case shall be less than reasonable.
5) The obligations of confidentiality under this clause shall survive even termination or expiration of this Agreement and for a period of five years thereafter.
6) All documents may not be confidential, BSEDC to provide markings on the documents for the level of confidentiality.
7) The System Integrator will return any documents to BSEDC within 15 days it asked for.

Obligations provided under this provision shall not apply to information which

- Is or subsequently becomes part of the public domain.
- Is lawfully obtained from a third party which did not have an obligation of confidentiality.
- As substantiated by the receiving Party's records was independently developed by the receiving Party without the use of the Confidential Information of the disclosing Party.
- Is disclosed by reason of a governmental or judicial order or applicable law. In such a case, the Party who has received such an Order shall notify the other Party within three (3) days of getting such an order

8.13. Insurance Coverage

The Bidders at their cost shall arrange, secure and maintain all insurance as may be pertinent to the Works/ Services and obligatory in terms of law to protect their interest and interest of BSEDC. The responsibility to maintain adequate insurance coverage at all-times shall be of the Bidder alone. The Bidder's failure in this regard shall not relieve them of any of his contractual responsibilities, obligations and liabilities.

8.14. Corrupt or Fraudulent Practices

The Tender Committee requires that the Bidders under this Tender observe the highest standards of ethics during the procurement and execution of such contracts. For this purpose, the definition of corrupt and fraudulent practices will follow the provisions of the relevant laws in force.

The Tender Committee will reject a proposal for award if it detects that the Bidder has engaged in corrupt or fraudulent practices in competing for the contract in question.

The Tender Committee may declare a firm ineligible, either indefinitely or for a stated period of time, if it at any time determines that the firm has engaged in corrupt and fraudulent practices in competing for, or in executing, a contract.

9. Service Level Agreement

Service Level Agreement (SLA) shall become the part of contract between BSEDC and the Successful Bidder. SLA defines the terms of the successful Bidder's responsibility in ensuring the timely delivery of the deliverables and the correctness of the same based on the agreed Performance Indicators as detailed in this section. The successful Bidder has to comply with Service Levels requirements to ensure adherence to project timelines, quality and availability of services.

The successful Bidder has to supply software / automated tools to monitor all the SLAs mentioned below.

Note: Penalties shall not be levied on the successful Bidder in the following cases:

- There is a force majeure event effecting the SLA which is beyond the control of the successful Bidder
- The non-compliance to the SLA has been due to reasons beyond the control of the Bidder.
- Theft cases by default would not be considered as "beyond the control of Bidder". However, certain cases, based on circumstances & certain locations, Department of Science & Technology / BSEDC may agree to qualify as "beyond the control of Bidder". Damages due to Road Accident / Mishap shall be considered as "beyond the control of Bidder".

The purpose of this Service Level Agreement (hereinafter referred to as SLA) is to clearly define the levels of service which shall be provided by the System Integrator to BSEDC / DST for the duration of this contract.

9.1. Definitions

For the purposes of this service level agreement, the definitions and terms are specified in the contract along with the following terms shall have the meanings set forth below :

- **"Uptime"** shall mean the time period for the specified services / components with the specified technical service standards are available to the user department. Uptime, in percentage, of any component (Non IT & IT) can be calculated as:
- Uptime = {1- [(Downtime) / (Total Time – Maintenance Time)]} * 100

- **"Downtime"** shall mean the time period for which the specified services / components with specified technical and service standards are not available to the user department and excludes downtime owing to Force Majeure & Reasons beyond control of SI (such as- switching the power off to the equipment by college authority, access issue to the colleges, raw power unavailability beyond the availability of UPS power, unstable power supply with fluctuation of voltage resulting device failure/power failure, theft inside the college premises beyond the control of SI and mutually agreed by BSEDC/DST). If the access is not available on the premises or the devices is not accessible due to power related issue and SI claim the same is not attributable to them, the same needs to be informed to BSEDC and respective colleges on daily basis. SI shall log all the calls in the centralized monitoring solution and shall communicate over mail. SI shall be responsible to take that sign-off after resolution of the issue for the site from the college authority; otherwise, the exemption of SLA will not be accounted while calculating the penalty.

- **"Incident"** refers to any event / abnormalities in the functioning of the Services specified as part of the Scope of Work of the Systems Integrator that may lead to disruption in normal operations of the Surveillance System.

- **"Helpdesk Support"** shall mean the helpdesk service centre running 24x7x365 which shall handle Fault reporting, Trouble Ticketing and related enquiries during this contract.

- **"Resolution Time"** shall mean the time taken (after the incident has been reported at the helpdesk), in resolving (diagnosing, troubleshooting and fixing) or escalating (to the second level or to respective Vendors, getting the confirmatory details about the same from the Vendor and conveying the same to the end user), the services related troubles during the first level escalation.

9.2. Measurement of SLA:

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The SLA metrics provided specifies performance parameters as baseline performance, lower performance and breach. All SLA calculations will be done on quarterly basis. The SLA also specifies the penalties for lower performance and breach conditions. Payment to the successful Bidder is linked to the compliance with the SLA metrics. The matrix specifies three levels of performance, namely,

· The Agency will get 100% of the Contracted value if the all baseline performance metrics are compiled and the cumulative credit points are 100

· The Agency will get lesser payment as per SLA and Penalty clauses mentioned in this RFP.

· If the performance of the Agency in respect of any parameter falls below the prescribed lower performance limit, debit points are imposed for the breach.

The quarterly payment shall be made after deducting the penalty as mentioned above.

The aforementioned SLA parameters shall be measured per the individual SLA parameter requirements and measurement methods, through appropriate SLA Measurement tools to be provided by the SI and audited by BSEDC or its appointed Consultant for accuracy and reliability. The System Integrator would need to configure the SLA Measurement Tools such that all the parameters as defined under SLA matrix can be measured and appropriate reports be generated for monitoring the compliance.

BSEDC shall also have the right to conduct, either itself or through any other agency as it may deem fit, an audit / revision of the SLA parameters. The SLAs defined, shall be reviewed by BSEDC on an annual basis after consulting the SI, Project Management Consultants and other experts. All the changes would be made by BSEDC after consultation with the SI and might include some corrections to reduce undue relaxation in Service levels or some corrections to avoid unrealistic imposition of penalty, which are noticed after project has gone live.

Bidder is also required to note that incase of SLA penalties not being applicable for the cases considered as "beyond the control of Bidder", Bidder would be still required to solve the problem within the SLA defined for resolution of critical level/medium level/low level issues. In case Bidder doesn't adhere to the issue resolution SLA timeline, the original SLA shall be made applicable

Total penalty to be levied on the SI shall be capped at 10% of the total contract value.

BSEDC would have right to invoke termination of the contract if the overall penalty applicable in any 2 consecutive quarters during the contract period is 10% in each quarter.

9.3. Planned Downtime

Any planned application / System downtime would not be included in the calculation of application / System availability. However, the Successful Bidder should take at least 7 days prior approval from DST / BSEDC in writing for the planned outage, which preferably in the EBH but if urgent work which needs to be carried out in the PBH, the downtime activity should not be for more than 30 minutes in PBH period and limited to max. 4 outages in PBH in a year.

9.4. Pre-Implementation SLA

9.4.1. Timely delivery of the Scope of Work

Definition	**Timely delivery of deliverables would comprise entire bill of material and the systems, and as per successful FAT of the same.**
Service Level Requirement	All the deliverables defined in the contract has to be submitted On-time on the date as mentioned in the contract with no delay.
Measurement of Service Level Parameter	To be measured in Number of weeks of delay from the timelines mentioned in the section "Project Timelines"
Penalty for non-achievement of SLA Requirement	Penalty for non-achievement of SLA requirement for **"Supply and Installation" and "FAT and Go-Live"** - Any delay in the delivery of the project deliverables would attract a **penalty of 1% of the CAPEX per week for first 4 weeks, 4 weeks onwards 2% of the CAPEX per week subject to maximum of 10% of the total Contract value. If the penalty reaches 10% of the total Contract value**, BSEDC may invoke termination clause. The penalty is applicable if the delay to achieve the milestone is solely attributable to SI.

9.5. SLA Matrix for Post Implementation SLAs

I. IT Service Level

S No.	Measurement	Target	Severity	Penalty
1.	Individual IT active managed components availability (such as server, router, switch, firewall, Wireless controller, CCTV, AP etc.). Availability reports from centralized management solution needs to be produced by the SI.	>= 99.5 % quarterly average	Critical	No Penalty
		<99.5 % quarterly average		1% of the QGR of the impacted site/s for every 2 hours of down time at a stretch or imparts up to total down time of 10 hours. Beyond 10 hours of down time, 2% of the QGR of the impacted site/s for every 1 hour of down time at a stretch or in parts.
2.	Connectivity to 82 Colleges & SDC (attributable to SI). Device availability and link	>= 99.5 % quarterly average	Critical	No Penalty

S No.	Measurement	Target	Severity	Penalty
	reachability reports for each link from centralized management solution needs to be produced by the SI.	<99.5 % quarterly average		1.5% of the QGR of the impacted site/s for every 1 hours of down time at a stretch or in parts up to total down time of 10 hours. Beyond 10 hours of down time, 1.5% of the QGR for every 0.5 hour of down time at a stretch or in parts.
3.	Connectivity with Internet (With regards to equipment only) (Incident report from centralized management solution to be submitted by the SI)	>= 99.5 % quarterly average	Critical	No Penalty
		<99.5 % quarterly average		1.5% of the QGR of the impacted site/s for every 1 hours of down time at a stretch or in parts up to total down time of 10hours. Beyond 10 hours of down time, 1.5% of the QGR of the impacted site/s for every 0.5 hour of down time at a stretch or in parts.
4.	Scheduled downtime for Preventive maintenance Per Week • 1 am to 5 am on Sundays • Any further requirement for scheduled downtime as per approval from DST Communication for preventive maintenance request will be considered for SLA calculation	Notification of >= 7 days in advance	Medium	No Penalty
		Notification of less than 7 days		0.5% of the QGR per incident

II. Physical Infrastructure Service Levels

S No.	Measurement	Target	Severity	Penalty
1.	Power Availability (UPS output) UPS availability report from centralized management solution to be submitted by the SI	>= 99.5 % quarterly average	Critical	No Penalty
		<99.5 % to >= 98 % quarterly average		2% of the QGR of the impacted site/s
		<=98 % to = 95.00 % quarterly average		0.5% of the QGR of the impacted site/s for every 1 hours of down time at a stretch or in parts up to total down time in addition to the penalty mentioned above. This down time shall be calculated over and above the total hours of downtime permissible till 95.00 % availability.

III. Help Desk Service Level Agreements

The SI would have to setup a Help Desk at all 6 major locations (to cover all the colleges by 6 engineers to resolve the incidents/preventive maintenance) plus one in the Central Location, at SHQ or at the Department. This Help Desk would be setup on a 24 x 7 basis to support the usage of the system at central location and other resources will support the colleges in PBH hours, to resolve issues and ensure smooth usage. Full manpower support is required during Prime Business Hours and Non-Prime Business Hours minimum manpower may be allowed to run the operation smoothly.

The minimum requirement of 24 x 7 basis support is:

- At least 2 technical consultants (L2 engineers) to be available at DST premises during business hours
- At least 1 functional consultant (Operations Manager) aware of functionalities of the to be available at DST premises during business hours
- Minimum 1 Helpdesk engineer (L1 Engineers) should be available in each of the 3 shifts for taking Helpdesk Calls
- The entire team (other 6 L1 engineers) would be available on on-call basis during business hours

The Help Desk should have established communication channels, issue reporting mechanisms, closure of issues etc.

The severity of the issue has to be mutually agreed between the successful Bidder and the Employer.

Sl. N.	SLA	Phase	Criticality	Response Window	Resolution Window	Penalty in case of violation of resolution window
1	Entire connectivity across 82 colleges is not functional (Availability and link reachability reports from centralized server needs to be submitted by the SI)	Operation & Maintenance	Critical	15 min	30 minutes	>30 mins to 60 mins – 1% of QGR value >1 hour to 2 hours – 2% of the QGR value > 2hours to 3 hours – 5% of the QGR value > 3 hours to 4 hours or more – 10% of the QGR value If the issue does not get resolved within 48 hours, BSEDC rights to decide to terminate the contract or deduct 100% penalty for the QGR
2	Any connectivity amongst 82 colleges is non-functional attributable to SI (link	Operation & Maintenance	High	15 min	1 hour	>1 hour to 2 hours – 1% of QGR value of the site >2 hour to 3 hours – 2% of the QGR value of the site > 3 hours to 4 hours – 5% of the QGR

	reachability and device availability report to be submitted by the SI)					value of the site > 4 hours to 6 hours or more – 10% of the QGR value of the site If the issue does not get resolved within 48 hours, BSEDC rights to decide to deduct 100% penalty for the QGR for the site
3	Internet Routing based solution is not functional for all colleges attributable to SI (Incident report to be shared by the SI)	Operation & Maintenance	High	15 min	1 hour	>1 hour to 2 hours – 1% of QGR value >2 hours to 3 hours – 2% of the QGR value > 3 hours to 4 hours – 5% of the QGR value > 4 hours to 6 hours or more – 10% of the QGR value If the issue does not get resolved within 48 hours, BSEDC rights to decide to terminate the contract or deduct 100% penalty for the QGR
4	Internet Routing based solution is not functional for entire college attributable to SI (Incident report needs to be shared by the SI)	Operation & Maintenance	Moderate	15 min	2 hours	>2 hour to 3 hours – 1% of QGR value of the site >3 hour to 4 hours – 2% of the QGR value of the site > 4 hours to 6 hours – 5% of the QGR value of the site > 6 hours to 12 hours or more – 10% of the QGR value of the site If the issue does not get resolved within 72 hours, BSEDC rights to decide to deduct 100% penalty for the QGR for the site
4	Internet Routing	Operation & Maintenance	Low	30 min	4 hours	>4 hours to 6 hours – 1% of QGR value of

	based solution is not functional for any user attributable to SI (Incident report needs to be shared by the SI)					the site >6 hour to 8 hours – 2% of the QGR value of the site > 8 hours to 24 hours – 5% of the QGR value of the site > 24 hours to 72 hours or more – 10% of the QGR value of the site If the issue does not get resolved within 120 hours, BSEDC rights to decide to deduct 100% penalty for the QGR for the site
5	Replacement of Human Resource (Attendance report needs to be shared by the SI after approval from BSEDC)	Project life Cycle	Critical	Immediate	30 working days within submission of change request	For per weeks delay 1% of the QGR value for the resource will be deducted for first 2 weeks and subsequently 2% per week for next 4 weeks. Further delay to deploy the resource will be treated as absence of the resource for the entire QGR and no payment will be made for the resource for the particular QGR.

The minimum expected service levels from the SI and the criticality, response and resolution time are described below:

Note:

In certain cases if malfunctioning/ non-functioning of a particular section inside a module makes the entire module down. Then the criticality of the incident shall be considered “High”.

- If the value of penalty accumulated at any time in the Contract, is more than 10% of the total Contract value, then BSEDC shall reserve the right to terminate the contract.
- Working Hours will be from 8 A.M to 8 P.M. Any call getting not resolved within 8 PM of the same day may be taken up on next day 8 AM if the access is not available on the premises beyond 8 PM or the devices is not accessible due to power related issue. The same needs to be signed off by the end

user of the college/college authority regarding access issue or power related issue beyond 8 PM. SI shall be responsible to take that sign-off after resolution of the issue for the site from the college authority; otherwise, the exemption of SLA hours between 8 PM to 8 AM will not be accounted while calculating the penalty.

IV. Bandwidth Service Provider's Service Level Agreements

Sl. No	Service Level Parameter: SLA	Penalty
1	End-to-End (CPE to CPE) Network availability over OFC (Link reachability from centralized management server)	99.50 % - no penalty 1% of the QGR of the impacted site/s for every 0.5% of down time thereafter
2	Packet Loss in each link (report on packet loss from the centralized monitoring solution needs to be shared by the SI)	≤ 1.0 %. If packet loss is >1.0%, 1% of the QGR value for the link will be deducted upto 10%.
3	End to End Average Packet Latency for all Locations (CPE to CPE) (Latency report loss from the centralized monitoring solution needs to be shared by the SI)	Maximum 60 ms. Latency > 60 ms but < 100 ms – 1% of QGR will be deducted >= 100 ms to 150 ms – 2% of the QGR will be deducted > 200 ms to >= 250 ms – 5% of the QGR will be deducted > 250 ms – 10% of the QGR will be deducted for the link
4	If the availability of link is <90% for the quarter, the circuit will be treated as fully down for the quarter and no payment will be made for the circuit for the quarter. **Note:-** Down time due to the following situations will not be considered for the purpose of penalty calculation for downtime: - Link down due to raw power failure. - Switch off (Rack/equipment raw power) at the respective locations. - Scheduled maintenance by the vendor, with prior intimation. - Access not available at site for the BSP engineer to check the issue and the same should be reported to BSEDC on time. For all these cases, a monthly sign-off to be collected from the respective site/s and to be submitted to BSEDC for exemption of SLA.	<90% - 100% of the QGR for respective circuit

- Determination of Downtime of the BSP Link –
    - For the purpose of measurement, "downtime" or "fault duration" constitutes any period of time during which the Intranet link is unable to transfer data due to reasons assignable to BSP's network. Downtime of a link shall be calculated based on the data collected by the network monitoring tools (NMS) of the project. The reachability of the CPE device and availability of ports where the circuit is terminated will be compared and minimum between these two will be considered as link availability. The BSP will have to do proactive monitoring of the links / network. BSP also needs to provide access to BSEDC to their NMS for monitoring and generating uptime, downtime, utilization, latency, jitter etc. reports for customized timeframe by BSEDC.

V. Security Breach SLA

Note – This SLA for Security Breach is applicable over and above the SLAs mentioned in above table.

Definition	Security of the video feeds and the overall system is quite important and successful Bidder shall be required to ensure no compromise is done on the same. Security Breach types considered for this SLA are– • Successful hacking of any active component on the network by any unauthorized user • Any cyber-attack into the network • Or any other privacy rule is broken as per Govt of India guidelines
Service Level Requirement	Security compliance of the system should be 100%
Measurement of Service Level Parameter	Any reported security breach shall be logged into the SLA Management solution as a security breach
Penalty for non-achievement of SLA Requirement	For every security breach reported and proved, there shall be a penalty of INR 100,000/-.

The centralized management, monitoring and reporting solution should be implemented, integrated and configured to generate the all the required SLA reports for calculation of the uptime, reachability, latency, packet loss, incidents, service requests etc. for any custom periods.

10. Detailed Scope of Work for the System Integrator

11. Scope of Work for the SI

The selected SI has to perform the following activities (but not limited to):

i. ***Project Initiation and Planning***
ii. ***Requirement Gathering and Analysis***
iii. ***System Design***
iv. ***Infrastructure Installation & Commissioning***
v. ***System Testing***
vi. ***Go-Live***
vii. ***System Stabilization Testing***
viii. ***Project Documentation***
ix. ***Handholding and Post-Implementation Support***
x. ***System Warranty Support (Operation & Maintenance)***
xi. ***Project Closure***

i. Project Initiation and Planning

This activity is primarily aimed at getting the SI to familiarize with the project scopes and objectives and prepare a project plan for the implementation of the project. The sub-activities for the SI under this would be –

- Mobilization of team as per the signed agreement/ contract.
- Interact with Project Monitoring Unit and the key officials of BSEDC to prepare a detailed Project Charter containing a detailed Project Plan.
- Perform preliminary requirement gathering and will identify the stakeholders, their roles, Communication Protocol, escalation matrix, Risks, Assumption & Dependencies
- Prepare and present a Project Charter for discussion, feedback and finalization.
- Prepare and submit a Meeting Schedule for discussion with various officials of BSEDC to gather requirements for development of the envisioned IT Infrastructure
- Prepare and submit a Project Inception Report and Integrated Project Implementation Plan (IPMP)

Deliverable(s):

- Project Charter
- Project Inception Report & Integrated Project Implementation Plan

ii. Requirement Gathering and Analysis

The prime focus of this activity is to understand the Scope of Project, interact with the potential stakeholders to understand the broad user needs and develop a Work plan with list of activities and timelines associated for each activity. It is presumed that SI will interact with stakeholders and associated agencies. SI will be responsible for conducting the detailed system study to gather the requirement for the system to be developed for which SI needs to submit the meeting plan with stakeholders in advance. SI will submit Minutes of the Meetings (MoM) mentioning the discussion details and requirements gathered and ensure acceptance from the concerned stakeholder on the same.

The activity breakdown for this segment for the SI would be –

- To initiate discussions with the officials of BSEDC and other related stakeholders to gather requirements as per the Meeting Schedule and with reference to the Project Charter.

- To analyze the requirements gathered and will identify Integration touch points and detailed use cases.
- If required, the SI may visit to site for further detailed information to be captured from the end users
- To submit the requirement gathered on a weekly basis in the form of Minutes of Meeting (MoM).
- To analyze the requirements gathered and submit the System Requirement Specification documents as per the defined timeline in Project Charter and signed agreement/ RFP.

