RFP for selection of agency for Operations & Maintenance of Gujarat State Wide Area Network (GSWAN) and Gujarat State Data Centre (GSDC) for the State of Gujarat for a period of 5 years on behalf of Department of Science & Technology, Government of Gujarat.

Minimum Bill of Material

Sr. No.	ITEM	Qty (in Nos.)	Make and Model
1	**Taluka Router (Type -3)** As per Technical specifications including all applicable Licenses, Cables and Accessories, Installation, Configuration and Commissioning with 5 Year Warranty and onsite Support	10	
2	**Layer - 3 (Type - 2) Switch for Taluka Centers** As per Technical specifications including all applicable Licenses, Cables and Accessories, Installation, Configuration and with 5 Year Warranty and onsite Support	10	
3	**Layer - 2 Gigabit 48 Port PoE Switch (Type - 3)** for each Node As per Technical specifications including all applicable Licenses, Cables and Accessories, Installation, Configuration and Commissioning with 5 Year Warranty and onsite Support	10	
4	**33U Network Rack (800 mm Depth)** As per Technical specifications including all applicable Cables and Accessories, Installation and Commissioning, 5 Year Warranty and onsite Support	10	
5	**UPS 5 KVA with 2 Hr backup** As per Technical specifications including all applicable Cables and Accessories, Installation and Commissioning, 5 Year Warranty and onsite Support	10	
6	**4 Kg Dry Powder/Co2 based Fire Extinguisher** with Installation with 5 Year Support	10	
7	**Video Conference Endpoint (Taluka).** As per Technical specifications including all applicable License, Cables and Accessories, installation, Configuration and 5 Years warray and Onsite Support	10	
8	**32 Inch LED TV**: As per Technical specifications including all applicable License, Cables and Accessories, installation, Configuration and 5 Years warray and Onsite Support	10	
9	**User Onboarding & Radius Server:** Compatible with Existing Solution and having licenses to connect 20000 Concurrent Users.	1	
10	**Layer - 3 Switch for WIFI Solution:** As per Technical specifications including all applicable License, Cables and Accessories, installation, Configuration and 5 Years warray and Onsite Support	2	

Note: The above mentioned is minimum BoQ as per the RFP. You will have to supply the additional required BoQ as proposed in your technical solution to fulfill the Scope of work & maintain the Service Levels mentioned in the RFP.

Technical Specifications

Item No. 1: Type 3 Router for Taluka Centres		
Sr. No.	**Minimum Required Specifications**	**Make & Model**
1	The router should support IP routing, IP multicast, QoS, multiprotocol label switching (MPLS), VPNs and redundant power supply.	
2	Routers should have at least 1 or more free slots for LAN or WAN modules after populating all interfaces. Router should have minimum 4 GB of of DRAM/RAM & should support increasing of flash/compact flash size to hold multiple image, data etc.	
3	Router should have minimum 4 or more 1GE SFP ports poluplated with 1G single mode SFP & 16x1G electrical ports. Router shoud have support for E1, Chn E1/ Fractional, Serial V.35, G.703.	
4	The router should have a minimum performance of 2 Gbps or more	
5	The router shall support adaptive routing adjustments by doing routing path selection based upon advanced criteria like Response time, packet loss, delay, jitter and traffic load to intelligently control the traffic to maximise the quality of the user experience.	
6	Routers should support marking, policing and shaping	
7	IPv4 and IPv6 enabled from day one	
8	HSRP/VRRP, Static Routes, RIPv1, RIPv2, RIPng, OSPFv2, OSPFv3, BGP4, MBGP, BGp route reflector, BFD, Policy based routing IGMP V1/V2/V3, PIM-DM, PIM-SM enabled from day one	
9	Should support extensive support for SLA monitoring for metrics like delay, latency, jitter, packet loss	
10	Support for accounting of traffic flows for Network planning and Security purposes	
11	Should support extensive support for SLA monitoring for metrics like delay, latency, jitter, packet loss,	
12	Routers should support SNMPv2 and SNMPv3	
13	Routers should support Software upgrades	
14	Extensive debugs on all protocols	
15	Shall support Secure Shell for secure connectivity	
16	Should have to support Out of band management through Console and an external modem for remote management	
17	Pre-planned scheduled Reboot Facility	
18	Real Time Performance Monitor – service-level agreement verification probes/alerts	
19	The Router should be NDPP or EAL3 certified at the time of Bidding	
20	All necessary SFP's, interfaces, connectors, patch cords (if any) & licenses must be delivered along with the Router from day one.	
21	The Router should be 19" Rack mountable & should be supplied with Indian standard AC (5Amp) power cord.	

