

Annexure 1

Service Models – Highlights

Managed Service Model	Self Service Model
Last mile leased lines shall be owned & procured by NSE (options available from Telco Service Providers at POPs)	Last mile leased lines shall be owned & procured by Member (options available from Telco Service Providers at POPs)
Member shall procure last mile router (CPE) from NI as per NSE rate card published by NSE	Member shall procure last mile router (CPE) from open market adhering to technical specifications provided by NSE
Last mile leased lines & routers shall be managed by NI	Last mile leased lines & routers shall be managed by Member
NI will manage the SLA for last mile leased lines & routers	Member to manage SLA for last mile leased lines & routers

Service Models – Features

Service Feature	Managed Service Model	Self Service Model
Choice of last mile router can be made by member	X	√
Last mile leased line life cycle can be managed by member	X	√
Last mile reliability solution, monitoring and ensuring SLA for their uptime can be managed by member	X	√
Last mile leased line life cycle management by NI (Activation till Surrender)	√	X
NI co-ordination with TELCO service providers for last mile leased lines (Delivery, SLA, incidents, changes etc.)	√	X
Last mile leased line monitoring & management by NI	√	X
Last mile router supply, installation, configuration & testing by NI	√	X
Last mile router monitoring & management by NI	√	X
Last mile router troubleshooting & replacement (as per OEM SLA) by NI to restore connectivity *OEM - Original Equipment Manufacturer	√	X
Onsite field support by NI for last mile leased lines & routers	√	X
NI Help Desk support	√	X
NI Network Operations Center (NOC) services	√	X
NI ticketing system & update services	√	X
NI managed services portal/dashboard	√	X

Note: Members may kindly note that lines procured under a particular mode of service shall not be available for conversion to the other type of service model. In case members desire to switch mode of service, lines under existing mode of service will have to be surrendered and reapplied under the desired mode, leading to change of IP address

Minimum recommended Router Specification for Self Service Mode

1	Physical Parameters
1.1	Should have 100/1000 Ethernet ports available
1.2	Dual ports for WAN /LAN link
2	Interface types
2.1	WAN link - Ethernet handoff (1G / 100Mbps Interface).
2.2	All the interface ports should be routable ports
2.3	Should also support L3 VLANs -SVI as well as L3/L2 port-channels
3	Multicast requirement
3.1	Should be able to handle and participate in Multicast delivery
3.2	Should be able to subscribe to multiple multicast streams
3.3	Should be able to operate in all Multicast modes (ASM, SSM, PIM-Dense-mode, PIM sparse-mode)
3.4	Should support IGMP v2 and v3
3.5	Should support for Multiple RP
3.6	Should be able to support unique multicast streams subscription per RP (PIM sparse)
4	Routing and Switching requirement
4.1	Should be able to support routing protocols and redistribution (both static and dynamic protocols e.g. BGP, OSPF etc.)
4.2	Should be able to support policy based routing, decision making based on ACL (Access list), Routing Policies via route-map etc.
4.3	Should support Gateway level redundancy, first-hop redundancy protocols (HSRP, VRRP etc.)
4.4	Should support BFD
4.5	Should support traffic tagging, QOS features
4.6	Should support L2 VLAN , Dot1q tagging, access / trunk ports
4.7	Should support IPV4, IPV6,NTP,PTP
	Security requirement
5.1	Should support RBAC access controls support
5.2	Should support AAA eg TACACS, RADIUS
5.3	Should support ACL filtering
5.4	Should support IPSEC VPN
6	Monitoring requirement
6.1	Should support SNMP (v2c, v3)
6.2	Debug options to troubleshoot and capture relevant information
6.3	Tracking SLA features based on different groups/policies. (e.g. IP SLA)
6.4	Should support flow based monitoring such as Netflow
6.5	Syslog support (Log the events etc. within device and also be able to send logs to external syslog server)

	Software requirement
1	Shall have licensed software from OEM and updated at all times as per latest patches from OEM
2	The CPE hardware and software should not be End-of-life or End-of-support