Deliverable(s):

- MoM on requirements gathered
- System Requirement Specification documents

iii. System Design

The SI needs to design the network architecture on the basis of the scope of the RFP document, requirement analysis with BSEDC and MOMs with the Stakeholders. The System Integrator will –

- Prepare System Design Documentations, both High Level Design (HLD) and Low-Level Design (LLD).
- Incorporate the feedback received during the review of the LLD & HLD
- Identify Report Metrics and key KPIs
- Prepare Platform Design & conduct PoC on the same and will incorporate the feedback review received for the same. And will take the sign off

Deliverable(s):

- HLD
- LLD
- POC

iv. Infrastructure Installation & Commissioning

In this stage the System Integrator will –

- Prepare the sites with necessary IT infrastructures
- Procure and install the required hardware and software components
- Conduct security tests, commission the system at each college
- Commission and integrate the overall Systems

Deliverable(s):

- Installation and Commissioning of the system at colleges (LAN, Wi-Fi Access Points, Fiber Backbone) & Smart Classrooms

v. System Testing

All components and different units of the envisaged system being implemented by System Integrator and services should be thoroughly tested for individual satisfactory performance. SI will –

- Prepare a Testing Schedule
- Submit the testing cases for review, finalization and approval.
- Conduct Security Testing and will incorporate review feedbacks for Security Testing
- Conduct full Functional Test of the system.
- Conduct Performance Testing and will incorporate review feedbacks for Performance Testing
- Incorporate the feedbacks received during and post testing stage and will take the signoff from or its nominated representative

Deliverables:

- Acceptance testing readiness documents

vi. Go-Live

Based on the outcomes of the test, the complete system should be integrated and operationalized for use. SI has to carry out the system implementation and hosting as per norms. The SI will –

- ***Configure the Networking Layers & Centralized Management Servers***
- ***SI will conduct Pilot Run***
- ***SI will make the system Go-Live***

Deliverables:

- Go-Live of the envisioned IT System.

vii. Project Documentation

SI has to prepare the project documentation at each stage and has to update the same based on the reviews, feedbacks and suggestions received from various stakeholders. The documents will range from (but not limited to) -

- ***Training Manuals for each group of stakeholders***
- ***Standard Operating Procedure for colleges***
- ***Standard Operating Procedure for Helpdesk***
- ***H/W, S/W document ownership***
- ***Exit Management Document***
- ***Business Continuity Plan Document***

viii. Handholding & Post Implementation Support

Post implementation, the SI has to provide handholding support to the stakeholders for a period of 5 years for operational & functional issues. The support will include –

- ***Onsite handholding Support for implementation***
- ***Support services through online service desk application***
- ***Handholding Support from Helpdesk (L1) followed by L2 & L3 Support***

Deliverables:

SI will submit the following reports on daily basis –

- Service Level Compliance – availability report, Incident reports
- Attendance report of the resources using open source GIS based app (to be managed by the SI by their own and the report will be approved by BSEDC)

ix. System Warranty & Maintenance Support (Operation & Maintenance)

a) System Integrator will have to give **05 (Five) years** comprehensive warranty on all components including software from the date of go-live of the solution. After completion of comprehensive warranty period, BSEDC may go for fresh AMC with the supplier. Hence Bidder should maintain sufficient stock of spares with them even after the expiry of the warranty period.

b) The SI is liable for repairing all or any sort of damage detected during the warranty period completed free of cost.

c) During the warranty period no active component should be declared “End of Life”. In case it is declared “End of Life” during this period, the vendor has to replace such equipment at their own cost. A letter of Confirmation by OEM shall be mandatory. The rate should be quoted inclusive of warranty.

d) Separate SLA will be signed with the vendor for warranty & support after supply of the equipment’s.

e) During the warranty period which will start right after the System Go-Live and will terminate at the end of the 5th year post system go-live, the SI will provide ensure the operational and functional support in the following areas.

- ***Operations maintenance & monitoring of overall System***
- ***Review and updation of Project Documents***
- ***System Utilization Monitoring***

Deliverables:
SI will ensure the submission of the following reports –

- Daily Service Level Compliance Report
- Daily & Monthly O & M Report
- Weekly & Monthly System/Infrastructure/Application Maintenance Report
- Weekly & Monthly System Utilization report

x. Project Closure

At the end of the support period, the SI will enter the project closure phase in which he has to –

- ***Update and finalize of all the relevant project documents.***
- ***Prepare a Knowledge Transfer Plan***
- ***Carry out the Exit Management Process***
- ***Take the Project Closure Clearance/ certificate from the BSEDC***

Resource Requirements during the O&M Phase –

Sl No.	Required Manpower	● Operation Manager (1 No.) ● L2 Engineer (2 Nos.) a. Network Expert (1 no.) b. Server Administrator cum Content Management Specialist (1 no.) ● L1 Engineer (9 Nos.)
1	Operation Manager	**Minimum criteria:-** ● M.Tech / B.Tech / B.E/ MCA ● Years of experience – Minimum 8years with 3+ Years in Network Implementation Project Management ● CCNA Certification.
2	L2 Engineer – Network Expert	**Minimum criteria:-** ● BE/B.Tech/MCA ● Experience of 5+ years in management of enterprise network and Security Systems. Must have experience in monitoring network performance, optimize bandwidth capacity, and secure networks and data ● CCNP Certification is must.
3	Server Administrator cum Content	**Minimum criteria:-**

	Management Specialist	● BE/B.Tech /MCA ● Experience of 5+ years as Server Administration & management specialist and responsible for controlling the information uploaded to a website/ server. ● MCSE Certification is must. ●
4	L1 Engineer	**Minimum criteria:-** ● BE/B.Tech/ MSC (IT) ● Experience of 3+ years in implementation of networking and Security Systems in Government / PSU unit/ large organization in India ● CCNA Certification is must.

12. Supply of all Materials as per final BoM at Patna Warehouse

The successful Bidder shall arrange all the material as per final BoM and complying with the Technical specification in Section 15 – Annexure 1. All the material to be arranged at a single warehouse at Patna (to be set up by the bidder) and SI shall send request to BSEDC for inspection. The request letter should enclose a list of all the materials with Make, Model, Serial number and Part code number for each College/Site. BSEDC / appointed PMU will verify the same.

1. Inspection of all materials in boxed condition to check the quantity
2. one quantity from each category of item as per BoQ will be checked in unboxed condition. BSEDC shall issue the Inspection Report.
3. Serial number and part code will be checked on sample basis (10%)

13. Supply of all Materials, Installation & Commissioning at sites

The SI should supply, install & commission respective items at all the sites as per the scope of work and timeline given in this RFP.

1. SI shall deliver the material to the respective sites
2. Delivery challan must be signed by competent authority of college/Sites
3. Installation report for each location to be shared by the SI to BSEDC for verification of sites.
4. NMS reports need to be shared for verification of commissioning of each active component at college/sites
5. For passive components Bidder to provide self-declaration on the installed components with their quantity. BSEDC reserves the right to verify the same on sample basis. If any discrepancy found, payment may be deducted on pro-rata basis for all the college/sites.

14. Responsibility Matrix

The roles of the stakeholders shall change over a period of time as the project will evolve from design to implementation and enter the operations phase. Stakeholders' responsibilities, illustrative organizational structure for the design & implementation phase, operational phase is given below:

Various Stakeholders identified for the Project are as below:

DST Department of Science & Technology
BSEDC Bihar State Electronics Development Corporation Limited
Con Project Management Consultant
SI Systems Integrator (Vendor selected for the Project's Implementation)

Responsibilities are shown using RACI Matrix which splits project tasks down to four participatory responsibility types that are then assigned to different Stakeholders in the project.

R (Responsible) - Those who do work to achieve the task
A (Approve) - The Stakeholder that ultimately approves the task
C (Consulted) - Those whose opinions are sought (2 way communication)
I (Informed) - Those who are kept up-to-date on progress (1 way communication)

Sr. No	Activity	DST	BSEDC	Con	SI
1.	Signing of the Contract	R	R	C	**R**
2.	Preparation of the Inception Report	A	A	C	**R**
3.	Integrated Plan for the Design & Implementation of the Entire System	I	A	C	**R**
4.	Prepare the Site Survey Plan	I	I	C	**R**
5.	Submission of the Partial Acceptance Testing & Final Acceptance Testing Formats	C	C	C	**R**
6.	Supply, Installation, Configuration and Commissioning of various equipment, components, systems	I	A	C	**R**
7.	Preparation of the Policy Documents for Operations	A	A	C	**R**
8.	Partial Acceptance Testing & Final Acceptance Testing of IT & Non-IT Equipment	I	C	C	**R**
9.	System Documents, User Documents as per ITIL (Information Technology Infrastructure Library) standards	I	A	C	**R**
10.	Providing technically qualified manpower for maintenance of the entire system	I	A	C	**R**
11.	On-Site Facilities Management service	I	A	C	**R**
12.	Comprehensive Warranty Maintenance of the supplied equipment	I	A	C	**R**
13.	Provision of on-site tools and spares	I	A	C	**R**
14.	Provision of manpower for a period of Five years after successful Acceptance of the system.	I	A	C	**R**
15.	Hand-over of the system at the end of contractual period along with all documentation required to operate and maintain the system	A	A	C	**R**
16.	Weekly Progress Reports	I	I	C	**R**
17.	**Monthly Progress Reports**	**I**	**I**	**R**	**I**

15. Common guidelines / comments regarding the compliance of IT / Non-IT Equipment / Systems to be procured

- The specifications mentioned for various IT / Non-IT components are indicative and minimum requirements and should be treated for benchmarking purpose only. Bidders are required to undertake their own requirement analysis and may propose higher specifications that are better suited to the requirements.
- The IT / Non-IT hardware & software items mentioned in the BoQ are indicative only. Based on the requirement Bidder must provide necessary items as required.
- Any manufacturer and product name mentioned in the RFP should not be treated as a recommendation of the manufacturer / product.
- None of the IT / Non-IT equipment proposed by the Bidder should be End of Life product. It is essential that the technical proposal is accompanied by the OEM certificate in the format given in this RFP, where-in the OEM will certify that the product is not end of life product & shall support for at least 6 years from the date of Bid Submission.
- All IT Components should support Ipv4 and Ipv6
- Technical Proposal should be accompanied by OEM's product brochure / datasheet. Bidders should ensure complete warranty and support for all equipment from OEMs. All the back-to-back service agreements should be submitted along with the Technical Bid.
- All equipment, parts should be Original and New.
- The User Interface of the system should be a User-Friendly Graphical User Interface (GUI).
- Critical / Core components of the system should not have any requirements to have proprietary Platforms and should conform to open standards.
- For the custom-made modules, Industry standards and norms should be adhered to for coding during application development to make debugging and maintenance easier. Object oriented programming methodology must be followed to facilitate sharing, componentizing and multiple use of standard code. The application should be subjected to Application security audit to ensure that the application is free from any vulnerability.
- The Successful Bidder should also propose and include any additional hardware/software in its proposal, if required for the proposed solution to achieve the complete objective of the scope of work and functionalities mentioned in the RFP.
- The indicative architecture of the system is given in the RFP. The Successful Bidder must provide the architecture of the solution it is proposing.
- SI is required to ensure that there is no choking point / bottleneck anywhere in the system (end-to-end) to affect the performance / SLAs.
- All the hardware and software supplied should be from the reputed Original Equipment Manufacturers (OEMs).
- BSEDC reserves the right to ask replacement of any hardware / software if it is not from a reputed brand and conforms to all the requirements specified in the tender documents.
- BSEDC reserves the right to ask replacement of any hardware / software if the hardware/software does not meet the functional requirement to meet the objective to successfully run the project.
- Selected Bidder may propose for a change in make / model of any hardware/software only in case of- if the proposed item is not available for timely supply or not meeting functionalities envisaged in the RFP or technology getting obsolete / upgraded which may impact the project objective and timelines. However, BSEDC at its discretion may accept or reject the request.
- System Integrator shall place orders to various 'OEMs or from it's authorized distributors/partners directly' and not through any sub-contractor .

Annexure 1 – Technical Specification

1. Technical Specifications for Centralized Networking Solution

	Functional Specifications of Networking Solution
#	**Minimum Requirement**
1	The solution shall support Ipv6 from Day-1
	Architecture
1	Proposed solution should have physical management appliances/Virtual appliance. If management appliance goes offline the solution should keep on functioning without any issues. Must support build in GUI.
2	The Bidder shall propose at least one management solution
3	Management architecture should have option to be deployed in HA if required in future.
4	Management architecture should support on premise Model.
5	There should not be any impact on data forwarding capability in case of complete disconnection of management
6	Management architecture should support multi-tenancy if required
7	Management architecture should support rich policy constructs to manipulate routing information, access control, segmentation, extranets
8	Solution should provide transport independence and should allow to use any transport like MPLS, Internet, 3G/4G, Point to Point link, RF based connectivity, Broadband etc.
	Security
1	Solution should support build in NGFW feature (IPS and application control) to protect network against threats
2	Management and the solution should communicate over encrypted channel
3	Solution must support IPSec tunnel creation and they must be also take part in software defined network management irrespective of IPSec tunnel is between same vendor or different vendor
4	Central core device should support strong encryption like AES 256 or higher
5	Packet redistribution must be supported even over IPSec tunnel meaning if ipsec tunnel break the file transfer shouldn't break or stop, rather it should move to secondary tunnel without any noticeable delay.
6	Proposed solution must support creation of logical separate sub-domain within single physical devices to separate different kind of networks.
7	The solution should support integration with cloud based/appliance-based security solutions or should have inbuilt security features like Content filtering, URL filtering, antivirus, anti-bot etc.
8	The solution should support split tunnelling to provide direct internet access from branch
9	The solution shall have built in feature to protect CPU under DoS/DdoS attacks
10	The architecture should support application identification at layer-7 and should be able to identify minimum 2000 applications natively. It should also allow to define custom applications as per requirement
	Routing and QoS
1	The solution should support minimum 2 service providers at branch locations and 4 service providers at DC.
2	The solution should support minimum BGP, OSPF /MP-BGP and Static routing
3	The solution should support performance SLA based on latency, packet loss, jitter or all 3

	Functional Specifications of Networking Solution
#	**Minimum Requirement**
	combined
4	The edge devices should support 802.1Q, sub interface, Inter VLAN routing
5	The solution should support rule based routing based on Application, user, user group, source, destination or combination of any of them
6	The Solution should support rule creation based on Application or source address or destination address and each rule should have option to use different performance SLA
7	The solution should support QoS based on application
8	The solution must support Auto-Discovery VPN
	Management
1	It should be appliance/Virtual appliance which must support around 100 WAN devices. If VM option is quoted then server should be given along with all the necessary licenses
2	Management solution should have built in GUI which can be accessed by any popular browser and if extra software required to open management GUI access, Bidder shall include that within the solution
3	Should have template option to push common policy across all solution
4	Must have dashboard showcasing all the solution across the network with their latency and link status
5	Centralized management should have open APIs to integrate with third party management
6	Centralized management should support role based access
7	Management must support IPSec wizard which can push vpn configuration to various devices with the routing information updates.
	Logging & Reporting
1	The Logs and Reporting platform must be a dedicated appliance/Virtual Appliance
2	The Logs and Reporting platform support running on-demand and scheduled reports
3	Should have RAID based Storage for logging and reporting.
4	Real-time display of information allows you to follow real-time trends in network usage such as the source IP address and the destination URL for HTTP traffic or IM message traffic.
5	All log files and messages are searchable and can be filtered to drill down and locate specific information.
6	The logging Appliance should support multiple types of report format PDF, HTML, CSV etc.
	Licensing
1	All license for Monitoring, management, VPN and Logging should be quoted. Vendor should quote all the license from day one related to proper Centralized Networking Solution deployment and all the feature requested above.
2	License for any unmentioned feature which require proper deployment and functioning of Centralized Networking Solution must be quoted. Vendor shouldn't have any hidden charges
	Central Core device deployed in HA
1	**The Central device** should have minimum 2x 10 GE SFP, 6x GE Copper, to cater to connectivity.
2	IPSec throughput should be minimum 10 Gbps
3	Should support minimum 30,000 new sessions per second,
4	Should support minimum 800,000 concurrent session,
5	Should support minimum 1000 Site to Site VPN
6	Should support minimum 3 Gbps of Threat Protection Throughput including Firewall, IPS, Application Control and antivirus Protection enabled with Mix / production traffic

2. Network monitoring, reporting and helpdesk solution at centralized location

Centralized Management Solution	
A	**General Requirement**
1	The proposed Centralized Management Solution (CMS) should be an integrated, modular, and scalable solution from single OEM family (i.e., all Network Monitoring, server Monitoring and Service Management tools should be from single OEM) to provide comprehensive fault management, performance management, IT service desk\ help desk \trouble ticketing system & SLA monitoring functionality.
2	The system should be accessible via a Web based GUI console/portal from intranet as well as from internet.
3	It should have a secured single sign-on and unified console for all functions of components offered for seamless cross-functional navigation & launch for single pane of glass visibility across multiple areas of monitoring & management.
4	The proposed CMS solution deployment must support latest version of both Windows and Linux Operating Systems and should be 64-bit application to fully utilize the server resources on which it is installed.
5	Proposed CMS solution must have at least 3 deployments in Indian Government/ Public Sector, monitoring & managing 10000+ devices (including IT assets – Network devices, servers etc.; Non-IT Assets – UPS, KVM, etc.; Surveillance system – Cameras, etc.) in each of such deployments. Customer names, solution details and OEM undertaking needs to be provided at the time of bidding.
6	**All components (hardware, software, database, licenses, accessories, etc.) if required for implementation and execution of project, for providing the total solution as mentioned in the RFP document should be provided by the Bidder.**
7	The proposed CMS solution should be an integrated, modular, and scalable solution, accessible from a single pane of glass for KPI insights across the entire IT environment. This dashboard will provide service status, performance view, response-time data etc based on role-based access.
B	**Performance Monitoring Management**
1	The proposed Enterprise Management tools must be able to monitor end to end performance of Server Operating Systems & Databases and Should be able to manage distributed, heterogeneous Systems – Windows, UNIX & LINUX from a single management station.
2	There should be a single agent on the managed node that provides the system performance data, and for event management it should be able to prioritize events, do correlation & duplicate suppression ability to buffer alarms and provide automatic actions with capability to add necessary annotations
3	The system must support multiple built in discovery mechanisms for e.g., Active Directory, Windows Browser, DNS with capability to discover and services discovery
4	Each operator should be provided with user roles that should include operational service views enabling operators to quickly determine impact and root cause associated with events.
5	The system should integrate with Helpdesk / Service desk tool for automated incident logging and notify alerts or events via e-mail or SMS.
6	Solution should provide alarm correlation and facilitate reduction of total number of alarms displayed by means of intelligent alarm correlation, suppression and root cause analysis techniques built into the system. The system must ensure reduction in MTTR by means of advanced event correlation, filtering, and root cause analysis.

Centralized Management Solution	
7	The proposed Alarm Correlation and Root Cause Analysis system shall integrate network, server and database performance information and alarms in a single console and provide a unified reporting interface for network components. The current performance state of the entire network & system infrastructure shall be visible in an integrated console.
8	It should have capability to perform cross domain correlation with alarm correlation from Network Monitoring tool, Systems monitoring tool and other domain monitoring tools.
9	The proposed solution should provide out of the box root cause analysis with multiple root cause algorithms inbuilt for root cause analysis.
10	Alarms should be mapped to the live topology views and real time updates to topology based on alarm occurrences.
Network Management System (NMS)	
A	**Network Fault Monitoring & Performance Management with Reporting**
1	The Network Management function must monitor performance across heterogeneous networks from one end of the enterprise to the other.
2	The solution should allow for discovery to be run on a continuous basis which tracks dynamic changes near real-time; to keep the topology always up to date. This discovery should run at a low overhead, incrementally discovering devices and interfaces.
3	NMS should provide integrated fault, performance Monitoring, Configuration & compliance Management together in one tool.
4	NMS should support Industry-leading support for physical, virtual, and SDN-enabled devices like Cisco ACI, VMWare NSX, Viptela, Big Switch Networks, etc.
5	NMS should provide network Trap Analytics out of the box.
6	NMS should support out of the box monitoring of at least 2500+ devices from at least 150+ vendors.
7	Diagnostic Analytics providing change-Correlated Performance Views and should show the difference either in either a side-by-side, or line-by-line presentation
8	NMS should support Compliance Model – Configuration, Software, Running State
9	It should support various discovery –protocols to perform automatic discovery of all L2, L3 Network devices across WAN and any further Network connectivity's planned in future.
10	The tool shall be able to discover Ipv4 only, Ipv6 only as well as devices in dual stack. In case of dual stack devices, the system shall be able to discover and show both Ipv4 and Ipv6 IP addresses.
11	The tool shall be able to work on SNMP V-1, V-2 & V-3 based on the SNMP version supported by the device. It shall provide an option to discover and manage the devices/elements based on SNMP as well as ICMP.
12	The proposed Network Fault Management solution must support extensive discovery mechanisms and must easily discover new devices using mechanisms such as SNMP Trap based discovery. It must also allow for inclusion and exclusion list of IP address or devices from such discovery mechanisms
13	The proposed solution must provide a detailed asset report, organized by vendor name, device type, listing all ports for all devices. The Solution must provide reports to identify unused/dormant Network ports in order to facilitate capacity planning
B	**Network Configuration Automation**
1	The system should be able to clearly identify configuration changes / policy violations / inventory changes across multi-vendor network tool.
2	The system should support secure device configuration capture and upload and thereby detect inconsistent "running" and "start-up" configurations and alert the administrators.

