INFORMATION

FOXMAN-UN and FOX61x
Terms and Abbreviations

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1   Terms and Abbreviations

3DES   Triple DES or TDES; A block cipher formed from the DES cipher by using it three times.

A Port   Access Bridge Port; Ethernet port configured as access bridge port. Ethernet traffic is not VLAN tagged.

AAA   Authentication, Authorization, Accounting; Authentication refers to the process of establishing the digital identity of a client to a server. Authorization refers to the granting of specific types of privileges to a user. Accounting refers to the tracking of the consumption of network resources.

abcd   Control bits transported via the channel associated signaling (CAS).

AC   Accessory; Extension of the short name describing the category of the short named item.

AC   Attachment Circuit; The physical or virtual circuit attaching a CE to a PE. In case of a CEPI1 unit, the AC is an unstructured P12 signal connected to a physical circuit located on the same or another service unit inside a FOX61x.

ACH   Associated Channel Header

ACL   Access Control Lists

ADF   Application Definition File (xml formatted) that describes the data structure of the corresponding unit ESW.

AE   Alarm Escalation

AES   Advanced Encryption Standard; A block cipher adopted as an encryption standard.

AF   Assured Forwarding

AH   Authentication Header; Intended to guarantee connectionless integrity and data origin authentication of IP datagrams.

AIS   Alarm Indication Signal; An all ones signal sent down or up stream by a device when it detects an error condition or receives an error condition or receives an error notification from another unit in the transmission path.

ANSam   Answer tone, amplitude modified

AP   Access Point; Addressable part of a managed object, e.g. a port.

APC   Angled Physical Contact

API   Application Programm Interface

APS   Automatic Protection Switching; Protects section or trails/paths in the network by switching traffic to a protecting section/trail in case of failure of the active section/trail.

ARP   Address Resolution Protocol; IP protocol used to translate IP addresses into Ethernet addresses.

ASD   Acceleration Spectral Density

ASDU   Application Service Data Unit

ASN   Autonomous System Number

ATM   Asynchronous Transfer Mode

BBE   Background Block Error

BC   Broadcast

BE   Best Effort

BER   Bit Error Ratio; A measure of transmission quality. It is generally shown as a negative exponent, (e.g., 10-7 which means 1 out of 1E+7 bits are in error or 1 out of 10,000,000 bits are in error).

BERT   Bit Error Rate Test

BFD   Bidirectional Forwarding Detection

BGP	Border Gateway Protocol
BHCA	Busy Hour Call Attempt; Conventionally, the capacity of a telephone switching system is measured by the maximum number of call attempts per hour (during busy hour of the day) that can be handled by the system. This measure is referred to as BHCA.
BIGO1	GOOSE Proxy Gateway for Teleprotection Commands, Packet Services, 4 Ports.
BK	Background traffic
BLM	Business Logic Manager
BMC	Best Master Clock
BNG	Broadband Network Gateway
BP	Basic Package
BPDU	Bridge Protocol Data Units; A message type used by bridges to exchange management and control information.
Bridging (bridge)	The terms «bridging» and «switching» are used as synonyms.
BS	Binary Signal
BW	Bandwidth
C-VLAN	Customer VLAN
CA	Certificate Authority
CAM	Content Addressable Memory
CAS	Channel Associated Signaling; A form of circuit state signaling in which the circuit state is indicated by one or more bits of signaling status sent repetitively and associated with that specific circuit.
CAT	Category
CBN	Common Bonding Networks
CBS	Committed Burst Size
CBUS	Hitachi Energy proprietary bus system for control, timing and powering
CC	Continuity Check
CCM	Continuity Check Message
CDN	Coupling Decoupling Network
CE	Customer Equipment / Customer Edge / Crypto Engine
CED	Called terminal identification
CEM	Circuit Emulation Manager
CEPI1	E1 circuit emulation service unit of the FOX61x. 8 E1 ports, 8 P12 transport capacity over Ethernet.
CES	Circuit Emulation Service
CESM1	Core unit for the FOX61x, 5 Ethernet ports (2xSFP, 3xElectrical), 2 synchronization ports.
CESM1-F	Core unit for the FOX61x. The CESM1-F is functionally identical to the CESM1 unit but can be operated in FOX61x subracks with passive cooling.
CESM2	Core unit for the FOX61x, 5 Ethernet ports (4xSFP, 1xElectrical), 2 synchronization ports.
CESM2-F	Core unit for the FOX61x. The CESM1-F is functionally identical to the CESM1 unit but can be operated in FOX61x subracks with passive cooling.
CESM3	Core unit for the FOX61x, 5 Ethernet ports, 2 synchronization ports, external time reference ports.
CESoETH	Circuit Emulation Service over Ethernet

