

S#	Required Minimum Specifications	Your Company Name & Comments	Remarks (If Any)
1	Racks Min. Size: 21U DIN Std. No. 41494 or equivalent		
2	Width * Depth: 600 MM x 1000 MM		
3	Min. 2 Horizontal Cable Manager		
4	Well Painted / Coated Steel Body		
5	Completely covered & have security locks		
6	Uninhibited access to all mounting points inside the racks		
7	Proper ventilated with minimum two fans		
8	All covers can be removed & operatable from all sides		
9	Power cable management		
10	Two Power strips having Min. 5 x 5A/15A sockets with MCB each		
11	Adjustable shelf & accessories to accommodate equipment's		
12	Should have floor standing on 360 degree rollers and Front rollers with brakes		
13	UL (Under Laboratory) Listed / ISO 14001		
14	Warranty: 5 Years onsite warranty & support		

S#	Required Minimum Specifications	Your Company Name & Comments	Remarks (If Any)
1	Racks Size: 42U DIN Std. No. 41494 or equivalent		
2	Width * Depth: 600 MM x 1000 MM		
3	Well Painted / Coated Steel Body		
4	Completely covered & have security locks		
5	All covers can be removed & operatable from all sides		
6	Uninhibited access to all mounting points inside the racks		
7	Proper ventilated with minimum four fans		
8	2 nos. Vertical Cable Manager		
9	Min. 5 Nos. Horizontal Cable Manager		
10	Power cable management		
11	Two Power strips having 10 x 5A/15A sockets with MCB each		
12	Adjustable shelf & accessories to accommodate equipment's		
13	Should have floor standing on 360 degree rollers and front rollers with brakes		
14	UL (Under Laboratory) Listed / ISO 14001.		
15	Warranty: 5 Years onsite warranty & support		

SINGLE PHASE GENSET for BNMCs and DNMCs

S#	Specifications	7.5 KVA	Your Company Name
ENGINE			Comments
1	Max. Continuous Power at Flywheel	> 10 KW	
2	Type of cycle	4 Cycle	
3	No of Cylinders	2	
4	Engine speed	3000 rpm (minimum)	
5	Cooling system	Water Cooled	
6	Aspiration system	Naturally aspired	
7	Governing System	Mechanical	
8	Engine starting system	12V, Electrical	
ALTERNATOR			
9	KVA Rating	7.5 KVA	
10	No of Phases	Single	
11	Output Voltage	230 V +/- 3 V	
12	Frequency	50 Hz	
13	Voltage Regulation	+ / - 1.5 % or better	
14	Frequency Regulation	4%	
15	Efficiency	> 80%	
16	Power Factor	0.8	
CONTROL PANEL			
17	Front Panel Controls	<ul style="list-style-type: none"> ✓ Auto / Manual (Bypass) Switch. ✓ Starting Engine through key switch. ✓ AMF Controller for auto operation. 	
18	AMF Controller	Microprocessor based Automatic on Mains Failure type cubicle control panel (AMF - Panel) with engine instruments arranged in same compartment mounted as part of the set with all accessories Microprocessor based generator control and monitoring unit with AMF logic suitable for either automatic and manual control, starting and stopping of the engine with LED indications, audio alarms and also with voltage monitoring relays with surge protection.	
19	Audio Visual Alarm with Trip	<ul style="list-style-type: none"> ✓ Low Lubricating oil pressure ✓ High water temp. ✓ Engine failed to start after 3 attempts ✓ Starting battery unhealthy ✓ Half fuel level alarm at 50% of fuel tank ✓ low fuel trip at 10% of the fuel tank ✓ Over voltage ✓ Under voltage ✓ Over Frequency ✓ AC mains Failure 	
20	Potential free contacts for external connection	<ul style="list-style-type: none"> ✓ Low Lubricating oil pressure ✓ High water temp 	

