Technical Specification Compliance Sheet

Active Part:			
Item No.-1: UTM Firewall			
Sl.	**Item Description**	**Technical Specifications and Standard**	**Remarks**
1	**Brand**	To be mention by the bidder	
2	**Model**	To be mention by the bidder	
3	**Country of Origin**	USA/EU	
4	**Country of Manufacture**	To be mention by the bidder	
5	**Form factor**	Rack Mountable appliance.	
6	**MTBF & EoS / EoL Announcement**	Proposed appliance must NOT be EoS / EoL announcement product and vendor will NOT offer any product that will declare EoS / EoL within next 3 years.	
7		Hardware lifetime – MTBF (Mean Time Between Failure) should be 10 years or higher	
8		The vendor/ OEM must attain ISO 9001:2000 certification that covers scope of the Quality Management System which includes the design, development and manufacturing of network security products and the delivery of associated security services and support	
9		OEM should be in Leaders in quadrant of Gartner's – for UTM and Enterprise Firewall Magic Quadrant for the last two years (2017, 2018).	
10		Appliance shall be ICSA Lab certified for Firewall, IPSec VPN, SSL VPN, IPS, AV, and ATD/ATP. ATD/ATP-Mail security functionalities.	
11	**General Requirements**	For SD-WAN, proposed vendor must be in Gartner Leader/ Challenger for WAN Edge Infrastructure in 2018. SD-WAN vendor must be recommended by NSS Labs in 2018 group test.	
12		The device should belong to a family of products that attains NSS Approved Certification like SVM for DCIPS, NGIPS, NGFW, and DCSG.	
13		The product must supports Layer-7 based UTM/Firewall virtualization, and all UTM features should be supported in each virtual firewall AV, IPS, Web filter etc.	
14		The Firewall should be on ASIC Based architecture or Multi-core processor	
15		Product OEM should have its own Technical assistance center (should not be outsourced)	
16		The Firewall Appliance should be rack mountable	

17	**Networking & System Performance Requirements:**	Firewall Throughput: Minimum 4 Gbps or higher	
18		Concurrent session per second: 1.3 Million or better	
19		New sessions per second: 30,000 or Better	
20		IPS Throughput: minimum 450 Mbps minimum or better in multi-protocol environment)	
21		Next Generation Firewall Throughput: 360 Mbps or better	
22		Threat Protection Throughput : 250 Mbps or better	
23		Application Control Throughput: 900 Mbps or better	
24		The Firewall should have minimum 14 x GE RJ45 ports (including 1 x DMZ port, 1 x Mgmt port, 1 x HA port, 12 x switch ports), 2 x Shared Media pairs	
25		System must have dedicated Out-of-Band management port	
26		The Solution should support minimum 8 Virtual Firewalls	
27	**SSL Performance**	Proposed appliance must be capable to perform deep packet inspection (SSL inspection) without drastically degradation of performance.	
28		SSL performance throughput must be minimum 5Gbps or more (200 Mbps or more)	
29		SSL Inspection CPS (FW+IPS+HTTPS): 135 or better	
30		SSL Inspection Concurrent Session(FW+IPS+HTTPS):95,000 or better	
31	**The proposed solution must have following features inbuilt**	Firewall should support RIP1 & 2, OSPF, OSPFv3, BGP4…etc. routing protocol	
32		Should support LADP, RADIUS, Windows AD,PKI based Authentication	
33		Should have integrated 2-Factor Authentication server	
34		The proposed solution should support Client-Reputation feature	
35		Should support DHCP server & DHCP Agent functionality	
36		Firewall should support scheduled vulnerability scanning functionality for internal network segments	
37		The proposed solution should be able to enable or disable Web Filtering per firewall policy or based on firewall authenticated user groups for both HTTP and HTTPS traffic.	