Item No. 2: Type 2 Layer-3 Switch for Taluka Centres		
Sr. No.	**Minimum Required Specifications**	**Make & Model**
1	Switch with min 8 Nos. 10/100/1000BaseT ports and additional 2 no's of free combo ports so that Fiber based SFP or Gigabit Ethernet transceiver can be used for uplink purpose.	
2	Should have minimum switching capacity of 10 Gbps. All ports on the switch should work on line rate.	
3	The switch should have IPV4 & IPv6 support from day one	
4	It shall support IEEE 802.1s Multiple Spanning Tree Protocol and provide legacy support for IEEE 802.1d STP and IEEE 802.1w RSTP or equivalent technology and static routes.	
5	Switch should support queuing as per IEEE 802.1P standard on all ports with mechanism for traffic shaping and rate limiting.	
6	Should support dynamic routing protocols like OSPF, RIP, BGP from day one.	
7	Switch should support automated image installation, configuration & automatic configuration of per port QoS to reduce switch provisioning time & effort.	
8	The switch should support IPv6 RA-Guard, IPv6 DHCP-Guard/ DHCP Snopping, Source-Guard features.	
9	The Router should be NDPP or EAL3 certified at the time of Bidding	
10	All necessary SFP's, interfaces, connectors, patch cords (if any) & licenses must be delivered along with the switch from day one.	
11	The Switch should be 19" Rack mountable & the switch should be supplied with Indian standard AC (5Amp) power cord.	

Item No. 3: Type 3 Layer -2 Gig Switch		
Sr. No.	**Minimum Required Specifications**	**Make & Model**
1	Switch should have minimum 48 No's of 10/100/1000 Base-TxPoE ports (Duplex, Full, Half) and 4 x 1GE Uplink port. Switch PoE power rating should be 370W or more.	
2	Should have minimum switching capacity of 52 Gbps. All ports on the switch should work on line rate.	
3	Should be IPv4 and IPv6 ready from day one	
4	The switch should support dedicated stacking port separate from uplink ports with 48 Gbps of stacking bandwidth.	
5	It shall support IEEE 802.1s Multiple Spanning Tree Protocol and provide legacy support for IEEE 802.1d STP and IEEE 802.1w RSTP or equivalent technology and static routes.	
6	Port Security to secure the access to a port based on the MAC address of a user's device. The aging feature to remove the MAC address from the switch after a specific time to allow another device to connect to the same port.	
7	Switch should support Port-based and 802.1Q tag-based VLANs, MAC-based VLAN, Guest VLAN, Private VLAN Edge, also known as protected ports, with multiple uplinks	