		<ul style="list-style-type: none"> ✓ Engine failed to start after 3 attempts ✓ Low Fuel ✓ Mains Failed 	
21	Monitoring Parameters	<ul style="list-style-type: none"> ✓ Mains Voltage ✓ Genset voltage ✓ Genset current ✓ Genset frequency ✓ Battery voltage 	
22	Auxiliaries	<ul style="list-style-type: none"> ✓ DC Ammeter (Battery charging). ✓ Hour Meter 	
23	Controls Panel Details	<p>The AMF should be compartmentalized and fabricated out of minimum 1.5 mm thick powder coated CRCA sheet steel housed within the Genset canopy.</p> <p>The panel should have accessibility to all components. Control wiring will be with 1.5 Sq. mm / 0.5 sq mm PVC insulated multi strand copper conductor depending upon the connectors used. WAGO type screw less connector strips with identification ferrules will be used for external connections. on both ends. AC and DC wiring is clearly separated. Panel will have sufficient space for making connection of cables.</p> <p>Earth studs should be provided on both sides of the panel. Necessary individual gland plates to receive power cables, control cables. Sufficient space should be provided in power chamber for termination of load cables.</p>	
DG SET			
24	Dimensions L X W X H (MM)	Should be compact and light weight	
25	Weight in KG		
26	Noise Level	75 db(A) at 1 meter from the canopy surface	
27	Acoustic Material	Poly Urethane Foam, 50 mm thick	
28	Battery	12V with Suitable Ah rating .	
29	Acoustic Enclosure	The sound proof enclosure should be free standing, floor mounting outdoor weather proof (water tight) type independent of EA set. The enclosure should be modular in construction so that it can easily be assembled at site. Should be designed for reducing the sound level around the enclosure	
30	Fuel Tank	Base Tank with Fuel capacity suitable for 12 Hrs running.	

31	Ventilation & Air circulation	<p>The system should provide air inlet/exhaust acoustic louvers for efficient air circulation and have following feature:</p> <p>Adequate ventilation to be provided to meet air requirement for combustion and heat removal.</p> <p>The temperature inside the enclosure should not exceeds 5-7 deg C. than the ambient temperature of even 48 degree Celsius, near air suction point.</p>	
32	Warranty & Support	5 Years onsite	

SINGLE PHASE GENSET for BNMCs and DNMCs

S#	Specifications	10 KVA	Your Company Name
ENGINE			Comments
1	Max. Continuous Power at Flywheel	> 20 KW	
2	Type of cycle	4 Cycle	
3	No of Cylinders	3	
4	Engine speed	3000 RPM (Minimum)	
5	Cooling system	Water Cooled	
6	Aspiration system	Naturally aspired	
7	Governing System	Mechanical	
8	Engine starting system	12V, Electrical	
ALTERNATOR			
9	KVA Rating	10 KVA	
10	No of Phases	Single	
11	Output Voltage	230 V +/- 3 V	
12	Frequency	50 Hz	
13	Voltage Regulation	+ / - 1.5 % or better	
14	Frequency Regulation	4%	
15	Efficiency	> 80%	
16	Power Factor	0.8	
CONTROL PANEL			
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19	Audio Visual Alarm with Trip	<ul style="list-style-type: none"> ✓ Low Lubricating oil pressure ✓ High water temp. ✓ Engine failed to start after 3 attempts ✓ Starting battery unhealthy ✓ Half fuel level alarm at 50% of fuel tank ✓ low fuel trip at 10% of the fuel tank ✓ Over voltage ✓ Under voltage ✓ Over Frequency ✓ AC mains Failure 	
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DG SET			
24	Dimensions L X W X H (MM)	Should be compact and light weight	
25	Weight in KG		
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27	Acoustic Material	Poly Urethane Foam, 50 mm thick	
28	Battery	12V with Suitable Ah rating .	
29	Acoustic Enclosure	The sound proof enclosure should be free standing, floor mounting outdoor weather proof (water tight) type independent of EA set. The enclosure should be modular in construction so that it can easily be assembled at site. Should be designed for reducing the sound level around the enclosure	
30	Fuel Tank	Base Tank with Fuel capacity suitable for 12 Hrs running.	

31	Ventilation & Air circulation	<p>The system should provide air inlet/exhaust acoustic louvers for efficient air circulation and have following feature:</p> <p>Adequate ventilation to be provided to meet air requirement for combustion and heat removal.</p> <p>The temperature inside the enclosure should not exceeds 5-7 deg C. than the ambient temperature of even 48 degree Celsius, near air suction point.</p>	
32	Warranty & Support	5 Years onsite	