38		The proposed system should be able to block, allow or monitor only using AV signatures and file blocking based on per firewall policy with configurable selection of the following services: HTTP, SMTP, POP3, IMAP, Instant Messenger (AIM, YAHOO!, MSN, ICQ, SIMPLE), NNTP as well as all SSL based protocols like SMTPs, IMAPs, POP3s, etc.	
39		The proposed system shall provide ability to allow and block attachments or downloads according to file extensions and/or file types, including: Executables (.com, .exe, .elf), HTTP (.html, .hta), Java (.jad, .class, .cod, javascript), Microsoft Office Packer (.fsg, upx, petite, aspack), Palm OS applications (.prc), Symbian Installer system file (.sis), Windows Help file (.hlp), Activemime, Batch File (.bat), Archive (.arj, .cab, .lzh, .rar, .tar, .zip, .bzip, .gzip, .bzip2), Common Console Document (msc), Encoded Data (.uue, mime, Base64, binhex).	
40		Should have integrated Application control solution & Should have identification support for at least 1000+ applications and the identification should be regardless of ports. The applications need to be predefined on the box.	
41		The proposed system shall have the ability to identify, block or rate limit the following common P2P applications:Gnutella (Napshare, iMesh, Mldonkey, morph, Xolox, BearShare, FOXY), Bittorrent, Kaaza, WinY, eDonkey	
42		The proposed system shall have the ability to manage and control Instant messaging usage by identifying various IM applications such as AIM, MSN, YAHOO, SIMPLE, ICQ	
43		The proposed system should support Traffic shaping & Traffic quota management on per IP address and Per user group basis without the need of any client utility to be either manually installed on hosts or pushed through Directory servers.	
44		Should support both explicit proxy and implicit proxy functionality integrated within firewall appliance	
45		The proposed system should allow multiple OS firmware image for booting options and Firmware's should be upgradeable via Web UI or TFTP	
46	**VPN support**	The Firewall should be integrated solution and there should be no user based licensing for SSL VPN &IPSec VPN as well.	

47		IPSec VPN throughput: 450 Mbps or higher	
48		SSL VPN Throughput: 200 Mbps or higher	
49		Total Number of site-to-site IPSec VPN tunnels to be supported minimum 200	
50		Total Number of Remote Access IPSec VPN tunnels to be supported minimum 2,500	
51		IPSec VPN should support Extended Authentication	
52		IPSec VPN should support DDNS.	
53		Should support IPSec Standards like Des, 3DES, AES, DH group 1,2,5,14	
54	**Management, Logging and Reporting**	Support for Built-in Management Software for simple, secure remote management of the security appliances through integrated, Web-based GUI	
55		Support accessible through variety of methods, including console port, Telnet and SSH	
56		Support for both SNMPv2/v3, providing in-depth visibility into the status of appliances	
57		Should capable to provide a convenient method for alerting administrators when critical events are encountered, by sending e-mail alert messages to administrator defined e-mail addresses	
58		Solution must allow administrator to choose to login in read only or read-write mode	
59		Rich reporting module should be in-build with the solution or external	
60		Solution should be able provide reports based on criteria mentioned on alert	
61		System should have capability to automatic rotation of log files, archiving, restoring from archive, and reporting from archived logs.	
62	**High Availability**	Active-active with stateful failover	
63		Active-standby with stateful failover	
64		Failure detection: Path monitoring, interface monitoring	
65	**Bandwidth Management / Traffic Shaping &QoS**	Proposed solution must support traffic shaping based on - Single IP, Subnet, IP Range, IP Group, Port/Protocol, Application, Application Group, URL Category…etc.	
66		Proposed solution must ensure bandwidth guarantee, limit, and priority interactions as per admin configuration	
67		Proposed solution must support the traffic priority - high/medium/low based on admin configuration.	
68	**Authorization**	Original Manufacturer Authorization Certificate to be submitted along with the bid.	

Sl.	Item Description	Technical Specifications and Standard	Remarks
69	**Warranty and Support**	The proposed solution should include 3 Year's UTM Subscription from Day 1 that includes: 24x7 FortiCare plus Application Control, IPS, AV, Web Filtering and Antispam, Sandbox Cloud))	
70		Vendor must offer 24x7 service support that includes Comprehensive Support from TAC.	

Item No.-2: Core Switch

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	**Brand**	To be mention by the bidder	
2	**Model**	To be mention by the bidder	
3	**Country of Origin**	USA/EU	
4	**Country of Manufacture**	To be mention by the bidder	
5	**Form factor**	Rack Mountable appliance.	
6	**General Requirements**	Switching capacity of the proposed switch should be minimum 56 Gbps	
7		Packet per second capacity of the switch should be minimum 80 Mpps or higher	
8		Proposed Switch should support minimum 16K MAC address storage	
9		Proposed switch should support 4000 VLANs	
10		Should support DRAM-512 MB or higher	
		The Switch should have at least 24 x 1 GE RJ45 ports, 4 x 1 GE SFP ports	
11	**Layer 2 Requirements**	Jumbo frames and link auto-negotiation	
12		Should support Spanning Tree Protocol MSTP native, and backwards compatible with RTSP and STP	
13		Should support Edge Port / Port Fast	
14		IEEE 802.1p Mapping to priority queue	
15		IEEE 802.1q VLAN tagging, Private VLAN	
16		Should support IEEE 802.3ad Link Aggregation with LACP with maximum 8 Link Aggregation Group size	
17	**Layer 3 Requirements**	Should support OSPFv2, RIPv2, VRRP	
18		Should support Routing Entries minimum 64	
19		Should support ACL minimum 512 Entries	
20	**Authentication Requirements**	should support LLDP, LLDP-MED	
21		should support MAC based, IP based, protocol based VLAN assignment	
22		802.1x port-based authentication	
23		802.1x authentication via certificate EAP-TLS and EAP-TTLS	
24		support 802.1x guest VLAN assignment	
25		support 802.1x authentication fail VLAN for unauthenticated users	
26		Switch should support LDAP, RADIUS, TACACS+	
27	**Security**	should support Storm Control, LoopGuard	