Centralized Management Solution	
3	The proposed fault management solution must be able to perform real-time or scheduled capture of device configurations.
C	**Network Traffic Flow Analysis System**
1	It shall be able to capture, track & analyses traffic flowing over the network via different industry standard traffic capturing methodologies viz. NetFlow, jflow, sFlow, IPFIX etc.
2	It shall provide key performance monitoring capabilities by giving detailed insight into the application traffic flowing over the network.
3	It shall be able to monitor network traffic utilization, packet size distribution, protocol distribution, application distribution, top talkers etc. for network traffic.
4	It shall collect the real-time network flow data from devices across the network and provide reports on traffic based on standard TCP/IP packet metrics.
D	**Reporting**
1	Reporting solution should be able to report on Service Level status of configured business service.
2	It should be able to collect and collate information regarding relationship between IT elements and business service, clearly showing how infrastructure impacts business service levels.
3	The solution should be user configurable for building additional reports.
4	Solution should be able to collect Key performance measurements and statistics from all network domains and store it. This data is to be used for evaluation of performance of the end-to-end network infrastructure/services.
5	The performance management system shall be able to collect and report data like: a. Packet delay and packet loss; b. User bandwidth usage rate; d. Network availability rate; e. CPU usage rate; f. Input/output traffic through physical ports; g. Input/output traffic through logical ports
6	**The Performance Management shall have user defined set of reports like:** **a. Summary Reports for specific groups:** Reports displaying per group of resources the group aggregations for a set of metrics **b. Summary Reports for specific Resources:** Reports displaying for a set of resources the period aggregations for the same set of metrics (for example, per interface, the maximum traffic over the day).
Helpdesk and IT Service Management	
A	**General Requirement of IT Service/ Helpdesk**
1	Should be able to support and handle large volume of incident, service requests, changes, etc. and be able to integrate with third party IVR or CTI.
2	The solution should have IT Service Management documentation/ guidelines in-built based on ITIL best practices and must be ITIL 2011 certified on at least 7 processes by Pink Elephant. The certification copies to be submitted.
3	The solution should have a single CMDB across ITSM and Asset Management system.
4	The solution should have a Single Architecture and leverage a single application instance across ITIL processes, including unique data and workflows segregated by business unit, , and user role for Incident, Problem, Change, Release, Knowledge Management, Asset Management and CMDB.
5	Solution should support multi-tenancy with complete data isolation as well as with ability for analysts based on access rights to view data for one, two or more organizational units.
6	The solution should provide to browse through CMDB which should offer powerful search capabilities for configuration and services, enabling to quickly find Cis as well as their

Centralized Management Solution	
	relationships to other Cis.
7	Provide option for approval engine so that any customized applications developed could incorporate the hierarchy, role based, level-based ad-hoc approval structure. Include notification and escalation capability if approval is not performed.
8	A virtual bot should be available, which can respond to user requests, immediate via portal, email or mobile interfaces.
9	Beyond mobile iOS and Android apps, Self Service App should be available on any device with an HTML5 browser.
10	Should provide out-of-the-box categorization, as well as routing and escalation workflows that can be triggered based on criteria such as SLA, impact, urgency, CI, location, or customer.
11	Should provide modern data analysis methods for insight and value to service desk by leveraging unstructured as well as structured data.
12	The tool should allow the user to take a screenshot of the error message and sends it to the service desk. The user can type in a couple of text lines to describe the error in simple language. The service desk agent then can pick up the ticket with the information already filled in (category, impact, and assignment).
13	The tool should have the knowledge management OOB – knowledge databases to support investigations, diagnoses, root cause analysis techniques, and creating / updating workarounds, temporary fixes and resolutions.
14	Integrates with any underlying service management including Service Desk, Change Management, Service Level Management and CMDB for request fulfilment.
15	The solution should have the ability to operate all functionality available in the incident, problem, change, assets etc. via a mobile app on iPhone or Android phone.
16	Any incident of parent component resulting downtime for the underpinning infrastructure should be corelated and multiple incident should not log in the helpdesk system.
B	**Service Level Management**
1	SI's must proposed a full fledges Service Level Management Solution that allows for tracking of various service level performances of IT Infrastructure and vendor performance.
2	Solution should support comprehensive SLA management platform and must allow creating and applying various operational level parameters to Incidents, Requests, Changes, and Release management modules.
3	The tool should provide an audit trail, tracking & monitoring for record information and updates from opening through fulfilment to closure for example: IDs of individuals or groups opening, updating & closing records; dates / times of status & activities updates, etc.
4	The solution should support SLA violations alerts during the tracking period and should support managing and maintaining a full history of an SLA.
5	The solution must provide a flexible framework for collecting and managing service level templates including Service Definition, Service Level Metrics, Penalties, and other performance indicators measured across infrastructure and vendors.
C	**Auto-Discovery and Inventory**
1	Discovery should work without requiring agent installation (that is, agent-less discovery) while discovery Layers 2 through Layers 7 of OSI model.
2	Discovery system should have the ability to capture configuration files for the purposes of comparison and change tracking.
3	Discovery system should be capable of supporting role-based access to various aspects of CMDB administration.

Centralized Management Solution	
4	Discovery engine should gather detailed asset and configuration item (CI) information for specific servers and the applications running on them.
5	Solution should dynamically discover and continuously map IT hardware inventory and service dependencies.
6	Discovery system should have ability to modify out-of-box discovery scripts, create customized discovery scripts.

3. Edge Device at Campus which includes reporting of all managed devices for the site

A	CPE at Colleges
1	The CPE device must be delivered by a physical hardware platform
2	The CPE device must handle the throughput of minimum 1 Gbps of Threat Protection Throughput including Firewall, IPS, Application Control and antivirus Protection enabled with Mix / production traffic.
3	The CPE should have minimum 8 x 1G Copper Ports and support for LTE ports.
4	The solution should support minimum Concurrent Sessions of more than 150000
5	The CPE should support 10K new connections/sec
6	The CPE device must support 1000 IPSEC tunnels
7	Device should have option to be deployed in Active-Active HA mode to provide redundancy if required in future
8	From day one the Device should support termination of MPLS as well as Internet links and must be able to use multiple links for traffic management. Any failure of a link must result in steering traffic on another link without any manual intervention.
9	Device should have features like IP and URL Whitelist/blacklist, Search patterns/strings, Web reputation feeds, Reputation/category-based actions, URL filter, L7 application-based policies, Custom applications & Intelligent Path selection
10	Device should support TCP Optimization
11	Device should support performance SLA based on latency, packet loss and jitter.
12	The solution should not be just a feature extension but they should be from the core software defined WAN principle compliant.
13	Device Should support Static NAT, Dynamic NAT, Destination NAT, Static NAT with Port Translation
14	System should be able to support IPv6 and IPv4 routing protocols like, BGP, OSPF/ MP-BGP and Static routing.
15	Support for 802.1X Network Access Control
16	User/Group based policies with support for Active Directory & LDAP
17	Device should support LTE Ports.
18	**The CPE device should be able to generate report for -**
	• Traffic statistics, Specific application utilization
	• should provide automated, real-time event alert mechanism such as SNMP traps.
	• should be able to generate system events/logs for events that have taken place in the system such as a login, changes to configuration and system related errors or warnings.
	• should be able to capture uptime of the networking devices at the branch office and shall be able to generate uptime reports

4. Distribution Switch - L3 Switch with Dual Power supply & with minimum 32 SFP ports from day 1

Sr. No.	Specification
	Architecture
1	Shall be 19" Rack Mountable
2	The switch should have dual power supplies
3	The switch should have minimum 32 SFP from day one with 4 no's of 10 G uplinks
4	Minimum 1 serial / RJ-45 based console port
5	Shall have switching capacity of minimum 144 Gbps and Switch shall have minimum 4 GB RAM and 1 GB Flash
6	Quality of Service (QoS)
7	The switch should support Layer 4 prioritization to enable prioritization based on TCP/UDP port numbers
8	The switch should support Classifier-based rate limiting to use an access control list (ACL) to enforce increased bandwidth for ingress traffic on each port
9	The switch should support Remote intelligent mirroring to mirror selected ingress/egress traffic based on an ACL, port, MAC address, or VLAN to a local or remote switch anywhere on the network
10	The switch should support Traffic prioritization allows real-time traffic classification Management
11	The switch should support Dual flash images to provide independent primary and secondary operating system files for backup while upgrading
12	The switch should have Out-of-band Ethernet management port to enable management over a separate physical management network and keeps management traffic segmented from network data traffic
13	IPv6 host enables switch management in an IPv6 network
14	Dual stack (IPv4 and IPv6): transition IPv4 to IPv6, supporting connectivity for both protocols
15	Forward IPv6 multicast traffic to the appropriate interface
16	IPv6 ACL/QoS: support ACL and QoS for IPv6 traffic
17	IPv6 routing: support static, RIPng, OSPFv3 routing protocols
18	Security: provide RA guard, DHCPv6 protection, dynamic IPv6 lockdown
19	Resiliency and high availability
20	The Switch should support Virtualized switching to provide simplified management as the switches appear as a single chassis when stacked
21	The switch should support Redundancy Protocol
22	The switch should support Multiple Spanning Tree
23	The switch should enable loop-free and redundant network topology; allows a server or switch to connect to two switches using one logical trunk for redundancy and load sharing
	The switch should provide easy-to-configure link redundancy of active and standby links
25	The switch should support VLAN and tagging 1024 VLANs simultaneously
26	The switch should support Loopback interface address
27	The switch should support DHCP server
28	The switch should support Bidirectional Forwarding Detection (BFD) to enable link connectivity monitoring and reduces network convergence time for static routing, OSPFv2, and VRRP/HSRP
29	The switch should support Static IP routing for both IPv4 and IPv6 networks
30	The switch should support Policy-based routing. The switch should support Border Gateway Protocol (BGP), MPLS. The switch should support Source-port filtering or equivalent
31	The switch should support RADIUS/TACACS+, NTP. The switch should support Secure shell. The switch should support Secure Sockets Layer (SSL). The switch should support Port security. The switch should support MAC address lockout. The switch should support Secure FTP/TFTP
32	The switch should support Secure management access to deliver secure encryption of all access

Sr. No.	Specification
	methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
33	Certification: - Switch shall conform to UL /BIS Standards for Safety requirements of Information Technology Equipment. Switch/Switch OS should be EAL/NDPP Certified.
34	Should have high-availability feature for active-active & active-passive operation from day-1

5. Distribution Switch - L3 Switch (Type A) with Dual Power supply & with minimum 24 SFP ports

Sr. No.	Specification
	Architecture
1	Shall be 19" Rack Mountable
2	The switch should have dual power supplies
3	The switch should have minimum 24 SFP from day one with 2 no's of 10 G uplinks
4	Minimum 1 serial / RJ-45 based console port
5	Shall have switching capacity of minimum 88 Gbps and Switch shall have minimum 4 GB RAM and 1 GB Flash
6	Quality of Service (QoS)
7	The switch should support Layer 4 prioritization to enable prioritization based on TCP/UDP port numbers
8	The switch should support Classifier-based rate limiting to use an access control list (ACL) to enforce increased bandwidth for ingress traffic on each port
9	The switch should support Remote intelligent mirroring to mirror selected ingress/egress traffic based on an ACL, port, MAC address, or VLAN to a local or remote switch anywhere on the network
10	The switch should support Traffic prioritization allows real-time traffic classification Management
11	The switch should support Dual flash images to provide independent primary and secondary operating system files for backup while upgrading
12	The switch should have Out-of-band Ethernet management port to enable management over a separate physical management network and keeps management traffic segmented from network data traffic
13	IPv6 host enables switch management in an IPv6 network
14	Dual stack (IPv4 and IPv6): transition IPv4 to IPv6, supporting connectivity for both protocols
15	Forward IPv6 multicast traffic to the appropriate interface
16	IPv6 ACL/QoS: support ACL and QoS for IPv6 traffic
17	IPv6 routing: support static, RIPng, OSPFv3 routing protocols
18	Security: provide RA guard, DHCPv6 protection, dynamic IPv6 lockdown
19	Resiliency and high availability
20	The Switch should support Virtualized switching to provide simplified management as the switches appear as a single chassis when stacked
21	The switch should support Redundancy Protocol
22	The switch should support Nonstop switching and routing
23	The switch should support Multiple Spanning Tree
24	The switch should enable loop-free and redundant network topology without using Spanning Tree Protocol; allows a server or switch to connect to two switches using one logical trunk for redundancy and load sharing
25	The switch should provide easy-to-configure link redundancy of active and standby links

Sr. No.	Specification
26	The switch should support VLAN and tagging 1024 VLANs simultaneously
27	The switch should support Loopback interface address
28	The switch should support DHCP server
29	The switch should support Bidirectional Forwarding Detection (BFD) to enable link connectivity monitoring and reduces network convergence time for static routing, OSPFv2, and VRRP/HSRP
30	The switch should support Static IP routing for both IPv4 and IPv6 networks
31	The switch should support Policy-based routing. The switch should support Border Gateway Protocol (BGP), MPLS. The switch should support Source-port filtering or equivalent
32	The switch should support RADIUS/TACACS+, NTP. The switch should support Secure shell. The switch should support Secure Sockets Layer (SSL). The switch should support Port security. The switch should support MAC address lockout. The switch should support Secure FTP/TFTP
33	The switch should support Secure management access to deliver secure encryption of all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
34	Certification: - Switch shall conform to UL /BIS Standards for Safety requirements of Information Technology Equipment. Switch/Switch OS should be EAL/NDPP Certified.
35	Should have high-availability feature for active-active & active-passive operation from day-1

6. Distribution Switch - L3 Switch (Type B) with Dual Power supply & with minimum 12 SFP ports

Sr. No.	Specification
	Architecture
1	Shall be 19" Rack Mountable
2	The switch should have dual power supplies
3	The switch should have minimum 12 SFP from day one with 2 no's of 10 G uplinks
4	Minimum 1 serial / RJ-45 based console port
5	Shall have switching capacity of minimum 44 Gbps and Switch shall have minimum 4 GB RAM and 1 GB Flash
6.1	Quality of Service (QoS)
6.2	The switch should support Layer 4 prioritization to enable prioritization based on TCP/UDP port numbers
7	The switch should support Classifier-based rate limiting to use an access control list (ACL) to enforce increased bandwidth for ingress traffic on each port
8	The switch should support Remote intelligent mirroring to mirror selected ingress/egress traffic based on an ACL, port, MAC address, or VLAN to a local or remote switch anywhere on the network
9	The switch should support Traffic prioritization allows real-time traffic classification Management
10	The switch should support Dual flash images to provide independent primary and secondary operating system files for backup while upgrading
11	The switch should have Out-of-band Ethernet management port to enable management over a separate physical management network and keeps management traffic segmented from network data traffic
12	IPv6 host enables switch management in an IPv6 network
13	Dual stack (IPv4 and IPv6): transition IPv4 to IPv6, supporting connectivity for both protocols
14	Forward IPv6 multicast traffic to the appropriate interface
15	IPv6 ACL/QoS: support ACL and QoS for IPv6 traffic

Sr. No.	Specification
16	IPv6 routing: support static, RIPng, OSPFv3 routing protocols
17	Security: provide RA guard, DHCPv6 protection, dynamic IPv6 lockdown
	Resiliency and high availability
18	The Switch should support Virtualized switching to provide simplified management as the switches appear as a single chassis when stacked
19	The switch should support Redundancy Protocol
20	The switch should support Nonstop switching and routing
21	The switch should support Multiple Spanning Tree
22	The switch should enable loop-free and redundant network topology without using Spanning Tree Protocol; allows a server or switch to connect to two switches using one logical trunk for redundancy and load sharing
23	The switch should provide easy-to-configure link redundancy of active and standby links
24	The switch should support VLAN and tagging 1024 VLANs simultaneously
25	The switch should support Loopback interface address
26	The switch should support DHCP server
27	The switch should support Bidirectional Forwarding Detection (BFD) to enable link connectivity monitoring and reduces network convergence time for static routing, OSPFv2, and VRRP/HSRP
28	The switch should support Static IP routing for both IPv4 and IPv6 networks
29	The switch should support Policy-based routing. The switch should support Border Gateway Protocol (BGP), MPLS. The switch should support Source-port filtering or equivalent
30	The switch should support RADIUS/TACACS+, NTP. The switch should support Secure shell. The switch should support Secure Sockets Layer (SSL). The switch should support Port security. The switch should support MAC address lockout. The switch should support Secure FTP/TFTP
31	The switch should support Secure management access to deliver secure encryption of all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
32	Certification: - Switch shall conform to UL /BIS Standards for Safety requirements of Information Technology Equipment. Switch/Switch OS should be EAL/NDPP Certified.
33	Should have high-availability feature for active-active & active-passive operation from day-1.

7. Access Switch- 16 port L2 PoE+ (Type A) with minimum 2 SFP

Sr. No.	Specifications and Requirements
1.1	**General Features:**
1.1.1	Switch should be 1U/2U and rack mountable in standard 19" rack.
1.1.2	Switch should support field replaceable power supply.
1.1.3	Switch should have minimum 1 GB RAM and 1 GB Flash
1.2	**Performance:**
1.2.1	Switch shall support minimum 36 Gbps of switching fabric
1.2.2	Switch should support STP or equivalent.
1.3	Functionality:
1.3.1	Switch should support network segmentation or VLAN and tagging support
1.3.2	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP/SNTP, RADIUS and TACACS+.
1.3.3	Switch should support IPv6.
1.3.4	Switch should support MACSec-128/802.1AE/802.1x authentication and accounting, IPv4 and IPv6

Sr. No.	Specifications and Requirements
	ACLs and Dynamic VLAN assignment.
1.3.5	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
1.4	Interfaces:
1.4.1	Switch shall have minimum 16 nos. 10/100/1000 Base-T ports, should have 16 ports populated from day 1 and additional 2 nos. SFP uplinks ports
1.4.2	All 16 port should support PoE and PoE+.
1.5	Certification:
1.5.1	Switch shall conform to UL /BIS Standards for Safety requirements of Information Technology Equipment. Switch/Switch OS should be EAL/NDPP Certified.

8. Access Switch- 8 port L2 PoE+ (Type B) with minimum 2 SFP

Sr. No.	Specifications and Requirements
1.1	**General Features:**
1.1.1	Switch should be 1U/2U and rack mountable in standard 19" rack.
1.1.2	Switch should support field replaceable power supply.
1.1.3	Switch should have minimum 1 GB RAM and 1 GB Flash.
1.2	Performance:
1.2.1	Switch shall support minimum 20 Gbps of switching fabric
1.2.2	Switch should support STP or equivalent.
1.3	Functionality:
1.3.1	Switch should support network segmentation or VLAN and tagging support
1.3.2	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP/SNTP, RADIUS and TACACS+.
1.3.3	Switch should support IPv6.
1.3.4	Switch should support MACSec-128/802.1AE/802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.
1.3.5	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
1.4	Interfaces
1.4.1	Switch shall support minimum 8 nos. 10/100/1000 Base-T ports, should have 8 ports populated from day 1 and additional 2 nos. SFP uplinks ports
1.4.2	All 8 port should support PoE and PoE+.
1.5	Certification:
1.5.1	Switch shall conform to UL /BIS Standards for Safety requirements of Information Technology Equipment. Switch/Switch OS should be EAL/NDPP Certified.

9. Access Switch- 48 port L2 with minimum 2 SFP

Sr. No.	Specifications and Requirements
1.1	**General Features:**
1.1.1	Switch should be 1U/2U and rack mountable in standard 19" rack.
1.1.2	Switch should support field replaceable power supply.
1.1.3	Switch should have minimum 1 GB RAM and 1 GB Flash

1.1.4	Switch should support stacking.
1.2	Performance:
1.2.1	Switch shall support minimum 98 Gbps of switching fabric
1.2.2	Switch should support STP or equivalent.
1.3	Functionality:
1.3.1	Switch should support network segmentation or VLAN and tagging support
1.3.2	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP/SNTP, RADIUS and TACACS+.
1.3.3	Switch should support IPv6.
1.3.4	Switch should support MACSec-128/802.1AE/802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.
1.3.5	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
1.4	Interfaces:
1.4.1	Switch shall have 48 nos. 10/100/1000 Base-T ports and additional 2 nos. SFP uplinks ports
1.5	Certification:
1.5.1	Switch shall conform to UL /BIS Standards for Safety requirements of Information Technology Equipment. Switch/Switch OS should be EAL/NDPP Certified.

10. Access Switch- 24 port L2 (Type - A) with minimum 2 SFP

Sr. No.	Specifications and Requirements
1.1	**General Features:**
1.1.1	Switch should be 1U/2U and rack mountable in standard 19" rack.
1.1.2	Switch should support field replaceable power supply.
1.1.3	Switch should have minimum 1 GB RAM and 1 GB Flash.
1.1.4	Switch should support stacking.
1.2	Performance:
1.2.1	Switch shall support minimum 52 Gbps of switching fabric
1.2.2	Switch should support STP or equivalent.
1.3	Functionality:
1.3.1	Switch should support network segmentation or VLAN and tagging support
1.3.2	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP/SNTP, RADIUS and TACACS+.
1.3.3	Switch should support IPv6.
1.3.4	Switch should support MACSec-128/802.1AE/802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.
1.3.5	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
1.4	Interfaces:
1.4.1	Switch shall have 24 nos. 10/100/1000 Base-T ports and additional 2 nos. SFP uplinks ports
1.5	Certification:
1.5.1	Switch shall conform to UL /BIS Standards for Safety requirements of Information Technology Equipment. Switch/Switch OS should be EAL/NDPP Certified.

11. Access Switch- 16 port L2 (Type - B) with minimum 2 SFP

Sr. No.	Specifications and Requirements
1.1	**General Features:**
1.1.1	Switch should be 1U/2U and rack mountable in standard 19" rack.
1.1.2	Switch should support field replaceable power supply.
1.1.3	Switch should have minimum 1 GB RAM and 1 GB Flash
1.1.4	Switch should support stacking.
1.2	Performance:
1.2.1	Switch shall support minimum 36 Gbps of switching fabric
1.2.2	Switch should support STP or equivalent.
1.3	Functionality:
1.3.1	Switch should support network segmentation or VLAN and tagging support
1.3.2	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP/SNTP, RADIUS and TACACS+.
1.3.3	Switch should support IPv6.
1.3.4	Switch should support MACSec-128/802.1AE/802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.
1.3.5	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
1.4	Interfaces
1.4.1	Switch shall have 16 nos. 10/100/1000 Base-T ports and additional 2 nos. SFP uplinks ports
1.5	Certification:
1.5.1	Switch shall conform to UL /BIS Standards for Safety requirements of Information Technology Equipment. Switch/Switch OS should be EAL/NDPP Certified.

