Expression of Interest / Pre RFP Stakeholder Consultation

Madhya Pradesh Vidhan Sabha has prepared a Model RFP for selecting a Managed Service Provider-MSP (System Integrator) for Augmentation and Management of IT Infrastructure at Madhya Pradesh Vidhan Sabha, Bhopal for NeVA Implementation (Supply, Installation, Testing, Commissioning, Maintenance and Management of IT Infrastructure). The RFP contains specifications of various Items required for the Project.

Interested Companies/OEMs are invited for discussion on 20th of August 2025 at Committee Room No.-3, Vidhan Sabha at 3:00 P.M., regarding the specifications of Proposed Procurement. Model Specification are also available on Official Website of M.P.Vidhan Sabha (https://mpvidhansabha.nic.in) and NICSI. OEMs/Companies may also send their comments (component wise) via email to vidhansabha@mp.gov.in, latest by 18th August, 2025 3:00 P.M.

Enclosed – Specifications

MODEL SPECIFICATIONS
for
Selection of Managed Service Provider – MSP (System Integrator)
for
Augmentation & Management of IT Infrastructure at Madhya Pradesh Vidhan Sabha, Bhopal for NeVA Implementation
*(*Supply, Installation, Testing, Commissioning, Maintenance & Management of IT Infrastructure)

Table for Details of the IT Infrastructure Items

S. No.	Item Name	Specifications	Reference Bid Page No.	Make/ Model	Part Code
1.	Item #1: **Tablet Devices - Samsung Galaxy Tab S9 Plus (For House)**	Higher specifications will be acceptable			
1.1.	**Tablet Devices - Samsung Galaxy Tab S9 Plus**	For specifications, refer **"Table for Specifications for Item #1.1: Tablet Devices - Samsung Galaxy Tab S9 Plus**			
1.2.	**4 in 1 adaptor**	For specifications, refer **Table for Specifications for Item #1.2: 4 in 1 adaptor**			
1.3.	**Tablet Device Metal Stand**	For specifications, refer **Table for Specifications for Item #1.3: Tablet Device Metal Stand**			
1.4.	**Mobile Device Management Tool**	For specifications, refer **Table for Specifications for Item #1.4: Mobile Device Management Tool**			
2.	Item #2: **Touch Screen Devices - Samsung Galaxy Tab S10 Plus (For Members)**	For specifications, refer **Table for Specifications for Item #2: Touch Screen Devices - Samsung Galaxy Tab S10 Plus**			
3.	**Item #3: Projector System**				
3.1.	Projector System	For specifications, refer **Table for Specifications for Item #3.1: Projector System**			
3.2.	**Projector Screen, Projector Ceiling /Wall Mounting with necessary accessories**	For specifications, refer **Table for Specifications for Item #3.2: Projector Screen, Projector Mounting Kit with necessary accessories**			
4.	Item #4: All in one PC				
4.1.	All in one PC	For specifications, refer **Table for Specifications for Item #4.1: All in one PC**			
4.2.	Microsoft Office	For specifications, refer **Table for Specifications for Item #4.2: Microsoft Office for All-in-one PC**			
4.3.	Antivirus	For specifications, refer **Table for Specifications for Item #4.3: Antivirus for All in one PC**			
5.	Item #5: Laptop				
5.1.	Laptop	For specifications, refer **Table for Specifications for Item #5.1: Laptop**			
5.2.	Microsoft Office	For specifications, refer **Table for Specifications for**			

S. No.	Item Name	Specifications	Reference Bid Page No.	Make/ Model	Part Code
		Item #5.2: Microsoft Office for Laptop			
5.3.	Antivirus	For specifications, refer **Table for Specifications for Item #5.3: Antivirus for Laptop**			
5.4.	Laptop Bag	For specifications, refer **Table for Specifications for Item #5.4: Laptop Bag**			
6.	Item #6: Multi-Function Printer (Mono)	For specifications, refer **Table for Specifications for Item #6: Multi-Function Printer (Mono)**			
7.	**Item #7: Hi Speed Scanner** **7.1 : Hi Speed Scanner (Sheet Fed)** **7.2: Hi Speed Scanner (Flat Bed)**	For specifications, refer **Table for Specifications for Item #7.1 & 7.2: Hi-Speed Scanner**			
8.	Item #8: Plastic Id Card Printers	For specifications, refer **Table for Specifications for Item #8: Plastic ID Card Printer**			
9.	Item #9: VC Studio System	For specifications, refer **Table for Specifications for Item #9: VC Studio System**			
10.	Item #10: e-Sign /DSC	For specifications, refer **Table for Specifications for Item #10: DSC/eSign Certificate**			
11.	Item # 11: Mid-Range Server with necessary accessories				
11.1.	Mid-Range Server with necessary accessories	For specifications, refer **Table for Specifications for Item #11.1: Mid-Range Server with necessary accessories**			
11.2.	Microsoft Windows Server OS (Latest Version)	For specifications, refer **Table for Specifications for Item #11.2: Microsoft Windows Server OS**			
11.3.	Linux Server OS – 2 Flavours / Brands	For specifications, refer **Table for Specifications for Item #11.3: Linux Server OS**			
12.	Item #12: *Active Networking Items	**Including Supply, Installation, Integration, Configuration, Testing and Commissioning with 5 years on-site warranty support All active networking components (Network switches, Wireless Access Points, Wireless controller, etc.) must be from the same OEM.**			
12.1.	Layer3 Switch 24 Port 1/10 Gbps SFP+Port,2nos and 40/100Gbps Uplink	For specifications, refer **Table for Specifications for**			

S. No.	Item Name	Specifications	Reference Bid Page No.	Make/ Model	Part Code
	ports with redundant power supply and stacking module & cable 1.5m with single mode optical fiber module and Advance Routing Licenses (IPv4 and IPV6). Also should be loaded with 40/100G Optics. with Indian power cables	**Item #12.1: 24 Ports 1/10GBPS Layer3 Switch with single mode optical fiber**			
12.2.	Layer-2: 24 ports 10/100/1000 MBPS manageable Layer2 Switch with SFP+ Ports and 2/4 nos. 1/10GBPS optical single mode Uplink ports, stacking module & cable 1.5m, basic Routing Licenses & Indian power cable (IPV4 & IPV6 Compatible)	For specifications, refer **Table for Specifications for Item #12.2: 24 Ports 10/100/1000 MBPS manageable Layer2 Switch non-POE**			
12.3.	Layer2 - 48 ports 10/100/1000 MBPS 2/4-1/10G SFP+ Ports, PoE+ manageable Layer2 Switch with optical single mode Uplink ports, stacking module & cable 1.5m, and 1.5 Mtr Cable. basic Routing Licenses & Indian power cable	For specifications, refer **Table for Specifications for Item #12.3: 48 Ports 10/100/1000 MBPS manageable Layer2 Switch with POE**			
12.4.	Layer 2: 48 ports 10/100/1000 MBPS manageable Layer2 Switch and 2/4 nos. 1/10GBPS optical single mode Uplink ports, stacking module & cable 1.5m, basic Routing Licenses & Indian power cable	For specifications, refer **Table for Specifications for Item #12.4: 48 Ports 10/100/1000 MBPS manageable Layer2 Switch non-POE**			
12.5.	Transceiver Fibre: 1 port 1000 Base LX- transceivers SFP Pluggable GBIC, SM LC connector compatible with above Layer 2 and Layer 3 Switches				
12.6.	Transceiver Copper -1 port 1000 Base Tx- transceivers SFP pluggable GBIC				
12.7.	Wi-Fi Access Point including Site Survey, Supply & Installation)	For specifications, refer **Table for Specifications for Item #12.7: Wi-Fi Indoor Access Points**			
12.8.	Wi-Fi - Wireless Controllers with 100 Access Points License	For specifications, refer **Table for Specifications for Item #12.8: Wireless Controller**			
12.9.	Network Management Systems (NMS) - with required hardware for around 60 devices	For specifications, refer **Table for Specifications for Item #12.9: NMS**			

Table for Specifications for Item #1.1: Tablet Devices - Samsung Galaxy Tab S9 Plus