S#	Minimum required IPS Specifications:	Your Company Name	
		Comments	Remarks (If Any)
1	The Proposed solution should have capability to be installed in in-line mode and must provide 2 Gbps of Threat Prevention (FW + IPS + Application + Antivirus + Anti-bot + URL filtering) throughput from day 1.		
2	The appliance must be fully populated with at least 10 X 1G Gigabit Base-T Copper Ports and 2 x 10Gig SFP+ ports from day 1 with dual integrated power supply. There must be one management Copper port.		
3	NGFW must have minimum Next Generation Firewall with IPS and application visibility throughput of 2 Gbps.		
4	IPS must be based on the following detection mechanisms: exploit signatures, protocol anomalies, application controls and behavior-based detection		
5	IPS and firewall module must be integrated on one platform.		
6	IPS must be able to detect and block network and application layer attacks i.e. protecting at least the following services: email services, DNS, FTP, Windows services (Microsoft Networking)		
7	IPS must have a mechanism to convert SNORT signatures		
8	Application control database must contain more than 4000 known applications. The proposed solution must allow free custom application signatures for Homegrown and custom applications.		
9	IPS must have at least 10000 signatures		
10	Anti-bot Security application must be able to detect and stop suspicious abnormal network behavior		
11	Anti-Virus must be able to scan archive files		
12	The next security appliances should be managed from centrally management server. The central management server should be physical appliance based solution.		
13	The central management server should be able to manage 50 device from day 1. any centrallized software, licences, server required to manage all the IPS devices shall be provided by the bidder from day-1.		
14	The central management server should have intergrated log server with at least 4TB dedicated storage space expendable up to 8 TB to have centralized logging and reporting.		
15	The reporting should be intractive and provide the complete detail of attacks and infected hosts in the network. The reports must be able to export into CSV/PDF formats. There should be centralized coprehensive deshboard to Monitor all End Devices alongwith facility to push the policies and updates centrally to all devices.		
16	Firewall OS, CVE (Common Vulnerabilities and Exposures) must be available / disclosed on public web sites		
17	It should also support on-premise sandboxing feature to protect against zero-day attack if required in future after procurement of required license & supporting hardware		
18	The offered solution/appliance must not have optional and integrated WIFI functions/modules.		
19	The Complete solution & licences should have 5 years on-site warranty and support from the date of Acceptance.		

S.No.	Description	Minimum Technical Specifications of Hardware Based On-Premise MCU Solution (50 Full HD ports)	Your Company Name & Comments	Remarks (If any)
1	Solution Design	The core video infrastructure solution including MCU, Gatekeeper, Device Management Server, Web Collaboration Server and Firewall Traversal should be deployed. All the software applications deployed as a part of complete solution must be on a dedicated server / Virtualised instance on physically separate server to avoid a single point of failure. All solution should be designed with Local High Availability / Redundancy mode.		
2	Hardware	The MCU must to be a secure dedicated enterprise grade server or virtualized server on a dedicated hardware server with perpetual licences for all software components.		
3	MCU Features	The solution must support at least 50 FHD calls from Hardware Based H.323 or SIP based VC Endpoints and upto 150 Web Browser calls from day one. In case no hardware based VC Endpoint joins into MCU Call then the solution should support upto 200 Web Browser based calls.		
		There must not be any artificial limits imposed in terms of creating number of conference rooms/IDs. Additionally, it should be possible to preassign 400 meeting rooms / IDs dedicated for end users. The MCU solution must support at least 6 simultaneous conferences at any given point of time. The Licenses should be perpetual. These conference licenses must not be tagged in any manner - to an end point, a soft client or a named user employee. They must be freely floating for any user to utilize.		
		It must be possible to see at least 16 sites simultaneously on the screen. The end points must have the capability to change their local video layout from remote control/touch control panel. The MCU should have at least 8 layouts or more from day one.		
		MCU must support embedded site naming, site name edit feature, active speaker with border highlight. Centre layout should be available for active speaker.		
		The MCU should support on-screen text messaging on video endpoints, so that if there's a delay in starting a meeting, participants can be informed.		
		The MCU should support on-screen display of Conference Indicators to show total number of Audio and Video participants in active conference(s).		
4	Gatekeeper	The solution must have native support for H.323 & SIP with the ability of 300 devices registrations for H.323 gatekeeper and SIP registrar from day one and should be scalable to 500 device registrations in future on the same server through software licenses only. The number of concurrent calls supported must be 200 from day one. This software application must be hosted on a dedicated server / Virtualised instance to avoid a single point of failure. Performance should not be degraded on creation of separate VM for the purpose.		
5	Device Management	The solution must include a management, scheduling and provisioning component with capacity of at least 300 devices from day one and should be scalable to 400 devices in future on the same server through software licenses only. The management system should support provisioning, bandwidth & device management/software upgrade and scheduling of the video endpoints of the same OEM from the management server. This software application must be hosted on a dedicated server / Virtualised instance on physically separate server to avoid a single point of failure. Performance should not be degraded on creation of separate VM for the purpose.		
		It must be possible to have an integrated presence-awareness feature that allows users to verify contact availability and status, and seamless enterprise directory integration which simplified management and ensures contact list accuracy.		