12. Access Switch- 12 port L2 (Type - C) with minimum 2 SFP

Sr. No.	Specifications and Requirements
1.1	**General Features:**
1.1.1	Switch should be 1U/2U and rack mountable in standard 19" rack.
1.1.2	Switch should support field replaceable power supply.
1.1.3	Switch should have minimum 1 GB RAM and 1 GB Flash.
1.2	Performance:
1.2.1	Switch shall support minimum 28 Gbps of switching fabric
1.2.2	Switch should support STP or equivalent.
1.3	Functionality:
1.3.1	Switch should support network segmentation or VLAN and tagging support
1.3.2	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP/SNTP, RADIUS and TACACS+.
1.3.3	Switch should support IPv6.
1.3.4	Switch should support MACSec-128/802.1AE/802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.
1.3.5	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
1.4	Interfaces:
1.4.1	Switch shall have 12 nos. 10/100/1000 Base-T ports and additional 2 nos. SFP uplinks ports
1.5	Certification:

1.5.1	Switch shall conform to UL /BIS Standards for Safety requirements of Information Technology Equipment. Switch/Switch OS should be EAL/NDPP Certified.

13. Access Switch- 8 port L2 (Type - B) with minimum 2 SFP

Sr. No.	Specifications and Requirements
1.1	**General Features:**
1.1.1	Switch should be 1U/2U and rack mountable in standard 19" rack.
1.1.2	Switch should support field replaceable power supply.
1.1.3	Switch should have minimum 1 GB RAM and 1 GB Flash.
1.2	Performance:
1.2.1	Switch shall support minimum 20 Gbps of switching fabric
1.2.2	Switch should support STP or equivalent.
1.3	Functionality:
1.3.1	Switch should support network segmentation or VLAN and tagging support
1.3.2	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP/SNTP, RADIUS and TACACS+.
1.3.3	Switch should support IPv6.
1.3.4	Switch should support MACSec-128/802.1AE/802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment.
1.3.5	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
1.4	Interfaces
1.4.1	Switch shall have 8 nos. 10/100/1000 Base-T ports and additional 2 nos. SFP uplinks ports
1.5	Certification:
1.5.1	Switch shall conform to UL /BIS Standards for Safety requirements of Information Technology Equipment. Switch/Switch OS should be EAL/NDPP Certified.

14. Wireless Controller System (H/w or S/w) Managing single SSID authentication in campus

Sr. No.	Specification
1.	WLC must be compliant with IEEE CAPWAP or equivalent for controller-based Wireless LANs (WLANs)
2.	WLC should be dedicated appliance with support up-to 300 Access points. Should support High Availability mode. Should have minimum 2x10/100/1000 Base-T and 4 nos. 1 Gig SFP ports to connect to LAN.
3.	WLC should support minimum 10000 concurrent devices.
4.	WLC should support min 8 Gbps of throughput
5.	Should support multiple redundancy models like 1+1
6.	Should support coverage hole detection and correction that can be adjusted on a per WLAN basis.
7.	Should support RF Management with 40, 80 & 160 MHz channels
8.	Should support Access Control Lists (ACLs).
9.	Should support built-in web authentication
10.	Should be able to set a maximum per-user bandwidth limit on a per-SSID basis.
11.	Should provide Mesh capability for Mesh supported AP
12.	Must support client roaming across controllers separated by a layer 3 routed boundaries.

13.	Should support spectrum analysis and able to classify different types of interference.
14.	Should provide multiple real-time charts/log showing interferers per access point, on a per- radio, per-channel basis.
15.	System should provide fast Fourier transform (FFT) displays and spectrograms for real-time troubleshooting and visualization. Any specialized hardware and software required for the same should be provide by the vendor.
16.	Support for configuring media streams with different priority to identify specific video streams for preferential quality-of-service treatment.
17.	To deliver optimal bandwidth usage, reliable multicast must use single session between AP and Wireless Controller.
18.	Should support IPv4 & IPv6.
19.	Controller should support deep packet inspection for all user traffic across Layer 4-7 network to analyses information about applications usage, peak network usage times for all access points from day one
20.	WIPS solution should Automatically blacklist clients when it attempts any attack.
21.	WIPS solution should be capable of wireless intrusion detection & prevention. The WLAN should be able to detect Rogue AP and take corrective action to prevent the rogue AP. The system should detect and prevent an organization's wireless client connecting to rogue AP and also prevent an outside client trying to connect to organizational WLAN.
22.	WIPS solution should identify an Ad-hoc connection (i.e. clients forming a network amongst themselves without an AP) as well as windows bridge (client that is associated to AP is also connected to wired network and enabled bridging between two interfaces)
23.	The system should detect an invalid AP broadcasting valid SSID and should prevent valid clients getting connected from these AP's.
24.	For advance forensic WIPS solution should perform spectrum analysis to detect and classify sources of interferences. System should provide chart displays and spectrograms for real-time troubleshooting and visualization
25.	The WIPS solution should identify if a client/tool try to flood an AP with 802.11 management frames like authenticate/associate frames which are designed to fill up the association table of an AP.
26.	The WIPS solution should identify if somebody try to spoof mac address of client or AP for unauthorized authentication.

15. Wi-Fi Indoor AP (With Mounting Kit + Antenna + Accessories)

Sr. No.	Specification
1	802.11 a/b/g/n/ac/ax 2x2:2 MIMO, dual radio Access Point. The AP should have Dual Radio 802.11ax access point with OFDMA and Multi-User MIMO (MU-MIMO)
2	The Access Point should have single 10/100/1000 Ethernet interfaces
3	Access point should support Built-in technology that resolves sticky client issues for Wi-Fi 6 and Wi-Fi 5 devices
4	Access point should have Bluetooth 5 and Zigbee/Z wave or equivalent support
5	Access point should have 1.4 Gbps aggregate data rates
6	Access Point can have integrated internal antenna
7	Access point should have Internal Bluetooth Low energy beacon to support advance location-based services for Mobile engagement solutions and Applications.
8	Should support 16x BSSID per AP radio.

Sr. No.	Specification
9	The access point should be capable of performing security scanning and serving clients on the same radio. It should be also capable of performing spectrum analysis and security scanning using same radio.
10	Access Point should be able to power up using standards 802.3 af/at POE input
11	Access point should have option of external power adaptor as well. Should have dedicated console port
12	Must operate as a sensor for wireless IPS
13	AP model proposed must be able to be both a client-serving AP and a monitor-only AP for Intrusion Prevention services
14	Access point must incorporate radio resource management for power, channel, coverage hole detection and performance optimization
15	The AP should support supports priority handling and policy enforcement for unified communication apps, including Skype for Business with encrypted video conferencing, voice
16	The AP should support deep packet inspection to classify and block, prioritize, or limit bandwidth for thousands of applications in a range of categories
17	Should support standalone/autonomous mode for specific requirement
18	AP should be provided with proper mounting kit
19	The Access point should support Transmit beamforming (TxBF) for increased signal reliability and range
20	The Access point should support 802.11ax Target Wait Time (TWT) to support low-power client devices
21	**Regulatory Compliance** FCC/ISED CE Marked UL/IEC/EN 60950 EN 60601-1-1, EN60601-1-2
22	**Certifications** UL/BIS Wi-Fi Alliance: - Wi-Fi CERTIFIED a, b, g, n, ac - Wi-Fi CERTIFIED 6 (ax) - WPA, WPA2 and WPA3
23	Should support 0-50-degree operating temperature

16. Rugged Wi-Fi Outdoor AP (With Mounting Kit + Antenna + Accessories)

Sr. No.	Specification
1	802.11 a/b/g/n/ac/ax 2x2:2 MIMO, dual radio Access Point. The AP should have Dual Radio 802.11ax access point with OFDMA and Multi-User MIMO (MU-MIMO)
2	Access Point should be 802.11ax ready from day one and support WPA3 from day one
3	The Access Point should have single 10/100/1000 Ethernet interfaces
4	Access point should support Built-in technology that resolves sticky client issues for Wi-Fi 6 and Wi-Fi 5 devices
5	Access point should support ready with Bluetooth 5 and Zigbee/Z Wave/equivalent to simplify deploying and managing location-based services
6	Access point should have 1.4 Gbps aggregate data rates

Sr. No.	Specification
7	Access Point can have integrated internal/external antenna
8	Should support 16x BSSID per AP radio.
9	The access point should be capable of performing security scanning and serving clients on the same radio. It should be also capable of performing spectrum analysis and security scanning using same radio.
10	Should support BPSK, QPSK, 16-QAM, 64-QAM, 256 QAM and 1024 QAM modulation types
11	Access Point should be able to power up using standards 802.3 af/at POE input
12	AP model proposed must be able to be both a client-serving AP and a monitor-only AP for Intrusion Prevention services
13	The Access Point should have the technology to improve downlink performance to all mobile devices.
14	Access point must incorporate radio resource management for power, channel, coverage hole detection and performance optimization
15	AP should support standalone mode/ Inbuilt Virtual controller mode for specific requirements.
16	The AP should support Supports priority handling and policy enforcement for unified communication apps, including Skype for Business with encrypted videoconferencing, voice, chat and desktop sharing
17	The AP should support deep packet inspection to classify and block, prioritize, or limit bandwidth for thousands of applications in a range of categories
18	The Access point should support 802.11ax Target Wait Time (TWT) to support low-power client devices
19	**Regulatory Compliance** FCC/ISED CE Marked UL/IEC/EN 60950 EN 60601-1-1, EN60601-1-2
20	**Certifications** UL/BIS Wi-Fi Alliance certified 802.11a/b/g/n Wi-Fi CERTIFIEDTM 6 (802.11ax)
21	**Environmental** Operating Temperature: - -10° C to +55° C Humidity: 5% to 95% non-condensing internal to chassis. Water and dust: IP66/67 Wind survival: up to 165 Mph

17. 32 U Rack (with Redundant PDU)

Sr. No.	Features & Specification
1	The rack should be of 32U height with 800mm x 1000mm dimensions.
2	The Rack should have metal sheet perforated front and rear doors.
3	Both the side panels should be easily removable for easy access to the equipment's.
4	The top and bottom panels should have ventilation and cable entry facility.
5	The rack should have adjustable 19" vertical mounting
6	As part of supply the rack should have 2 x PDU, 1 x cable manager, 1 x Rack tray, 2 x Fan and hardware kit.

18. 6 U rack (With PDU and all accessories)

Sr. No.	Features & Specification
1	The rack should be of 9U height with minimum 500 mm (W) x 430mm (D) dimensions.
2	The Rack should have FRONT GLASS DOOR.
4	The bottom panels should have ventilation and cable entry facility.
5	The rack should have adjustable 19" vertical mounting
6	As part of supply the rack should have 1 x PDU, 1 x cable manager, 1 x Fan and hardware kit.

19. 5 KVA UPS with battery bank with 30 mins full load backup along with Display

5 KVA On-Line UPS With 30 Minutes Backup		
Sr. No.	**Parameter**	**Specification**
	AC INPUT	
1	Rating	5 KVA
2	Voltage	170 – 270 V
3	Frequency	50Hz ± 4 Hz
4	Phase	Single Phase
5	DC Voltage	192 V
	AC OUTPUT	
6	Nominal Output Voltage	220/230/240 VAC Single Phase
7	Voltage Regulation	± 1%
8	Frequency (Synchronized range)	50Hz ± 4 Hz
9	Frequency (Battery mode)	50Hz ± 0.1%
10	Waveform	Sine wave
11	Harmonic Distortion	<2% (Linear load), <3% (non – linear load)
12	Inverter Efficiency (AC-AC)	>91%
13	Crest Factor	03:01
14	Backup time	30 minutes through suitable SMF Battery Bank
	GENERAL	
15	Control panel	LED status display with Online, On Battery & Overload Indications
16	Audible Alarm	Audible and visible alarms
17	Operating Environment	0 – 45 °C
18	Bypass	Should be available
	COMMUNICATION INTERFACE	
19	Standard	RS 232/RS485 port for software interface
20	Optional	SNMP Interface
21	Product Certification	BIS certification with ISO 9001, ISO 14001, ISO 50001 & ISO 45001.
22	OEM Should have its own infrastructure and minimum Service support at within Bihar.	
23	OEM should have mandate EPR Authorization from Central Pollution Control Board, Govt. of India.	
24	Must have received a single order for at least 82 Nos. or more 5 KVA Online UPS for throughout Bihar locations from any Central Govt. / State Govt. / PSU / Bank.	

20. 1 KVA UPS with battery bank with 1 hour full load backup along with Display

1 KVA On-Line UPS With 60 Minutes Backup

Sr. No.	Parameter	Specification
	AC INPUT	
1	Rating	1 KVA
2	Voltage	170 – 270 V
3	Frequency	50Hz ± 4 Hz
4	Phase	Single Phase
5	DC Voltage	36 Volts
	AC OUTPUT	
6	Nominal Output Voltage	220/230/240 VAC Single Phase
7	Voltage Regulation	± 1%
8	Frequency (Synchronized range)	50Hz ± 4 Hz
9	Frequency (Battery mode)	50Hz ± 0.1%
10	Waveform	Sine wave
11	Inverter Efficiency (AC-AC)	>90%
12	Crest Factor	03:01
13	Backup time	60 minutes through suitable SMF Battery Bank
	GENERAL	
14	Control panel	LED status display with On Line, On Battery & Overload Indications
15	Audible Alarm	Audible and visible alarms
16	Operating Environment	0 – 45 °C
17	Bypass	Should be available
	COMMUNICATION INTERFACE	
18	Standard	RS 232/RS485 port for software interface
19	Monitoring	SNMP Interface
20	Product Certification	BIS certification with ISO 9001, ISO 14001, ISO 50001 & ISO 45001.
21	OEM Should have its own infrastructure and minimum Service support at within Bihar.	
22	OEM should have mandate EPR Authorization from Central Pollution Control Board, Govt. of India.	
23	Must have received a single order for at least 300 Nos. or more 1 KVA Online UPS for throughout Bihar locations from any Central Govt. / State Govt. / PSU / Bank. OEM to furnish self-certification in this regards.	

21. Low end Rack server with Monitor, Keyboard & Mouse with OS and Antivirus for Content Management, AAA, user management, log management etc

Rack Server with necessary OS		
Sr. No.	**Component**	**General Specifications**
1	Form factor and processor	Rack mountable (upto 2U), upto two x-86 processors (64-bit), (to be populated with dual processor min 16 Cores each with 2.1 GHz clock speed, total minimum 36 MB Cache)
2	Memory slots	Support upto 32 DIMM slots
3	Memory configured	128 GB with support upto 1TB
4	Capacity Drive	Server should support minimum 6.4 TB usable SSD Drive after RAID-5 or 6.
5	Boot Optimized SSD's	Each Server should be configured with 2 * 960GB using latest M.2 Drives.

6	RAID/HBA Controller	12 Gbps SAS RAID controller with minimum 4 GB Cache supporting RAID 0, 1, 5, 6, 10, 50, 60 supporting capacity drives configured in system.
7	I/O slots	Support at least 6 * PCIe Gen3 Slots.
8	Ethernet ports	Min 2 x 10G Base T.
9	OS Support	Microsoft Windows Server, Hyper-V, VMWare, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), Cent OS The server should be supplied with Windows server latest edition which should be capable of creating minimum 2 VMs in the server.
10	Power Supply	Redundant Power Supply
11	Management Integration	Support for integration with Microsoft System Centre and PowerShell toolkit
12	Power & temperature	Integrated Power monitoring and reporting
13	Configuration & Management	System should support multiple management interface like Web UI, CLI. Management solution should be able to manage different form factor hardware and provide single console. Should be supplied with required Antivirus
14	Monitor, Keyboard and Mouse	The server shall be supplied with KVM to be mounted on rack
14	IPV 6 compliance	The Hardware should be IPV 6 Compliant from day 1

22. 1.5 Ton AC

Sl. No.	Min Technical Specifications and Standards
1	a. Type: Split units
2	b. Capacity: minimum 1.5 Ton
3	c. Cooling Capacity: minimum 18000 BTU / Hr
4	d. Noise Level: < 50 dB
5	e. Operation: Remote Control
6	f. Power: 230VAC, 50Hz
7	g. Type of Refrigerant: R 32 (CFC free)
8	h. Inclusive of Cables, Refrigerant pipes, drainpipes, MS Stand or any other item if required to make the same operational.

23. 75-inch Smart Interactive Board + OPS

Sr. No.	Parameter	Specification
1	Software	The touch interactive display shall have inbuilt onboard writing software. Thus, this software shall have the capability to write something on the display and store in on-board system even WITHOUT any PC/Laptop/External or Internal add on devices.
		The display must have the facility of send the written contents by mail without using any external devices.
		The display must have the facility of store written contents in the pen drive.
		This software which is embedded in the On-Board system shall have capability to write (Annotate) on top the contents that are shown from Pen drive direct / External PC (Image, Video etc.) / Any such sources.

Sr. No.	Parameter	Specification
		To achieve those functions, the touch interactive display shall have inbuilt onboard smart android 8.0 or better.
2	Internet access	The touch interactive display must have inbuilt WIFI. So that the presenter shall visit the internet to show/access the content/information even without PC/LAPTOP
3	Display technology	Direct Backlit LED- IPS Panel
4	Display Panel Diagonal size (mm)	Minimum 1900mm
5	Width of The Effective Display Area of The Panel (mm)	Minimum 1710 mm
6	Height of The Effective Display Area of The Panel (mm)	Minimum 1020 mm
7	Display Ratio	16:9 & Full HD.
9	Display Colour	Minimum 1 Billion
10	Screen Orientation	Landscape / Portrait
11	Viewing Angle	176 ° or better viewing angle
11	Lifetime	30,000 hours or more
13	**Touch Interactive Display - Audio System**	
14	Speakers	Should be seamlessly build-in the display
15	No. Of speakers and Max. Power Output	Touch Interactive Display shall have minimum of 2 speakers with the power of each speaker at 10 Watts or above
16	**Touch Interactive Display - Touch Technology**	
17	Deployment of Touch Technology	Advanced Infrared / IR spread
18	Thickness of the touch glass	Minimum 3.5 mm Toughened Glass. Surface must have Anti-Glare technology.
20	Touch accuracy & Sensor	1mm with Infrared or Capacitive touch sensor. Must have a touch capability of minimum 20 points
23	Writing Tool	Shall use with stylus pen or finger. It must have 2 no. of stylus with it.
	Touch Interactive Display - Connectivity Ports	
25	Ports	USB2.0 *1, USB3.0 *3, HDMI IN 2.0 *2, OPS (Optional) *1, LAN RJ45*2, RS232 IN *1, Audio OUT *1, Audio IN *1, VGA *1,
	Touch Interactive Display - Handheld Remote Control	
26	Technology	Infrared
27	On Board Operating System	Touch Interactive Display shall have better Operating System which shall be coded with any latest programs like Android 8.0 or better
28	Onboard System's CPU	Quad Core 1.3GHz or higher,
29	Onboard System's RAM & ROM	2GB or Higher- RAM 16GB or Higher- ROM
31	Onboard system Android (Or equivalent) Version support	8.0 or better
32	GUI - Graphic User Interface	The display must have GUI for ease access of resources, functions and shortcuts. This GUI shall be any proprietary OS but shall be compatible

Sr. No.	Parameter	Specification
		with Android coding. Or any such OS. Should Support all major commonly used types of multi-media files.
33	White Board feature	The touch interactive display shall have white board function for seamless writing without any connectivity of computing devices. This white board function shall have minimum features of selecting different colours of pen, highlighter and sizes. The redo and undo function also shall add additional comfort to the presenter with eraser function. Preferably gesture action for eraser shall enhance the convenient of presentation.
	OPS in slot	
34	OPS	Interactive display must have OPS in slot with 4 core processor, 4GB RAM, 1TB HDD Hard disk, Windows 10 or higher. From which video-calling can be possible via ZOOM, SKYPE, WEBEX, etc. Also, local training sessions could be recorded in it.
	Touch Interactive Display - System Safety	
35	Mounting Capabilities	Display must have facility to mount on floor stand or wall brackets
36	BIS and CE Approval	Proposed Product must have BIS/CE certification. And Attach the copy as proof.
37	Provision of OPS slot	Interactive display must have OPS slot for PC applications
38	Suitable wall mount kit with accessories	Equipment has to be supplied with suitable wall mount kit and accessories

24. VC Codec

The proposed system must be an all-in-one video bar consisting of Integrated - Camera, Codec, Speakers, Microphones and Wireless Remote Control/Touch Control Panel. The system must be based on ITU standards & hardware based. No software-based solution will be accepted.		
Sr. No.	**Description**	**Specification Parameter**
1	Package	It should be All-In-One Video Bar (with Integrated Microphones, Speakers , 4K Camera with Privacy Cover/Shutter) and Wireless Remote Control/Touch Control Panel.
2	Video Standards and Resolutions	It should support H.323 & SIP standards for communications.
		It should support interoperability and bandwidth saving using video compression H.264 AVC, H.264 High Profile, H.265
		It should support 4K 30 fps,1080p 60 fps,1080p 30 fps ,720p 60 fps, 720p 30 fps.
3	Content Standards and Resolutions	It should support both wired and wireless content sharing using standard based H.239 and BFCP. It should also support audio from PC used for content sharing.
		It should transmit content to the far end location at 4K 15fps.
		It should support inbuilt feature for wireless content sharing using Airplay and Miracast technology without downloading any application on the user device.
		It should support Content Annotation and White Boarding capability when connected to Touch Display.
4	Audio Standards and	It should support G.711, G.728, G.729A, G.722, G.722.1, G.719 or better

The proposed system must be an all-in-one video bar consisting of Integrated - Camera, Codec, Speakers, Microphones and Wireless Remote Control/Touch Control Panel. The system must be based on ITU standards & hardware based. No software-based solution will be accepted.		
Sr. No.	**Description**	**Specification Parameter**
	Features	It should support 20 kHz or better bandwidth with crystal clear audio and stereo sound.
		Keyboard Noise Reduction and Noise Block
5	Video and Audio Inputs	1 x HDMI input to share 4K/Full HD content from PC/Laptop/Document camera/PTZ Camera.
		1 x USB input to connect additional USB based PTZ camera from same OEM to capture whiteboard/presenter.
6	Video and Audio Outputs	2 x HDMI output for connecting primary and secondary 4K(UHD)/Full HD displays.
7	Other Interfaces	1 x 10/100/1000 Ethernet port
		1 x USB to support system software upgrade
		Bluetooth 5.0 and Wi-Fi 802.11a/b/g/n/ac (MIMO) for Wireless Content Sharing for Guests using their Smartphones and Tablets (Android and iOS)
8	Camera	Integrated UHD 2160p (4K) capture resolution
		Minimum 5x digital automatic zoom and 120° FOV
		The camera should support automatic speaker framing and group framing.
		The Camera should have privacy cover/shutter.
		Video Conference Camera and Codec should be controlled using same remote control/touch panel.
9	Microphone and Speaker	Inbuilt Microphones and Stereo Speakers
		Optional external expansion microphone with mute/unmute button availability.
10	USB Device Mode	The system should have inbuilt functionality to use the VC system as an external camera and microphones when connected to a Laptop/PC over a single USB cable without using any external hardware components to connect to any Cloud/on-Premise Based VC platform like Cisco Webex, Zoom, Microsoft Teams, Google Meet, etc.
11	Network Features	H.323 and SIP bandwidth supporting up to 6 Mbps or more.
		Must support IPv4 and IPv6 from day one on both H.323 and SIP.
		Auto Gatekeeper Discovery, Lost Packet Recovery (LPR) technology, IP Precedence and DiffServ, Configurable MTU size
12	Security	Media Encryption (H.323, SIP): AES-128, AES-256
		Authenticated access to admin menus and web interface access
		Local account password policy configuration
		Global Directory/Centralized Directory/LDAP support
13	Other Standards/features	H.460.18, H.460.19, SSL, TLS
14	Warranty	The complete solution should be from the same OEM with 1 year warranty from day one.