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1	Make	Samsung		
2	Model	Samsung Galaxy Tab S9 Plus		
3	Memory (RAM)	12 GB (Memory expandable with microSD up to 1 TB)		
4	Screen Size	12.4 inches		
5	Screen Protection	High-quality tempered glass with highest hardness rating to provide powerful scratch resistance and complete screen protection.		
6	Storage Disk	256 GB		
7	Connectivity (Communication)	Wi-Fi		
8	USB Ports & interface	USB Type-C, USB charging		
9	Battery Life	Up to 10 hours		
10	Charging	Charging via USB-C to computer system or with Power adapter		
11	Tablet Case / Cover	Tablet Case / Cover compatible for fixing with Metal Stand		
12	Warranty	3 Years Onsite comprehensive Warranty including battery		
13	Update and Upgrade Support	Minimum 3 years at no extra cost		

Table for Specifications for Item #1.2: 4 in 1 adaptor

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	**USB-C to Ethernet, USB, HDMI Adapter and HDMI**	Samsung Certified or Compliant for Tablets RJ45 port for Ethernet connection, Adapter with Charge Port Compatible with the Tablet Device External Ethernet Hub compatible with supplied the Tablet Device as Plug and Play 4-in-1 adaptor HDMI, RJ45, USB3.0, USB-C for PD charging HUB		
2.	Warranty	3 Years Onsite comprehensive Warranty		

Table for Specifications for Item #1.3: Tablet Device Metal Stand

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1	**Material**	Brass should be finished to provide good appearance and should be PVD coated with Rose Gold Finish with premium PU lacquer coating for long lasting finish.		
2	**Type 1 Stand: Full Stand Mounting Mechanism**	Round shape stands with comfortable working operation and fixed table mounting with elegant appearance and premium brass material, concealing the wire with slots at the bottom and upper side of the stand. Total stand height should be approximately 365-400 mm including the Tablet Device housing and base of the mounting mechanism.		
3	**Type 2 Stand: Sliding Stand Mounting Mechanism**	There are about 13 number of desks at the House, which are elevated in height and need separate type of stand as mentioned below. The Bidder can visit MPVS to understand the requirement and accordingly bid for the same. A round shape sliding stand with adjustable sliding length up to 55 mm for height adjustment should be provided in the stand. This stand would be used for short length and height adjustment applications at the table where three seating arrangements must be made. A round knurled knob beside the slider should be provided to fasten or loosen the slider. Round shape stands with comfortable working operation and fixed table mounting with elegant appearance and premium brass material should be provided. Total stand height considering complete slider rod should be approximately 305 mm including the tablet device housing and base of the mounting mechanism.		
4	**Stand movement mechanism**	Mechanisms should make free movement in all the working direction with restrictions not to come out of the bench, should not move in a forward direction to interrupt other working areas. Horizontal and Vertical rotation should be restricted to around 90º.		
5	**Mounting Housing**	Material of the mounting housing and adapter box should be machined from solid hard aluminum. An Adapter box should be fitted behind the housing. Silicone rubber housing should be provided with key buttons and camera slots to provide appropriate functioning. Mounting housing should be able to secure the Tablet Device with high quality silicone housing pad. Aluminum housing and adapter box should be black anodized with licensed process from SAC, ISRO. Further, the aluminum housing should be PU coated to provide surface protection. The Tablet Device should be restricted to 90º- 120º rotation to avoid tangling of		

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
		the wire.		
6	**Installation and Commissioning at Site**	The Metal stands should be installed at site as per User requirement.		
7	**Warranty**	3 Years Onsite comprehensive Warranty		

Mounting stand pictures are depicted below as per the specification (Specifications and Dimensions may be changed by MP Vidhan Sabha before Supply of Tablets). Sample Stands will be in display at MPVS during BID. Bidders must ensure to check the details of Stands along with dimensions and all other things. Bidder must ensure that the stands are similar or better (Stand should be approved by MPVS).

Type 1 Stand: Full Stand Mounting Mechanism

Type 2 Stand: Sliding Stand Mounting Mechanism

Table for Specifications for Item #1.4: Mobile Device Management Tool

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	**Centralized Management of Devices**	Manage apps Ensure Functionality restrictions effectively, such as disabling specific apps, restricting camera usage, controlling Bluetooth access, and limiting Wi-Fi connections, Ensure a secure and focused user experience		
2.	**Warranty**	3 Years Onsite comprehensive Warranty		

Table for Specifications for Item #2: Touch Screen Devices - Samsung Galaxy Tab S10 Plus

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	Make	Samsung		
2.	Model	Samsung Galaxy Tab S10 Plus		
3.	Memory (RAM)	12 GB (Memory expandable with MicroSD up to 1.5 TB)		
4.	Screen Size	Minimum 12.4 inches		
5.	Screen Protection	High-quality tempered glass with highest hardness rating to provide powerful scratch resistance and complete screen protection.		
6.	Storage Disk	256 GB		
7.	Connectivity (Communication)	Wi-Fi and Cellular (both)		
8.	Keyboard	Included compatible Keyboard & Stylus (Pen)		
9.	USB Ports & interface	USB Type-C, USB charging		
10.	Battery Life	Up to 10 hours		
11.	Charging	Charging via USB-C to computer system or with Power adapter		
12.	Warranty	3 Years Onsite comprehensive Warranty including battery		
13.	Update and Upgrade Support	Minimum 3 years at no extra cost		
14.	Tablet Case	Flip Cover Case for the Samsung Tablet embossed with Text as "M P Vidhan Sabha" in Hindi with logo etc. The pattern and style will be approved on work initiation		

Table for Specifications for Item #3.1: Projector System

S.N	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	**Display Technology**	**DLP 1 CHIP or 3 CHIP**		
2.	**Min Brightness**	**5000 lumens**		
3.	**Resolution**	1920 X 1080 (Full HD) / 1920 X 1200 (WUXGA) / 2560 X 1600 (WQXGA) / 3840 X 2160 (UHD 4K) / 4K UHD @ 60Hz		
4.	Brightness Uniformity	90% or more		
5.	Projection lens (Motorized)	**Optical Zoom - YES: 1.1x *Or Higher***		
6.		Vertical Lens Shift: *-60%~ +60% Or Higher*		
7.		Lens with throw ratio of 0.75~0.95:1 /0.81 – 0.89:1 / 0.91 -2.5 (i.e. between 0.75 ~ 2.5)		
8.	Constant Light Output	Yes		
9.	Installation Flexibility	360-degree Installation		
10.	Min Input terminals	dbase		
11.		HDMI 2.0 (4K Input) - 2 Nos		
12.		Display Port 1.2		
13.		3D Sync IN		
14.		RJ-45 LAN		
15.	Min Output terminals	HDMI 2.0		
16.		3D Sync OUT		
17.		Audio OUT		
18.	Hardware Interface	USB A / USB 2.0 or higher / USB – C or Higher – Bluetooth & Wireless (Preferred)		
19.		HDMI		
20.		Bluetooth & Wireless (preferred)		
21.	In-built Speakers	*10 W Or Higher*		
22.	3D Capable	Yes, Active Stereoscopic 3D		
23.	Warping & Blending	Yes, In-built		
24.	Remote Option	Yes		
25.	24x7 Operation	Yes		
26.	Warranty	3 Years Onsite comprehensive Warranty		
27.	**Warranty on Light Source**	**3 Years - 9000 hours or Higher**		
28.	Wall Mount Kit for Projector	Supply of Wall / Roof Mount Kit for Projector for wall mounted displays. The wide mounting plate and telescopic extension arm for convenient and flexible installation from 65 –120" (varies by model). It should provide less shadow interference and glare, for more optimal presenting and viewing experience etc. (all complete)		
29.	Preferred Brand	Product from companies like Barco, BenQ, Epson, LG, Samsung or Sony will be preferred.		