8	All ports should have features of auto- negotiate, flow control (802.3x), port based network access control (802.1x), port security, MAC filtering etc.	
9	The switch should support IPv6 RA-Guard, IPv6 DHCP-Guard/ DHCP Snopping, Source-Guard features.	
10	The Router should be NDPP or EAL3 certified at the time of Bidding	
11	All necessary SFP's, interfaces, connectors, patch cords (if any) & licenses must be delivered along with the switch from day one.	
12	The Switch should be 19" Rack mountable & the switch should be supplied with Indian standard AC (5Amp) power cord.	
Item No. 4: 33U 800 (W) X 800 (D) Network Rack for Taluka		
Sr. No.	**Minimum Required Specifications**	**Make & Model**
1	Black color 33U x 800 mm x 800 mm Rack skeleton + Ventilated Roof + F/R 19" Multi-fold Mounting Rails + 100mm Reducing Channels for 19" Mounting Configuration	
2	33U x 800 Front Perforated Hex Mesh Steel Door with conventional locks	
3	33U x 800 Rear Steel Door Split type with HEX Mesh and Centre handle Lock having Multi-point locking.	
4	33U X 800D Side Panels with Locks & Latch	
5	Set of Castors (2 with Brake + 2 without Brake)	
6	Fix Shelf	
7	Roof Mounted Fan Tray with 2 Fans of 90 CFM / 230V AC	
8	1U Metal Type Cable Manager	
9	Extra Front Panel Mounting Hardware (pack of 20 Sets)	
10	Earthing Continuity Kit	
11	Power Distribution Unit - Vertically Mounted, with 12 Power Outputs of 5/15Amp Sockets having 32 AMP MCB with 3M Input Cable Pdu Rating : 32 Amp	
12	Rack should be floor mountable and should be supplied with the stand along with castors and stoppers.	
Item No. 5: UPS		
Sr. No.	**Minimum Required Specifications**	**Make & Model**
1	Technology	
	True On-line High-Frequency Design UPS with Double Conversion technology	
	Rectifier & Inverter both be IGBT based PWM	
2	Certifications	
	ISO 9001:2000 and 14001 Certified OEM (certificate to be submitted)	
	UPS should meet CE and ROHS standards (Compliance to be submitted)	
3	Input Voltage Range: 160-280 VAC @ 100% load, Single Phase	
4	Input Freq. Range: 40-70 Hz (auto sensing)	
5	Input Power Factor: 0.99 (100% Load)	
6	Input Protection: Thermal Circuit Breaker	
7	Output Voltage: 220/230/240 VAC +/- 1%	
8	Output Frequency: 50Hz ± 0.2Hz	
9	Output Power Capacity	
	2KVA: 1600W	
	5KVA: 4000W	
	10KVA: 8000W	
10	Output Waveform: Pure Sine wave	
11	O/P Voltage Distortion: <3% for Linear, <6% for Non Linear Load	
12	Output Connections: (1) Hard Wire 3-wire (H N + G), (2) IEC 320 C13	
13	Efficiency (Overall): > 85%	
14	Efficiency (Inverter): > 90%	
15	Battery Type: SMF-VRLA (Sealed maintenance free valve regulated lead acid)	
16	Battery Make: Exide, Quanta, Panasonic, CSB, Yuasa, Relicell	
17	Battery Backup:	
	5KVA: 17400VAH for 120min backup	
18	Battery/DC Voltage	
	5KVA - 192VDC	
19	Noise level: <58 dB	
20	Communication: Full-Functional SNMP Card should be present; RS 232 & USB port with software for UPS status monitoring	
21	Protection: Inherent protection should be provided for Output Short-circuit and Overload, Input Fault, Cold Start, Low battery, Battery Over and Under charge, Battery Disconnect, Battery self-test feature, Over Temperature, OVCD, External Transient Voltage Surge Suppressor, etc	
22	LCD Display: Input Voltage, Input Frequency, Output voltage, Output Current, Output Frequency, Battery Voltage, UPS Status, Load Level, Battery Level, Discharge Timer, Battery Disconnect and Fault Conditions	
23	By Pass: Manual and Automatic (Built-in) Bypass switch should be provided	
24	Environment: Noise Level – less than 60 dB at a distance of 1 meter	
25	Programmable Outlets: UPS should have programmable outlets for control of load segment	
26	Operating Temperature: 0-45 degC	
27	Relative Humidity: 20-90%RH @0-400 C (Non-condensing)	
28	Miscellaneous	
	ECO Mode Operation with Enable/Disable function	
	Emergency Power Off (EPO)	
	BYPASS Mode Operation with Enable/Disable function	