CESoP	Circuit Emulation Service over Packet
CESoPSN	Circuit Emulation Service over Packet Switched Network
CET	Circuit Emulation Timing
Chassis switch	Centralized Ethernet switching function within the FOX61x. Synonym to "FOX61x Switch".
CIR	Committed Information Rate
CIST	Common and Internal Spanning Tree
CL	Controlled Load
CLI	Command Line Interface
CNG	Comfort Noise Generation; Complementary to the transmit-side VAD, a comfort noise generator (CNG) is a receive-side device. A CNG generates a local noise signal that it presents to the listener during silent periods.
CNR	Complex Node Representation; A collection of nodal state parameters that provide detailed state information associated with a logical node.
CORBA	Common Object Request Broker Architecture
CoS	Class of Service; Tagging system on Ethernet frames which allows to differentiate class of services. IEEE 802.1p
COSI1	SIP gateway functional unit of the FOX61x with a capacity of up to 1216 user ports.
CPE	Customer Premises Equipment; General term for equipment at the customer site, including xDSL modems or home gateways.
CPS	Custom Parameter Set
CPU	Central Processing Unit
CRC	Cyclic Redundancy Check; A mathematical algorithm that computes a numerical value based on the bits in a block of data. This number is transmitted with the data and the receiver uses this information and the same algorithm to insure the accurate delivery of data.
CS	Class Selector
CSMACD	Carrier Sense Multiple Access/Collision Detection
CST	Configuration Software Tool
CT	Class Type
CTP	Connection Termination Point
CU	Core Unit (CESM1, CESM2 or CESM3)
CV	Continuity Verification
CVP	Customer VLAN Port
CW	Control Word
CWDM	Coarse Wave Division Multiplexing; Coarse Wave Division Multiplexing combines up to 16 wavelengths onto a single fiber. CWDM technology uses an ITU standard 20nm spacing between the wavelengths, from 1310 nm to 1610 nm.
DAC	Direct Attached Cable
DAN	Doubly Attached Node
DANP	Doubly Attached Node implementing PRP
DATI1	TDM SHDSL service unit of the FOX61x, 8 ports. Remote powering of DTEs.
DB	Database
DCC	Data Communication Channel

DCE	Data Circuit-terminating Equipment
DCN	Data Communication Network
DDM	Digital Diagnostics Mode; This allows the user to monitor real-time parameters of the SFP modules.
DEFM1	EFM SHDSL service unit of the FOX61x, 24 ports.
DEFM1-F	EFM SHDSL service unit of the FOX61x, 24 ports. DEFM1-F is functionally identical to the DEFM1 unit, but can be deployed in FOX61x subracks with passive cooling.
DEI	Drop Eligibility Indicator
DES	Data Encryption Standard; A method for encrypting information (also called a cipher)
DIN	German Institute for Standardization
DIRAC	Centralized key management system responsible for the generation and distribution of the Master Keys used by Crypto Engines.
DKM	DIRAC Key Manager
DM	Delay Measurement
DNMS	DIRAC Network Management System
DNS	Domain Name System
Down-stream	The direction from the trunk port (of the core unit) towards the subscriber, or towards a subtending node.
DSA	Digital Signature Algorithm; A Federal Information Processing Standard (FIPS) for digital signatures
DSCP	Differentiated Services Code Point
DSL	Digital Subscriber Line; Digital Subscriber Line, may stand for ADSL, ADSL2, ADSL2+, SHDSL, or VDSL2.
DSS2	Digital Subscriber Signaling System No. 2; B-ISDN UNI Signaling
DTE	Data Terminal Equipment
DTM	Desktop Modular
DTM-M	Desktop Modular Metal housing
DTMF	Dual Tone Multi-Frequency
DWDM	Dense Wave Division Multiplexing
DXC	Digital Cross Connect
E-Tree	Secured point-to-multipoint service based on rooted-multipoint EVC, enabling sites with hub and spoke multipoint connectivity
E, M or E1, M1	E&M signaling interface number 1
E', M' or E2, M2	E&M signaling interface number 2
E0	64 kbit/s physical signal according to ITU-T G.703
E1, E12	2048 kbit/s signal interface according to ITU-T G.703
EA	Element Agent; Part of the EM communicates with the individual NEs on one side and with the active GUIs and CLIs on the other side.
EAPoL	Extensible Authentication Protocol over Local Area Network
EB	Engineering Bulletin
EB	Errored Block; A block of data with one or more bit errors.