Table for Specifications for Item #3.2: Projector Screen, Projector Mounting Kit with necessary accessories

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	Projector Screen	Supply of 12X10 Feet Projector Screen having Premium Fabric Motorized Screen with Tubular Motor & remote control, Plug and play Noise free operation, Wide angle of vision with both GB and MW fabrics, Black masking border to get best image quality, Design for wall or ceiling installations, RF/IR Remote Control with In-Line Switch for Convenience, furnished with junction box and 3-position wall switch for recessed wall mounting, Matte White Screen surface can be cleaned, flame retardant, Mildew resistant, viewing angle 160°, Balanced and flat viewing surface with dowel at bottom to maintain vertical tension of screen, Inbuilt energy-efficient synchronous motor operates smoothly and silently with a long operational life. Includes Radio Frequency (RF) remotes and a 3-way wall switch. all complete		
2.	Wall Mount Kit for Projector	Supply of Wall Mount Kit for Projector for wall mounted displays. The wide mounting plate and telescopic extension arm for convenient and flexible installation from 65 –120" (varies by model). It should provide less shadow interference and glare, for more optimal presenting and viewing experience etc. (all complete)		
3.	Cables and Accessories and equipment	HDMI Cable: Supply of minimum 15 mtr HDMI Cable for the smooth transmission of data In order to ensure the Projector is fully operational, required Indian power cord, HDMI cable with required length etc must be supplied with the product.		
4.	Warranty	3 Years Onsite comprehensive Warranty on all Accessories with Projector Installation, Testing & Commissioning		

Notes:
1) **Item# 3.1 & 3.2 is tentative requirement and specifications can be changed / requirement can be dropped, if not required by MPVS.**
2) **Vendor has to visit the facility and inspect the Projector location and display point's location for installation of projector screen, wall mount Type and then suggest the changes required in projector type, if required.**

Table for Specifications for Item #4.1: All in one PC

SN	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	Display Size	23" or higher		
2.	Display Type	LED		
3.	Resolution	1920 x 1080 *Or Higher*		
4.	Form Factor	All-in-One		
5.	Processor Type	Core i5 latest generation		
6.	RAM Size & Type	16 GB or Higher - Type DDR4/DDR5		
7.	Memory Technology	DDR4 / DDR5		
8.	Maximum Memory Supported	64 GB		
9.	Numbers of DIMM Slots	2		
10.	Built-in Camera	Built in 2 MP (or Higher) Webcam with Privacy Shutter Preferably		
11.	Built-in Microphone	Built in 2 Digital Microphone		
12.	Built-in Speaker	2W or higher X 2 Stereo Speakers with high-definition audio support **or Higher**		
13.	Hard Drive Size	512 GB *SSD Or Higher*		
14.	Hard Disk Description	SSD		
15.	Hard Drive Interface	Solid State		
16.	Graphics Chipset Brand	Intel or Substantial Equivalent or Higher		
17.	Graphics Card Description	Integrated		
18.	Graphics RAM Type	Shared		
19.	Graphics Card Interface	Integrated		
20.	Hardware Interface	USB, Ethernet, HDMI		
21.	Connectivity Type	Bluetooth, Wi-Fi, LAN Card		
22.	Wireless Type	Bluetooth, 802.11ax		
23.	Number of USB 3.0 Ports	2		
24.	Total USB ports	4 or Higher		
25.	Video output interface	HDMI		
26.	Number of DP Ports	*1 Or Higher*		
27.	Headphone out	Yes		
28.	Microphone-in	Yes		
29.	Mouse Connectivity	Wired with USB interface, Mouse pad		
30.	Type of Mouse	Optical Scroll		
31.	Keyboard Connectivity	Wired with USB interface		
32.	Type of Keyboard	Standard		
33.	Included Components	User Manual, Keyboard, Power Cable, Mouse, All In One (AIO)		

SN	Features	Minimum Specifications	Reference Bid Page No.	Compliance
34.	Recovery Image Media	Stored in Partition of the Hard Disk / USB Drive from the OEM / On Line / Cloud,		
35.	Operating System	**Preloaded Windows 11 Professional with Lifetime Validity**		
36.	Stand	Height Adjustable		
37.	Warranty	**3 Years Onsite comprehensive Warranty**		
38.	Additional Accessories and equipment etc	In order to ensure the systems are fully operational, required Indian power cord, other required cables etc with required length must be supplied with the product.		

Table for Specifications for Item #4.2: Microsoft Office for All in one PC

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	Microsoft Office	Preloaded Genuine Microsoft Office (Latest Version) with Lifetime Validity		

Table for Specifications for Item #4.3: Antivirus for All in one PC

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	Antivirus software	Anti-Virus (Latest version) to protect PC by scanning for malware, virus and security threats for 3 years		

Table for Specifications for Item #5.1: Laptop

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	Display Size	**15.6"LED (15'' to 15.99'')**		
2.	Resolution	**1920 x 1080, Anti-Glare , Blue Light Certified (Optional)**		
3.	Form Factor	Laptop		
4.	Color	Silver *Preferably*		
5.	Processor Type	**Core i5** latest generation		
6.	RAM Size	DDR4 / DDR5 -16 GB or higher		

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
7.	Built-in Camera	Built in HD 720p Webcam (or higher) with Privacy Shutter		
8.	Built-in Microphone	Built in 2 Digital Microphone		
9.	Built-in Speaker	Stereo Speakers with high-definition audio support or Higher		
10.	Hard Drive Size	512 GB SSD Or Higher		
11.	Hard Drive Interface	Solid State		
12.	Graphics Chipset Brand	Intel or Substantial Equivalent or Higher		
13.	Graphics Card Description	Integrated		
14.	Hardware Interface	USB, Ethernet, HDMI, Headphone/microphone combo jack		
15.	Connectivity Type	Bluetooth, Wi-Fi, LAN Port		
16.	Wireless Type	Bluetooth, 802.11ax		
17.	Number of USB 3.0 Ports	2		
18.	Total USB ports	3		
19.	Video output interface	HDMI		
20.	Type of Keyboard	Standard		
21.	Mouse	Wired Optical Scroll mouse with USB interface		
22.	Batteries	1 Lithium Polymer batteries required. (included)		
23.	Average Battery Life (in hours)	8 Hours with Rapid Charge		
24.	Operating System	**Preloaded Windows 11 Professional with Lifetime Validity**		
25.	Body Type	Metal Preferably		
26.	Included Components	User Manual, Power Cable, Wired Mouse, Mouse pad		
27.	Warranty	3 Years Onsite comprehensive Warranty		
28.	Recovery Image Media	CD from the OEM / Stored in Partition of the Hard Disk / USB Drive from the OEM / On Line / Cloud		
29.	Additional Accessories and equipment etc	In order to ensure the laptops are fully operational, required Indian power cord, other required cables etc with required length must be supplied with the product.		

Table for Specifications for Item #5.2: Microsoft Office for Laptop

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	**Microsoft Office**	**Preloaded Genuine Microsoft Office (Latest Version) with Lifetime Validity**		

Table for Specifications for Item #5.3: Antivirus for Laptop

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	Antivirus software	Anti-Virus (Latest version) to protect PC by scanning for malware, virus and security threats for 3 years		

Table for Specifications for Item #5.4: Laptop Bag

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1	**Laptop Bag Size**	Suitability - To accommodate 15.6" size Laptop Computer approximately.		
2	**Material**	Polyester fabric, nylon bonded thread, branded zippers and sliders		
3	**Compartments**	Minimum Three compartment bag (Laptop, Text book, Power adapter, utility pocket) with padded sleeve, Utility pocket in the front and side packets Padding Padded handle, padding on the back for comfort and air flow curved and padded contoured shoulder straps		
4	**Logo and image**	**The Logo of MP Vidhan Sabha and other information like as desired by the MP Vidhan Sabha be screen printed on the front pocket as per the design finalized**		

Table for Specifications for Item #6: Multi-Function Printer (Mono)

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	Printing Technology	**Laser**		
2.	Print Speed	Minimum 26 PPM or higher (upto 45 ppm)		
3.	Paper Size	A4		
4.	Resolution	1200 X 1200 DPI		
5.	Monthly duty cycle	Minimum 15,000 pages to 40000 pages		
6.	Cartridge & yield	Separate drum and toner technology will be preferred. (Full yield original cartridge must be supplied along with printer which should print 3000 minimum pages -i.e. it should not be demo cartridge.		
7.	RAM	Minimum 128 MB RAM		
8.	Processor	Minimum 600 MHz processor or above		
9.	Interface / Connectivity	High Speed USB 2.0 with Ethernet Interface as standard interface – 10/100/1000 Mbps		
10.	OS Compatibility	Windows 10/11 or higher		
11.	Duplex	Automatic, Built in with minimum speed of 12 ppm or higher / 1*0 ipm Or Higher*		
12.	Warranty	3 Years Onsite comprehensive Warranty		

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
13.	Additional Accessories and equipment etc	In order to ensure the Printers are fully operational, required Indian power cord, network cable, other required cables etc with required length must be supplied with the product.		