25. <u>USB based PTZ camera & Speaker Phone</u>

Technical Specifications for USB Based PTZ Camera for Large Size Room		
Sr.	**Description**	**Specification Parameter**

No.		
1	Camera Type	1/2.7" CMOS (1920 x 1080)
2	Output	1080p30/25, 720p30/25, 960x540p30/25, 640x360p30
3	Zoom	12X Optical
4	Compression	H.264 SVC/AVC
5	Focus	Auto
6	Lens Focal Length	f= 3.5mm to 42.3mm (+/- 3mm for both range values)
7	Lens F#	1.8 - 2.8
8	Horizontal Field of View	6.9 - 72.5 degrees
9	Vertical Field of View	3.9 - 44.8 degrees
10	Pan Range	+/-170 degrees
11	Tilt Range	+90/-30 degrees
12	Camera PTZ Control	IR Remote Control to be supplied day one.
13	Minimum Illumination	0.5Lux @ (F1.8, AGC ON)
14	Exposure	Auto-iris, AGC
15	SNR	≥ 55dB
16	Warranty	The complete solution should be from the same OEM with 1 year warranty from day one.

Technical Specifications for Smart Speakerphone for Personal Use		
S.No.	**Description**	**Minimum Specifications**
1	Microphone	Three microphone steerable array
		Pickup range: 7 ft / 2 m
		Frequency Response: 100 Hz to 6.7 kHz
		Full duplex audio
		Noise and echo reduction
2	Speaker	40 mm high-performance music speaker
		Frequency response: 80 Hz to 20 kHz
		Bass reflex with dual passive radiators
3	Compatibility	Windows and Mac OS
4	Connectivity	To PC via USB-A (Integrated cable length: minimum 2.34 feet)
		To PC wirelessly via included Bluetooth Dongle adapter
		Smartphone via Bluetooth v5.1
5	User Interface Features	Touch sensitive user controls for for Call/answer end, Mute, Volume +/-, Programmable function button
		Push button user controls for Power On/Off, Bluetooth pairing
		One USB-A port for smartphone charging
6	Battery	Type: Lithium-ion
		Capacity: 3200 mAH
		Talk time: up to 20 hours
		Charge Time: up to 4 hours
7	Certification	Microsoft Teams and Zoom certified
8	Operating Conditions	IP64 dust and water resistant
12	Warranty	1 years from day one

26. Installation/Cabling/Electrical Wiring/Civil Works

Sr. No.	Features & Specification

1	The 32U rack should be properly installed and earthed to avoid any surge.
2	The UTP cable should be Cat-6 type and all the cable laying should be done in conduits/flexi pipes. All cables terminated in 32U rack to be managed properly in the cable manager.
3	The vendor should also provide a separate earthing for 32U Rack.
4	The 6U rack should be properly installed and earthed to avoid any surge.
5	The UTP cable should be Cat-6 type and the OFC should be 6- Core unarmoured type and all the cable laying should be done in conduits/flexi pipes.
6	The LIU for OFC termination should be of at least 6-Port and Cat-6 type Patch Panel to be installed in wherever required.
7	SI needs to build the server room by installing partitions (Aluminum/Glass) as required based on the site conditions
8	Any additional accessories required to install all active/passive components shall be borne by the Bidder

27. Cat 6 UTP Outdoor/Indoor Cable Double Jacket Cable

Cat 6 UTP Outdoor/Indoor Cable Double Jacket Cable	
Sr. No.	**Specification**
1	4 Pair Cable with integral cross -member pair separator for uniform characteristic impedance.
2	Category 6 Unshielded Twisted 4 Pair 100 Ω cable shall be compliant with ANSI/TIA/EIA-568-C.2-1 Additional ISO/IEC 11801 2ndEd. Transmission Performance Specification for 4 Pair 100Ω Category 6 Cabling
3	Category 6 UTP cables shall extend between the work area location and its associated telecommunications closet and consist of 4 pair, UTP cable jacket.
4	Conductor: Solid Copper, 23 AWG
5	Insulator High Density Polyethylene
6	Inner Jacket: LSZH
7	Outer Jacket: High Density PE, Anti rodent, Black
8	Application: Outdoor/Indoor
9	Outer Diameter: 7.2 +/- 0.2 mm
10	Operation Temperature: -20°C to +70°C
	Mechanical Test
11	Should have Pulling force of 11.5 Kg
12	OEM must provide declaration on conformity of all the passive components to the following standards: a) TIA/EIA 568-C.2; b) TIA/EIA 568-C.3; c) ISO/IEC 11801
13	All the products must have RoHS Compliance

28. Patch Cord, U/UTP Cat 6

Patch Cord, U/UTP Cat 6	
Sr. No.	**Specification**
1	Standardization: Compliant with Cat 6, Class E requirements: ISO/IEC 11801 2nd Edition Compliant with Cat 6 component standards IEC 60603-7-4 and 60603-7-5
2	Cable shield: U/UTP
3	Number of conductors: 8

4	Stranding: 7 x 0.20 mm (24 AWG)
5	Cable jacket characteristics: cable, metal-free
6	Cable overall diameter: 6.5±0.2 mm
7	Tube / Wire type: stranded conductor
8	Insulation: solid polyolefin, 0.97±0.02 mm diameter
9	Plug: Feature cable retention, with enhanced pull strength.
10	Cat 6 patch cord plug to have round cable holder and strain relief boot to avoid bending.
11	Jacket: PVC/LSZH with 8 different color options
12	Plug should be featured with color ring options
13	Plug should have high repeatability cross talk performance
14	OEM must provide declaration on conformity of all the passive components to the following standards: a) TIA/EIA 568-C.2; b) TIA/EIA 568-C.3; c) ISO/IEC 11801
15	All the products must have RoHS Compliance

29. Fiber Optic LIU Rack Mount LIU (12/24 Ports)

Fiber Optic LIU Rack Mount LIU (12/24 Ports)	
Sr. No.	**Specification**
1	Fiber optic patch panel: Fiber optic patch panel FMS Termination Drawer should have sufficient slots to accommodate 3 of 12/16 Port LC Adaptor Plates.
2	Should have Slide type drawer structure
3	Height: 1 U, 1.75 inches (12 & 24 Ports)
4	Material: Cold Rolled Steel in surface coated by electrostatic epoxy powder
5	Slots: FMS should have sufficient slots to accommodate adaptor plates
6	Empty Slots of FMS should be covered with blank plates.
7	Splice Tray: Splice Tray of ABS, comply with UL 94V2 material should be supplied with LIU.
8	OEM must provide declaration on conformity of all the passive components to the following standards: a) TIA/EIA 568-C.2; b) TIA/EIA 568-C.3; c) ISO/IEC 11801
9	OEM should have valid ISO 9001 and ISO 14001 certificate on Design, development and manufacture of SW and HW solutions for communication networks.
10	All the products must have RoHS Compliance

30. 6 Core OFC with Accessories

6 Core Fibers with Accessories such as Loose Tube, MM, Central Steel Wire+Corrugated Steel, PE	
Sr. No.	**Specification**
1	The fibre should be optimized for operation at 850 nm and at 1300 nm.
2	Should fulfil the requirements of ISO.IEC 11801 - 2nd Edition, type OM3, IEC 60794-1-2 F5
3	Fibre Count: 6
4	Loose tube count: 5
5	Fiber count per tube :6 core - 6 in 1 tube rest filler and rest filler
6	Filler count: 4 (6 core)

7	Filler Material: PP
8	Max. Attenuation: ≤3.5 dB/km at 850nm and ≤2.3 dB/km at 850nm
9	Fibre/Tube Identification: Single Tube
10	Fibre protection (Tubes): Polybutylene Terephthalate (PBT)
11	Armouring: CST
12	Thickness: 1.6mm
13	Outer Sheath: UV Stabilized Polyethylene (PE)
14	Central Strength Member: Steel wire coated with PE
15	Water Blocking: Thixotropic Gel (Tube);
16	Petroleum Jelly (Interstices)
17	Cable Diameter (D): 9.0 ± 0.5 mm
18	Mass (Nominal): 91 kg/km
19	Min. Bending Radius (during Installation): 20 D; D-Outer Diameter
20	Max. Tensile Strength-Short Term: 1500N
21	Max. Crush Resistance-Short Term: 2200N/100 mm
22	Operating Temperature range: -40°C to +70°C
23	OEM must provide declaration on conformity of all the passive components to the following standards: a) TIA/EIA 568-C.2; b) TIA/EIA 568-C.3; c) ISO/IEC 11801
24	All the products must have RoHS Compliance

31. 19" 1U 24 port unshielded Patch Panel

19" 1U 24 port unshielded Patch Panel	
Sr. No.	**Specification**
1	Patch panel should be modular design, populates up to 24 UTP keystone-type jacks in 1U
2	Patch panel should be Enhanced with cable strain relief with retention tray; It should be single metal both front panel and rear tray
3	Material: sub-rack made of MS Steel rack mountable with dimension 44.4 mm : 482.6 mm : 105 mm (h:w:d) tray
4	Information Outlet or connecting module should comply with the specification mentioned above in 2
5	Should be RoHS complied
6	OEM must provide declaration on conformity of all the passive components to the following standards: a) TIA/EIA 568-C.2; b) TIA/EIA 568-C.3; c) ISO/IEC 11801
7	All the products must have RoHS Compliance

32. Cat 6 Information Outlet with face plate

Cat 6 Information Outlet with face plate	
Sl No	**Specifications**
1	The cable should meet minimum Category 6 requirement and rodent proof (Document proof to be submitted with technical compliance).
2	Conductor: 4 pair 23 AWG solid bare copper conductor
3	Frequency tested up to 250 MHz or above. Double Jacket:

4	Inner Jacket Polyethylene and outer Jacket LSZH complying IEC 60332-1 or vice versa
5	Separator: Cross / Star Spine to separate 4 pairs UTP cables
6	Pull / Stripe thread inside the UTP cable
7	Operating temperature: Minimum 60 Degree C or better.
8	Approvals / Certifications: ELV compliant/RoHS compliant for IO
9	Color of the Jack should be visible to identify different and Redundant Port when shutter is open
10	Color of the face plate: Open & Grade: Fire Retardant
11	UL/ ABS Rugged plastic with ROHS Compliant for face plate
12	Capable of supporting – UTP Jack, STP Jack.

33. Workstation with Monitor

Sl No .	Parameter	Specification
1	Processor	X-86 processor, minimum 8 core with adequate L3 cache
2	Operating System	Windows 10 Pro or better, 64bit
3	Office	Microsoft office standard edition latest.
4	Memory	16 GB DDR4 RAM
5	Hard Drive	1 TB SATA HDD
6	Keyboard & Mouse	Wired Keyboard & Mouse (Same make as PC)
7	Monitor	Should be supplied min 21” Full HD Monitor.
8	Network Card	Minimum 1 GBPS
9	I/O	2 nos. - USB 3.1 Type-A / Type-C or more
10		1 universal Audio Jack & Headphone
11 12		2 nos. - DisplayPort Connector
	Warranty	5 years from the date of Go-live
13	Size of monitor	Minimum 21” LED Monitor
14	Resolution	1920 X 1080
15	Graphics Card	Minimum 1 Gb Graphics card
16	Ports	Minimum 1 x DisplayPort, 1 x HDMI 5 x USB
17	Certification	TCO/ISV/equivalent Certified
18	Warranty	As mentioned in RFP.

34. Bandwidth of 50 Mbps from BSP

Sl No .	Parameter	Specification
1	Bandwidth	Provisioning, commissioning and ensuring availability of link with dedicated synchronous/ symmetric bandwidth (1:1) of 50 Mbps in un-interrupted way

Sl No .	Parameter	Specification
2	Last Mile Connectivity	The link should be terminated over OFC with no single point of failure, it should have dedicated dual fiber & multi homed architecture
3	Access Network	All the locations connected on dual diverse paths on fiber (no copper) to ensure high availability
4	Access self-care portal	Access self-care portal from order creation stage to track progress of link / service delivery – no shocks on delays in delivery
5	CPE	CPE at colleges will be provided by the SI
6	Round the clock link availability: Link Availability is defined as end-to-end connectivity and accessibility to ensure 24 x 7 availability of internet connectivity at colleges.	a) Round the clock fault monitoring b) Timely restoration and resolution of faults or incidents c) The links will be maintained throughout the contract period on 24 x 7 basis (i.e. 24 hours and 7 days a week). Any degradation in link performance will be attributable to link outage and will be governed as per SLA mentioned in this RFP.
7	Link Availability	Link Availability is defined as end-to-end connectivity and accessibility. The BSP has to ensure availability of internet connectivity at colleges as per defined SLA.
8	Link Management	Intranet facility at colleges 24x7
9	WAN IP	/30
10	LAN IP	/29, 6 IPs usable, statically routed + IPv6 will be allocated as required
13	Interface Handoff	Ethernet interface towards CPE devices
14	Feasibility of connectivity over OFC	BSP needs to conduct site survey to check the feasibility of bandwidth at all colleges over OFC and confirm the feasibility at all sites.
15	Others	Bidder may include any other components as deemed fit/required and the prices of the same should be clubbed with the price of bandwidth in price bid.

16. Annexure 1 – Instructions for Pre-Qualification Bid

16.1. Bid Cover Letter

To

Subject: Selection of System Integrator for Implementation & management of Electronic Knowledge Network (100 Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar.

Ref : Tender No: XXXXXXXXX Dated: XX/XX/XXXX

Sir/ Madam,

Having examined the RFP, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to provide the professional services as required and outlined in the RFP for the Appointment of an Agency for implementation & management of Electronic Knowledge Network (100 Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar.

We attach hereto our responses to pre-qualification requirements and technical & commercial proposals as required by the RFP. We confirm that the information contained in these responses or any part thereof, including the exhibits, and other documents and instruments delivered or to be delivered to Govt. of Bihar is true, accurate, verifiable and complete. This response includes all information necessary to ensure that the statements therein do not in whole or in part mislead the department in its short-listing process.

We fully understand and agree to comply that on verification, if any of the information provided here is found to be misleading the selection process, we are liable to be dismissed from the selection process or termination of the contract during the project, if selected to do so.

We agree for unconditional acceptance of all the terms and conditions set out in the RFP document and also agree to abide by this tender response for a period of 180 days from the date fixed for bid opening. We hereby declare that in case the contract is awarded to us, we shall submit the contract performance guarantee bond in the form prescribed the RFP. We also herewith express our willingness to subject to BSEDC's conditionality's regarding manpower recruitments (required for the project), change of hands of management and declaring upfront the source of funding for the project.

We agree that you are not bound to accept any tender response you may receive. We also agree that you reserve the right in absolute sense to reject all or any of the products/ services specified in the tender response.

It is hereby confirmed that I/We are entitled to act on behalf of our company/ corporation/ firm/ organizationand empowered to sign this document as well as such other documents, which may be required in this connection.

Dated this Day of 2021

(Signature) (In the capacity of)

(Name)

Duly authorized to sign the Tender Response for and on behalf of:

(Name and Address of Company) *Seal/Stamp of Bidder*

Witness Signature:

Witness Name:
Witness Address:

16.2. Checklist for the documents to be included in the Pre-Qualification

#	Documents to be submitted	Submitted (Y /N)	Documentary Proof (Page No.)
1.	Bid Covering Letter		
2.	Power of attorney / board resolution to the authorized Signatory ofthe Bid		
3.	E.M.D. of Rs. 150,00,000/-		
4.	Particulars of the Bidders (in the format given in Section 17, Annexure-III)		
5.	Copy of Certificate of Incorporation		
6.	Copy of Audited Balance Sheet for last 3 years		
7.	Copy of the audited Profit & Loss Statements for each of the last 3 financial years		
8.	Certificate from the Chartered Accountant towards net worth of the company as on 31/03/2021		
9.	Certificate from the Chartered Accountant towards Revenue of thefirm from IT & ITES related business from last 3 financial years		
10.	Appraisal letter from the lead banker giving the • Financial position of the firm • Liquidity position, • Credit facility enjoyed by the firm, • present working capital • Any other financial aspects		
11.	Certified copies of valid PAN documents		
12.	Proof of ISO certification		
13.	Copy of GST registration		
14.	Statement of Deviation from the RFP Requirements (Format given inSection 17 Annexure XII)		

16.3. Format to share Organizational Profiles

#	Description	Details (to be filled by the responder to the RFP)
1.	Name of the company	
2.	Official address	
3.	Phone No. and Fax No.	
4.	Corporate Headquarters Address	
5.	Phone No. and Fax No.	
6.	Web Site Address	
7.	Details of Company's Registration (Please enclose copy of the company registration document)	
8.	Name of Registration Authority	
9.	Registration Number and Year of Registration	
10.	Quality Certificates (ISO 9001 ISO 20000) and its validity	
11.	GST registration No.	
12.	Permanent Account Number (PAN)	
13.	Company's Revenue for last 3 years (Year wise)	
14.	Company's Profitability for the last 3 years (Year wise)	

Please submit the relevant proofs for all the details mentioned above along with your Bid response.

Contact Details of officials for future correspondence regarding the bid process:

Details	Authorized Signatory	Secondary Contact
Name		
Title		
Company Address		
Phone		
Mobile		
Fax		
E-mail		

16.4. Formats to share Bidder details

Name of the Bidder		
Heading1	**Sub - Heading**	
Financial Capability	Overall turnover for FY 2018-19, FY 2019-20, FY 2020--2021 (in INR Crores)	
	Turnover from Networking projects for FY 2018-19, FY 2019-20, FY 2020--2021 (in INR crores) #	

	Turnover from IT/ITES related business for FY 2018-19, FY 2019-20, FY 2020--2021 (in INR crores)#	
	Net Worth as on March 31, 2021 (in INR crores) #	
* List of the Projects considered for Networking turnover for the last 3 years	1. 2. 3.	
# List of the Projects considered for IT / ITES / Telecom turnover for the 3 years	1. 2. 3.	