6	Firewall Traversal	The solution must include a firewall traversal component for SIP & H.323 video endpoints and Web Browser Users. It must support at least 200 calls from day one. Single server application that combines remote and B2B calling scenarios with SIP and H.323 capabilities for a seamless video collaboration experience within and beyond the firewall. This software application must be hosted on a dedicated server / Virtualised instance to avoid a single point of failure. Performance should not be degraded on creation of seprate VM for the purpose.		
7	Software Based Client	The solution must include dedicated software based VC client to allow calls from Laptop/ PC (Windows, MacOS) and Tablet/Mobile (Android or iOS) from the same OEM. The software client should be able to connect to external endpoints/bridge on H.323/SIP protocol. It must support/integrate with other web/cloud-based software MCUs & other hardware based MCUs. The solution should be on premise Web solution.		
8	Protocols	The solution should support content sharing using standard based H.239 and BFCP over H.323 & SIP to up to Full HD @1080p resolution.		
		The solution must support H.323 and SIP (both run simultaneously) from day one.		
		The solution should support G.711, G.729A, G.722, G.722.1 or better		
		It must provide crystal clear audio and stereo sound irrespective of bandwidth		
9	Security	The MCU solution must support Lecture Mode / Presentation Mode.		
10	Interoperability & Cascading	The solution must support encryption on H.323 and SIP (AES-128 / AES-256), TLS & etc		
		The solution must be interoperable with standards-based H.323 and SIP VC Endpoints, even if they are from a different OEM for all the video ports. Any hardware required to interop should be supplied from day one.		
		The solution must support both dial-in and dial-out of calls.		
		The solution must support cascading over standard protocols.		
11	Recording Feature	The complete solution should be from the same OEM as VC Endpoint for seamless feature integration benefits and interoperability.		
12		The Solution must include dedicated recording solution to record 6 concurrent video conferencing sessions and 3 concurrent live streaming sessions with minimum 500 live viewing participants in total. The recording solution may be from same OEM or third party with all necessary licences from day one. The solution should capable to record atleast 50 Hours meetings.		
13	Warranty	Any Software / Hardware / Licences required to make the offered MCU solution Go-Live, that should be provided by OEM/Bidder from Day-1.		
14	Training	The complete solution software (MCU, Gatekeeper, Device Management Server, Web Collaboration Server, Firewall Traversal, and Video Endpoints) should be from the same OEM. Recording and Streaming solution may be from same OEM or third party. The Licenses offered for the complete solution should be perpetual. The complete solution should be provided with 5 years of onsite warranty & support from date of acceptance.		
		Hands on Training -2-3 Weeks / 2-3 Batches as per requirements		

Minimum Technical Specifications of Room Based VC Endpoint			Your Company name & Comments	Remarks (If any)
The proposed system must support PAL/equivalent with PTZ camera. The codec must be based on ITU-T standards & hardware based. No software based solution will be accepted. All components of the VC system like Codec, Camera, Microphone and Remote Control should be from the same OEM.				
1	Package	Full HD 1080p30 or Higher PTZ Camera, Codec, Omnidirectional Microphone and Remote Control from the same OEM.		
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.265 or better		
		It should support 1080p30 FPS, 720p30 FPS or Higher		
3	Content Standards and Resolutions	It should support both wired and wireless content sharing using standard based H.239 and BFCP & etc. It should also support audio from Laptop used for content sharing.		
		It should support inbuilt feature for wireless content sharing from Windows, MacOS, Android, iOS Smartphones & Tables with / without downloading any application on the user device. If the same feature is not natively built into the VC codec then external third-party system can be provided by the bidder to achieve the same functionality.		
4	Audio Standards and Features	It should support G.711, G.729 / G.729A, G.722, G.722.1 or better		
		It should support 20kHz or better bandwidth with crystal clear audio and stereo sound.		
		Automatic Gain Control and Automatic Noise Suppression		
5	Video and Audio Inputs	1 x HDMI/HDCI/USB input for connecting main Full HD camera		
		1 x HDMI input to share 4K/Full HD content from PC/Laptop/Document camera/PTZ Camera.		
		Min. 2 x HDMI, 1 USB inputs to connect additional PTZ cameras from same OEM to capture whiteboard/presenter and podium area in future whenever required.		
		2 x Microphone Inputs or more with support for minimum 2 digital omnidirectional mics. The bidder needs to quote 1 digital omnidirectional microphone with mute/unmute soft touch button on the microphone. Each microphone should have atleast 20 feet pickup range.		
		1 x RCA/3.5mm stereo line-in		
6	Video and Audio Outputs	2 x HDMI output for connecting primary and secondary Full HD displays.		
		1 x RCA/3.5 mm stereo line-out		
		1 x 10/100/1000 Ethernet port		