Table for Specifications for Item #7.1: Hi-Speed Scanner (Sheet Fed)

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	**General**			
1.1.	Product Form Factor - Scanner Type	Sheet Fed Scanner		
1.2.	Scanner Technology	Dual CIS (Contact Image Sensor)		
1.3.	**Local Interface**	**Super Speed USB 3.0, USB 2.0 or Higher Host (Rear), Ethernet RJ-45, (Wifi / Wifi – Direct connectivity)**		
2.	**Scan**			
2.1.	Scan Speeds (A4) simplex (Color & Mono)	30 ppm or higher / 20 ipm or Higher		
2.2.	Scan Speeds 2-Sided (duplex) (A4)	40 PPM / 40 ipm or Higher		
2.3.	Optical Scan Resolution	Up to 600 x 600dpi		
2.4.	Interpolated Scan Resolution	Up to 1,200 x 1,200dpi		
2.5.	Color Depth	48-bit internal, 24-bit external		
2.6.	Grey Scale	256 levels (8 bit)		
3.	**Scanner Functions**			
3.1.	Image Processing	Auto Deskew (Feed), Detect End of Page, Margin Setting, Auto Image Rotation, Edge Fill, Tear Fill, Punch Hole Removal, Auto Color Detect Adjust, Blank Page Removal, Diffusion Adjustment - Grey, Colour Tone Adjustment		
3.2.	File Format Support	Including PDF (single, multi, PDF/A-1b, secured, signed), JPEG, TIFF (single, multi)		
3.3.	Standard Functions	Scan to PC, Image, Plastic Card Mode, Single Page Scan, Continuous Scan., Multi Feed Detection, Half Speed Mode, Barcode Detection, JPEG Compression., Digital Imprinter., Custom TWAIN Profiles		
3.4.	Direct Scan	Scan directly to a USB flash memory storage (Optional)		
4.	**Software**			
4.1.	Windows Drivers	TWAIN, ISIS, WIA, Windows 11, Windows 10 (Home |Pro| Education | Enterprise) (32- or 64-bit editions), Windows 8.1(32- or 64-bit editions), Windows 7 SP1 (32- or 64-bit editions), Windows Server 2019, 2016, 2012R2, 2012		
4.2.	Windows Software	All necessary Software required for configuration and running the operations		
4.3.	Linux Drivers	All necessary Software required for configuration and running the operations		
5.	**Duty Cycle**			
5.1.	**Daily**	*4,000 Sheets Or Higher*		
5.2.	**Monthly**	**Minimum 50,000 Sheets or Higher**		
5.3.	**Pickup Roller for ADF**	**50,000 Sheets (A4/LTR)**		
6.	**Others**			
6.1.	Reverse Roller	ADF - 50,000 Sheets or Higher (A4/LTR)		
6.2.	Media Handling with Automatic Document Feeder (ADF)	Media Handling with Automatic Document Feeder (ADF) - Min 50 Sheets		

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
6.3.	Consumables and Upgrades	as per product policy		
6.4.	Included items	ADS machine, detachable ADF, Power supply cord, AC adapter, USB Cable, Quick setup guide, Product safety guide & Warranty		
6.5.	On site OEM warranty	3 Years Onsite comprehensive Warranty		
6.6.	**Additional Accessories and equipment etc**	**Detachable ADF (optional), Power supply cord, AC adapter, USB Cable, Quick setup guide, product safety guide & Warranty**		

Table for Specifications for Item #7.2: Hi-Speed Scanner (Sheet Fed & Flat Bed)

Optical resolution (dpi) : **600 / 1200**
Document size : **A3+ / A4**
Daily duty cycle (number of pages) : 1000 Pages or Higher

Any Standard Model with 3 Year On site Warranty

Table for Specifications for Item #8: Plastic ID Card Printer

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	**PRINTING**			
1.1.	Print Type / Area	Dye-Sublimation / Edge to Edge		
1.2.	Resolution	300dpi (Color & Mono), 600 & 1200dpi (Mono only) Dual Sided Printing		
1.3.	Dual Sided Printing			
2.	**CARD**			
2.1.	Card Feeding	Automatic		
2.2.	Card Size	ISO CR80 or ISO CR79 {Option-Factory installed)		
2.3.	Card Thickness	0.38mm (15mil), 1.0mm {40mil)		
2.4.	Card Type	PVC, PET, Composite PVC, ABS Cards and rewritable Card		
3.	**PRINT SPEED**			
3.1.	Monochrome	5 sec per Icard (720 cards/hour)		
3.2.	YMCKO	Front-n & Front-out: Max. 17 sec.Icard (212 cards/hour)		
3.3.	YMCKOK	Front-n & Back-out: Max. 16 sec.Icard (225 cards/hour)		
4.	**Laminating Speed**			
4.1.	Simultaneous (Single/ Dual / Lamination)	22 sec. Icard (YMCK) / 32 sec/card (YMCKK)		
4.2.	One by One (Single Lamination)	43 sec. Icard (YMCK) / 53 sec/card {YMCKK}		
5.	**CAPACITY**			
5.1.	Input Hopper	100 cards / 200 cards with cover open		
5.2.	Output Hopper	Front :40 cards / Back : 100 cards (Optional Back-5ide Stacker)		
6.	**SYSTEM**			
6.1.	Display & Button	2 Line LCD / 2 LED Buttons		
6.2.	Supported Platforms	Microsoft Windows 7/ 8/ 10, Mac OS, Linux		
6.3.	Internal Storage	2 GB Flash Memory as internal Storage		
6.4.	Communication	USB, Ethernet, Wi-Fi Connectivity (Optional)		
6.5.	Security	Physical Lock & Kensington Lock (Optional)		
7.	**ENCODING OPTIONS**			
7.1.	Magnetic	IS07811 (Track I, 11, 111 Read/ Write, HiCo/ LoCo), JIS II		
7.2.	Contact	ISO 7816 (10-1)		
7.3.	Contactless	MIFARE, ISO 14443 (Type NB), ISO 15693, DESFIRE, iCLASS		
8.	**Warranty**	3 Years Onsite comprehensive Warranty		
9.	**Additional Accessories and equipment etc**	To ensure proper working, Indian power cord, network cable, other required cables etc with required length must be supplied with the product.		