Sl.		Technical Specifications and Standard	Remarks
28		Should support IGMP snooping, DHCP snooping, DHCP relay	
29		Should support Port mirroring, sFlow	
30		Should support port MAC limit, MAC-IP binding	
31		Switch should support ACL with classifier(src-mac, dst-mac, ether-type, src-prefix, dst-prefix, service-id, vlan-id)	
32	**QoS**	should support 8 queues per port, packet classification, packet marking, packet queuing	
33		Should support 802.1p, DSCP	
34		Should support QoS per VLAN	
35	**Management**	Proposed switch must support central management system for easy management	
36		Telnet/SSH, HTTP/HTTPS…etc.	
37		Switch should support SNMP v1, v2c and v3	
38		switch must log all authentication events: locally and via syslog	
39		Switch should support Packet Capture and diagnose features in CLI offer similar packet capture capabilities like tcpdump.	
40		Proposed switch should be managed via both, GUI and CLI	
41		MUST support multiple configuration files with 2 bootable partitions for better availability and easy upgrade / fallback.	
42		Software download/upload: TFTP/FTP/GUI	
43		Support for HTTP REST APIs for Configuration and Monitoring	
44	**Warranty and Manufacturer's part number**	Bidder shall propose hardware and 3 years OEM warranty and RMA support	
45		Bidder should submit BOQ of proposed device including the details part numbers and Manufacturer's Warranty part number.	

Item No.-3: Access Switch

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	**Brand**	To be mention by the bidder	
2	**Model**	To be mention by the bidder	
3	**Country of Origin**	USA/EU	
4	**Country of Manufacture**	To be mention by the bidder	
5	**Form factor**	Rack Mountable appliance.	
6	**General Requirements**	Switch proposed should have minimum 24x GE RJ45 ports and 4x GE SFP ports as uplink	
7		switch should support non-blocking, store-n-forward architecture	
8		Proposed switch should have a RJ-45 Serial console port	
9		The form factor of the proposed switch should be 1 RU Rack-Mount Appliance	

10		Switching capacity of the proposed switch should be minimum 56 Gbps	
11		Packet per second capacity of the switch should be minimum 80 Mpps	
12		Proposed Switch should support minimum 8K MAC address storage	
13		Proposed switch should support 4000 VLANs	
14		Should support DRAM-256 MB or higher	
15		Jumbo frames and link auto-negotiation	
16	**Layer 2 Requirements**	Should support Spanning Tree Protocol MSTP native, and backwards compatible with RTSP and STP	
17		Should support Edge Port / Port Fast	
18		IEEE 802.1p Mapping to priority queue	
19		IEEE 802.1q VLAN tagging, Private VLAN	
20		Should support IEEE 802.3ad Link Aggregation with LACP with maximum 8 Link Aggregation Group size	
21		should support LLDP, LLDP-MED	
22		should support MAC based, IP based, protocol based VLAN assignment	
23		802.1x port-based authentication	
24	**Authentication Requirements**	802.1x authentication via certificate EAP-TLS and EAP-TTLS	
25		support 802.1x guest VLAN assignment	
26		support 802.1x authentication fail VLAN for unauthenticated users	
27		Switch should support LDAP, RADIUS, TACACS+	
28		should support Storm Control, LoopGuard	
29		Should support IGMP snooping, DHCP snooping, DHCP relay	
30	**Security**	Should support Port mirroring, sFlow	
31		Should support port MAC limit, MAC-IP binding	
32		Switch should support ACL with classifier(src-mac, dst-mac, ether-type, src-prefix, dst-prefix, service-id, vlan-id)	
33	**QoS**	should support 8 queues per port, packet classification, packet marking, packet queuing	
34		Should support 802.1p, DSCP	
35		Should support QoS per VLAN	
36		Proposed switch must support central management system for easy management	
37	**Management**	Telnet/SSH, HTTP/HTTPS…etc.	
38		Switch should support SNMP v1, v2c and v3	
39		switch must log all authentication events: locally and via syslog	

Sl.		Technical Specifications and Standard	
40		Switch should support Packet Capture and diagnose features in CLI offer similar packet capture capabilities like tcpdump.	
41		Proposed switch should be managed via both, GUI and CLI	
42		MUST support multiple configuration files with 2 bootable partitions for better availability and easy upgrade / fallback.	
43		Software download/upload: TFTP/FTP/GUI	
44		Support for HTTP REST APIs for Configuration and Monitoring	
45		Bidder shall propose hardware and 3 years OEM warranty and RMA support	
46	Warranty and Manufacturer's part number	Bidder should submit BOQ of proposed device including the details part numbers and Manufacturer's Warranty part number.	
47		Bidder must submit the required performance document and compliance reference document for the proposed device.	