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EBS	Excess Burst Size
EC	Echo Canceler
ECC	Elliptic Curve Cryptography; Embedded Communication Channel, System integrated data channel for the management communication of the FOX61x.
ED Cover	Extended Depth Cover for FOX61x subracks; An extended depth front cover is required for the operation of units with electrical or optical Ethernet ports.
EE	Excellent Effort
EEC	Ethernet Equipment Clock
EF	Expedited Forwarding
EHV	Extra High Voltage
EIR	Excess Information Rate
EISS	Enhanced Internal Sublayer Service; (see ISS), used by VLAN-aware nodes. This is the normal case in networks where FOX61x is operated.
ELET1	Ethernet switching service unit of the FOX61x, 24 electrical ports.
ELMI	Ethernet Local Management Interface
EM	Element Manager
EMC	Electromagnetic Compatibility
EMI	Electro Magnetic Interference
EN	European Norm
ENP	Ethernet Networking Package
EOAM	Ethernet OAM
EoS	Ethernet over SDH
EPEX1	Ethernet WAN port extension unit of the FOX61x, 4x 1 or 10 GbE SFP+ ports, 1x 40 GbE QSFP1 port.
EPL	Ethernet Private Line
EPOI1	Ethernet Switching Unit with 12 electrical ports supporting PoE
EPSI1	Ethernet routing and switching unit of the FOX61x, Ethernet transport over PDH.
EQP	Equipment Protection; Feature that allows a HW redundancy by using two units of the same type.
ERO	Explicit Route Order
EROP1	Ethernet routing service unit of the FOX61x, 12 electrical/optical Ethernet ports, 4 virtual router instances and up to 256 virtual router interfaces.
EROP1-F	Ethernet routing service unit of the FOX61x. EROP1-F is functionally identical to the EROP1 unit, but can be deployed in FOX61x subracks with passive cooling.
ERP	Ethernet Ring Protection
ERPS	Ethernet Ring Protection Switching
ES	Errored Second; Second with one or more Errored Blocks.
ESD	Electrostatic Discharge
ESI	Electrical Synchronization Input
ESMC	Ethernet Synchronization Messaging Channel
ESO	Electrical Synchronization Output
ESOP1	Ethernet stand-alone switching service unit of the FOX61x, 12 electrical/optical ports.

ESOP1-F	Ethernet stand-alone switching service unit of the FOX61x. ETOP1-F is functionally identical to the ETOP1 unit, but can be deployed in FOX61x subracks with passive cooling.
ESP	Encapsulating Security Payload; Provides origin authenticity, integrity, and confidentiality protection of IP datagrams.
ESPO1	Ethernet stand-alone switching service unit of the FOX61x, 12 electrical ports supporting PoE.
ESW	Embedded Software; Application software that is downloaded and runs on FOX61x core units or service units.
Eth	Ethernet
ETOP1	Ethernet switching service unit of the FOX61x, 12 electrical/optical ports.
ETOP1-F	Ethernet switching service unit of the FOX61x. ETOP1-F is functionally identical to the ETOP1 unit, but can be deployed in FOX61x subracks with passive cooling.
ETR	External Time Reference
ETSI	European Telecommunications Standards Institute
EVC	Ethernet Virtual Connection; As defined in the Metro Ethernet Forum specification 10.1.
EVP-LAN	Ethernet Virtual Private LAN
EVP-Tree	Ethernet Virtual Private Tree
EVPL	Ethernet Virtual Private Line
EXP	Experimental bits in the MPLS header
FAMO1	Fan unit for the FOX615 R2 and FOX615 subrack.
FAMO1-F	Alarm unit for the FOX615 R2 and FOX615 subrack.
FAMO2	Fan unit for the FOX612 subrack.
FAMO2-F	Alarm unit for the FOX612 subrack.
FAMO3	Fan unit for the FOX611 subrack.
FAMO3-F	Alarm unit for the FOX611 subrack.
FCS	Frame Check Sequence; Any mathematical formula which derives a numeric value based on the bit pattern of a transmitted block of information and uses that value at the receiving end to determine the existence of any transmission errors.
FDB	Filtering Database
FDB	Forwarding Database
FE	Fast Ethernet
FEXT	Far End Cross Talk
FIFO	First In First Out; Memory type
FIPS	Federal Information Processing Standard
FO	Foreign Object
FOX	Universal Multiplexer family, multi-service access node of Hitachi Energy
FOX51x	Universal Multiplexer, multi-service access node of Hitachi Energy
FOX610	Compact Ethernet / MPLS-TP Multiplexer
FOX611	Subrack of the FOX61x platform with 4 slots capacity.
FOX612	Subrack of the FOX61x platform with 8 slots capacity.
FOX615	Subrack of the FOX61x platform with 21 slots capacity.
FOX615 R2	Subrack of the FOX61x platform with 21 slots capacity.

FOX61x	FOX61x is the name of the full hybrid multi-service access and transport platform for the mission critical market.
FOXCST	FOX61x Local Craft Terminal (GUI).
FOXMAN-UN	FOX Network Manager
FPE	Functional Protective Earth
FPGA	Field Programmable Gate Array
FQDN	Fully Qualified Domain Name
FSK	Frequency Shift Keying; FSK is a modulation technique used by modems in which two different frequencies in the carrier signal are used to represent the binary states of 0 and 1.
FTP	File Transfer Protocol
FU	Function Unit; Extension of the short name describing the category of the short named item.
FV	Software Full Version; Extension of the short name describing the category of the short named item.
FW	Firewall; Forward
FXO	Foreign Exchange Office; Analog voice interface pointing to the office (e.g. local exchange).
FXS	Foreign Exchange Subscriber; Analog voice interface pointing to the subscriber (e.g. telephone set).
G-Ach	Generic associated Channel
GAL	G-Ach Label
GARP	Generic Attribute Registration Protocol
GbE	Gigabit Ethernet
GCM	Galois Counter Mode
GFP	Generic Framing Procedure
GMRP	GARP Multicast Registration Protocol
GND	Ground
GOOSE	Generic Object Oriented Substation Events
GPON	Gigabit-capable Passive Optical Network
GPS	Global Positioning System
gRPC	Google Remote Procedure Calls
GUI	Graphical User interface
GW	Gateway
H-VPLS	Hierarchical Virtual Private LAN Service (mesh / spoke)
HDLC	High-Level Data Link Control; An ITU-T link layer protocol standard for point-to-point and multi-point communications.
HF	High Frequency
HLM	Higher-Layer Manager
HP	Horizontal Pitch; = 5.08 mm
HQoS	Hierarchical Quality of Service
HSR	High-availability Seamless Redundancy (IEC 62439-3)
HTTP	Hyper-Text Transfer Protocol

HTTPS   Hyper-Text Transfer Protocol Secure

HU   Height Unit; Corresponds to 44.45 mm. Basic measure used with the 19-inch construction practice.