Table for Specifications for Item #9: VC Studio System

Recording @1080P on the end-point -   NO

S. No.	Minimum Specifications	Reference Bid Page No.	Compliance
1.	IP based High-Definition Video Conferencing End Point		
2.	Video Conferencing end point resolution - 1080P 30fbps, 1080P 60fps / Higher / equivalent		
3.	Camera (PTZ) with Automatic Voice Activation / face detection, preset and other multiple Controls with Optical Zoom 10X/12X or Higher / equivalent features		
4.	**Omni Directional Microphone support, preferably directly on device – 2/3 or higher as per room size**		
5.	HDMI Input / Output Ports – 2/3 or Higher		
6.	Video Coding Protocol Support - H264/H265 or Higher/equivalent		
7.	Video Calls – H.323 and SIP at 2/4/6 Mbps or Higher		
8.	System should support latest AES encryption		
9.	Sharing of Video and Graphics content during call at 1080P 30fps , 1080P 60fps or higher		
10.	Ethernet Ports – 10/100/1000 Mbps (01 No. or more)		
11.	Wi-fi Connectivity – Integrated or optional		
12.	It should support interoperability and bandwidtAlh saving using video compression H.264 AVC / H.264 High Profile / H.265 or higher/equivalent		
13.	**It should support to use End point's Camera, Microphone etc. with Desktop/Cloud based VC solutions like Zoom, WebEx, Bharat VC and Microsoft Team etc. using a Desktop Client machine directly OR with cable/accessories**		
14.	Must support IPv4 and IPv6 from day one on both H.323 and SIP calls		
15.	It should support wired/wireless content sharing. It should also support audio from Desktop/Laptop etc., which is used for content sharing (preferably Audio-visual contents/ppt etc.)		
16.	It should support H.323 and SIP standards for communications or higher		
17.	1 x RCA/3.5 mm stereo line-in/out or higher/equivalent		
18.	Ethernet/USB etc suitable to support system software upgrade		
19.	It should transmit both people and content both simultaneously to the far end location at 1080p 30fps or higher		
20.	System should be remotely controllable using any browser		
21.	Should support mic on /off synchronization of remote control / touch panel / microphone button etc./equivalent		
22.	**Recording @1080P on the end-point - NO**		
23.	Infrared Remote Control/ Touch Panel or equivalent		
24.	Bidder need to provide full demonstration of product functionality on the site		
25.	High Definition or higher Display panel as per Room Size or planned seating capacity. Preferably display panel/LED etc., should have multiple connectivity ports like HDMI In/Out, USB, Ethernet, AV Ports, Wi-fi etc., with necessary cables. It should be compatible with supplied VC end Point.		
26.	3 Years Onsite comprehensive Warranty		

Table for Specifications for Item #10: DSC/eSign Certificate

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	DSC / eSign Certificate	Class 3 Sign with Token		
2.	Validity	2 years validity		

Table for Specifications for Item #11.1: Mid-Range Server with necessary accessories

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
1.	Processor	The server should have 2 nos. of Intel Xeon (or AMD equivalent or better) latest Generation Processor: 2 x 16 cores, minimum 2.9 GHz clock rate. processor fully binary compatible to 64/32-bit applications. Number of cores on a single die/socket will be treated as a single processor.		
2.	Memory	Minimum 256 GB latest DDR memory or higher. Advanced ECC with multi-bit error protection. The server should be integrated in the factory, tested, certified, chassis intrusion switch enabled.		
3.	HDD Controller	2 Gbps SAS/ nVMe RAID Controller supporting RAID 0, 1, 5 and 6 with 4GB battery backed up Cache		
4.	HDD	4 x 480 GB SSD Hot Swap HDD or Higher		
5.	Video Controller	Integrated Graphics Controller		
6.	Network Controller	Minimum 2 x 1 Gbps ports and 4 No¡¦s (2 x 2 on each network adapter card) of 10/25 Gbps SFP+ ports with 25 Gbps SFP28 LC trans receiver SR Type.		
7.	Fiber Channel HBA	Two no¡¦s Dual FC Port 32 Gbps (i.e. 4 Nos. of 32 Gbps.) with LC fiber transceiver SR Type.		
8.	Slots	Minimum one free PCI-x/PCI-e Slot		
9.	Ports	Minimum 4 USB 3.0 Ports, One dedicated Ethernet Port for OS independent out-of-band hardware management.		
10.	Bays	Minimum 2 Hot Swap drive bays		
11.	System Chassis	Rack Mount, 2U (max) chassis with security bezel, Redundant Hot Swappable Power Supply with Platinum efficiency		
12.	OS Certification	Certification for latest Server version of Windows and minimum two Linux flavors		
13.	Drivers / Software Utilities	All required device drivers for OS installation /System Configuration and Server Management		
14.	System Management	Monitoring ongoing management, service alerting, reporting and remote management with embedded dedicated Gigabit out of band management port. Remote Management of Server over LAN & WAN with SSL encryption, Virtual Media and virtual folder with required advanced license, Server Health logging, Directory Services compliance (AD or LDAP), REST/XML API, dynamic/group management of power, licenses including firmware or self-updating firmware system, Configuration backup, zero touch repository manager, Syslog (local / remote). Management software should support		

S. No.	Features	Minimum Specifications	Reference Bid Page No.	Compliance
		integration with popular virtualization platform management software like VCentre, SCVMM, Redhat OpenStack and Red Hat RHEV. Offered Server platform must be ready for container workload deployment		
		Server's integrated remote management subsystem shall have EAL2+ or higher common criteria certification (Certificate copy from Common Criteria Portal to be submitted).		
15.	Serviceability	• System should support embedded remote support to transmit hardware events directly to OEM or an authorized partner for automated phone support. • The server should support monitoring and recording changes in the server hardware and system configuration. It assists in diagnosing problems and delivering rapid resolution when system failures occur. Should provide remote firmware update functionality. • Should help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD. Solution should be provided for monitoring & analysis feature to predict, prevent and auto-resolve problems and by providing automating case creation and log file submission for the problems that can't be auto-resolved or should have recommendation engine for IT operations management. • Should provide silicon-based hardware root of trust, automatic secure BIOS recovery, cryptographically signed firmware updates. • OEM of the server should have its warehouse in MP for spare.		
16.	Virtualization	Should support Industry Standard Virtualization Software		
17.	Warranty	3 years on-site comprehensive OEM Warranty Support with 24X7coverage and access to OEM TAC/support		
18.	IPv6 Support	All devices should be IPv6 implementation ready from day 1. No extra cost will be borne by MPVS for IPv6 implementation.		
19.	Power Cord	Server should be supplied with compatible IEC C13/C14 3 pin power cord suitable for PDU.		
20.	**Additional Accessories and equipment etc**	To ensure the proper operational, required Indian power cord, other required cables etc with required length must be supplied with the product.		

Table for Specifications for Item #11.2: Microsoft Windows Server OS

S. No.	Specifications	Reference Bid Page No.	Compliance
1.	General Requirements		
1.1.	The proposed solution must include the latest stable version of Windows Server OS - Standard Edition		
1.2.	Must support on-premises, cloud, or hybrid deployment.		
1.3.	Licensing should comply with OEM, Volume Licensing, or SPLA models.		
2.	Performance & Scalability		
2.1.	Must support multi-core processors with efficient workload distribution.		
2.2.	Capable of handling high availability and load balancing.		
2.3.	Should allow scalability for increasing workloads and users.		
3.	Security & Compliance		
3.1.	Must include built-in security features such as Windows Defender ATP, BitLocker, and Secure Boot.		
3.2.	Support for Role-Based Access Control (RBAC) and Active Directory integration.		
3.3.	Must support Virtualization-based Security through hardware-level isolation		
3.4.	Should comply with industry security standards like ISO 27001, HIPAA, and GDPR.		
4.	Virtualization & Cloud Integration		
4.1.	Must support Hyper-V for server virtualization.		
4.2.	Ability to integrate with Microsoft Azure services for hybrid cloud.		
5.	Networking & Connectivity		
5.1.	Must support IPv4, IPv6, and Software-Defined Networking (SDN).		
5.2.	Should offer load balancing and failover clustering for high availability.		
6.	Storage & File System		
6.1.	Support for Resilient File System (ReFS) and NTFS.		
6.3.	Must include deduplication, compression, and encryption.		
7.	Identity & Access Management		
7.1.	Must include Active Directory Domain Services (AD DS) and LDAP support.		
8.	Backup & Disaster Recovery		
8.1.	Must include native backup and restore functionalities.		
8.2.	Ability to perform incremental and full backups with minimal downtime.		
9.	Monitoring & Management		
9.1.	Must provide a centralized management console via Windows		

S. No.	Specifications	Reference Bid Page No.	Compliance
	Admin Center.		
9.2.	Should support PowerShell scripting and automation.		
9.3.	Ability to track logs, monitor server health, and generate reports.		
10.	Licensing & Support		
10.1.	Must include valid Microsoft licensing (OEM, Volume, or Cloud Subscription).		
10.2.	Must provide Life time license		
10.3.	Should provide at least 5 years of mainstream support and extended support.		