Item No.-4: Server with OS

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	Brand	To be mentioned by the Bidder	
2	Model	To be mentioned by the Bidder	
3	Country of Origin	USA/ UK/EU Countries	
4	Country of Manufacture	To be mention by the bidder	
5	Processor	Intel Xeon E-2126G 3.3GHz, 12M cache, 6C/6T, turbo (80W)	
6	Chassis	3.5" Chassis with up to 4 Hot Plug Hard Drives	
7	Memory	16GB 2666MT/s DDR4 ECC UDIMM	
8	Security features	Trusted Platform Module 2.0	
9	Hard Disk Drives	2x1TB 7.2K RPM SATA 6Gbps 512n 3.5in Hot-plug Hard Drive	
10	Storage Controller	RAID Controller	
11	Power supply	Dual, Hot Plug Power Supplies 350W	
12	Power Cord and Network Ports	Jumper Cord - C13/C14, 2M, 250V, 10A (TW and APCC countries except ANZ)	
13		On-Board Broadcom 5720 Dual Port 1Gb LOM	
14	PCI-e Expansion slot	1x FH x8 PCIe Gen3 slot, 1x LP x4 PCIe Gen3 slot	
15	Form Factor	1U, ReadyRails™ Sliding Rails With Cable Management Arm	
16	Media Drive	DVD+/-RW, SATA, Int	
17	Remote Management	iDrac9, Express	
18	OS	Microsoft Windows Server 2019 Standard 16 Core - OEM Pack with 5 Device CAL	
19	Warranty	03 (Three) Years Pro Support	

Item No.-5: Monitoring software			
Sl.	Item Description	Technical Specifications and Standard	Remarks
1	**Brand**	To be mention by the bidder	
2	**Model**	To be mention by the bidder	
3	**Country of Origin**	USA/EU	
4	**Country of Manufacture**	To be mention by the bidder	
5	**Form factor**	VM Based solution	
6	**General Requirements**	Proposed Central management must have single console management	
7		Proposed Central management must have centralized policy and device management	
8		Proposed Central management must have Zero-touch provisioning	
9		Proposed Central management must have Secure SD-WAN provisioning and monitoring	
10		Proposed Central management must have Multi-tenancy and administrative domains (ADOMs)	
11		Proposed Central management must support Security automation	
12		Proposed Central management must have Enterprise-grade availability and integration	
13	**Device support and System Performance**	Proposed VM lincense must support minimum 10 devices from day 1	
14		VM license must be stackable for future expansion up to any number of device support in future	
15		VM license must be perpetual (one time purchase)	
16		Proposed solution must support all well known hypervisor type, like: VMWare, Hyper-V, Citrix Xen, Open Xen, KVM and other platform also.	
17		Proposed solution must support all well known public cloud, like: AWS, Azure, Google Cloud, Oracle Cloud…etc.	
18	**NOC-SOC Requirement**	Proposed solution must have NOC-SOC functionality from day 1	
19		Proposed system must have automated data exchanges between security (SOC) workflows and operational (NOC) workflows	
20		NOC-SOC is capable to delivers advanced data visualization to help Analysts quickly connect dots and identify threats, simplifying how organizations deliver security and remediate breaches, data exfiltration, and compromised hosts…etc.	
21		Proposed system must have capabilities to create fabric connectors to facilitate connections with third-party vendors via pxGrid , OCI, ESXi and others, to share and exchange data between each others	
22	**System Functionality and Requirements**	Proposed solution must be capable to manage all types of products (single / multiple vendor),	

		including firewalls, log analyzers, switches, wireless infrastructure, WAF and Endpoints…etc.	
23		System must have capabilities to push configuration centrally to all connected devices.	
24		System must be capable to indetify in-sync and out-of-sync status of connected devices	
25		Proposed system must support administrative domain functionality to connect multiple devices with different OS versions	
26		Proposed switch must support HTML5 for easy management	
27		Proposed switch must support remote management protocols, like: Telnet/SSH, HTTP/HTTPS…etc.	
28	**Management**	Switch should support SNMP v1, v2c and v3	
29		MUST support multiple configuration files with 2 bootable partitions for better availability and easy upgrade / fallback.	
30		Software download/upload: TFTP/FTP/GUI	
31		Support for HTTP REST APIs for Configuration and Monitoring	
32	**Warranty and Manufacturer's part number**	Bidder shall propose VM-based license (10 devices) and 3 years OEM warranty and TAC support	
33		Bidder should submit BOQ of proposed device including the details part numbers and Manufacturer's Warranty part number.	