Hub   In E-Tree toppologies, a VPLS node used to transport the service traffic from Leaf nodes to the Root(s). A Hub node shall not have any UNI ports connected to the bridge. If such ports are present, the user must manage them individually (logic to set all rate limiters for Leafs and Roots will not be applied here).

HW   Hardware; In the Letter of Limitations tables the "embedded software" (ESW) and the "hardware" (HW) items are specified in the same column. For the clear distinctions from ESW the hardware is specified in brackets [HW].

IC   Internal Communication

ICMP   Internet Control Message Protocol; Integrated part of the IP suite, used to announce network errors or network congestion and for some network management commands e.g. "ping".

ICN   Internal Communication Network

ID   Identifier

IE   Information Element; Used in the V5 context for the standardized description of V5 features.

IEC   International Electrotechnical Commission

IED   Intelligent Electronic Device

IEEE   Institute of Electrical and Electronic Engineers; A worldwide engineering publishing and standards-making body for the electronics industry.

IF   Interface

IFP   Internet Facsimile Protocol; Fax data format (control and image) according to ITU-T, T.38.

IGMP   Internet Group Management Protocol

IKE   Internet Key Exchange

INP   Impulse Noise Protection

IP   Internet Protocol

IPCP   Internet Protocol Control Protocol

IPoE   IP over Ethernet

IPSec   IP Security

IPTV   Internet Protocol based Television; Stands for TV programs that are distributed over the Internet using the IP protocol.

IPv4/6   Internet Protocol version 4 or 6

ISDN-BA   ISDN Basic rate Access

ITU   International Telecommunication Union

IVL   Independent VLAN Learning; In a bridged VLAN, MAC address learning is performed individually for each VLAN.

JB   Jitter Buffer

L   Live conductor

L2   (Ethernet) Layer 2

L2VPN   L2 Virtual Private Network

LACP   Link Aggregation Control Protocol according to IEEE 802.3ad, used to bundle several physical ports together to form one logical port.

LAG   Link Aggregation Group

LAN	Local Area Network
LAPD	Link Access Procedure on the D channel; A layer 2 protocol defined by ITU-T Q.920. This protocol reliably transfers blocks of information across a single Layer 1 link and supports multiplexing of different connections at Layer 2. LAPD according to ITU-T, Q.921 is e.g. used with ISDN BA (D-channel).
LC	Local Connector, a fiber optical connector type. Link Connection.
LCAS	Link Capacity Adjustment Scheme; Protocol that allows bandwidth to be added or removed to a Virtual Concatenated Group (VCG) from the management system. ITU-T G.7042.
LCP	Link Control Protocol
LCR	Local Call Routing
LCT	Local Craft Terminal
LE	Local Exchange; The local exchange provides the analog telephone and ISDN services.
Leaf	In E-Tree toppologies, a VPLS node to which edge devices are connected. Usually source of SCADA measurements (substation), CCTV signal or receiver of the PTP signal. A Leaf node has UNI ports connected to the bridge.
LECO1	G.703 E0 (64 kbit/s) co-directional interface service unit of the FOX61x, 8 ports (with leco1 ESW). G.703 E0 (64 kbit/s) contra-directional interface service unit of the FOX61x, 2 ports (with leca1 ESW).
LED	Light Emitting Diode
LEDA1	E&M voice frequency interface service unit of the FOX61x, 8 ports 2-wire or 4-wire. Voice conference.
LEDE1	G.703 E1 (2048 kbit/s) interface service unit of the FOX61x, 8 ports.
LEDS1	TDM service unit of the FOX61x with 4 multi-protocol serial interfaces: X.24/V.11, V.24/V.28; V.35; RS485 4-wire, RS485 2-wire - configurable, point-to-point and (multi-) point-to-multipoint operation, one 10/100 Base-T Ethernet interface. Data conference.
LER	Label Edge Router
LESU1	POTS Foreign Exchange Subscriber (FXS) interface service unit of the FOX61x, 16 ports 2-wire analog.
LEXI1	POTS Foreign Exchange Office (FXO) interface service unit of the FOX61x, 12 ports 2-wire analog.
LLDP	Link Layer Discovery Protocol
LLF	Link Loss Forwarding
LOC	Loss Of Continuity
LoL	Letter of Limitations; Description of the known limitations of functions and features.
LOS	Loss of Signal; A condition at the receiver or a maintenance signal transmitted in the PHY overhead indicating that the receiving equipment has lost the received signal. This is used to monitor the performance of the PHY layer.
LPS	Linear Protection Switching
LSA	Link State Advertisement; Packet containing information about each of the links to its neighbors to every other router.
LSP	Label Switched Path
LSPing	Label Switched Path Ping
LSR	Label Switch Router
LT	Line Termination
LTP	Linear trail protection