Table for Specifications for Item #11.3: Linux Server OS
(Two different Flavors / Brands have to be quoted)

S. No.	Specifications	Reference Bid Page No.	Compli ance
1.	Linux Server Latest Edition – Specify the Flavour / Brand (like RHEL, Ubuntu, Fedora, Debian, etc) and edition		
2.	System Compatibility & Performance		
2.1.	Must support multi-core processors, high memory capacity, and scalable architecture.		
2.2.	Should be optimized for server, cloud, and container-based deployments.		
3.	Stability, Security & Compliance		
3.1.	Must include SELinux / AppArmor, firewall management, and role-based access control (RBAC).		
3.2.	Should comply with industry security standards like ISO 27001, GDPR, and NIST.		
3.3.	Highly secure by default		
3.4.	Strong emphasis on user control		
3.5.	The OS should be stable and have strong security features.		
4.	Networking & Connectivity		
4.1.	Must support IPv4/IPv6, VPN, and secure SSH access.		
4.2.	Should include load balancing, clustering, and high-availability features.		
5.	Package Management & Support		
5.1.	Must support Life time license		
5.2.	Must provide stable and long-term support (LTS) versions.		
5.3.	Should support package management systems like APT, YUM, or DNF		
5.4.	Must support GNU Tools: A collection of essential tools like the GNU Compiler Collection (GCC), the GNU C Library (glibc), and the Bash shell.		
5.5.	Must support Software Ecosystem: Large and growing software library		
5.6.	Server Hardware Compatibility: Compatible with the mentioned Server specifications		
5.7.	Availability of required drivers		
5.8.	Vast Software Repositories: Should provide access to a vast collection of open-source software packages through package managers.		
6.	User Interface:		
6.1.	Command-Line Interface (CLI): OS should have Powerful command-line tools for advanced users.		
6.2.	Graphical user interfaces (GUIs)		
6.3.	Customization options: Source code should allow for customization allowing users to tailor the system to their specific needs.		
6.4.	Active Community: A large and active community provides support, resources, and ongoing development.		

Table for Specifications for Item #12.1: 24 Ports 1/10GBPS Layer3 Switch with single mode optical fiber *(Should Support SVL /Virtualization)*

S. No.	General Specifications	Reference Bid Page No.	Compliance
1.	**General Features : 24 Ports Layer3 Switch**		
1.1.	Switch shall be 1U and rack mountable in standard 19" rack.		
1.2.	Switch shall have minimum 8 GB RAM and 8 GB Flash.		
1.3.	Switch shall have hot swappable 1:1 redundant internal power supply and redundant fan.		
1.4.	Switch must support Physical or Virtual stacking for achieving High Availability – HA *(Should Support SVL /Virtualization)*		
2.	**Performance:**		
2.1.	Switch shall have switching capacity minimum 2 Tbps or higher and forwarding rate *of min 1 Bpps Or Higher*		
2.2.	Switching system shall have minimum *60K Or Higher MAC Addresses/ support and minimum 4K Or Higher VLANs.*		
2.3.	Switch shall support minimum 18K ACLs,		
2.4.	shall support minimum 32 K IPv4 routes		
2.5.	shall support minimum 16 K IPv6 routes		
2.6.	Switch shall have 16 K or more multicast routes.		
2.7.	Switch shall support application visibility and traffic monitoring with minimum 60 K sflow / jflow / netFlow entries.		
2.8.	Switch shall have 32MB or more packet buffer.		
2.9.	Switch should support 128 or more STP Instances.		
3.	**Functionality:**		
3.1.	Switch should support IEEE Standards of Ethernet: IEEE 802.1D Spanning Tree Protocol, 802.1s Multiple Spanning Tree Protocol, 802.1w Rapid Spanning Tree Protocol, 802.1x Port-based Network Access control (PNAC), 802.3ad Link Aggregation Control Protocol (LACP), 802.1AE (MACSec) medium access control layer Security 802.3x Flow Control, 802.1p class of service, 802.1Q for VLAN Tagging, 802.3 standard for Ethernet, 802.3u standard for Fast Ethernet / 100Base-T(100 Mbps), 802.3ab standard for Gigabit Ethernet transmission over UTP CAT 5, 5e or 6, 802.3z Gigabit Ethernet/ GigE (1000 Mbps) 1588v2 / Precision Time Protocol Version 2 (PTPv2) precision clock synchronization OR NTP clock synchronization		
3.2.	Switch must have Basic and Advance Routing Protocol Support.		
3.3.	Switch shall support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+, IGMP, Netconf/YANG.		
3.4.	Switch shall support DHCP snooping, First Hop Security.		
3.5.	Switch shall have IPv6 support in hardware, providing wire rate forwarding for IPv6 network		

S. No.	General Specifications	Reference Bid Page No.	Compliance
3.6.	Switch shall support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.		
3.7.	Switch shall support IPv4 and IPv6 ACLs and Dynamic VLAN assignment for all ports.		
3.8.	Preferably Switch should have the capabilities to enable automatic configuration of switch ports as devices connect to the switch.		
3.9.	During system boots, the system's software signatures should be checked for integrity. System should be able to ensure that system OS is authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic.		
4.	**Interfaces**		
4.1.	Switch should have 24 nos of 1/10/25G ports along with at least 4x40/100G uplink ports, to be loaded with 1) Necessary DAC cables for HA with 40/100G uplink port. 2) 24 * 10G for downlink ports		
4.2.	Support for SVL/ISL/equivalent for HA		
5.	**Certification:**		
5.1.	Switch shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 Standards for Safety requirements of Information Technology Equipment.		
5.2.	Switch shall conform to EN 55022 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B Standards for EMC (Electro Magnetic Compatibility) requirements.		
5.3.	Switch / Switch's Operating System should be tested for EAL 2 / NDPP or above under Common Criteria Certification.		
6.	**Warranty:** 5 Years Onsite comprehensive Warranty		

Table for Specifications for Item #12.2: 24 Ports 10/100/1000 MBPS manageable Layer2 Switch non-POE

S. No.	General Specifications	Reference Bid Page No.	Compliance
1.	**General Features :**		
1.1.	Switch should be 1U and rack mountable in standard 19" rack.		
1.2.	Switch should support internal field replaceable unit redundant power supply from day 1.		
1.3.	Switch should have minimum 2 GB RAM and 2 GB Flash.		
1.4.	Switch should have dedicated slot/Ports for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.		
2.	**Performance:**		
2.1.	Switch shall have minimum 128 Gbps *Or Higher* of switching fabric and min. *95* Mpps *Or Higher* of forwarding rate *in addition to asked uplink port. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.*		
2.2.	Switch shall have minimum 16K MAC Addresses and 4000 VLAN IDs		
2.3.	Should support minimum 2K IPv4 routes or more		
2.4.	Switch shall have 1K or more multicast routes.		
2.5.	Switch should support at least 16K flow entries		
2.6.	Switch should support 128 or more STP Instances.		
2.7.	Switch should have 6MB or more packet buffer.		
3.	**Functionality:**		
3.1.	Switch should support IEEE Standards of Ethernet: IEEE 802.1D Spanning Tree Protocol, 802.1s Multiple Spanning Tree Protocol, 802.1w Rapid Spanning Tree Protocol, 802.1x Port-based Network Access control (PNAC), 802.3ad Link Aggregation Control Protocol (LACP), 802.3x Flow Control, 802.1p class of service, 802.1Q for VLAN Tagging, 802.3 standard for Ethernet, 802.3u standard for Fast Ethernet / 100Base-T(100 Mbps), 802.3ab standard for Gigabit Ethernet transmission over UTP CAT 5, 5e or 6, 802.3z Gigabit Ethernet/ GigE (1000 Mbps)		
3.2.	Switch must have static IP Routing capability and should support functionality like VLAN, QoS etc.		
3.3.	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+.		
3.4.	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.		
3.5.	Switch should support IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.		
3.6.	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch.		
3.7.	During system boots, the system's software signatures should be		

S. No.	General Specifications	Reference Bid Page No.	Compliance
	checked for integrity. System should be able to ensure that system OS is authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic.		
4.	**Interfaces**		
4.1.	Switch shall have 24 nos. 10/100/1000 Base-T ports and additional 4 nos. of 1/10G SFP+ uplinks ports.		
4.2.	Stacking module and 1.5-meter stacking cable		
5.	**Certification:**		
5.1.	Switch shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 Standards for Safety requirements of Information Technology Equipment.		
5.2.	Switch shall conform to EN 55022 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B Standards for EMC (Electro Magnetic Compatibility) requirements.		
5.3.	Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.		
6.	**Warranty:** 5 Years Onsite comprehensive Warranty		

Table for Specifications for Item #12.3: 48 Ports 10/100/1000 MBPS manageable Layer2 Switch with POE – Latest Generation

The Product typically should support advance features such as multi-gigabit ports (1G/2.5G/5G/10G) and uPoE/uPoE+ Standard OR equivalent OR Higher. Out of total Ports minimum 25% ports should support multi-gig and uPoE/uPoE+ Standards.