Item No.-6: Monitor (32 inch LED TV)

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	**Brand**	To be mentioned by the bidder	
2	**Model**	To be mentioned by the bidder	
3	Screen size	32"	
4	Aspect ratio	16:9	
5	Resolution	1366 x 768	
6	Viewing angle	H 1780 / V 1780	
7	Contrast	4000:1 (Typical)	
8	Brightness	240 cd/m2 (Typical)	
9	Response time	20 ms (Typical)	
10	Backlight type	DLED	
11	Dynamic backlight adjust	YES	
12	**Input & Output Ports :**		
13	HDMI IN (Version:1.3 / 1.4)	2	
14	USB 2.0	2	
15	AV input	1	
16	CVBS output	1	
17	YPbPr IN	1	
18	RF IN	1	

19	PC IN	1	
20	PC Audio IN	1	
21	**Warranty :**		
22	Product warranty	3 years	
23	**Power :**		
24	Power supply	AC 110v - 240v 50/60 Hz	
25	Standby power consumption	<0.5w or Less	
26	Maximum power consumption	45w or better	

Item-7: Access Point:

Specifications	Description of Requirements	Bidder's Response
Purpose	**Ministry of Food is looking for Access Point to use wireless devices from a single console**	
Brand	To be mentioned by the bidder	
Model	To be mentioned by the bidder	
Country of Origin	USA/EU	
Country of Manufacturing	To be mentioned by the bidder	
Item	AP must support Indoor Dule Band Access Point	
Standards	AP must have IEEE 802.11a/b/g/n/ac Wave 2	
Oparetion Mode	AP must work both Switch and Gateway Mode	
Services	AP should have NTP, Syslog, SNMP traps, DNS proxy, auto-off on WAN failure	
APIs	AP should have RESTful management and statistics API Presence location APIs	
Performance Monitoring	1. AP should have Insightful status monitoring; rich visibility to device lifecycle 2. AP should have Alarms and events management – Critical/Major/Minor 3. AP should have Statistics graphs and table display 4. AP should have Alarm traffic light display	
Maximum Data Transfer Rate	AP should support 1.267 Gpbs (minimum)	
Concurrent Clients	AP should have 256 (minimum) Concurrent Clients	
User Controller login Method	1. AP must support Social Login by Facebook, Google 2. AP must support Time and Rate limited Guest access portals with Vouchers 3. AP must support Setup Hotspot portals segmented by SSIDs	
Radio features	AP must support MIMO: 2X2 (minimum), 20 MHz, 40 MHz and 80 MHz Channels	
Maximum Transmit Power	AP should have 25 dBm (minimum) Transmit Power	
Coverage Range	AP Should have 180 m (minimum) Coverage Range	

AP Controller modes	AP Must support Controller-less standalone AP Must support AutoPilot heterogeneous network AP Must support Cloud managed, and single cloud hosting controller for AP lifetime duration AP Must support on-premises VM	
Fast Roaming	AP Should have 802.11r, OKC, Enhanced roaming	
Tunnel	AP Should have L2TP, L2oGRE, PPPoE	
Troubleshoot Tools	* AP Must have Remote Packet capture * AP Must have Channel/noise/interference analyzer * AP Must have Auto logging * AP Must have ZapD performance test tool * AP Must have Rogue AP detection	
Certifications	AP Must Have WiFi Alliance 80211a/b/g/n/ac, AP Must Have AP Must HavePasspoint 2.0 AP Must Have FCC, ETSI, CE, EN 60601-1-2, IEC60950, AP Must Have EN50121-1 Railway EMC EN50121-4 Railway Immunity AP Must Have IEC 61373 Railway Shock & Vibration AP Must Have EN-60601 (Medical) Certificat	
Bandwidth Control	Rate limiting of client traffic: Caps utilization based on data rates, max data rates and time interval	
Encryption	WPA-TKIP, WPA2 AES, 802.1x, 802.11w	
Authentication	Secure Web page, RADIUS based 802.1x including EAP-SIM/AKA, EAP-PEAP, EAP-TTLS, and EAP-TLS MAC authentication	
Device must support on board protocol	1. AP Should have GUEST ACCESS 2. AP Should have WMM 3. AP Should have CLIENT ISOLATION 4. AP Should have Load Balance 5. AP Should have BAND STEERING 6. AP Should have ACL, DNS-ACL 7. AP Should have Airtime Fairness 8. AP Should Support Hotspot 2.0 enabler	
SSID	AP Must support Minimum 16 SSIDs across 2 Radios (2.4 and 5 GHz) SSID must support access mode and trunk mode	
Scheduled SSID	AP Should have On/off by day, week, time of day	
Power Supply	AP Must have 802.3af injector or Powered Ethernet switch and should be provide POE injector with the access point.	
Antenna coverage	AP Should have Omni (360°)	
Antenna Polarization	AP Should have Dual Polarized	
Antenna Gain	AP Should have 4.55 dBi (2.4 GHz)/4.25 dBi (5 GHz)	
Controller modes	• AP Must support Autonomous Controller • AP Must support Cloud Managed • AP Must support On-premise virtualized controller • AP Must support Hardware controller	