MA	Maintenance Association
MAC	Media Access Control
MAM	Maximum Allocation Model
MAU	Media Attachment Unit
MC	Matrix Connection
MCAS	Mercury Channel Associated Signaling
MCC	Management Communication Channel
MCMI	Modified Coded Mark Inversion
MCN	Management Communication Network
MD5	Message-Digest Algorithm 5
MDF	Main Distribution Frame
MDI	Medium Dependent Interface
MDI-X	MDI-Crossed
Me	In E-Tree topologies: Mesh Split Horizon role
ME	Maintenance Entity
MEF	Metro Ethernet Forum; A non-profit organization chartered with the mission of accelerating World-wide Adoption of Carrier class Ethernet Networks and Services.
MEG	Maintenance Entity Group; comprises one or several MEs.
MEGACO	Media Gateway Control protocol
MEL	Maintenance Entity Level; Mercury Exchange Limited
MEP	MEG End Point; An end point of a single MA, and an end point of a separate ME for each of the other MEPs in the same MA. It is an actively managed CFM entity, associated with a specific SAP of a service instance.
MF	Management Function; Predefined category of management operations, e.g. configuration, status, etc
MF	Multi-Frame
MIB	Management Information Base
MIP	MEG Intermediate Point
MLPPP	Multi-Link PPP (Point-to-Point Protocol)
MMRP	Multiple MAC Registration Protocol
MMS	Manufacturing Messaging Specification
MO	Managed Object; Management view of a resource of the NE.
MOM	Managed Object Model
MP2MP	Multipoint-to-multipoint application
MPLS	Multi Protocol Label Switching
MPLS-TP	MPLS Transport Profile
MRP	Multiple Registration Protocol
MSA	Multi Source Agreement
MSN	Multiple Subscriber Numbers
MSP	Multiplex Section Protection
MSTI	Multiple Spanning Tree Instance

MSTP	Multiple Spanning Tree Protocol
MTBF	Mean Time Between Failures
MTIE	Maximum Time Interval Error
MTTF	Mean Time To Failure
MTU	Maximum Transmission Unit; Maximum size of a data packet (number of octets) that is allowed for the medium (network).
N	Neutral conductor
N. A. (or n. a. or NA)	Not applicable (or not available)
NAT	Network Address Translation
NBI	Northbound Interface; An interface of a management system to a higher level management system.
NC	Network Control
NCI	Non CRC4 Interworking
NE	Network Element; Generic term for managed elements in a network. Example: FOX615
NEC	Network Element Clock
NEM	Network Element Manager
NETG	Network Element Timing Generator
NGN	Next Generation Network; The NGN architecture separates the control, media and transport mechanism in the networks. Media Gateway Controller (MGC) and Media Gateways (MG) are two important elements in providing voice delivery in NGN.
NIF	Nodal Interworking Function
NIST	National Institute of Standards and Technology
NLP	Non-Linear Processor
NMS	Network management system; Common term which refers to the management platform to control and manage complete networks. Communication with the NE is based on telnet or SSH.
NP	Networking Package
NR	No Request
NT	Network Termination; Network Termination represents the termination point of a Virtual Channel, Virtual Path, or Virtual Path/Virtual Channel at the UNI.
NT1	Network Termination 1
NTP	Network Time Protocol
NTU	Network Termination Unit
OAM	Operation, Administration, and Maintenance; A group of network management functions that provide network fault indication, performance information, and data and diagnosis functions.
ODIS1	Optical teleprotection interface unit for distance protection, packet transport.
ODN	Optical Distribution Network
OI	Outage Intensity
OID	(SNMP) Object Identifier; Object identifiers uniquely identify managed objects in an MIB hierarchy. An address used to identify devices and their status.
OLT	Optical Line Termination
ONT	Optical Network Termination