S. No.	General Specifications	Reference Bid Page No.	Compliance
1.	**General Features :**		
1.1.	Switch should be 1U and rack mountable in standard 19" rack.		
1.2.	Switch should support internal field replaceable redundant power supply unit from day 1 along with redundant fans		
1.3.	Switch should have minimum 2 GB RAM and 2 GB Flash.		
1.4.	Switch should have dedicated slot/Ports for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.		
2.	**Performance :**		
2.1.	Switch shall have minimum *176 Gbps of switching fabric and 130 Mpps of forwarding rate.*		
2.2.	Switch shall have minimum 16K MAC Addresses and 500 VLANs		
2.3.	Should support minimum 2K IPv4 routes or more		
2.4.	Switch shall have 1K or more multicast routes.		
2.5.	Switch should support at least 16K flow entries		
2.6.	Switch should support 128 or more STP Instances.		
2.7.	Switch should have 6MB or more packet buffer.		
3.	**Functionality :**		
3.1.	Switch should support IEEE Standards of Ethernet: IEEE 802.1D Spanning Tree Protocol, 802.1s Multiple Spanning Tree Protocol, 802.1w Rapid Spanning Tree Protocol, 802.1x Port-based Network Access control (PNAC), 802.3ad Link Aggregation Control Protocol (LACP), 802.3x Flow Control, 802.1p class of service, 802.1Q for VLAN Tagging, 802.3 standard for Ethernet, 802.3u standard for Fast Ethernet / 100Base-T(100 Mbps), 802.3ab standard for Gigabit Ethernet transmission over UTP CAT 5, 5e or 6, 802.3z Gigabit Ethernet/ GigE (1000 Mbps)		
3.2.	Switch must have static IP Routing capability and should support functionality like VLAN, QoS etc.		
3.3.	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+.		
3.4.	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.		
3.5.	Switch should support IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.		
3.6.	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch.		

S. No.	General Specifications	Reference Bid Page No.	Compliance
3.7.	During system boots, the system's software signatures should be checked for integrity. System should be able to ensure that system OS is authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic.		
4.	**Interfaces**		
4.1.	Switch shall have *48 nos.* 10/100/1000 Base-T PoE ports and additional 4 nos. of 10G SFP+ uplinks ports.		
4.2.	All 48 port should support PoE (802.3af) and PoE+ (802.3at) with a PoE power budget of 720 W from day 1 *Or Higher*		
4.3.	Stacking module and 1.5-meter stacking cable		
5.	**Certification:**		
5.1.	Switch shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 Standards for Safety requirements of Information Technology Equipment.		
5.2.	Switch shall conform to EN 55022 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B Standards for EMC (Electro Magnetic Compatibility) requirements.		
5.3.	Switch / Switch's Operating System should be tested for EAL 2/NDPP/NIAP or above under Common Criteria Certification.		
6.	**Warranty:** 5 Years Onsite comprehensive Warranty		

Table for Specifications for Item #12.4: 48 Ports 10/100/1000 MBPS manageable Layer2 Switch non-POE

S. No.	General Specifications	Reference Bid Page No.	Compliance
1.	**General Features :**		
1.1.	Switch should be 1U and rack mountable in standard 19" rack.		
1.2.	Switch should support internal field replaceable redundant power supply from day 1.		
1.3.	Switch should have minimum 2 GB RAM and 2 GB Flash.		
1.4.	Switch should have dedicated slot for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack.		
2.	**Performance:**		
2.1.	Switch shall have minimum 160 Gbps of switching fabric and 120 Mpps of forwarding rate.		
2.2.	Switch shall have minimum 16K MAC Addresses and 500 VLANs		
2.3.	Should support minimum 2K IPv4 routes or more		
2.4.	Switch shall have 1K or more multicast routes.		
2.5.	Switch should support at least 16K flow entries		
2.6.	Switch should support 128 or more STP Instances.		
2.7.	Switch should have 6MB or more packet buffer.		
3.	**Functionality:**		
3.1.	Switch should support IEEE Standards of Ethernet: IEEE 802.1D Spanning Tree Protocol, 802.1s Multiple Spanning Tree Protocol, 802.1w Rapid Spanning Tree Protocol, 802.1x Port-based Network Access control (PNAC), 802.3ad Link Aggregation Control Protocol (LACP), 802.3x Flow Control, 802.1p class of service, 802.1Q for VLAN Tagging, 802.3 standard for Ethernet, 802.3u standard for Fast Ethernet / 100Base-T(100 Mbps), 802.3ab standard for Gigabit Ethernet transmission over UTP CAT 5, 5e or 6, 802.3z Gigabit Ethernet/ GigE (1000 Mbps)		
3.2.	Switch must have static IP Routing capability and should support functionality like VLAN QoS etc.		
3.3.	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+.		
3.4.	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.		
3.5.	Switch should support IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.		
3.6.	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch.		
3.7.	During system boots, the system's software signatures should be checked for integrity. System should be able to ensure that		

S. No.	General Specifications	Reference Bid Page No.	Compliance
	system OS is authentic and unmodified, it should have cryptographically signed images to provide assurance that the firmware & BIOS are authentic.		
4.	**Interfaces**		
4.1.	Switch shall have 48 nos. 10/100/1000 Base-T PoE ports and additional 4 nos. of 10G SFP+ uplinks ports.		
4.2.	Stacking module and 1.5-meter stacking cable		
5.	**Certification:**		
5.1.	Switch shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 Standards for Safety requirements of Information Technology Equipment.		
5.2.	Switch shall conform to EN 55022 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B Standards for EMC (Electro Magnetic Compatibility) requirements.		
5.3.	Switch / Switch's Operating System should be tested for EAL 2/NDPP/NIAP or above under Common Criteria Certification.		
6.	**Warranty:** 5 Years Onsite comprehensive Warranty		

Table for Specifications for Item #12.7: Wi-Fi Indoor Access Points

S. No.	General Specifications	Reference Bid Page No.	Compliance
1.	Access Point shall support 2.4GHz and 5Ghz or higher		
2.	Access Point shall be able to powered up using PoE / PoE + / UPoE (.af/.at/.bt)		
3.	Access Point shall support assurance, packet capture, RF sensing capabilities		
4.	Access Point shall support encrypted traffic visibility **(Optional)**		
5.	Access Point shall support application visibility and control		
6.	Access Point should have BLE/Zigbee radio to support use cases of location, asset tracking and analytics, from Day1		
7.	Access Point shall ship with metal/fibre-based mounting bracket for durability and reliability		
8.	Access Point shall be able to leverage current Access Point mount kit /cable conduit		
9.	Access Point shall provide console-based connectivity that uses standard interfaces such as RJ45/serial USB connection/special SSID for initial config and during disconnected network situations. If serial USB connection is supported by the AP model (10 nos. of min 3ft serial USB cable to be provided at no extra cost).		
10.	Must have multi-gigabit (1G/ 2.5G/5G/10G) Ethernet (RJ45).		
11.	Access Point should have a USB port for future requirements.		
12.	Must Support min. PHY data rate up to 2.5 Gbps or higher		
13.	Must support a minimum of 21-23dBm of transmit power in both 2.4Ghz and 5Ghz radios and should follow the local regulatory Norms.		
14.	Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.		
15.	Must incorporate radio resource management for power, channel and performance optimization		
16.	Must have -97 dB or better Receiver Sensitivity.		
17.	Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.		
18.	Must support Management Frame Protection.		
19.	Must support the ability to serve clients and monitor the RF environment concurrently.		
20.	Same model AP that serves clients must be able to be dedicated to monitoring the RF environment.		
21.	Must be plenum-rated (UL2043).		
22.	Access Point must continue serving clients when the internet link to the controller is down, Controllers should be configured in High availability. In case both Controllers fail, Aps should have the capability to serve the clients.		
23.	The solution should have high availability of controllers to avoid the single point of failure. In case both controllers fail. APs should have the capability to serve the clients by converting them to FAT/IAP/Bridge mode automatically or with manual configuration changes. **(Optional)**		
24.	Must support telnet and/or SSH login to APs directly for		