WLAN	AP Must support Minimum 256 clients, 16 SSIDs AP Must support WPA-TKIP, WPA2 AES, 802.1x AP Must support Minimum 802.11w PMF WPA2 (802.11i), WPA2 Enterprise AP Must support Minimum (802.1x/EAP), WPA PSK, Open	
Captive Portal	AP Must -- Hosted on cnMaestro Controller --n-AP hosted guest portal --Redirect to HTTP/RADIUS --Server DNS logging	
Authentication	AP Must support Hotspot 2.0/Passpoint 2.0 AP Must support 802.1x EAP-SIM/AKA, EAP-PEAP, EAP-TTLS, EAP-TLS AP Must support MAC authentication to local database or external RADIUS	
User Traffic Options	• AP Must Support Local Breakout (LBO) • AP Must Support External GW Tunneling - L2TP, L2oGRE, PPoE • AP Must Support VLAN Pooling and per VLAN per SSID tegging	
Enterprise WiFi Standard	Must have 802.11 h, 802.11 d, 802.11 r, 802.11 u, 802.11e, 802.11i, 802.1Q, 802.11k, 802.11w Wi-Fi alliance certification.	
Manufacturer's part number, Warranty / RMA and TAC support	Bidder must be submitted Manufacturer Authorization form (MAF)	
	Bidder should submit BOQ of proposed device including the details part numbers, necessary TAC support and manufacturer warranty for 3 years	
Installation, Testing and Commissioning	Bidder must carry out on site installation, testing and commissioning. Bidder must configure appropriate security and administration related policies, must do integration with other related hardware/software required to make the LAN functional and shall provide respective documentation to Ministry of Food Authority.	

Passive Part:

Item No.-8: UTP Cat-6 Cable

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	Brand	To be mentioned by the bidder	
2	Model	To be mentioned by the bidder	
3	Country of Origin	USA/ UK/EU Countries	
4	Country of Manufacturer	To be mentioned by the bidder	
5	Type	CAT6 4 pair U/UTP Cable (305m, unshielded, PVC)	
6	Standards	ISO/IEC 11801, IEC 61156-5, ANSI/TIA/EIA-568-C.2 Class E	
7	General Specification	CAT6 4 pair U/UTP Cable, Drain Wire (Unshielded)	
8		Jacket Color: Purple or Orange	

9		Conductor Gauge: 23 AWG	
10		Conductor: 0.56±0.0085mm	
11		Separator Type: Cross Spline	
12		Conductor Material: Bare copper (99.99%)	
13	Construction Materials	Insulation Material: HDPE, Diameter: 1.05±0.05mm	
14		Jacket Material: PVC, Jacket thickness: 0.6±0.1	
15		Separator Material: PE	
16	Cable distance	85±5mm	
17	Overall Diameter	6.3±0.3	
18	**Electrical Performance**		
19	Direct Current Resistance	<9.38Ω/100m	
20	Operating Capacitance	≤5.6nF/100m	
21	NVP	68%	
22	Propagation Delay	≤45ns	
23	**Physical Performance**		
24	Tensile	110N	
25	Min. Bend Radius	8x overall diameter	
26	Installation Temperature Range	0°C ~+50°C	
27	Operating Temperature	(- 20~60, Degrees C, -4~140 Degrees F)	
28	Dimension	Cable Length : 305 m | 1000 ft	
29	DC Resistance Unbalance	≤2.5%	
30	Break & Mix between Wires	No break & mix between wires	
31	Variation Rate of Tensile Strength of Jacket	±20%	
32	Elongation of Jacket at Break before Aging	≥150%	
33	Transmission Performance	Frequency:250(MHz) , NEXT (dB): 38.3	
34	Single Conductor DC Resistance	≤9.50Ω/100m	
35	Insulation Resistance	≥5000MΩ/km +20°C DC (100-500)V	
36	Working Capacitance	≤5.6nF/100m	
38	Warranty	3 Years performance warranty	