ONU	Optical Network Unit
OPIC1	Optical teleprotection interface unit for differential protection, TDM transport.
OPIC2	Optical teleprotection interface unit for differential protection, packet transport.
OS	Operating System; Operating system (and version) required to run the specified application software. The application software is released for the specified OS only.
OSPF	Open Shortest Path First; A link-state routing algorithm that is used to calculate routes based on the number of routers, transmission speed, delays and route cost.
OSS	Operation Support System
OTN	Optical Transport Network
OUI	Organizationally Unique Identifier
Oversam-pling	In the oversampling transmission mode, the DCE signal is sampled with a fixed timing signal. The fixed timing signal should have a frequency at least three times higher than the user data rate.
P0	Logical layer of the 64 kbit/s traffic signal
P0-nc	n concatenated P0 time slots preserving time slot sequence integrity
P12	Logical layer of the 2048 kbit/s traffic signal with or without a structure according to ITU-T G.704
P2MP	Point-to-multipoint application with one master DTE and several slave DTEs
P2P	Point-to-point application
PABX	Private Automatic Branch Exchange; A subscriber-owned telecommunications exchange that usually includes access to the PSTN.
PAM	Phase Amplitude Modulation
PBB	Provider Backbone Bridge
PBB-TE	Provider Backbone Bridge Traffic Engineering
PBUS	PDH bus in FOX61x
PBX	Private Branch Exchange; The term given to a device which provides private local voice switching and voice-related services within the private network.
PCB	Printed Circuit Board
PCM	Pulse Code Modulation; An audio encoding algorithm which encodes the amplitude of a repetitive series of audio samples. This encoding algorithm converts analog voice samples into a digital bit stream.
PCP	Priority Code Point
PDH	Plesiochronous Digital Hierarchy; Developed to carry digitized voice over twisted pair cabling more efficiently. This evolved in Digital Hierarchies with only a discrete set of fixed rates available, namely, nxDS0 (DS0 is a 64 kbit/s rate) and the next levels in the multiplex hierarchies.
PDU	Protocol Data Unit; Structured information that is delivered as a unit between peer entities of a network.
PE	Provider Edge, a device that provides PWE3 to a CE. Protective Earth.
PEC	Product Engineering Code; The Hitachi Energy Product Engineering Code technically identifies and describes the product, its state and evolution. The PEC cannot be used for ordering or other commercial purposes.
PETS	Plesiochronous Equipment Timing Source; Timing system for PDH traffic signals and equipment. In the FOX61x the PETS also handles the SyncE timing and the PTP timing.
PHB	Per Hop Behavior
PHY	Physical Layer
PKI	Public Key Infrastructure

PLC	Packet Loss Concealment
PLL	Phase Locked Loop; Phase Lock Loop is a mechanism whereby timing information is transferred within a data stream and the receiver derives the signal element timing by locking its local clock source to the received timing information.
PM	Performance Management
PMTS	Performance Monitoring Time Slot
POAC1	AC/DC power module for the FOX611 subrack
PoE	Power over Ethernet; Provisioning of power for (remote) units via electrical Ethernet interfaces (IEEE 802.3af).
POTS	Plain Old Telephone System
PPP	Point-to-Point Protocol
PPS	Pulse Per Second
PRA	Primary Rate Access
PRBS	Pseudo Random Binary Sequence
PRC	Primary Reference Clock
Priority	One of the IEEE 802.1p priorities: (0) Best Effort, (1) Background, (2) Spare, (3) Excellent Effort, (4) Controlled Load, (5) Video, (6) Voice, (7) Network Control
PRP	Parallel Redundancy Protocol (IEC 62439-3)
PSC	PHB Scheduling Class
PSC	Protection State Coordination; Protocol used for protection switching with MPLS-TP.
PSN	Packet Switched Network; Within the context of PWE3, this is a network using IP or MPLS as the mechanism for packet forwarding.
PSTN	Public Switched Telephone Network
PTP	Precision Time Protocol (IEEE 1588)
PVID	Port VLAN Identifier
PW	Pseudo Wire; A mechanism that carries the essential elements of an emulated service from one Provider Edge to one or more other Provider Edges over a Packet Switched Network.
PWAC	Pseudo Wire Attachment Circuit
PWE3	Pseudo Wire Emulation Edge to Edge; A mechanism that emulates the essential attributes of service (such as a T1 leased line or Frame Relay) over a PSN.
Q-in-Q	Queue in Queue; VLAN Tag stacking, 802.1Q that allows providing extra information (Protocol/type, VLAN priority/tag, etc.) into the frame header.
QL	Quality Level; 4-bit code (SSM) indicating the "quality level" of the signal provided for synchronization use.
QoS	Quality of Service
QOSTE	QoS & TE (Quality of Service and Traffic Engineering)
QRNG	Quantum Random Number Generator
QSFP	Quad Small Form Factor; QSFP is a compact hot-pluggable transceiver used for data communications applications.
R-APS	Ring Automated Protection Switching
R-L2GP	Reverse Layer 2 Gateway Protocol
RADIUS	Remote Authentication Dial In User Service; RADIUS is an AAA protocol for controlling access to network resources

