## Annexure 3 - TECHNICAL SPECIFICATIONS OF ROUTERS

### Minimum recommended Router Specification for Self Service Mode

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| 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 e.g., 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 be able to send logs to external syslog server) |
| | Software requirement |
| 1 | Shall have licensed software from OEM and always updated as per latest patches from OEM |
| 2 | The CPE hardware and software should not be End-of-life or End-of-support |