Item No.-9: 22u Close Cabinet (600*1000 mm) with PDU			
Sl.	Item Description	Technical Specifications and Standard	Remarks
1	Brand	To be mentioned by the bidder	
2	Model	To be mentioned by the bidder	
3	Country of Origin	To be mentioned by the bidder	
4	Country of Manufacturer	To be mentioned by the bidder	
5	Size & Features	22U Rack	

6	Dimension(Width*Depth * Height)	(600*1000 mm)	
7	Maximum Static Load Capacity (KG)	Industry Standrad	
8	Color	Black	
9	Max. Open Angel for front door	180 degree	
10	Surface Treatment	Powder coated	
11	Side Panel	Powder coating (1.2mm), removable side panel	
12	PDU	13Amp 6 way PDU UK type	
13	Cooling Fan	2nos fan on top of the rack	
14	Screw & Nuts	As required	
15	Warranty	3 Years	

Item No.-10: 9 u Wall mount Rack with 6 port PDU

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	Brand	To be mentioned by the bidder	
2	Model	To be mentioned by the bidder	
3	Country of Origin	To be mentioned by the bidder	
4	Country of Manufacturer	To be mentioned by the bidder	
5	Size & Features	9U Rack	
6	Dimension(Width*Depth * Height)	(600 x 450 mm)	
7	Maximum Static Load Capacity (KG)	Industry Standrad	
8	Color	Black	
9	Max. Open Angel for front door	180 degree	
10	Surface Treatment	Powder coated	
11	Side Panel	Powder coating (1.2mm), removable side panel	
12	PDU	13Amp 6 way PDU UK type	
13	Cooling Fan	2nos fan on top of the rack	
14	Screw & Nuts	As required	
15	Warranty	3 Years	

Item No.-11: 24 Port UTP Patch Panel with Modular (loaded)

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	Brand	To be mentioned by the bidder	
2	Model	To be mentioned by the bidder	
3	Country of Origin	USA/ UK/EU Countries	
4	Country of Manufacturer	To be mentioned by the bidder	
5	Compliance	ANSI/TIA 568-C.2 Category 6 UTP	
6		ISO/IEC 11801 Class E	
7	Features & Benefits	Standard 19"widely used industry standard.	

8		CAT6 24 port Patch Panel (Unshielded, Loaded)	
9		Each keystone can be individually disassembled	
10	Size	24 port 1U size, Plenty of tag space, management of port information is clearer and more convenient	
11	Product Structure	Color Black, individual modular system	
12	Material	Cold role plate with powder coating	
13	Cable Slot/Modular	Removable	
14	Gold Pin	Phosphor bronze with gold plating	
15	Gold Plating	50 u	
16	Modular Jack	CAT6 U/UTP (Unshielded)	
17	IDC	Phosphor Bronze	
18	Plug Insertion	≥1000	
19	IDC Insertion Life Span	≥250	
20	Working Temperature	- 10~60°C	
21	Dielectric Strength	DC 1000V(AC750V) 1min,no breakdown and arcing phenomena	
22	Connector And Cable Resistance	max≤100 mΩ, average≤40mΩ	
23	Warranty	3 Years system performance warranty	

Item No.-12: Cable Manager-1U front

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	Brand	To be mentioned by the bidder	
2	Model	To be mentioned by the bidder	
3	Country of Origin	USA/ UK/EU Countries	
4	Country of Manufacturer	To be mentioned by the bidder	
5		1U in height	
6	Features and Benefits	Special construction ensures patch cord bending to guarantee transmission performance	
7		Standard 19", widely used industry standard	
8	Size	482.6x44.5x83.5mm	
9	Material	ABS	
10	Color	Black	
11	Warranty	3 Years system performance warranty	

Item No.-13: Single Faceplate with Modular

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	Single Faceplate:		
2	Brand	To be mentioned by the bidder	
3	Model	To be mentioned by the bidder	
4	Country of Origin	USA/ UK/EU Countries	
5	Country of Manufacturer	To be mentioned by the bidder	
6	Material	PC	
7	Size	86*86*14.7mm	
8	Appearance Structure	Modular structure double panel design	