- ***Please submit CA Certification IT/ITES Business Turnover and Net Worth. Also attach the Auditor Certifiedfinancial statements for the last three financial years; FY 2018-19, FY 2019-20, FY 2020--2021***

17. Section – Annexures

The Bidders are expected to respond to the RFP using the Annexures given in this section and all documents supporting Pre-Qualification / Technical Evaluation Criteria.
Pre-Qualification Bid & Technical Proposal shall comprise of following forms:

Annexures for Pre-Qualification Proposal

- Annexure I: Covering letter for submission of RFP
- Annexure II: Bidder's Information
- Annexure III: Compliance Sheet for Technical-Qualification Proposal
- Annexure IV: Compliance Sheet for Pre-Qualification Proposal
- Annexure V: Bidder's Annual Turnover over last 3 Financial Years

Annexures for Technical Proposal

- Annexure VI: Project Citation Format
- Annexure VII: Undertaking of Total Responsibility
- Annexure VIII: Declaration for not being Blacklisted
- Annexure IX: Format for Performance Bank Guarantee
- Annexure X- Bank Guarantee for Earnest Money Deposit
- Annexure XI: Power of Attorney
- Annexure XII: Statement of Deviation from Requirement Specifications
- Annexure–XIII: Format for Manufacturer's Authorization Form
- Annexure–XIV: Warranty Certificate
- Annexure–XV: Undertaking on office Premises in Bihar
- Annexure–XVI: Team Composition
- Annexure–XVII: Curriculum Vitae (CV)
- Annexure–XVIII: Letter for Technical Proposal

Annexures for Financial Proposal

- Annexure XIX: Financial Proposal Standard Form
- Annexure XIX (A): Financial Proposal Submission Form
- Annexure XIX (B): Financial Form

Annexures for List of Colleges

- Annexure XX: List of colleges for phase wise rollout
- Annexure XXI: Unpriced BoQ

Annexure-I: Covering letter for submission of RFP

(To be submitted on the letterhead of the Bidder)

To, *(Date)*
Project Leader,
BSEDC,
BELTRON Bhawan,
Shastri Nagar, Patna, Bihar

Ref: *RFP No <……>*
Sub: *Submission of RFP for "Selection of System Integrator for Implementation & management of Electronic Knowledge Network (100Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar."*

Dear Sir/Madam,
We have examined the RFP document, we, the undersigned, herewith submit our RFP in response to your RFP no. _____ dated _____ for "Selection of agency for Implementation & management of Electronic Knowledge Network (100Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar" in full conformity with the said RFP document.

i. *We have read the provisions of the RFP document and confirm that these are acceptable to us. We further declare that additional conditions, variations, deviations, if any, found in our RFP shall not be given effect to.*
ii. *We agree to abide by this RFP, consisting of this letter, the detailed response to the RFP and all attachments, for a period of 180 days from the date of submission of the bid.*
iii. *We would like to declare that we are not involved in any major litigation that may have an impact of affecting or compromising the delivery of services as required under this assignment and we are not under a declaration of ineligibility for corrupt or fraudulent practices*
iv. *We would like to declare that there is no conflict of interest in the services that we will be providing under the terms and conditions of this RFP.*
v. *We hereby declare that all the information and statements made in this EoI are true and accept that any misrepresentation contained in it may lead to our disqualification.*
vi. *We understand you are not bound to shortlist / accept any RFP you receive*

Sincerely,
Signature of Authorized Signatory and Seal of the Bidder
Name:
Designation:
Date:

Annexure-II: Bidder's Information

To,
Project Leader,
BSEDC,
BELTRON Bhawan,
Shastri Nagar,
Patna, Bihar

(Date)

Bidder information Format

Details of the Bidder		
1	Name of the Bidder	
2	Address of the Bidder	
3	Status of the Company (Public Ltd/ Pvt. Ltd)	
4	Details of Incorporation of the Company	Date: Ref. No
5	Details of Commencement of Business	Date: Ref. No
6	Permanent Account Number (PAN)	
7	GST registration No.	
8	Name & Designation of the contact person to whom all references shall be made regarding this tender	
9	Telephone No. (with STD Code)	
10	Fax No. (with STD Code)	
11	E-Mail of the contact person	
12	Website	

Contact Details of officials for future correspondence regarding the bid process:

DETAILS	**AUTHORIZED SIGNATORY**	**SECONDARY CONTACT**
Name		
Title		
Company Address		

Mobile		
Fax		
Email Id		

Yours Sincerely,

_____

Signature of Authorized Signatory (with official seal)
Name :
Designation :
Address :
Telephone& Fax :

Annexure-III: Compliance Sheet for Technical-Qualification Proposal

#	Technical Evaluation Criteria	Description	Compliance (Yes/No)	Page reference (Document name and Page no.)
A	**Past Experience of the Bidder**			
A 1	Average Annual Turnover in last three financial years (i.e. 2018-19, 2019-20, and 2020-2021)	=250 Cr to <= 275 Cr = 7 Marks > 275 Cr to <= 300 Cr = 8 Marks > 300 Cr to <= 325 Cr = 10 Marks > 325 Cr = 12 marks To be evaluated based on the BS & PL statement and certificate from CA/Statutory auditor		
A 2	Project Experience	Experience of Bidder in establishment of network connectivity for a Central / State Government Organization / Public Sector Unit (PSU) in India, during the last 5 years (as on 31.03.2021), amongst which the following value specified has to be included in the criteria mentioned herein: Minimum 1 project with order value >= 60 Cr or 2 orders value not less than 30 Cr each or 4 orders value not less than 15 Cr each= 12 Marks Each additional 1 project having order value of Rs. 15 Cr and above will get 2 marks up to Max 8 Marks. To be evaluated based on the project experience citation submitted by the Bidder		
A 3	Project Experience	Experience in Setting Up Campus Network with minimum 100 active network nodes in each project in the last five financial years (Value of one project – Rs 15 Cr or more) i. One Project - 9 Marks ii. Two Projects - 12 Marks iii. Three Projects or more – 15 Marks To be evaluated based on the project experience citation submitted by the Bidder		
A 4	ISO certification (valid as on bid submission date)	• ISO 9001 = (1 mark) • ISO 20000(latest) = (1.5 mark) • ISO 27001 = (1.5 marks) To be evaluated based on the certificates submitted by the Bidder		

#	Technical Evaluation Criteria	Description	Compliance (Yes/No)	Page reference (Document name and Page no.)
A4	Overall regular staff strength with experience as on 31.03.2021 on firm's payroll.	• =50 to < 100 employees = 3 Marks • >100 to <= 200 employees = 4 Marks • >200 employees = 5 Marks To be evaluated based on the certificate from HR submitted by the Bidder		
A6	Presence in Bihar	• Only have GST Registration in Bihar- 2 marks. • Involved in a running Govt. project in Bihar - 3 marks • Involved in a running Govt. project in Bihar and also have an office and GST Registration in Bihar – 4 marks To be evaluated based on the valid documents/evidence submitted by the Bidder		
B	**Approach & Methodology and Technical Presentation/ Demonstration**			
B1	Overall Approach & Methodology	To be evaluated from the technical proposal documentation and technical presentation to BSEDC. BSEDC shall evaluate the Approach and Methodology for the Implementation & Post-Implementation comprehensive warranty support proposed by Bidder and evaluate the same on the following parameters: ▪ Completeness of the A&M to meet the requirements of the RFP – 2.5 marks ▪ Any unique project implementation strategy (i.es) proposed, which can impact projects outcomes in positive manner- 2.5 marks ▪ Risk's identification and proposed mitigation plan- 2.5 marks ▪ O&M plan-2.5 marks		
B2	Presentation of the proposed solution	The eligible Bidders as per pre-qualification criteria will be asked to give a demonstration on the proposed solutions. The Proof of Concept should depict how the technical solutions using Internet router-based solution and the fibre based high speed LAN & Wi-Fi facility system (as mentioned in Section-11) will fulfil the objective of the project. The Bidder's technical proposal would be evaluated on the basis of the documents submitted along with this presentation on the following aspects ▪ Understanding of the Scope of Work – 2 Marks ▪ A&M to meet the requirements of the RFP – 2 marks ▪ Any unique project implementation strategy (ies) proposed, which can impact projects outcomes in positive manner- 2 marks ▪ Risk's identification and proposed mitigation plan- 2 marks ▪ O&M plan-2 marks		

ELIGIBILITY CRITERIA FOR OEMS

Sl. No.	Items	Provided (Yes/No)	Reference & Page No	For Use of The Bidders (Provide Registration Numbers Wherever Applicable)
1	Certificates of Incorporation for Company under competent authority in India			
2	Copies of the valid ISO certificates from authorized agencies			
3	Self-certificate with supporting document on presence in India.			
4	OEM declaration on Blacklisting as per Annexure-VII			
5	Copy of Tender Specific Authorization Certificate from Manufacturer/Authorized Dealer			
6	Certificate from the HR of the firm on employee strength as mentioned in the Eligibility Criteria for OEM			
7	Copy of the UL/EN/BIS certification			

Note :

i. For each OEMs the Bidder has to provide above checklist separately.
ii. The Bidders are requested to see that all of the above columns are marked.
iii. If any of the information furnished above are found to be false, action as per tender rule will be initiated.

ELIGIBILITY CRITERIA FOR BSPS

Sl. No.	Qualification Criteria	Documents/Information to be provided in the submitted proposal	Compliance (Yes/No)	Page reference
1	The BSP should be a Registered Company in India under the Companies Act, 1956 or 2013.	Certificate of incorporation		
2	The BSP should either be a Layer 3 MPLS VPN Service Provider under the License of Government of India or a	Submit attested copy of the appropriate license.		

	National Long Distance (NLD) / Basic Service Operator or Unified License (UL) having own MPLS VPN network.			
3	The BSP should have capacity to provide NLD/MPLS VPN services and should have valid Telecom License for a period of at least 3 years	Submit attested copy of the appropriate license or work order / agreement showing experience in providing MPLS VPN services to the customer		
4	The BSP should have the following experience: ➢ 100+ operational MPLS PoPs across India on its own fiber network. ➢ The Carrier should have its own STM 16 or 10 Gbps level bandwidth at the core and DS3 or 100 Mbps /STM1 or 1 Gbps level bandwidth at access network. ➢ Its own fiber based backbone network of more than 100,000 Km. BSP should have been operating in Bihar having more than 5000 km fiber infrastructure layout across the state	Self-declaration certificate by authorized signatory on company letter should be submitted with contact details.		
5	The BSP should have it's own Centralized NOC 24x7x365 support and backed by redundant NOC in different seismic zone.	Self-declaration certificate by statutory auditor or company secretary should be submitted		
6	The BSP must have MSCP / Tier 1 / ISO 27001 / TL 9000 certification.	Submit attested copy of the appropriate license.		
7	The BSP should have executed 1 order for commissioning of MPLS network for any organization connecting a minimum of 100 locations.	Work Order / agreement of successful commissioning/e-mail confirmation with references list with contact details.		
8	The BSP should not have been blacklisted by any State Govt. Central Govt./ PSU and its agencies. The BSP shall not be under a declaration of	Self-declaration certificate by authorized signatory should be submitted		

	ineligibility for corrupt or fraudulent practices.			
9	The responding firm should hold Copy of Valid License following valid licenses to operate (any of the following): • Class 'A' BSP license • National Long Distance License • Unified Access License or UL (Unified License) The license should be valid for at least 5 years from the date of Bidding	Submit attested copy of the appropriate license.		
10	The BSP should have minimum 100 fiber PoPs in Bihar.	A Self Certified letter with addresses of own Optical Fiber Network with PoPs to be submitted		

Annexure-IV: Compliance Sheet for Pre-Qualification Proposal

Sr. No.	Qualification Criteria	Documents/Information to be provided in the submitted proposal	Compliance (Yes/No)	Page reference (Document name andPage no.)
1.	The responding firm/agency (a) Should have made a payment of INR. 10000 (Rupees Ten Thousand) (non-refundable) for the Tender Fee (b) Should have submitted EMD of INR. 1,50,00,000 (Rupees One Crore Fifty Lakhs only)	(a) Cost of tender document must be submitted through E-payment only; else bid will be summarily rejected. (b) EMD should be in favor of "Bihar State Electronics Development Corporation Ltd' Payable at Patna and issued by any nationalized/scheduled commercial bank in the form of a Demand Draft or original bank guarantee. Bidders can also deposit the EMD through online payment in state e-procurement site.		
2.	Legal Entity • The Company should be in the IT/ITES/Telecom business for at least last 5 (five) years as of 31st March 2021 and should be registered under Companies Act, 1956	c) Copy of Certificate of Incorporation d) Copy of Registration Certificate Copy of all documents listed above should be attested by authorized signatory and must be submitted along with the response		
	• Registered with the Income Tax and GST	a) Copy of PAN Card b) Copy of GST Certification Copy of all documents listed above should be attested by authorized signatory and must be submitted along with the response		

3.	The Net Worth of the Bidder must be positive for each of the last 3 audited financial years i.e., 2018-19, 2019-20, and 2020-2021	Separate Chartered Accountant Certificate for positive Net worth of the Bidder		
4.	The Bidder must not be blacklisted by any Government/Public Sector organization /department in India at the time of submission of the response to this RFP	A declaration as per the format prescribed in Form - "Declaration that the Bidder has not been blacklisted" to be given by the authorized signatory of the Bidder – Annexure – VIII		
5.	Bidder's average annual turnover must be INR 250 Crores or above for last three financial years	A certificate with extracts from the filed BS & PL with annual turnover for last three financial years, signed by Chartered Accountant/Statutory Auditor to be submitted by the Bidder. Copy of filed BS and PL for respective years should also be submitted by the Bidder.		
6.	The Bidder must have successfully completed/ running projects which comprises the establishment of network connectivity for a Central / State Government Organization / Public Sector Unit (PSU) in India, during the last 5 years (as on 31.03.2021), amongst which the following value	Ref Annexure VI: - "Project Citation Format" supported with Work order or Purchase Order (PO) or 'Letter of Intent (LoI) 'Letter of Intent (LoI) with extract from signed contract showcasing the project value and scope of work' for each project along with completion certificate (if the project is completed) or Go-Live certificate (if the project is still running). Project which has not gone live will not be considered. Project completion/Client		

	specified has to be included in the criteria mentioned herein: 1. One project of value not less than INR 60 crores including taxes OR 2. Two projects of value not less than INR 30 crores including taxes each OR 3. Four projects of value not less than INR 15 crores including taxes each.	satisfactory certificates must be signed by the authorized official from client mentioning the scope of work and project value. BSEDC may check the authenticity of the documents provided by the Bidder.		
7	The Bidder should be ISO 9001:2015 & ISO 20000 certified.	Copy of certification which is valid on date of submission.		
8	The Bidder must have at least 50 IT professionals (B.E/B.Tech/MCA) on its payroll as on bid submission date	Certificate from HR Department for number of technically qualified professionals employed by the company		
9	The Bidder should have direct authorization from the Original Equipment Manufacturer (OEM) for selling and supporting the equipment offered	Refer: Annexure XIII: - "Manufacturers'/Producers' Authorization Form" for the MAF and complete the associated table provided with the form.		
10	Bidder should have registered office in Bihar. Alternatively, if the Bidder doesn't have	A self-certified declaration by the authorized signatory of the Bidder should be submitted along with the proposal.		

	an office in Bihar, then they have to furnish an undertaking that an office would be established in Bihar, within 1 (one) month of signing the contract, to provide warranty and post warranty services.			
11	Authorized signing authority	Refer Annexure-XI- Separate "Copy of Board resolution" or POA for the Bidder authorizing the person to sign on behalf of the company or Power of Attorney for the designated person to be provided as per the format prescribed in Form "Bidder's Authorization Certificate". (Must be on a Non-Judicial INR 100/- Stamp Paper or higher)"		
12	a) The Bidder has to provide a consent on affidavit (in non-judicial stamp paper) related to the MoU signed with BSPs at the time of bid submission Land Border Clause-: Bidder shall ensure compliance to the Office Memorandum for insertion of Rule 144 (xi) in the General Finance Rules (GFR)-2017	a) Consent on affidavit (in non-judicial stamp paper) related to the MoU signed with BSPs Self-declaration as per the clauses mentioned in Land Border Clause.		

	bearing reference number F.No. 6/18/2019-PPD dated 23 July 2020 including amendments thereon, by the Public Procurement Division, Department of Expenditure, Ministry of Finance. Non- compliant bid(s) will be summarily rejected.			

Annexure–V: Bidder's Annual turnover over last 3 financial years

<<To be printed on Bidder company's letterhead and signed by Authorized signatory>>

Date: dd/mm/yyyy

To,
Project Leader,
BSEDC,
BELTRON Bhawan,
Shastri Nagar,
Patna, Bihar

Dear Sir,
I have carefully gone through the Terms & Conditions contained in the RFP Document. I hereby declare that below are the details regarding Overall turnover over last 3 financial years for our organization.

	Details	***FY 2018-19 (in Crores) (a)***	***FY 2019-20 (in Crores) (b)***	***FY 2020-21 (in Crores) (c)***	***Average Turnover [(a+b+c)/3]***
1	*The Bidder should have average annual turnover of more than Rs. 250 crores for last 3 financial years (i.e. 2018-19, 2019-20, and 2020-2021) in implementation & management of network services.*				

Yours Sincerely,

_____

Signature of Statutory Auditor (with official seal)
Name :
Designation :
Address :
Telephone& Fax :
E-mail address :

Annexure-VI: Project Citation Format

Relevant project experience	
General Information	
Name of the project	
Client for which the project was executed	
Name and contact details of the client (email, Phone no.)	
Project Details	
Description of the project	
Scope of services	
Service levels being offered/ Quality of service (QOS)	
Technologies used	
Outcomes of the project	
Other Details	
Total cost of the project	
Total cost of the services provided by the respondent	
Duration of the project (no. of months, start date,completion date, current status)	
Other Relevant Information	
Letter from the client to indicate the successful completion of the projects	
Copy of Work Order/Purchase Order (PO)/ Letter of Intent (LoI) 'Letter of Intent (LoI) with extract from signed contract showcasing the project value and scope of work'/Experience Certificate etc	

Submit Customer Order Copy details of the order indicating the project value, customer contact details, project completion certificate or partial completion certificate, customer satisfaction certificate etc.

Annexure-VII: Undertaking on Total Responsibility

Date:
To,
Project Leader,
BSEDC,
BELTRON Bhawan,
Shastri Nagar,
Patna, Bihar

Sub: Self Declaration for Total Responsibility in response to the RFP

Dear Sir,
This is to certify that we undertake total responsibility for implementation & management of Electronic Knowledge Network (100Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar successfully without any breach of terms & conditions and as per the requirements of the RFP.

Thanking you,
Yours faithfully

(Signature of the Authorized signatory of the Bidding Organization)
Name :
Designation :
Date :
Time :
Seal :
Business Address:

Annexure-VIII: Declaration for not being blacklisted

(Self-declaration for not being blacklisted by any Government Entity)
(To be submitted on the Letterhead of the responding firm)

(Place)
(Date)
To,
Project Leader,
BSEDC,
BELTRON Bhawan,
Shastri Nagar,
Patna, Bihar

Ref: .....
Ref: RFP No. .....

Dear Sir/Madam,
We confirm that our company, _____, is not blacklisted in any manner whatsoever . We, hereby declare that we are having unblemished past record and are not declared blacklisted or ineligible to participate for bidding by any State/Central Government, Semi-Government or PSU.

Sincerely,
Signature of Authorized Signatory and Seal of the Bidder
Name:
Designation:

Annexure–IX: Format for Performance Bank Guarantee

PERFORMANCE GUARANTEE

Ref:
Bank Guarantee No:
Date:
To
Managing Director,
Bihar State Electronics Development Corporation (BELTRON)
BELTRON Bhawan
Shastri Nagar Patna – 800023

1) ***Against contract vide Advance Acceptance of the Tender No. Dated covering "RFP for selection of agency for Implementation & management of Electronic Knowledge Network (100Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar" (hereinafter called "the Bid"). e" (hereinafter called the said 'contract') entered into between BELTRON, Government of Bihar, (hereinafter called the Purchaser) and M/s. , a Company incorporated under the Companies Act, 1956 and having its Registered Office at .....(hereinafter called the Bidder) this is to certify that at the request of the Bidder we (name of the Bank / Branch .....) a body corporate constituted under the Banking Companies [Acquisition and Transfer of Undertakings] Act, 1970 and having its, Registered Office at..... and a branch office at ..... are holding in trust in favour of the Purchaser, an amount of Rs (Rupees ..... only) to indemnify and keep indemnified the Purchaser against any loss or damage that may be caused to or suffered by the Purchaser by reason of any breach by the Bidder of any of the terms and conditions of the said contract and/or in the performance thereof. We agree that the decision of the Purchaser, whether by any breach of any of the terms and conditions of the said contract and/or in the performance thereof has been committed by the Bidder and the amount of loss or damage that has been caused or suffered by the Purchaser shall be final and binding on us and the amount of the said loss or damage shall be paid by us forthwith on demand and without demur to the Purchaser.***
2) ***We (Name of the Bank /Branch) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for satisfactory performance and fulfilment in all respects of the said contract by the Bidder i.e. till hereinafter called the said date and that if any claim accrues or arises against us (Name of the Bank /Branch) by virtue of this guarantee before the said date, the same shall be enforceable against us .....(Name of the Bank/Branch) notwithstanding the fact that the same is enforced within six months after the said date, provided that notice of any such claim has been given to us .....(Name of the Bank/Branch) by the***

Purchaser before the said date. Payment under this guarantee shall be made promptly upon our receipt of notice to that effect from the Purchaser.

3) ***It is fully understood that this guarantee is effective from the date of the said contract and that we…… (Name of the Bank /Branch) undertake not to revoke this guarantee during its currency without the consent in writing of the Purchaser.***
4) ***We undertake to pay to the Purchaser any money so demanded notwithstanding any dispute or disputes raised by the Bidder in any suit or proceeding pending before any court or Tribunal relating thereto our liability under this present bond being absolute and unequivocal.***
5) ***The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Bidder shall have no claim against us for making such payment.***
6) ***We (Name of the Bank / Branch) further agree that the Purchaser shall have the fullest liberty, without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said contract or to extend time of performance by the Bidder from time to time or to postpone for any time or from time to time any of the powers exercisable by the Purchaser against the said Bidder and to forebear or enforce any of the terms and conditions relating to the said contract and we, (Name of the Bank / Branch) shall not be released from our liability under this guarantee by reason of any such variation or extension being granted to the said Bidder or for any forbearance by the Purchaser to the said Bidder or for any forbearance and or omission on the part of the Purchaser or any other matter or thing whatsoever, which under the law relating to sureties, would, but for this provision have the effect of so releasing us from our liability under this guarantee.***
7) ***This guarantee will not be discharged due to the change in the constitution of the Bank or the Bidder.Notwithstanding anything contained herein:***
    a. ***Our liability under this Bank Guarantee shall not exceed of Rs…… (Rupees in words only).***
    b. ***The Bank Guarantee shall be valid up to ; and;***
    c. ***We…… (Name of the Bank / Branch) are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before ##……***

Authorised Signatory of the Bank
Signature
Full name/designation/ Address of the official and date
WITNESS NO. 1

Signature
Full name/designation/ Address
WITNESS NO. 2
Signature
Full name/designation/ Address

Annexure–X: Bank Guarantee for Earnest Money Deposit

To,

Managing Director,
Bihar State Electronics Development Corporation (BELTRON)
BELTRON Bhawan
Shastri Nagar Patna – 800023

Whereas <Name of the bidder> (hereinafter called 'the Bidder') has submitted the bid for Submission of RFP #
<RFP Number> dated <Date> for <Name of the assignment> (hereinafter called "the Bid") to BSEDC

Know all Men by these presents that we < > having our office at <Address> (hereinafter called "the Bank") are bound unto BSEDC (hereinafter called "the Purchaser") in the sum of Rs. <Amount in figures> (Rupees
<Amount in words> only) for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this <Date>

The conditions of this obligation are:

1) ***If the Bidder having its bid withdrawn during the period of bid validity specified by the Bidder on the BidForm; or***

2) ***If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of validityof bid***

   a) ***Withdraws his participation from the bid during the period of validity of bid document; or***

   b) ***Fails or refuses to participate in the subsequent Tender process after having been short listed;***

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to <insert date> and including <extra time over and above mandated in the RFP> from the last date of submission and any demand in respect thereof should reach the Bank not later than the above date.

