Alcatel-Lucent 1850

Transport Service Switch (TSS-320/160) | Release 3.2.1A

Release Notes
NE SW Version 3.22.01

8DG 08501 ABAA FMZZA
ISSUE 4
AUGUST 2010

Notice

Every effort was made to ensure that this information product was complete and accurate at the time of printing. However, information is subject to change.

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Contents

About this document

Purpose

This document provides information on the Alcatel-Lucent 1850 Transport Service Switch (TSS-320/160) Release 3.2.1A features, known problems, problems fixed, software installation, upgrade procedures, and other helpful information.

Reason for reissue

The following table shows the revision history of this document.

Issue	Change Note	Revision
01	First Issue	This is the first issue.
02	ECR-000	Errata corrige, adding some missing bugs / resrictions
03	ECR-000xxx	Maintenance release update
04	ECR-000xxx	Maintenance release update

Supported systems

The Alcatel-Lucent 1850 TSS-320/160 Release 3.2.1A with Software Package 3.22.01 includes the following items:

- First Level Controller (Equipment Controller) SW Version FLC 03.02_62_D53
- Second Level Controller (Shelf Controller) SW Version SLC 03.02_62_D53
- Local Data Controller (Aggregator) SW Version LDC 03.02_62_D53
- ZIC (Zero Installation Craft terminal) SW Version 3.2.41

Related information

Code	Document title
8DG09086AAAA	Product Information Guide
8DG09086HAAA	Installation Guide

8DG09086JAAA	Turn-Up and Commissioning Guide (ETSI)
8DG09086MAAA	Installation and Turn-Up Guide (ANSI)
8DG09086KAAA	User Provisioning Guide
8DG09086DAAA	TL1 User Provisioning Guide
8DG09086EAAA	CLI Guide
8DG09086BAAA	TL1 Commands Guide
8DG09086GAAA	Engineering Rules
8DG09086CAAA	Maintenance and Trouble Clearing
8DG09086FAAA	Safety Guide

1 Features

General Features

1 Introduction

2 Shelf and Common Parts

GF2953: 1850 TSS-160 Shelf

Feature Description

Support of TSS-160 shelf

Applicability

This feature is applicable to TSS-160 only

GF1339: 1850 TSS-320 Shelf

Feature Description

Support of TSS-320 shelf

Applicability

This feature is applicable to TSS-320 only

GF1341: Equipment Controller, Shelf Controller (Matrix), Power Supply Filter, Service Card, FAN Unit

Feature Description

Generic Network Element functionalities (e.g. controller, switching, powering, etc.) are supported by a set of common cards, which are independent from the supported services or layers (e.g. the matrix is agnostic w.r.t. the type of traffic it switches)

Release Specific

R3.0 and later releases: Service card is not supported

GF3397: NG-TRU Top Rack Unit 2.0KW

Release Specific

R3.0: Only TSS-320 support (limited to configurations dissipating up to 2.0KW)

R3.1 and later releases: TSS-320 and TSS-160 can be powered by 2.0KW Top Rack Unit

GF2453: TRU Top Rack Unit 3.5KW

Feature Description

The power supply is able to provide power up to 3.5KW to the Network Element.

GF2954: ANSI Bay Support 14" deep 23" wide

Feature Description

The subrack can be mounted in a 14" deep

and 23" wide ANSI SNBF (seismic network bayframe).

GF2723: ETSI 300 mm Bay Support

Feature Description

The shelf can be mounted in an ETSI-2 (300 mm deep) rack, in front access only configuration. Baffles (air deflectors) are available to support correct air flow when mounting the subrack together with other miscellaneous equipments.

GF2724: Cable Design

Feature Description

The system uses for internal and external cabling only halogen free cables.

3 Equipment

GF2956: TSS-160 Agnostic Marix

Feature Description

The Network Equipment matrix supports agnostic switching (e.g. TDM Higher Order, Packet switching, etc.)

Applicability

This feature is applicable to TSS-160 only

GF1346: TSS-320 Agnostic Marix

Feature Description

The Network Equipment matrix supports agnostic switching (e.g. TDM Higher Order, Packet switching, etc.)

Applicability

This feature is applicable to TSS-320 only

GF2957: 160 Gb/s HO & 20Gb/s LO Sonet/SDH Agnostic Matrix for TSS160

Feature Description

The system supports an enhanced agnostic Matrix able to support also Lower Order switching functionality

Applicability

This feature is applicable to TSS-160 only

GF1347: 320 Gb/s HO & 40Gb/s LO Sonet/SDH Agnostic Matrix for TSS320

Feature Description

The system supports an enhanced agnostic Matrix able to support also Lower Order switching functionality

Applicability

This feature is applicable to TSS-320 only

GF1363: Double (A & B) power feeds w/ alarm

Feature Description

The system supports a redundant power supply system

GF1364: Auto-recovery after power shut-down

Feature Description

In case of complete power failure (both A and B power feeds), the system is able to recover without any manual intervention

GF2847: Enhanced start-up boot time

Feature Description

Start-up boot time from power-off (cold boot time) is max 10 minutes

4 Equipment Protection

GF1351: 1+1 Matrix EPS

Feature Description

The Network Element supports redundant matrices (1+1 protection)

GF1352:

1+1 Equipment Controller EPS

Feature Description

Controller Redundancy - Node controller (FLC). The system supports redundant node controllers, with protection switching independent from the shelf controllers.