9	Port No.	1 with dust cover (Shutter Type)	
10	Inner Spring	Alloy spring	
11	Compatible Jack & MK box	Support UTP, STP: cat5e, cat6, cat6a, cat7 & MK box should be come from same manufacturer	
12	Screw Carbon Steel	2	
13	Size	M4*20mm	
14	Color	White	
15	Warranty	3 Years system performance warranty	
16	Modular:		
17	Standards	ISO/IEC11801 Class E	
18		TIA/EIA568-C Category6	
19	Product Structure	360° fully shielded design to effectively prevents EMI	
20	Method of Shielding	CAT6 Unshielded	
21	IDC	Phosphor bronze	
22	Electrical Characteristics :		
23	Dielectric Strength	DC 1000V(AC750V) 1min, no breakdown and arcing phenomena	
24	Insulation Resistance (Ω)	Under normal atmospheric pressure ≥500mΩ	
25	Physical Characteristics :		
26	RJ45 Pin	Phosphor bronze with 50microinch gold plating	
27	IDC Insertion Life Span	≥250 times	
28	Plug Insertion	≥1000 times	
29	AWG & Color	22~24 & Silver	
30	Wiring	T568A & T568B	
31	Working Temperature	- 25~60°C	
32	Warranty	3 Years system performance warranty	

Item No.-14: MK Box

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	**Type**	Square	
2	**Materials**	PVC or Similar	
3	**Installation**	Should supported with face plate	

Item No.-15: 3 mtr. UTP patch cord

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	**Brand**	To be mentioned by the bidder	
2	**Model**	To be mentioned by the bidder	
3	**Country of Origin**	USA/ UK/EU Countries	
4	**Country of Manufacturer**	To be mentioned by the bidder	
5	**Patch Cord (1 & 3 Meter) & Standards**	ISO/IEC 11801:2008	
6		ANSI/TIA - 568-C.2	
7		IEC 61156-5	
8	**Pair**	4 pairs	
9	**Color**	Lemon, blue, orange, gray, yellow and red	

10	AWG	24-26	
11	Method of Shielding	U/UTP (Unshielded)	
12	Material	Bare copper (99.99%)	
13	Conductor Diameter	7/0.16±0.008BC	
14	Insulation	HDPE	
15	Typical Applications	▪ 1000BASE-T Gigabit Ethernet ▪ 100BASE-TX Fast Ethernet ▪ 622 Mbps ATM ▪ 155 Mbps ATM ▪ VOIP Applications ▪ Composite Video	
16	Connector Gold Plating	50u inch/ 8P8C	
17	Assembly	Plastic injection	
18	Insertion	≥1000 times	
19	Filler Material	PE	
20	Drain Wire	Tinned copper	
21	Storage Temperature	0°C～+50°C	
22	Operating Temperature	-20°C～+60°C	
23	Warranty	3 Years system performance warranty	

Item No.-16: 1 mtr. UTP patch cord

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	Brand	To be mentioned by the bidder	
2	Model	To be mentioned by the bidder	
3	Country of Origin	USA/ UK/EU Countries	
4	Country of Manufacturer	To be mentioned by the bidder	
5	Patch Cord (1 & 3 Meter) & Standards	ISO/IEC 11801:2008	
6		ANSI/TIA - 568-C.2	
7		IEC 61156-5	
8	Pair	4 pairs	
9	Color	Lemon, blue, orange, gray, yellow and red	
10	AWG	24-26	
11	Method of Shielding	U/UTP (Unshielded)	
12	Material	Bare copper (99.99%)	
13	Conductor Diameter	7/0.16±0.008BC	
14	Insulation	HDPE	
15	Typical Applications	▪ 1000BASE-T Gigabit Ethernet ▪ 100BASE-TX Fast Ethernet ▪ 622 Mbps ATM ▪ 155 Mbps ATM ▪ VOIP Applications ▪ Composite Video	
16	Connector Gold Plating	50u inch/ 8P8C	
17	Assembly	Plastic injection	
18	Insertion	≥1000 times	
19	Filler Material	PE	

20	**Drain Wire**	Tinned copper	
21	**Storage Temperature**	0°C〜+50°C	
22	**Operating Temperature**	-20°C〜+60°C	
23	**Warranty**	3 Years system performance warranty	

Item No.-17: Rj-45 Connector

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	**Brand**	To be mentioned by the bidder	
2	**Type**	Rj-45 Connector (100 pc/Box)	

Item No.-18: UTP Node Installation with Necessary accessories

Sl.	Item Description	Technical Specifications and Standard	Remarks
1	**UTP Node Installation**	UTP Node Installation with Necessary accessories (PVC pipe, Channel, Flexible pipe, Royal Plug, Bolt, Screw etc), Dressing, Identification Marking). Also should remove the existing LAN.	