NOTHWITHSTANDING ANYTHING CONTAINED HEREIN:
- ***a) Our liability under this Bank Guarantee shall not exceed Rs. <Amount in figures> (Rupees <Amount in words> only)***
- ***b) This Bank Guarantee shall be valid upto <insert date>)***

c) It is condition of our liability for payment of the guaranteed amount or any part thereof arising under this Bank Guarantee that we receive a valid written claim or demand for payment under this Bank Guarantee on or before <insert date>) failing which our liability under the guarantee will automatically cease.

(Authorized Signatory of the Bank)

Seal:

Date:

Annexure–XI: Power of Attorney

(On Stamp Paper of relevant value)

Tender Ref. *Date:*

To:
Project Leader,
BSEDC,
BELTRON Bhawan,
Shastri Nagar,
Patna, Bihar

Ref: RFP Notification no <xxxx> dated <dd/mm/yy>

Subject: Power of Attorney in response to the RFP for Selection of agency for Implementation & management of Electronic Knowledge Network (100Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar

Dear Sir,
Know all men by these presents, we (name of the company and address of the registered office) do hereby appoint and authorize Mr. / Ms. (full name and residential address) who is presently employed with us and holding the position of as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our bid document for 'Selection of agency for Implementation & management of Electronic Knowledge Network (100Mbps internet connectivity,

wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar', in response to the tenders invited by Bihar State Electronics and Development Corporation (referred to as BSEDC), including signing and submission of all documents and providing information / responses to BSEDC in all matters in connection with our bid.
We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

Dated this _____ day of _____ 2020
For _____

(Signature)
(Name, Designation and Address) Accepted

(Signature) (Name, Title and Address of the Attorney)

Date:

Note:

The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants and when it is so required the same should be under common seal affixed in accordance with the required procedure. Also, wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a resolution /power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder. In case the bid is signed by an authorized Director / Partner or Proprietor of the Bidder, a certified copy of the appropriate resolution / document conveying such authority may be enclosed in lieu of the Power of Attorney.

Annexure- XII:

a) Statement of Deviation from Tender Terms and Conditions for Bidder

Tender Ref. ***Date:***
To,
Managing Director,
Bihar State Electronics Development Corporation (BELTRON)
BELTRON Bhawan
Shastri Nagar Patna – 800023
Sir,
There are no deviations (null deviations) from the terms and conditions of the tender. All the terms and conditions of the tender are acceptable to us.
OR (Strike out whatever is not applicable)
Following are the deviations from the terms and conditions of the tender. These deviations and variations are exhaustive. Except these deviations and variations, all other terms and conditions of the tender are acceptable to us.

S. No.	Section No.	Page No.	Para	Statement of deviations and variations
1.				
2.				

Authorized Signatory
Name :
Designation:
Seal:

b) Statement of Deviation from Tender Terms and Conditions for OEM

Tender Ref. *Date:*
To,
Managing Director,
Bihar State Electronics Development Corporation (BELTRON)
BELTRON Bhawan
Shastri Nagar Patna – 800023
Sir,
There are no deviations (null deviations) from the terms and conditions of the tender. All the terms and conditions of the tender are acceptable to us.
OR (Strike out whatever is not applicable)
Following are the deviations from the terms and conditions of the tender. These deviations and variations are exhaustive. Except these deviations and variations, all other terms and conditions of the tender are acceptable to us.

S. No.	Section No.	Page No.	Para	Statement of deviations and variations
1.				

2.				

Authorized Signatory
Name :
Designation:
Seal:

Annexure–XIII: Format for Manufacturer's Authorization Form

(To be submitted on the Letterhead of the Manufacturer and duly signed by an authorized signatory)

(This form has to be provided by the OEMs of all products proposed. Separate MAF's to be provided from OEM if same item has different parts from different OEM)

Tender Ref. *Date:*

To:
Managing Director,
Bihar State Electronics Development Corporation (BELTRON)
BELTRON Bhawan
Shastri Nagar Patna – 800023

Dear Sir,

Subject: OEM Authorization Letter for "Selection of agency for Implementation & management of Electronic Knowledge Network (100Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar."

We, (name and address of the manufacturer) who are established and reputed manufacturers of having factories at (addresses of manufacturing locations) do hereby authorize (name of the Bidders & address of the manufacturer) to bid, negotiate and conclude the contract with you against the above mentioned tender for the above equipment manufactured by us.

Yours faithfully,

For and on behalf of M/s (Name of the manufacturer)

Signature Name *: _____*

Designation Address *: _____*

Date *: _____*

Directorate Seal *: _____*

Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. The Bidder in its Bid should include it. The Bidder should complete the below given table with details of all OEMs as proposed for this assignment.

Item	***Name of OEM and brand/ Make***	***Model no.***

Annexure–XIV: Warranty Certificate

On the Bidder's Letterhead)
Tender Ref. *Date: dd/mm/yyyy*
To,
Managing Director,
Bihar State Electronics Development Corporation (BELTRON)
BELTRON Bhawan
Shastri Nagar Patna – 800023
Sir,

We warrant that the equipment(s) supplied under the contract would be newly manufactured, free from all encumbrances, defects and faults in material or workmanship or manufacture, shall be of the highest grade and quality, shall be consistent with the established and generally accepted standards for materials of the type ordered, shall be in full conformity with the specifications, drawings of samples, if any, and shall operate as designed. We shall be fully responsible for its efficient and effective operation. We also warrant that the servicesprovided under the contract shall be as per the Service Level Agreement (SLA) with BSEDC. This warranty shall survive inspection of and payment for, and acceptance of the Equipment and Services and shall expire only after 5 years after their successful installation and acceptance by BSEDC.

We warrant that all services to be provided under the contract shall be as per our Service Level Agreement (SLA) with BSEDC. This warranty on services provided shall remain valid for the entire duration of the servicescontract from the date of acceptance by BSEDC.

The obligations under the warranty expressed above shall include all costs relating to labour, tools, spares, maintenance (preventive as well as unscheduled), and transport charges from site to manufacturer's works / service facilities and back for repair or modification or replacement at site of the equipment or any part of the equipment, which under normal care and proper use and maintenance proves defective in design, material or workmanship or fails to operate effectively and efficiently or conform to the specifications and for which notice is promptly given by BSEDC to us (Bidder). We shall provide on-site support for all the equipment and services supplied hereunder during the period of this warranty (5 years after acceptance for equipment and entire service period for services).

_____
Authorized Signatory
Name :
Designation:
Seal:

Annexure–XV: Undertaking on Office Premises (in firm/ company letter head)

This is to certify that << COMPANY NAME >> has an office in Patna / Bihar. Relevant address proof and supportingdocuments are enclosed.

Company Secretary / Authorized Signatory
Name of Signatory:
Bidder Name:
Date
Place

Annexure–XVI: Team Composition

Name of Staff with qualification and experience	**Area of Expertise**	**Position Assigned**	**Task Assigned**	**Time committed forthe engagement**

*

Annexure–XVII: Curriculum Vitae (CV) of Key Personnel

General Information	
Name of the person & Photograph	
Current Designation/Job Title	
Current job responsibilities	
Proposed Role in the Project	
Whether resource is engaged by the firm in its own payrolls	Yes / No
Proposed Responsibilities in the Project	
Academic Qualifications: • Degree • Academic institution graduated from • Year of graduation • Specialization (if any) • Key achievements and other relevant information (if any)	
Professional Certifications	
Total number of years of experience	
Number of years with the current company	
Summary of the Professional / Domain Experience	
Summary of Projects undertaken/worked on (Only project name, client name, client contact details)	
Details of Past assignment details (For eachassignment provide details regarding name oforganizations worked for, designation, responsibilities,tenure) Prior Professional Experience covering: • Organizations worked for in the past o Organization name o Duration and dates of entry and exit o Designation Location(s) o Key responsibilities • Prior project experience o Project name o Client o Key project features in brief o Location of the project o Designation o Role o Responsibilities and activities o Duration of the project Please provide only relevant projects.	
Proficient in languages (Against each language listed indicate if speak/read/write)	

Annexure–XVIII: Letter for Technical Proposal

To:

Managing Director,
Bihar State Electronics Development Corporation (BELTRON)
BELTRON Bhawan
Shastri Nagar, Patna – 800023
Subject: Submission of the Technical bid for <Name of the Systems Implementation assignment>

Dear Sir/Madam,
We, the undersigned, offer to provide Systems Implementation solutions to BSEDC Ltd on <Name of the Systems Implementation engagement> with your Request for Proposal dated <insert date> and our Proposal. We are hereby submitting our Proposal, which includes this Technical bid and the Financial Bid separately asper the e-forms.
We hereby declare that all the information and statements made in this Technical bid are true and accept thatany misinterpretation contained in it may lead to our disqualification.
We undertake, if our Proposal is accepted, to initiate the Implementation services related to the assignment not later than the date indicated in Data sheet.
We agree to abide by all the terms and conditions of the RFP document. We would hold the terms of our bid valid for 180 days as stipulated in the RFP document.
We hereby declare that we are not insolvent, in receivership, bankrupt or being wound up, our affairs are not being administered by a court or a judicial officer, our business activities have not been suspended and we are not the subject of legal proceedings for any of the foregoing.
We understand you are not bound to accept any Proposal you receive.
Yours sincerely,

Authorized Signature [*In full and initials*]: _____
Name and Title of Signatory: _____
Name of Firm: _____
Address:_____
Location:_____
Date*:* _____

Annexure – XIX: Financial Proposal – Standard Forms

Annexure-XIX (A): Financial Proposal Submission Form

[Date]
To,
Project Leader,
BSEDC,
BELTRON Bhawan,
Shashtri Nagar,
Patna, Bihar

Subject: *RFP for "Selection of agency for Implementation & management of Electronic Knowledge Network (100Mbps internet connectivity, wi-fi system and Smart Classes) in Academic / Administrative buildings of Government Engineering Colleges and Polytechnic Institutes under Department of Science & Technology, Govt. of Bihar".*

Dear Sir,
We, the undersigned, offer to provide the services as mentioned in the scope of work of the RFP dated (date). Our Financial Proposal shall be binding upon us subject to the modifications resulting from arithmetic correction, if any, up to expiration of the validity period of the Proposal, i.e. [date].
We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".
We understand you are not bound to accept any Proposal you receive. We remain,
Yours sincerely,
Authorized Signature [In full and initials]:
Name and Title of Signatory:
Name of Firm:
Address:

Annexure-XIX(B): Financial Form

Financial Format for Design, Supply, Implementation of integrated electronic knowledge network.
Bidder shall submit the unpriced BoQ with quantity along with their make and model with their Technical proposal (Refer - Annexure XXI).

PART-A: Capital Expenditure (CAPEX)

(In Indian Rupees)

Major Components at Data Center

S/N	Components	UoM	Qty	Amount (A)	GST (in %) (B)	Total Tax Amount (C=A*B%)	Total Amount (D=A+C)
1	Centralized Networking Solution	No's	1				
2	Network monitoring, reporting and helpdesk solution at centralized location	No's	1				
Total cost for Core Components at SDC (CDC)							

Major Components at College

S/N	Components	UoM	Qty	Amount (A)	GST (in %) (B)	Total Tax Amount (C=A*B%)	Total Amount (D=A+C)
1	Edge Device at Campus which includes reporting of all managed devices for the site	No's	82				
2	Distribution Switch - L3 Switch with Dual Power supply & with minimum 32 SFP ports from day 1	No's	1				
3	Distribution Switch - L3 Switch (Type A) with Dual Power supply & with minimum 24 SFP ports	No's	13				
4	Distribution Switch - L3 Switch (Type B) with Dual Power supply & with minimum 12 SFP ports	No's	68				
5	Access Switch- 16 port L2 PoE (Type A) with minimum 2 SFP	No's	45				
6	Access Switch- 8 port L2 PoE (Type B) with minimum 2 SFP	No's	490				
7	Access Switch- 48 port L2 with minimum 2 SFP	No's	345				
8	Access Switch- 24 port L2 (Type - A) with minimum 2 SFP	No's	295				
9	Access Switch- 16 port L2 (Type - B) with minimum 2 SFP	No's	23				

S/N	Components	UoM	Qty	Amount (A)	GST (in %) (B)	Total Tax Amount (C=A*B%)	Total Amount (D=A+C)
10	Access Switch- 12 port L2 (Type - C) with minimum 2 SFP	No's	41				
11	Access Switch- 8 port L2 (Type - D) with minimum 2 SFP	No's	77				
12	Wireless Controller System (H/w or S/w) Managing single SSID authentication in campus	No's	82				
13	Wi-Fi Indoor AP (With Mounting Kit + Antenna + Accessories)	No's	1981				
14	Rugged Wi-Fi Outdoor AP (With Mounting Kit + Antenna + Accessories)	No's	98				
15	32 U Rack (with Redundant PDU) and Rack Earthing	No's	82				
16	6 U rack (With PDU and all accessories)	No's	778				
17	5 KVA UPS with battery bank with 30 mins full load backup along with Display	No's	82				
18	1 KVA UPS with battery bank with 1 hour full load backup along with Display	No's	778				
19	Low end Rack server with Monitor, Keyboard & Mouse with OS and Antivirus for Content Management, AAA, user management, log management etc	No's	82				
20	Workstation	No's	82				
21	1.5 Ton Air Conditioner branded with 5-year warranty	No's	82				
22	75-inch Smart Interactive Board + OPS	No's	164				
23	Point to point VC Codec	No's	82				
24	Camera with 10X Optical Zoom (10XH.264)	No's	82				
25	8 Port NVR with 8 no's of CCTV camera	No's	82				
26	Suitable Electrical wiring with conduit & all required material	Rmtr	6560				
27	Civil Works- (Aluminium & Glass partitioning of server room, customized bracket for all access points)	Lump-sum	82				

S/N	Components	UoM	Qty	Amount (A)	GST (in %) (B)	Total Tax Amount (C=A*B%)	Total Amount (D=A+C)
Total Cost of College Components (CC)							

Cable Requirement

SL No	Item	UoM	Qty	Amount (A)	GST (in %) (B)	Total Tax Amount (C=A*B%)	Total Amount (D=A+C)
1	Cat 6 UTP Cable	Rmtr	629,759				
2	Patch Cord U/UTP Cat.6A	No's	58,288				
3	LIU and termination accessories for 6 Core Fiber	Unit	228				
4	6 Core OFC cable with accessories	Mtr	17440				
5	19" 1U 24 port unshielded Patch Panel	Unit	1206				
6	IO Box for CAT 6A termination	Unit	25144				
7	Conduit for CAT-6 Cabling	Mtr	629759				
8	OFC Route Indicators	No's	253				
9	HDPE Pipe for fiber laying	Mtr	17440				
10	Cat 6A laying and termination accessories	Lump-sum	As per requirement				
11	OFC laying and termination accessories with required connectors	Lump-sum	As per requirement				
Total Cost of Passive Components (PC)							

PART B: Operational Expenditure (OPEX)

Manpower cost for O&M for 5 Years							
#	**Resource**	**Qty (A)**	**Rate of Manpower Per Month (B)**	**Total Cost (5 years) (C=A*B*60)**	**GST (in %) (D)**	**Total Tax Amount (E=C*D %)**	**Total Amount (F=C+E)**
1	Operation Manager	**1**					
2	L2 Engineer – Network Expert	**1**					
3	Server Administrator cum Content Management Specialist	**1**					
4	L1 Engineer	**9**					
Total manpower cost for 5 years inclusive of taxes (MPC)							

50 Mbps Bandwidth Cost for O&M for 5 Years – BSP 1					
SR. NO.	**ITEM DESCRIPTION**	**AMOUNT (A)**	**TAX (in %)**	**TAX (B)**	**TOTAL (C= A+B)**
1.	1st Year bandwidth cost				
2.	2nd Year bandwidth cost				
3.	3rd Year bandwidth cost				
4	4th Year bandwidth cost				
5	5th Year bandwidth cost				
Total bandwidth cost for 5 years inclusive of taxes (BSP-A)					

50 Mbps Bandwidth Cost for O&M for 5 Years – BSP 2					
SR. NO.	**ITEM DESCRIPTION**	**AMOUNT (A)**	**TAX (in %)**	**TAX (B)**	**TOTAL (C= A+B)**
1.	1st Year bandwidth cost				
2.	2nd Year bandwidth cost				

50 Mbps Bandwidth Cost for O&M for 5 Years – BSP 2					
SR. NO.	**ITEM DESCRIPTION**	**AMOUNT (A)**	**TAX (in %)**	**TAX (B)**	**TOTAL (C= A+B)**
3.	3rd Year bandwidth cost				
4	4th Year bandwidth cost				
5	5th Year bandwidth cost				
Total bandwidth cost for 5 years inclusive of taxes (BSP-B)					

Support Cost for Hardware

(In Indian Rupees)

Major Components at Data Center

S/N	Components	UoM	Qty	Annual Support Cost (A)	Support Cost for 5 Years (B)	GST (in %) (C)	Total Tax Amount (D=B*C%)	Total Amount (E=B+D)
1	Centralized Networking Solution	No's	1					
2	Network monitoring, reporting and helpdesk solution at centralized location	No's	1					
Total cost for Core Components at SDC (CDC-O)								

Major Components at College

S/N	Components	UoM	Qty	Annual Support Cost (A)	Support Cost for 5 Years (B)	GST (in %) (C)	Total Tax Amount (D=B*C%)	Total Amount (E=B+D)
1	Edge Device at Campus which includes reporting of all managed devices for the site	No's	82					
2	Distribution Switch - L3 Switch with Dual Power supply & with minimum 32 SFP ports from day	No's	1					

S/N	Components	UoM	Qty	Annual Support Cost (A)	Support Cost for 5 Years (B)	GST (in %) (C)	Total Tax Amount (D=B*C%)	Total Amount (E=B+D)
	1							
3	Distribution Switch - L3 Switch (Type A) with Dual Power supply & with minimum 24 SFP ports	No's	13					
4	Distribution Switch - L3 Switch (Type B) with Dual Power supply & with minimum 12 SFP ports	No's	68					
5	Access Switch- 16 port L2 PoE (Type A) with minimum 2 SFP	No's	45					
6	Access Switch- 8 port L2 PoE (Type B) with minimum 2 SFP	No's	490					
7	Access Switch- 48 port L2 with minimum 2 SFP	No's	345					
8	Access Switch- 24 port L2 (Type - A) with minimum 2 SFP	No's	295					
9	Access Switch- 16 port L2 (Type - B) with minimum 2 SFP	No's	23					
10	Access Switch- 12 port L2 (Type - C) with minimum 2 SFP	No's	41					
11	Access Switch- 8 port L2 (Type - D) with minimum 2 SFP	No's	77					
12	Wireless Controller System (H/w or S/w) Managing single SSID authentication in	No's	82					

S/N	Components	UoM	Qty	Annual Support Cost (A)	Support Cost for 5 Years (B)	GST (in %) (C)	Total Tax Amount (D=B*C%)	Total Amount (E=B+D)
	campus							
13	Wi-Fi Indoor AP (With Mounting Kit + Antenna + Accessories)	No's	1981					
14	Rugged Wi-Fi Outdoor AP (With Mounting Kit + Antenna + Accessories)	No's	98					
15	32 U Rack (with Redundant PDU) and Rack Earthing	No's	82					
16	6 U rack (With PDU and all accessories)	No's	778					
17	5 KVA UPS with battery bank with 30 mins full load backup along with Display	No's	82					
18	1 KVA UPS with battery bank with 1 hour full load backup along with Display	No's	778					
19	Low end Rack server with Monitor, Keyboard & Mouse with OS and Antivirus for Content Management, AAA, user management, log management etc	No's	82					
20	Workstation	No's	82					
21	1.5 Ton Air Conditioner branded with 5-year warranty	No's	82					
22	75-inch Smart Interactive Board + OPS	No's	164					
23	Point to point VC Codec	No's	82					
24	Camera with 10X	No's	82					

S/N	Components	UoM	Qty	Annual Support Cost (A)	Support Cost for 5 Years (B)	GST (in %) (C)	Total Tax Amount (D=B*C%)	Total Amount (E=B+D)
	Optical Zoom (10XH.264)							
25	8 Port NVR with 8 no's of CCTV camera (2 MP Dome camera)	No's	82					
26	Suitable Electrical wiring with conduit & all required material	Rmtr	6560					
27	Civil Works- (Aluminium & Glass partitioning of server room, customized bracket for all access points)	Lump-sum	82					
	Total Cost of College Components (CC-O)							

Cable Requirement

SL No	Item	UoM	Qty	Annual Support Cost (A)	Support Cost for 5 Years (B)	GST (in %) (C)	Total Tax Amount (D=B*C%)	Total Amount (E=B+D)
1	Cat 6 UTP Cable	Rmtr	629,759					
2	Patch Cord U/UTP Cat.6A	No's	58,288					
3	LIU and termination accessories for 6 Core Fiber	Unit	228					
4	6 Core OFC cable with accessories	Mtr	17440					
5	19" 1U 24 port unshielded Patch Panel	Unit	1206					
6	IO Box for CAT 6A termination	Unit	25144					
7	Conduit for CAT-6 Cabling	Mtr	629759					
8	OFC Route Indicators	No's	253					
9	HDPE Pipe for fiber laying	Mtr	17440					

10	Cat 6A laying and termination accessories	Lump-sum	As per requirement					
11	OFC laying and termination accessories with required connectors	Lump-sum	As per requirement					
Total Cost of Passive Components (PC-O)								

Total cost of the project will be calculated as **CDC+CC+PC+MPC+'BSP-A'+'BSP-B'+ 'CDC-O'+'CC-O'+'PC-O'**

Note:

i. Bids quoting zero will be rejected
ii. Prices should be quoted in Indian Rupee only and indicated both in figures and words. The amount mentioned in words will prevail.