	Cables : With all necessary cables and plug and Battery links	
	Rack: Suitable Metallic Rack for housing of SMF Batteries to be provided	
29	Earthing: Vendor has to create the earth pit for each UPS. Connectivity from earth Pit to UPS system will be done by Vendor and required civil work will be taken care by vendor. Requirement of earthing value: Below 0.5 ohm-meter	
30	Battery Replacement: Vendor has to replace the UPS battery every 2 years for uninterrupted and smooth operations. OEM should confirm battery replacement in UPS at the end of 2nd year and 4th year respectively.	
Item No. 7: Video Conference Endpoint for Taluka		
Sr. No.	**Minimum Required Specifications**	**Make & Model**
1	Type of Endpoint - Point to Point Upgradable.	
2	Optical Zoom:12X	
3	Video Conference Resolution - 1080p 60 FPS	
4	Warranty - 3 Years	
5	Type of Camera - PTZ	
6	Supports sharing of graphics and video content during video call - 1080, 30 FPS	
7	Microphone Supplied - 2	
8	Camera Positioning - Single Camera (Face Detection, Automatic Voice activated, Preset)	
9	System uses standards based protocols & the offered system is inter operable with any existing H-323 AVC/SVC based VC equipment in a P to P call on VC end point; All H/W and S/W required to make it interoperable is included in the scope of supply	
10	Codec & Camera must be from the same OEM	
11	Codec must be custom built hardware and not software loaded on PC.	
12	The unit must be equipped with intuitive touch screen / panel / Remote for controlling VC Unit	
13	Must have ability to share content on wireless from desktop or laptop.	
14	Should be enabled for software based video conference like Webex, Team, Blue Jeans, Zoom, Google Meet & other similar platforms.	
Item No. 8: 32 Inch LED TV for Taluka		
Sr. No.	**Minimum Required Specifications**	**Make & Model**
1	Technology - Backlit	
2	Screen Size - 32 Inch	
3	Screen Type - Non Touch	
4	Native Resolution (Pixels)	
5	Aspect Ratio - 16:9	
6	Duty Cycle - 16 x 7	
7	OEM Warranty - 5 Years	
Item No. 9: User Onboarding Radius Server		
Sr. No.	**Minimum Required Specifications**	**Make & Model**
1	Solution should provide a highly powerful and flexible attribute-based access control solution that combines authentication, authorization, and accounting (AAA); posture; profiling; and guest management services on a single platform.	
2	Should allow enterprises to authenticate and authorize users and endpoints via wired, wireless, and VPN with consistent policy throughout the enterprise	
3	Support for port based authentication (802.1x).	
4	Supports a wide range of authentication protocols, including PAP, MS-CHAP, Extensible Authentication Protocol (EAP)-MD5, Protected EAP (PEAP), EAP-Flexible Authentication via Secure Tunneling	
5	Solution should be able to support creating hotspot, self-service, self-service sponsor approved and sponsored Guest Access	
6	In case of self-service sponsor approved guest access, it should be possible for sponsor to reject the guest request for network access	
7	Sponsor should be able to create guest using either mobile client and desktop client	
8	Sponsors should be able to create guest accounts by uploading a spreadsheet with guest info into sponsor portal	
9	Solution should have capability to allow admin to configure following guest flow post successful logged in:	
	Customized guest portal page	
	Page the guest was trying to access at the time of login	
	predefined URL	
13	Should have capability to define limit a user to specific number of devices	
14	Solution should support programmatic access to creating and managing guest users through a Representational State Transfer (REST) API.	
15	Should support the ability to completely customize all (Guest, Sponsor, BYOD, Client Provisioning, MDM, etc) of the end-user facing portals (mobile and desktop) and all of the notifications that are sent end-users.	
16	Solution should support configuring MDM policy based on the following attributes: Device Register Status, Device Compliant Status, Disk Encryption Status, Pin Lock Status, Jail Broken Status, Serial Number, Manufacturer, IMEI, Os Version& phone number	
17	In case required, Solution should have the capability to deliver certificated directly to endpoints for BYOD provisioning	
18	Should support guest user's host device be posture assessed and access policy granted based on compliance with security policy	
19	should support guest user's host device be profiled and access policy granted based on the type of device guest uses to access the network	
20	Supports the ability to report on guests network activity such as URLs visited, connections made etc	
21	Support ability to generate report on guest login/logout times, mac address and ip address used	
22	Should have the ability to export report in .CSV format	
23	Solution should support ability to send SMS via email gateway and http API gateway	
24	Solution should support ecosystem partners to integrate and share the context bi-directionally without the need to adopt platform specific APIs	
25	Solution should be Support 20000 Concurrent Users.	

26	Provides a wide range of access control mechanisms, including downloadable access control lists (dACLs), VLAN assignments, URL redirect.	
27	Support for Standard based enforcement like, DACLs, VLANs, URL redirect are more common ways of enforcement or WLAN Vendor supported enforcement types	
Item No. 10: SDC WIFI Switch		
Sr. No.	**Minimum Required Specifications**	**Make & Model**
1	Switch should have minimum 8 No's of 10G SFP based ports and 8 Nos of 1G (Electrical) ports populated with respective modules.	
2	Should have minimum switching capacity of 24 Gbps. All ports on the switch should work on line rate.	
3	The switch should have dedicated stacking port separate from uplink ports with 24 Gbps of stacking bandwidth to put minimum 8 switches into a single stack group.	
4	It shall support IEEE 802.1s Multiple Spanning Tree Protocol and provide legacy support for IEEE 802.1d STP and IEEE 802.1w RSTP or equivalent technology and static routes.	
5	Switch should support queuing as per IEEE 802.1P standard on all ports with mechanism for traffic shaping and rate limiting.	
6	Switch should support automated image installation, configuration & automatic configuration of per port QoS to reduce switch provisioning time & errort.	
7	The switch should support IPv6 RA-Guard, IPv6 DHCP-Guard / DHCP Snopping, Source-Guard features	
8	The Router should be NDPP or EAL3 certified at the time of Bidding	
9	All necessary SFP's, interfaces, connectors, patch cords (if any) & licenses must be delivered along with the switch from day one.	
10	The Switch should be 19" Rack mountable & the switch should be supplied with Indian standard AC (5Amp) power cord.	