RAT	Remote Administration Tool
RB	RPL Blocked
RBAC	Role-based access control
RDI	Remote Defect Indication
RDM	Russian Doll Model
Receive direction	Direction from the DCE interface towards the DTE.
Ref.	Reference; Normally a reference to a FOX61x system release or to a document.
REIN	Repetitive Electrical Impulse Noise
Rel.	Release; Release (version).
REST	REpresentational State Transfer
RFC	Request For Comment
RFI	Radio Frequency Interference
RIP	Routing Information Protocol
RMON	Remote Monitoring
RNG	Random Number Generator
RoHS	Restriction of the use of Hazardous Substances
Root	In E-Tree topologies, a parent VPLS node, i.e., a node usually connected to the Operating Center (SCADA) or clock source (for PTP clock distribution). A Root node has UNI ports connected to the bridge.
RPF	Reference Publication Format; The RPF notification for NSAP addresses is specified in the ITU-T standard X.213 and represents the NSAP addresses in the format IDP + DSP.
RPL	Ring Protection Link
RS-232	Recommended Standard 232
RSA	Named after the three developers Rivest, Shamir, Adleman. An algorithm for public-key cryptography, suitable for signing as well as encryption
RSTP	Rapid Spanning Tree Protocol
RTCP	Real-time Transport Control Protocol
RTP	Real-Time Protocol
S12	Logical layer of the VC-12 traffic signal. A VC-12 has a transport capacity of 2'176 kbit/s.
S3	Logical layer of the VC-3 traffic signal. A VC-3 has a transport capacity of 48'384 kbit/s.
S4	Logical layer of the VC-4 traffic signal. A VC-4 has a transport capacity of 149'760 kbit/s.
SAC	State in Alarm Case
SAMO1	STM-4 SDH transport unit of the FOX61x for TDM and Ethernet traffic. 4 SDH ports and 4 Ethernet ports.
SAMO2	STM-16 SDH transport unit for TDM and Ethernet traffic of the FOX61x. 4 SDH ports and 4 Ethernet ports.
SAMO2-F	STM-16 SDH transport unit for TDM and Ethernet traffic of the FOX61x. SAMO2-F is functionally identical to the SAMO2 unit, but can be deployed in FOX61x subracks with passive cooling.
SAMO3	STM-16 SDH transport unit for TDM and Ethernet traffic of the FOX61x. 4 SDH ports, 48 E1 ports and 4 Ethernet ports.
SAMO5	STM-4 SDH transport unit for TDM and Ethernet traffic of the FOX61x. 4 SDH ports and 4 Ethernet ports.

SAMO5-F   STM-4 SDH transport unit for TDM and Ethernet traffic of the FOX61x. SAMO5-F is functionally identical to the SAMO5 unit, but can be deployed in FOX61x subracks with passive cooling.

SAN   Singly Attached Node

SAToP   Structure-Agnostic Time Division Multiplexing (TDM) over Packet

SAToPSN   Structure Agnostic TDM over Packet Switched Network

SbU   Sub Unit

SCC   Signaling Communication Channel

SCL   Substation Configuration Language

SD   Signal Degrade

SD Cover   Standard Depth Cover, Standard Depth Cover for FOX61x subrack

SDH   Synchronous Digital Hierarchy; The ITU-T International standard for transmitting information over optical fiber.

SDP   Session Description Protocol

SE   Set; Extension of the short name describing the category of the short named item.

SEC   SDH Equipment Clock

SELT   Single Ended Line Test

SELV   Safety Extra Low Voltage

SENC1   Ethernet traffic encryption unit of the FOX61x. The term SENC1 is used to name the SENC1-4, SENC1F4, SENC1-8 or SENC1F8 unit.

SENC1-4   Ethernet traffic encryption unit of the FOX61x, 4 ports: 2 encrypted, 2 unencrypted.

SENC1-8   Ethernet traffic encryption unit of the FOX61x, 8 ports: 4 encrypted, 4 unencrypted.

SENC1F4   Ethernet traffic encryption unit of the FOX61x. SENC1F4 is functionally identical to the SENC1-4 unit, but can be deployed in FOX61x subracks with passive cooling.

SENC1F8   Ethernet traffic encryption unit of the FOX61x. SENC1F8 is functionally identical to the SENC1-8 unit, but can be deployed in FOX61x subracks with passive cooling.

SES   Severely Errored Seconds

SETG   Synchronous Equipment Timing Generator

SETS   Synchronous Equipment Timing Source

SF   Signal Fail

SFC   Safety Frame Concept

SFF   Small Form Factor

SFP   Small Form factor Pluggable

SHDSL   Single-pair High-speed Digital Subscriber Line

SHINE   Single High Impulse Noise Event

SID   Silence Insertion Descriptor

SIGTRAN   Signaling Transport

SIP   Session Initiation Protocol

SLA   Service Level Agreement

SMI   Structure of Managed Information; Represents the notation by which an SNMP MIB must be written, i.e. the grammar to write SNMP MIBs.

