Item No	Code	Item Description
21	NIT_017_PIP_001	**GI Pipe 1" Pipe at least B Class with Pipe laying/Per meter**

S. No	Description	Compliance: Yes/No
1	GI Pipe 1" Pipe at least B Class from reputed firm with Pipe laying/Per meter	

Item No	Code	Item Description
22	NIT_017_ROU_001_A	**Supply of Branch Router Type-I with Built-in FE and Supports LTE(4G)/ HSDPA(3G)/ EDGE(2.5G)/ GPRS(2G)/ GSM(2G) Cellular Networks**

S.No	Parameters	Specification	Compliance: Yes/No
1	WAN Protocol	WAN Ethernet: Static, DHCP & PPPoE Client with PAP/CHAP Authentication Cellular Network: PPP/IPCP over Asynchronous HDLC with PAP/CHAP Authentication	
2	Cellular Interface	One Built-in LTE Cellular Modem with Dual SIM provision for auto switchover between Service Providers based on health check. Auto APN Support. Only SIM card to be inserted. "No External dongle".	
		SIM Card: Dual Push - Push SIM card slots with Sealing facility	

		Cellular Network: LTE FDD: B1/B3/B5/B8 LTE TDD: B38/B39/B40/B41 WCDMA: B1/B8 GSM: 900/1800MHz	
3	Redundancy / Auto Fallback	Any WAN Port can be configured as Primary or Secondary	
4	Ethernet Interface	3 LAN+1 WAN 10/100 Base-T per IEEE 802.3 / ANSI 8802-3	
5	Network Protocols	PPP, IPCP, LCP, PPPoE, PAP, CHAP, ARP, DHCP, IPv4, , ICMP, TCP, UDP, DNS, NTP, NAT, TFTP, IPSec, GRE, OSPF & BGP	
6	Switching Features	MAC Filtering, MAC Binding, Port Forwarding, DHCP, Storm Control, 802.1Q	
7	VPN & Security	IPSec, GRE, NAT-T and Port Forwarding with Firewall, ACL	
		IPSEC : Encryption: DES, 3DES and AES 128/192/256 Authentication: MD5, SHA1, SHA2	
		Support for IPSec VPN Multiple peers - Up to Minimum 2 Peers per Tunnel	
		Should be able to build IPSec tunnel dynamically, point to point and point to multipoint.	
8	Management	HTTP, SSH, Telnet, SNMP V1,V2 & V3 with Authentication& Via SMS for Reboot, SIM Switchover, Active SIM status check. IP SLA, Track Based Routing, AAA,TACACS, SMART Manager, Multiple Privilege levels to provide different levels of access, Syslog. SIM data Usage statistics along with User configurable SIM. Shift based on threshold data usage. Remote Firmware Upgrade Via HTTP, SCP, TFTP. Recessed Push Button Switch for Factory Default	

9	Qos	Priority Queueing, Random Early Detection & Sophisticated Fair Queueing	
10	Status Monitoring	NMS, SNMP Traps	
11	Antenna	SMA Antenna connector with Optional Antennas of varying Gain and Cable length.	
12	LED Indications	MR, SIM1, SIM2, SQ and Ethernet. Also should indicate status of Fast Ethernet LAN Ports	
13	Operating Conditions	0 degree C to 55 degree C; 95% Humidity	
14	Power	External Power Supply adapter with 230V AC	
15	Make in INDIA	The product should be manufactured in INDIA.	
16	IP Support	IPv4, IPv6 and IPv4/IPv6 dual stack	
17	NMS-EMS Support	Product shall be delivered with relevant EMS software (including license) and hardware with 3 years warranty	

Item No	Code	Item Description
24	NIT_017_RFW _001_A	Supply of Branch Router cum Firewall Type-2 Hardware with SFP port with 3 years Warranty

S.No	Parameters	Specification	Compliance: Yes/No
1	RJ45 GE WAN / LAN Ports	5 Nos	
2	Firewall Throughput	5 Gbps	
3	Firewall Latency	<4 µs	
4	Firewall Packet per Second Throughput	7 Mpps	
5	Concurrent Sessions	700000	

6	New Sessions/Second	35000	
7	Firewall Policies	5000	
8	IPsec VPN Throughput	4 Gbps	
9	Site to Site VPN Tunnels	100	
10	Client-to-Site IPsec VPN Tunnels	150	
11	Should support upgrade to NGFW without any hardware replacement	Yes	
12	Should Support SD-WAN features from Day one a	Yes	
13	IPv4, IPv6 and IPv4/IPv6 dual stack	Yes	
14	NMS-EMS Support: Product shall be delivered with relevant EMS software (including license) and hardware with 3 years warranty		
15	The product shall be delivered with relevant aggregate software and Hardware(the aggregate sizing may be consider for 50 CPE box)		

Item No	Code	Item Description
27	NIT_017_RFW _002_A	Supply of Branch Router cum Firewall Type-3 Hardware with SFP port with 3 years Warranty

S.No	Parameters	Specification	Compliance: Yes/No
1	RJ45 GE WAN / LAN Ports	10 Nos	
2	Firewall Throughput	8 Gbps	
3	Firewall Latency	<4 µs	
4	Firewall Packet per Second Throughput	9 Mpps	

5	Concurrent Sessions	700000	
6	New Sessions/Second	35000	
7	Firewall Policies	5000	
8	IPsec VPN Throughput	6 Gbps	
9	Site to Site VPN Tunnels	100	
10	Client-to-Site IPsec VPN Tunnels	300	
11	Should support upgrade to NGFW without any hardware replacement	Yes	
12	Should Support SD-WAN features from Day one a	Yes	
13	IPv4, IPv6 and IPv4/IPv6 dual stack	Yes	
14	NMS-EMS Support: Product shall be delivered with relevant EMS software (including license) and hardware with 3 years warranty		
15	The product shall be delivered with relevant aggregate software and Hardware(the aggregate sizing may be consider for 50 CPE box)		

Item No	Code	Item Description
30	NIT_017_RFW_003_A	Supply of Branch Router cum Firewall Type-4 Hardware with SFP port with 3 years Warranty

S.No	Parameters	Specification	Compliance: Yes/No
1	RJ45 GE WAN / LAN Ports	8 Nos	
2	GE SFP WAN / LAN Ports	2 Nos	
3	Firewall Throughput	10 Gbps	
4	Firewall Latency	<4 µs	

5	Firewall Packet per Second Throughput	10 Mpps	
6	Concurrent Sessions	1 Million	
7	New Sessions/Second	35000	
8	Firewall Policies	5000	
9	IPsec VPN Throughput	6 Gbps	
10	Site to Site VPN Tunnels	100	
11	Client-to-Site IPsec VPN Tunnels	500	
12	Should support upgrade to NGFW without any hardware replacement	Yes	
13	Should Support SD-WAN features from Day one a	Yes	
14	IPv4, IPv6 and IPv4/IPv6 dual stack	Yes	
15	NMS-EMS Support: Product shall be delivered with relevant EMS software (including license) and hardware with 3 years warranty		
16	The product shall be delivered with relevant aggregate software and Hardware(the aggregate sizing may be consider for 50 CPE box)		

Item No	Code	Item Description
33	NIT_017_GEPON_001	ONT Type 1: GPON ONT (2GE+WiFi5 & Dual Mode GPON/EPON)

S.No	Parameters	Specification	Compliance: Yes/No
1	PON interface	1XPON port (EPON PX20+ and GPON Class B+)	
2	Support	SC single mode, SC/UPC connector	
3	TX optical power	0～+4dBm	
4	RX sensitivity	-27dBm	