Date:

(Signature of Bidder)

Annexure XX- The List of Colleges for phase wise rollout

S. No	Name of the College	Type of College	District	Complete Address of the College	Lat- Long Details
To be implemented in Phase - I (55 colleges)					
1	Shri Phanishwar Nath Renu Engineering College, Araria	Engineering	Araria	Araria, Simraha, currently running at Temporary Campus- Govt. Polytechnic, Purnea	26.01, 87.32
2	Government Polytechnic College Aurangabad	Polytechnic	Aurangabad	In Campus of GEC Gaya, shri krishna nagar, Po- Nagariava, Bunidganj Khizarsarai, Gaya-823003	GEC Gaya's Lat-Long 24.90, 85.04
3	Government Polytechnic. BANKA	Polytechnic	Banka	AT- KOTWALI, PO: HARCHANDI, PS: RAJOUN, BANKA-813105	25.09, 87.06
4	Government Engineering College Banka	Engineering	Banka	Vill-Lakrikola, Po-Manjira, PS-Banka, 813102	24.82,86.91
5	Government Polytechnic Barauni, Begusarai	Polytechnic	Begusarai	In front of Jublee petrol pump, Singhaul, Ulao, Begusarai-851134	25.42 86.10
6	Rashtrakavi Ramdhari Singh Dinkar College of Engineering Begusarai	Engineering	Begusarai	Ulao , Singhaul, Begusarai - 851134 (Bihar)	25.42, 86.10
7	Government. Polytechnic, BHAGALPUR	Polytechnic	Bhagalpur	AT+PO-BARARI, BHAGALPUR-812003	25.26, 87.02
8	Bhagalpur College of Engineering , Bhagalpur	Engineering	Bhagalpur	NH - 80 , PO: Sabour , Bhagalpur , 813210	25.27, 87.04
9	Lok Nayak Jai Prakash Institute of Technology	Engineering	Chapra	NH19 Chapra Bihar-841302	25.78, 84.79

S. No	Name of the College	Type of College	District	Complete Address of the College	Lat- Long Details
10	Govt. Polytechnic, Chapra	Polytechnic	Chapra	Marhowrah,Chapra,Bihar	25.95, 84.84
11	Darbhanga College of Engineering, Darbhanga	Engineering	Darbhanga	Mabbi, PO- Lalsahpur, Via- PTC, Darbhanga	26.17, 85.86
12	Government. Polytechnic, DARBHANGA	Polytechnic	Darbhanga	KADIRABAD,LALBAGH,DARBHANGA ,PIN-846004	26.16, 85.89
13	Government Polytechnic Motihari	Polytechnic	East Champaran	At- Luathahan, Behind Govt. ITI, Near Motihari Court, P.O.- Motihari Court, Distt- East Champaran	26.63, 84.89
14	Government Polytechnic, Gaya	Polytechnic	Gaya	Gaya- Bodhgaya Road, Ghugharitand, Gaya	24.76, 85.00
15	Gaya College OF ENGINEERING GAYA	Engineering	Gaya	Srikrishna Nagar, P.O Nagariyawan , Via, Buniyaadganj Bridge, Khizarsarai, Bihar 823003	24.90, 85.04
16	Government Polytechnic, Gopalganj	Polytechnic	Gopalganj	AT+PO- SIPAYA, PS- BISHWAMBHARPUR, DIST- GOPALGANJ-841501	26.58, 84.40
17	Braj Kishor Narayan Singh Government Polytechnic, Gopalganj	Polytechnic	Gopalganj	AT- Mantengrahi, Po: Maharani, PS : Mohammadpur , Dist : Gopalganj, Pin : 841409	26.20, 84.44
18	GOVERNMENT ENGINEERING COLLEGE, JAMUI	Engineering	Jamui	GOVERNMENT ENGINEERING COLLEGE, AMRATH,JAMUI-811313	24.95, 86.18
19	Government Engineering College Kaimur	Engineering	Kaimur	Government Engineering College Jaitpur Kalan PO+PS Bhagwanpur (Bhabhua) Kaimur 821102	24.92, 83.65

S. No	Name of the College	Type of College	District	Complete Address of the College	Lat- Long Details
20	Government. Polytechnic, KAIMUR	Polytechnic	KAIMUR	VILL- MACHHANAHATTA, PO- SAHBAJPUR, PS- MOHANIA, DIST- KAIMUR (BHABUA)	25.19, 83.73
21	Government. Polytechnic, KATIHAR	Polytechnic	KATIHAR	BHERIA RAHIKA, PO-BMP-07 DIST- KATIHAR-854106	25.57, 87.55
22	KATIHAR ENGINEERING COLLEGE, KATIHAR, BIHAR	Engineering	KATIHAR	KATIHAR ENGINEERING COLLEGE, KATIHAR, NEAR HIRDAYGANG, KATIHAR - 854109 Building under construction	25.56, 87.53
23	Government Polytechnic Khagaria	Polytechnic	Khagaria	Present Address:- Temp. Campus Government Polytechnic Katihar Bheriya Rehika BMP-07 pin-854106, Katihar. College Address:- Government Polytechnic Khagaria, Gram+P.O.- Mahaddipur,P.S.-Pasraha,Block- Parvatta,Dist- khagaria(Bihar)-851212	GP Katihar - 25.57, 87.55
24	Govt Polytechnic Kishanganj	Polytechnic	Kishanganj	Churli Nechagach Thakurganj , Kishanganj - 855116	26.48, 88.14
25	Government. Polytechnic, Lakhisarai	Polytechnic	Lakhisarai	North of Vidyapeeth Chowk Lakhisarai-811311	25.19, 86.10
26	B. P. Mandal College of Engineering Madhepura	Engineering	Madhepura	Near Jana Nayak Karpuri Thakur Medical College	25.91, 86.78
27	Government Polytechnic Madhepura	Polytechnic	Madhepura	Government Polytechnic Madhepura,At Dhuriya Kalashan,P.O Chousa,P.S Chousa , Dist:- Madhepura,Pin 852213	25.57, 87.03
28	Government Polytechnic Madhubani	Polytechnic	Madhubani	AT ARARIA SANGRAM PS- JHANJHARPUR, MADHUBANI- 847109	26.31, 86.35

S. No	Name of the College	Type of College	District	Complete Address of the College	Lat- Long Details
29	Govt. Polytechnic, Munger	Polytechnic	Munger	AT+PO-RAMANKABAD, PS-HAWELI KHARAGPUR, DIST-MUNGER, PIN-811317	25.11, 86.54
30	Govt. Polytechnic, Muzaffarpur	Polytechnic	Muzaffarpur	Government Polytechnic Muzaffarpur, Naya Tola, Technical chowk, Bihar 842001	26.11, 85.38
31	MIT Muzaffarpur	Engineering	Muzaffarpur	Brahmpura Laxmi Chowk , Muzaffarpur Bihar 842003	26.14, 85.36
32	Govt women's polytechnic Muzaffarpur	Polytechnic	Muzaffarpur	Bela Industrial area phase-II bela Muzaffarpur 842005	26.08, 85.41
33	Government. Polytechnic, ASTHAWAN NALANDA	Polytechnic	NALANDA	PO PS VILL ASTHAWAN NALANDA 803107	25.21, 85.61
34	Nalanda College Of Engineering	Engineering	NALANDA	Chandi-Jalalpur Rd, Bihar Sharif, Bihar 803108	25.32, 85.41
35	Government. Polytechnic, NAWADA	Polytechnic	Nawada	AT-KHANWAN, PO+PS-NARHAT, DIST-NAWADA, PINCODE-805122	24.74, 85.42
36	Bakhtiyarpur College of Engineering, Bakhtiyarpur Patna	Engineering	Patna	Bakhtiyarpur College of Engineering, Champapur, Dedaur, Bakhtiyarpur, Pin – 803212, , India	25.63, 85.10
37	Government. Polytechnic, Gulzaribagh, Patna-7	Polytechnic	Patna	Gulzarbagh, Sadikpur, Patna-800007	25.61, 85.20

S. No	Name of the College	Type of College	District	Complete Address of the College	Lat- Long Details
38	Government Women's Polytechnic,Patna	Polytechnic	Patna	Sanjay Nagar,Phulwarisharif ,Patna 801506	25.59, 85.07
39	New Government Polytechnic Patna-13	Polytechnic	Patna	Patliputra, Industrial Area, Patna-800013	25.63, 85.10
40	Government. Polytechnic, PURNEA	Polytechnic	Purnea	NEAR POLYTECHNIC CHAUK, MARIAM NAGAR, PURNEA PIN-854303	25.76, 87.46
41	Purnea College of engineering, Purnea	Engineering	Purnea	Purnea College of engineering, Purnea near ram nagar, at polytechnic chowk. Purnea 854303, bihar.	25.76, 87.46
42	Government. Polytechnic, DEHRI ON SONE	Polytechnic	ROHTAS	GOVERNMENT POLYTECHNIC, DEHRI ON SONE,NEAR INDRAPURI BARRAGE, PATANAWA, DEHRI ON SONE, ROHTAS, BIHAR-821308	24.85, 84.13
43	Government Polytechnic Saharsa	Polytechnic	Saharsa	Government Polytechnic Saharsa, Gangjala BypassRoad, Dist - Saharsa, Pin- 852201	25.88, 86.61
44	SAHARSA COLLEGE OF ENGINEERING ,SAHARSA	Engineering	Saharsa	Hatiya Gachhi, Saharsa, Bihar- 852201	25.88, 86.61
45	Kameshwar Narayan Singh Government. Polytechnic, Samastipur	Polytechnic	Samastipur	Kameshwar Narayan Singh Government Polytechnic, Samastipur, Kishanpur Tabhka, Bibhutipur, Via-Kalyanpur, Samastipur-848160	25.68, 85.91
46	Shershah Engineering College, Sasaram	Engineering	Sasaram	Vill + Post : Barki Kharari , P.S. - Karagahar, Sasaram , Dist - Rohtas , Pin - 821113	24.84, 84.13
47	Govt. Polytechnic sheohar	Polytechnic	Sheohar	Parihara chamanpur sheohar-843329	26.53, 85.32

S. No	Name of the College	Type of College	District	Complete Address of the College	Lat- Long Details
48	Sitamarhi Institute of Technology, Sitamarhi	Engineering	Sitamarhi	Dumra, village- Gosainpur Post office- Rasulpur Pin code 843302	26.54, 85.54
49	Government polytechnic sitamarhi	Polytechnic	Sitamarhi	Birpur malahi sursand sitamarhi pin-843331	26.62, 85.69
50	Baddiuzamman Khan Polytechnic	Polytechnic	Sitamarhi	Pupri Block Campus, State Highway 87, Janipur, Bihar 843333	26.46, 85.67
51	Government. Polytechnic, Siwan	Polytechnic	Siwan	Bawandih, Chainpur, Siwan-841203	26.01, 84.42
52	Supaul College of Engineering	Engineering	Supaul	Supaul College of Engineering, Beena Road, Ward No 24	26.10, 86.60
53	Govt. Polytechnic, Raghopur, Supaul	Polytechnic	Supaul	At- Mansapur, Karjain Bazar, Raghopur, Dist- Supaul Pin-8522215	26.38, 86.88
54	Government. Polytechnic, VAISHALI	Polytechnic	VAISHALI	Fatehpur Afzalpur Road via Chakmaruf, Goraul-844118 (Vaishali)	25.96, 85.26
55	Government Engineering College West Champaran (Bettiah)	Engineering	West Champaran	Kumarbagh Rd Opposite Railway Station Chawani,Bettiah District-West Champaran Bihar 845438	26.87, 84.51
To be implemented in Phase - II (27 colleges)					
56	Government Polytechnic Araria	Polytechnic	Araria	Rampur kodarkatti; Araria Bihar-854312	26.07, 87.48
57	Government Engineering College Arwal	Engineering	Arwal	Government Engineering College Arwal, In the campus of Gaya College of Engineering Gaya, At- Shrikrishna Nagar, Nagariawan, Khizarsarai Road, Buniyadganj Gaya-823003 Government	24.90, 85.05

S. No	Name of the College	Type of College	District	Complete Address of the College	Lat- Long Details
				Engineering College Arwal, Village- Pahleja, PS- Mehandiya, Block- Kaler, Dist- Arwal,	
58	Government Polytechnic College Arwal	Polytechnic	Arwal	TEMPORARY CAMPUS GOVERNMENT POLYTECHNIC ASTHAWAN NALANDA	Asthawan Nalanda - 25.21, 85.61
59	Government Engineering College Aurangabad	Engineering	Aurangabad	In Campus of GEC Gaya, shri krishna nagar , Nagariava, Buniyadganj, Khizarsarai Gaya-823003	GEC Gaya's Lat-Long 24.90, 85.04
60	Government Polytechnic College Bhojpur	Polytechnic	Bhojpur	Govt. Polytechnic, Bhojpur in the campus of government polytechnic gulzarbagh patna 7	25.61, 85.21
61	Government Engineering College Bhojpur	Engineering	Bhojpur	Permanent Site: Government Engineering College, Mouja- Kasbe, Bhojpur, Currently Running in: BCE Bakhtiyarpur Campus, Champapur, Dedaur, Bakhtiyarpur -803212	25.56,84.66
62	Government Polytechnic Buxar	Polytechnic	Buxar	VILL+PO+PS- Itarhi, Dist- Buxar (Bihar)-802123	25.19, 83.73
63	Government Engineering College Buxar	Engineering	Buxar	Permanent Site: Government Engineering College, Mouja- Mahdah, Buxar, Currently Running in: BCE Bakhtiyarpur Campus, Champapur, Dedaur, Bakhtiyarpur -803212	BCE Bakhtiyarpur - 25.63, 85.10
64	Government Polytechnic Tekari	Polytechnic	Gaya	Government Polytechnic Tekari,At Chaita Makhdumpur,Po-Harhi Makhdumpur,Ps-Alipur, District-Gaya,Pin-824235	25.00, 84.86
65	Government Engineering College Gopalganj	Engineering	Gopalganj	BKNS Government Polytechnic, Mantengarahi, Baikunthpur-841409 (Temporary Running in Lnjpit Chapra Campus)	26.58, 84.40

S. No	Name of the College	Type of College	District	Complete Address of the College	Lat- Long Details
66	GOVERNMENT POLYTECHNIC JAMUI	Polytechnic	Jamui	KALYANPUR ROAD JAMUI, PINCODE- 811307	24.92, 86.23
67	Government Polytechnic College Jehanabad	Polytechnic	Jehanabad	Government Polytechnic Jehanabad CAMPUS OF N.G.P PATNA PATLIPUTRA PATNA 13	25.12, 84.59
68	Government Engineering College Jehanabad	Engineering	Jehanabad	Balipur (बलीपुर) Block Hulasganj District : Jehanabad State : Bihar 804408	25.11, 85.16
69	Government Engineering College, Khagaria	Engineering	Khagaria	Permanent Address- Government Engineering College, Khagaria, Alauli, Khagaria, but currently running at Temporary Campus- Government Polytechnic, Purnea-854303	25.64, 86.39
70	Government Engineering College Kishanganj	Engineering	Kishanganj	Government Engineering College Kishanganj Mahesh Bathna Andha Juan kishanganj- 733208	26.14, 87.93
71	GOVENMENT ENGINEERING COLLEGE, LAKHISARAI	Engineering	Lakhisarai	GOVERNMENT ENGINEERING COLLEGE, AMRATH,JAMUI-811314	24.99, 86.12
72	Government Engineering College Madhubani	Engineering	Madhubani	Teaching campus: DEC Darbhanga, ADDM: MCE Motihari	26.15, 86.50
73	Motihari College Of Engineering, Motihari	Engineering	Motihari	Fursatpur, bairiya, Motihari, east champaran-845401(Near FCI Godown)	26.60, 84.93
74	GOVERNMENT ENGINEERING COLLEGE, MUNGER	Engineering	Munger	GOVERNMENT ENGINEERING COLLEGE, AMRATH,JAMUI-811313	25.37, 86.50
75	Government Engineering College Nawada	Engineering	Nawada	Government Engineering College, Plot No. 1097, 1100, Village- Budhaul, Circle- Nawada Sadar, Dist.- Nawada Temporarily running at NCE Chandi (Nalanda)	24.77, 85.43

S. No	Name of the College	Type of College	District	Complete Address of the College	Lat- Long Details
76	Government Engineering College , Samastipur	Engineering	Samastipur	Vidyapathi- Kakarghatti-Sarairanjan Rd, Bhojpur Urf Sudampur, Bihar-848111	25.72, 85.73
77	Government Engineering college Sheikhpura	Engineering	Sheikhpura	At. Bazidpur, post sheikhpura, District Sheikhpura pin 811105	25.32, 85.41
78	Government Polytechnic Sheikhpura, BIHAR	Polytechnic	Sheikhpura	Campus At- Govt. Polytechnic Lakhisarai, North of Vidyapeeth Chowk, Lakhisarai, Bihar-811311	25.22, 86.04
79	Government Engineering College Sheohar	Engineering	Sheohar	Temporary Address: Motihari College of Engineering, Motihari, Bariyarpur, Motihari, NH 28A, Furshatpur, Motihari, Bihar 845401(Current address:-Piprari ... chatauna bazar..)	26.46, 85.27
80	Government Engineering College Siwan	Engineering	Siwan	Campus of Government Polytechnic Siwan, Bawandih, Chainpur, Siwan - 841203	25.78, 84.78
81	Government Engineering College , Vaishali	Engineering	Vaishali	Biddupur ,chaksikander ,vaishali	25.69, 85.35
82	Government Polytechnic College West Champaran (Bettiah)	Polytechnic	West Champaran	Temporary campus at Motihari College of Engineering, Fursatpur, Bairiya, Motihari, Bihar-845401	26.82, 84.59

Annexure XXI – Unpriced BoQ

(To be submitted along with the Technical Proposal)

Major Components at Data Center

S/N	Components	UoM	Qty	Make	Model
1	Centralized Networking Solution	No's	1		
2	Network monitoring, reporting and helpdesk solution at centralized location	No's	1		

Major Components at College

S/N	Components	UoM	Qty	Make	Model
1	Edge Device at Campus which includes reporting of all managed devices for the site	No's	82		
2	Distribution Switch - L3 Switch with Dual Power supply & with minimum 32 SFP ports from day 1	No's	1		
3	Distribution Switch - L3 Switch (Type A) with Dual Power supply & with minimum 24 SFP ports	No's	13		
4	Distribution Switch - L3 Switch (Type B) with Dual Power supply & with minimum 12 SFP ports	No's	68		
5	Access Switch- 16 port L2 PoE (Type A) with minimum 2 SFP	No's	45		
6	Access Switch- 8 port L2 PoE (Type B) with minimum 2 SFP	No's	490		
7	Access Switch- 48 port L2 with minimum 2 SFP	No's	345		
8	Access Switch- 24 port L2 (Type - A) with minimum 2 SFP	No's	295		
9	Access Switch- 16 port L2 (Type - B) with minimum 2 SFP	No's	23		
10	Access Switch- 12 port L2 (Type - C) with minimum 2 SFP	No's	41		
11	Access Switch- 8 port L2 (Type - D) with minimum 2 SFP	No's	77		
12	Wireless Controller System (H/w or S/w) Managing single SSID authentication in campus	No's	82		
13	Wi-Fi Indoor AP (With Mounting Kit + Antenna + Accessories)	No's	1981		
14	Rugged Wi-Fi Outdoor AP (With Mounting Kit + Antenna + Accessories)	No's	98		
15	32 U Rack (with Redundant PDU) and Rack Earthing	No's	82		
16	6 U rack (With PDU and all accessories)	No's	778		
17	5 KVA UPS with battery bank with 30 mins full load backup along with Display	No's	82		
18	1 KVA UPS with battery bank with 1 hour full load backup along with Display	No's	778		
19	Low end Rack server with Monitor, Keyboard & Mouse with OS and Antivirus for Content Management, AAA, user management, log management etc	No's	82		
20	Workstation	No's	82		
21	1.5 Ton Air Conditioner branded with 5-year warranty	No's	82		

S/N	Components	UoM	Qty	Make	Model
22	75-inch Smart Interactive Board + OPS	No's	164		
23	Point to point VC Codec	No's	82		
24	USB Based PTZ Camera with Mic	No's	82		
25	8 Port NVR with 8 no's of CCTV camera (2 MP Dome camera)	No's	82		
26	Suitable Electrical wiring with conduit & all required material	Rmtr	6560		
27	Civil Works- (Aluminium & Glass partitioning of server room, customized bracket for all access points)	Lump-sum	82		

Cable Requirement

SL No	Item	UoM	Qty	Make	Model
1	Cat 6 UTP Cable	Rmtr	629,759		
2	Patch Cord U/UTP Cat.6A	No's	58,288		
3	LIU and termination accessories for 6 Core Fiber	Unit	228		
4	6 Core OFC cable with accessories	Mtr	17440		
5	19" 1U 24 port unshielded Patch Panel	Unit	1206		
6	IO Box for CAT 6A termination	Unit	25144		
7	Conduit for CAT-6 Cabling	Mtr	629759		
8	OFC Route Indicators	No's	253		
9	HDPE Pipe for fiber laying	Mtr	17440		
10	Cat 6A laying and termination accessories	Lump-sum	As per requirement		
11	OFC laying and termination accessories with required connectors	Lump-sum	As per requirement		