SNC   Sub Network Connection

SNCP	SNC Protection
SNI	Service to Node Interface
SNMP	Simple Network Management Protocol
SNR	Signal to Noise Ratio
SNTP	Simple Network Time Protocol
Sp	In E-Tree topologies, Spoke Split Horizon role
SP	Strict Priority (QoS)
Split Horizon	Split-horizon route advertisement is a method of preventing routing loops in distance-vector routing protocols by prohibiting a router from advertising a route back onto the interface from which it was learned.
Spoke	VPLS node role to define the Leafs in the generic H-VPLS service. This role is not available for E-Tree topologies. During the service "upgrade" Spoke nodes are migrated to Leafs if applicable.
SPQ	Strict Priority Queuing
SPR	Shared Protection Ring
SR [SR]	System Release; Used in tables for the specification of FOX61x system releases. In the LoL tables the items "FOXCST" and "system release" (SR) are specified in the same column. For the clear distinction from FOXCST the system release is quoted in square brackets [SR].
SRV	Service
SS	Silence Suppression
SS7	Signaling System No. 7; A family of signaling protocols originating from narrow-band telephony. They are used to set-up, manage and tear down connections as well as to exchange non-connection associated information.
SSH	Secure Shell
SSI	Synchronization Status Indication; Indicates whether the data stream can be used as timing source for synchronization or not.
SSM	Synchronization Status Message
SSU	Synchronization Supply Unit
STM	Synchronous Transport Module
STM-1	155'520 kbit/s data signal with a structure according to ITU-T G.707
STM-16	2'488'320 kbit/s data signal with a structure according to ITU-T G.707
STM-4	622'080 kbit/s data signal with a structure according to ITU-T G.707
STP	Spanning Tree Protocol
SU	Service Unit; Category of FOX61x units that provides traffic services.
SV	Sampled Values
SVI	Switch Virtual Interface
SW	Software
Switching (switch)	The terms «bridging» and «switching» are used as synonyms.
SyncE	Synchronous Ethernet
T Port	Trunk Bridge Port; Ethernet port configured as trunk bridge port. Ethernet traffic is VLAN tagged.
TA	Terminal Adapter
TAI	International Atomic Time

TAS	TE Alert Signal
TC	Topology Change. Traffic Class
TC-PAM	Trellis-Coded Pulse-Amplitude Modulation
TCN	Topology Change Notification
TCP	Transmission Control Protocol
TCXO	Temperature Compensated Crystal Oscillator
TDM	Time Division Multiplex
TE	Traffic Engineering; Transport Entity; Terminal Equipment
TEGO1	Optical teleprotection interface unit, IEC 61850 GOOSE gateway function, packet transport.
TEPI1	Electrical teleprotection interface unit for distance protection, TDM transport.
TEPI2	Electrical teleprotection interface unit for distance protection, packet transport.
TLS	Transport Layer Security
TLV	Type Length Value
TNV1	Telephone Network Voltage hazard level 1
TNV2	Telephone Network Voltage hazard level 2
TNV3	Telephone Network Voltage hazard level 3
ToD	Time of Day
ToS	Type of Service
TP	Termination Point
TPE	Teleprotection Equipment
Transmit direction	Direction from the DTE towards the DCE interface.
TS	Time Slot
TTI	Trail Trace Identifier; Unique identifier assigned to a trail and carried by the traffic signal.
TTL	Time To Live
TTP	Trail Termination Point
UAT	Unavailable Time
UC	Unicast
UCST	FOX51x Configuration Software Tool, PC/computer based Element Manager (EM) to manage the FOX51x NEs of Hitachi Energy.
UDP	User Datagram Protocol; Part of the TCP/IP protocol suite. Provides a means for applications to access the connectionless features of IP. Operates at layer 4 of the OSI reference model and provides for the exchange of datagrams without acknowledgments or guaranteed delivery.
UDPTL	UDP Transport Layer; Facsimile UDP Transport Layer according to ITU-T, T.38.
UIF	User Interface (application interface)
UNI	User Network Interface; An interface point between ATM end users and a private ATM switch, or between a private ATM switch and the public carrier ATM network; defined by physical and protocol specifications per ATM Forum UNI documents.
Upstream	The direction from the subscriber, or from a subtending node towards the trunk port (of the core unit) and further towards the backbone network.
URI	Uniform Resource Identifier
US	Unavailable Second

USB	Universal Serial Bus
USM	User-based Security Model
UTC	Coordinated Universal Time, Universal Time Coordinated
UTF	Power Supply Voltage Filtered
UTP	Unshielded twisted pair
V5CAS	V5CAS is a proprietary CAS signaling code which is an extension of MCAS (Mercury CAS) and carries out of band PSTN signaling.
VAD	Voice Activity Detection; VAD allows a data network carrying voice traffic over a packet network to detect the absence of audio and conserve bandwidth by preventing the transmission of "silent packets" over the network.
VBD	Voice Band Data
Vcon	Voice conferencing
Ver.	Version; Mainly used to describe the version of hardware components.
VFTLF	Voice frequency processing unit of the FOX61x with up to 2 x 208 echo cancelers for PSTN subscribers.
VI	Video traffic
VID	VLAN ID; A Virtual LAN identifier
VLAN	Virtual LAN; Virtual Local Area Network
VLAN-ID	VLAN IDentifier
VoIP	Voice over IP; Stands for voice services that are delivered using the IP protocol.
VPLS	Virtual Private LAN Service
VPN	Virtual Private Network
VPWS	Virtual Private Wire Service
VRRP	Virtual Router Redundancy Protocol
VSI	Virtual Switch Interface
WAN	Wide Area Network
WDG	Watchdog
WDM	Wavelength Division Multiplexing
WEEE	Waste Electrical and Electronic Equipment
WFQ	Weighted Fair Queuing
WRR	Weighted Round Robin
WTR	Wait To Restore
xDSL	All forms of DSL technology, e.g. ADSL, SDSL, SHDSL or VDSL
XML	Extensible Mark-up Language
ZMQ	Zero Message Queuing, communication protocol between DIRAC server and SENC1 Functional Units

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