S. No.	General Specifications	Reference Bid Page No.	Compliance
	troubleshooting flexibility.		
25.	Must support 802.11e and WMM		
26.	Must support QoS and Video Call Admission Control capabilities.		
27.	Access point should be WIFI 6 certified.		
28.	Must support downlink and uplink OFDMA		
29.	Must support TWT & BSS coloring		
30.	Must support WPA3 - enterprise 192-bit encryption		
31.	Peak integrated antenna gain on each radio with min. 4dBi on 2.4Ghz min. 5dBi on 5Ghz.		
32.	**Warranty:** 5 Years Onsite comprehensive Warranty		

Table for Specifications for Item #12.8: Wireless Controller

S. No.	General Specifications	Reference Bid Page No.	Compliance
1.	AP should be able to tunnel traffic to remote location to WLC/tunnel aggregator device using protocols like VxLAN / EoGRE/ L2TP/ Capwap/ GRE		
2.	Proposed WLC should be an on premise HW appliance-based solution. No VM based solutions are accepted.		
3.	Support for new Wi-Fi 6 (802.11ax), WPA3 and Enhanced Open and existing standards		
4.	WLC should have capability to host 2000 APs from day 1.		
5.	WLC should support 30K or more clients		
6.	WLC/ WLAN Tunnel aggregator devices should have 4 nos. of 1/10G SFP+ to connect to LAN		
7.	Should support multiple redundancy models like 1+1. On Premise WLC Must support 1+1 or N+1 redundancy		
8.	WLC Must support an ability to dynamically adjust channel, power settings and airtime, based on the RF environment. Radio coverage algorithm must allow adjacent WAPs to operate on different channels, in order to maximize available bandwidth and avoid interference.		
9.	Wireless Controller should support Access Control based on Identity/Role/Device/Time or Application.		
10.	WLC should have 4K VLANs		
11.	should supports IPSec/SSL encryption standards		
12.	Should support coverage hole detection and correction that can be adjusted on a per WLAN basis.		
13.	Should support RF Management with 20, 40, 80 & 160 MHz channels		
14.	Should support Access Control Lists (ACLs).		
15.	Should support built-in /URL redirection for web authentication		
16.	Should be able to set a maximum per-user bandwidth limit on a per-SSID basis.		
17.	Should provide Mesh capability for Mesh supported AP		
18.	Must support client roaming as per IEEE standard 802.11r or WLC/APs across layer3 routed boundaries		
19.	Should support spectrum analysis and be able to classify different types of interference.		
20.	Should provide multiple real-time charts/logs showing interferers per access point, on a per- radio, per-channel basis.		
21.	System should provide real-time troubleshooting and visualization. Any specialized hardware and software required for the same should be provided by the vendor.		
22.	WLC should support Application Visibility and Control (AVC).		
23.	Support for configuring media streams with different priority to identify specific video streams for preferential QoS treatment.		
24.	To deliver optimal bandwidth usage, reliable multicast must use a single session between AP and Wireless Controller.		
25.	Should support IPv4 & IPv6.		
26.	For smooth, seamless and easy manageability, operation, interoperability and maintenance, the bidder should offer/quote WLC & WAPs of the same make (OEM).		

S. No.	General Specifications	Reference Bid Page No.	Compliance
27.	Solution should support application visibility and control (applications like social media, Video Streaming, Video Conferencing apps, etc.)		
28.	The solution should detect and automatically prevent all types of Rogue (unauthorized APs connected to the network) APs.		
29.	WLC should support complete WIPS/WIDS support, via integrated or through external appliance		
30.	The solution to support automatic packet capture in the event of a client failure or anomalous events.		
31.	The WLAN solution should provide an easy GUI view dashboard to use all the settings, configuration, logs, topology view, etc.,		
32.	The solution should highlight client connection failures during association, authentication and network entry.		
33.	The Solution shall support Hitless/rolling and support AP upgrade feature.		
34.	The solution must be able to detect and automatically prevent any ad hoc network/ all Wi-Fi enabled devices such as smartphones bridging / ICS when connected to the network		
35.	The solution must support WPA3 - enterprise 192 bit encryption through WLC, if not available on APs.		
36.	**Warranty:** 5 Years Onsite comprehensive Warranty		

Table for Specifications for Item #12.9: NMS

S. No.	General Specifications	Reference Bid Page No.	Compliance
1.	Solution should have single pane of glass to discover, provision, monitor, manage, analyze and troubleshoot the network		
2.	Solution should design the network in a hierarchal manner along with automated provisioning of the devices		
3.	Solution should have self-learning capabilities like discovering the devices, getting on boarded using Plug and play and creating a topology automatically		
4.	Solution should provide complete inventory of network as well as should do the software or firmware image management		
5.	Solution should provide support to upgrade and downgrade the firmware		
6.	Solution should support workflows defined to complete each configurations step by step e.g. RMA process		
7.	Solution should support capabilities like AI/ML to dynamically filter the inventory and provide impacted devices list due to vulnerability.		
8.	Solution should have capabilities to monitor the health of network devices, clients connected to the devices and application accessed over the network.		
9.	Solution should have capabilities to alert/alarm when the issues detected over the network e.g. device health, link utilization etc. etc. and it should be shown under category like P1, P2		
10.	Solution should have capabilities to analyze the database of client's connectivity, devices statistics, applications performance statistics and need to come up with remediation plan in minutes against the issues.		
11.	Solution should support Application visibility using DPI, Client level visibility and device health visibility.		
12.	Solution should have capabilities like sensors for wired and wireless network to simulates real-world client experiences. Sensors can provide pro-active information about the health of your network. **(Preferred/Better/Optional)**		
13.	Solution should support wireless sensor in terms of AP to do the synthetic probing to capture the health of network pro-actively. **(Preferred/Better/Optional**		
14.	**Solution should support below for switching** Client or device DHCP Client or device DNS Client authentication or authorization Switch CPU, memory, temperature Line card Modules Power over Ethernet (PoE) power Ternary Content-Addressable Memory (TCAM) table		
15.	Solution should provide the dashboard capability to show case the wireless readiness status, clients connected using 802.11n; 802.11ac or 802.11ax / **(Better /latest /Higher /Standard)** and location level statistics		
16.	Solution should have capabilities like PoE Analytics which provides visibility on the power load and power availability per		

S. No.	General Specifications	Reference Bid Page No.	Compliance
	switch and per port.		
17.	Solution should have capabilities to trace the path to reach the destination across the network to understand any security filters available across the path		
18.	Solution should have capabilities to go back in time and see the cause of a network issue		
19.	Solution should have capabilities to capture the wireless network information proactively to analyse wireless performance per access point or per Wi-Fi client.		
20.	Solution should capable to provide Weekly and daily report providing executives a summary of how their network is performing with insights into network devices, clients, and applications.		
21.	Solution should have capabilities to classify thousands of networks and home-grown applications and network traffic. (Know and custom applications)		
22.	Solution should support role-based access control (RBAC)		
23.	Solution should support out of box integration with ITSM using generic APIs		
24.	Solution should support out of box integration with IPAM using generic APIs		
25.	Dashboard should have option of time slider of 24 hrs to check information for a specific time period.		
26.	It should have customized dashboard with option to build hierarchical/ building view dashboard.		
27.	Dashboard should able to provide root cause analysis and recommendations to fix problem.		
28.	Dashboard should provide user experience visibility like Throughput analysis, roaming pattern analysis, sticky client information, slow roaming, dual band clients prefer 2.4 Ghz.		
29.	Dashboard should provide network coverage and capacity information like coverage hole, client capacity, Radio utilization.		
30.	**Warranty:** 5 Years Onsite comprehensive Warranty		