7	Other Interfaces	1 x USB to support system software upgrade/ future use		
		Wi-Fi 802.11a/b/g/n/ac (MIMO) for Wireless Content Sharing for Guests using their Smartphones and Tablets (Android and iOS)		
		1 x RS-232 Serial Port or equivalent port for connecting to external RS-232 controller		
8	Camera	1/2.7" CMOS sensor and 70° Horizontal Field of View or more		
		The camera should support minimum 10X Optical Zoom or better, Min. PAN +/-170°, Tilt Min. +30°/-30° & minimum 10 camera presets. Auto focusing should be available.		
		Video Conference Camera and Codec should be controlled using same remote control		
9	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 / DiffServ, Configurable MTU size		
10	USB Pass-Thru Mode	The system should have inbuilt/external functionality to use the VC system as an external camera and microphones when connected to a Laptop/PC over a single USB cable with or without using any external hardware components to connect to any Cloud Based VC platform like Cisco Webex, Zoom, BlueJeans, Microsoft Teams, Google Meet, etc. 3rd party hardware if any, can be used to meet the functionality without degrading the Video & Audio quality and offered 3rd party hardware should be FCC, CE certified.		
		The system should be able to support up to 1080p30fps video transmit in USB Pass-thru mode.		
		It should be possible to Mute/Unmute all the microphones and control camera functionality from the same remote control during USB pass-thu mode.		
		The system should be supplied with 10 mtrs. single USB 2.0 or Higher cable from the same OEM for USB Pass-thru mode for seamless functionality.		
11	Security	Media Encryption (H.323, SIP): AES-128, AES-256, H.235 or better support & etc		
		Authenticated access to admin menus, web interface and APIs		
		Local account password policy configuration		
		Global Directory/Centralized Directory/LDAP support		
12	Other Standards/features	H.460.18, H.460.19, SSL, TLS & etc		
13	Warranty & on-site support	The complete solution should be from the same OEM with 5 years onsite warranty & support from the date of acceptance. The 3rd party devices should be certified by the Endpoint OEM		

		Your Company Name	
S#	Minimum required VPN Specifications:	Comments	Remarks (If Any)
1	The next generation gateway must be capable of supporting these next generation VPN applications on a unified platform in HA: SSL VPN Mobile Access, SSL VPN Logging and Status		
2	Must have Internal CA and External third party CA must be supported		
3	Must have inbuilt AAA for user authentication and authorization supporting up to 6000 VPN Users.		
4	Solution must support 3DES and AES-256 cryptographic for IKE Phase I and II IKEv2 plus "Suite-B-GCM-128" and "Suite-B-GCM-256" for phase II		
5	Solution must support at least the following Diffie-Hellman Groups: Group 1 (768 bit), Group 2 (1024 bit), Group 5 (1536 bit), Group 14 (2048 bit), Group 19 and Group 20		
6	Solution must support data integrity with md5, sha1 SHA-256, SHA-384 and AES-XCBC		
7	Solution must support clientless SSL VPNs for remote access.		
8	The vendor must be capable of serving the entire scope of security gateway requirements, including throughput, connection rate and next generation security application enablement for all network deployments, from small office to data center in a single hardware appliance.		
9	Appliance must have onboard 10/100/1000Base-T OOB management and USB ports dedicated for console management		
10	The appliance must be fully populated with at least 8 X 10G SFP+, 2 x 40Gig QSFP+ Ports and 8 X 1G Gigabit Base-T interfaces from day 1 with dual power supply		
11	The appliance hardware should be a multicore CPU architecture. The performance should not be degraded on maximum load of required concurrent user.		
12	Must include Min. 4000 SSL VPN user license scalable up to 6000 and Min. 1000 concurrent users from day 1 and scale up to 2000 concurrent users.		
13	Proposed solution must provide minimum 20 Gbps of VPN throughput.		
14	It should also support on-premise sandboxing feature to protect against zero-day attack if required in future after procurement of required license & supporting hardware		
15	The offered solution/appliance must not have optional and integrated WIFI functions/modules.		
16	Firewall OS, CVE (Common Vulnerabilities and Exposures) must be available/disclosed on public web sites		
17	The next security appliances should be managed from centrally management server. The central management server should be physical appliance based solution.		
18	The proposed solution must have USGv6 certificate for IPv6 Support from day 1.		
19	The Complete solution & licences should have 5 years on-site warranty and support from the date of Acceptance.		