Layer 2 Managed Ethernet Switch Specification		
Sl.No.	**Equipment**	**Guaranteed Technical Particular**
1	Make	Hirschmann / Ruggedcom
2	Type	Managed Ethernet Switch
3	Connector Type	SC/ST/LC (for FX) + RJ45 (for TX)
4	Network Speed	10/100 Mbps for DOWNLINK and 10/100/1000Mbps for UPLINK
5	No of Ports	24 nos. Cu(RJ45 Port)-10/100mbps 4 nos. SFP FO (SM/LC)-1000mbps
6	Console Port	V.24 interface with RJ11 socket
7	Auxiliary Voltage	110/220V AC/DC, Single / Dual Power Supply
8	Forwarding Mode	Store and Forward
9	Relative Humidity	5% to 95% (non-condensing)
10	Protocol	Complies with IEC61850 Protocol
11	Switching Features	Independent VLAN Learning, Fast Aging, Static Unicast, Multicast Address Entries, QoS , Port Prioritization (802.1D, p), TOS, DSCP Prioritization, Flow Control (802.3X), VLAN (802.1Q), VLAN Unaware Mode, Voice VLAN, IGMP Snooping, Querier per VLAN (v1, v2, v3), Multiple Registration Protocol (MRP), GARP VLAN Registration Protocol (GVRP), GMRP
12	Redundancy	Link Aggregation with LACP, Link Backup, Media Redundancy Protocol (MRP) (IEC62439-2), MRP Sub Ring Manager, RSTP 802.1D-2004 (IEC62439-1), RSTP Guards.
13	Management	Dual Software Image Support, TFTP, SFTP, SCP, LLDP (802.1AB), LLDP-MED, SSHv2, V.24, HTTP, HTTPS, Traps, SNMP v1, v2, v3, Telnet
14	Diagnostics	Management Address Conflict Detection, MAC Notification, Signal Contact, Device Status Indication, TCPDump, LEDs, Syslog, Port Monitoring with Auto-Disable, Link Flap Detection, Overload Detection, Duplex Mismatch Detection, Link Speed and Duplex Monitoring, RMON (1,2,3,9), Port Mirroring 1:1, Port Mirroring N:1, System Information, Self-Tests on Cold Start, Copper Cable Test, SFP Management, Configuration Check Dialog, Switch Dump, Snapshot Configuration Feature
15	Configuration	Automatic Configuration Undo (roll-back), Text-based Configuration File (XML), , BOOTP/DHCP Client with Auto-Configuration, DHCP Server: per Port, DHCP Server: Pools per VLAN, DHCP Relay with Option 82, Command Line Interface (CLI), CLI Scripting, CLI script handling over ENVM at boot, Full-featured MIB Support, Web-based Management, Context-sensitive Help
16	Security	MAC-based Port Security, Port-based Access Control with 802.1X, Guest/unauthenticated VLAN, Integrated Authentication Server (IAS), RADIUS VLAN Assignment, Denial-of-Service Prevention, VLAN-based ACL, Ingress VLAN-based ACL, Basic ACL, Access to Management restricted by VLAN, Device Security Indication, Audit Trail, CLI Logging, HTTPS Certificate Management, Restricted Management Access, Appropriate Use Banner, Configurable Password Policy, Configurable Number of Login Attempts, SNMP Logging, Multiple Privilege Levels, Local User Management, Remote Authentication via RADIUS, User Account Locking, Password change on first login
17	Time synchronization	Buffered Real Time Clock, SNTP Client, SNTP Server
18	Industrial Profiles	IEC61850 Protocol (MMS Server, Switch Model), Modbus TCP

19	Operating Temperature	0 °C to +60 ℃
20	Dimensions (WxHxD)	448 mm x 44 mm x 315 mm
21	Mounting	19" rack mount
22	Protection Class	IP30
23	Basic Standard	CE, FCC, EN61131
24	Substation Approval	KEMA IEC 61850-3, IEEE 1613
25	Manufacturing	India
26	Cyber Security	IEC 62443-4-2
27	MTCTE/TEC Certificate	MTCTE / TEC certificate is must as per Government of India Guideline
28	Conformal Coating	Ethernet Switch must have conformal coating
29	Warranty	60 Months from the date of supply (i.e. 5 years)
30	Support	5 years