GF1353: Resiliance to traffic loss if Controller/local DB is damaged/lost

Feature Description

In case the Equipment Controller is damaged or the Local DB on the controller is lost, the Traffic continues to flow through the node

GF2121: 1+1 Power Shelf EPS

Feature Description

The Network Element supports redundant power supply units (1+1 protection). It is possible to perform hot replacement of 1 of the 2 power shelf supply without traffic interruption.

GF2452: LOA EPS

Feature Description

Lower Order Adaptation card, needed together with the Lower Order matrix to provide LO switchin capability.

LOA boards have 10G capacity each, and can be protected 2+1.

GF2727: System Lifetime

Feature Description

The system is designed and complies to 15 years of life time.

GF2728: Fan Lifetime

Feature Description

The fan of the subrack is designed for 36 year lifetime.

GF2729: Mass Memory Lifetime

Feature Description

The Hard Disk / Compact Flash has a lifetime of 7.5 year.

Release Specific

The mass memory is used inside the Equipment Controller (FLC)

GF2730: Management Plane Reliability

Feature Description

Management Plane Reliability

The system provides five 9's of reliability across its managment plane.

Note: Only possible with dual DCN access (e.g. Q-LAN or ECC) and duplex control.

GF2731: Transmission Plane Reliability

Feature Description

The system provides five 9's of reliability across its transmission plane according to Bellcore GR-418-CORE and GR-499-CORE.

Note: Only possible with network protection and equipment protection in place.

GF2732: Optical Facility Loopback

Feature Description

The system supports Facility Loopbacks on all optical (WDM) system interfaces (line and client interfaces). Line interfaces mean only the OTU line side signal.

4.1 ANSI power requirements

GF2153: Redundant independent battery power plants

Feature Description

Each rack accepts redundant independent battery power plants with a diversely routed dual bus.

GF2154: Low input voltage shutdown

Feature Description

Any module that uses distributed TMN battery voltage has a low input voltage shutdown feature. The low input voltage shutdown occurs when the input voltage measured at the input terminals of the equipment is -39.5VDC to - 37.5 VDC

GF2155: Automatically restart after a low voltage shut down

Feature Description

All modules that use distributed TMN battery voltage are able to automatically restart after a low voltage shut down. The restart occurs at an input voltage of -43V DC (nominal). The system returns to normal operation without manual intervention.

GF2156: Battery return feeder input isolation

Feature Description

The battery return of each feeder input and frame ground is isolated from the battery returns of the other feeder inputs.

GF2123: Low-impedance bond to the protective grounding system.

Feature Description

The NE provides a low-impedance bond to the protective grounding system. Battery returns and chassis ground are isolated from each other.

GF2124: Electrical frame-grounding terminal

Feature Description

The NE provides an electrical frame-grounding terminal at a location on the rack that is easily accessible to the installer.

GF2125: Electrical Fast Transient compliance

Feature Description

The NE meets Electrical Fast Transient per GR-1089-Core, Issue 3, October 2002, Section 2.2 and 2.2.1.

GF2126: Major alarm on power sequence fault

Feature Description

The NE initiates a major alarm when a power sequence fault, an under-voltage fault, an over-voltage fault, or an over-current fault is detected on any of the power supplies/feeds

GF2128: Fuse/breaker alarm

Feature Description

Alarm is raised when a fuse is blown, or a breaker tripped

GF2748: Secondary Power Supply (AT&T version): Input Supervision and Shutdown

Feature Description

All power inputs can be supervised individually. The thresholds for under voltage is between -39.0V (+1 V / -1V). Threshold crossings raise an alarm.

The system provide a shutdown feature according AT&T 802-010-100. (shutoff at -38.5Vdc +/- 1.0Vdc).

Release Specific

R3.2: No shutdown as per AT&T standard.

Shutdown is applicable to step-up: when the voltage is under threshold, the step-up powers down the interface towards the Power card and the Power card raises an alarm ("Power Alarm")

GF2749: Bellcore Compatible Grounding

Feature Description

The system supports earthing compatible according to GR1089 (Mesh-IBN).

5 Certification/Testing

GF1366: ETSI environmental compliance

Feature Description

The NE is compliant to the ETSI environmental standards

GF2132: NEBS Level 3 environmental compliance (EMI, Safety)

Feature Description

The NE meets NEBS Level 3 requirements of SR-3580 and GR-1089-CORE

for the following areas:

- Electrostatic Discharge.

- Electromagnetic Interference (EMI) - emissions.

- EMI - immunity.

- Bonding and Grounding

- Safety

GF1368: EMC qualification

Feature Description

The NE is qualified for Electro magnetic compatibility and immunity, according to the relevant standards

GF2026: RUS Rural Utility Service

Feature Description

Government certification. Rural Utility Service requires that at least a portion of the equipment is made in US.

GF2034: GR-63-CORE

Feature Description

Compliance to GR-63-CORE

GF2032: GR-78

Feature Description

Compliance to GR-78

GF2031: FCC Part 15 Class A

Feature Description

The NE is compliant with FCC Part 15 Class A

GF2030: GR-1230-Core

Feature Description

Compliance to GR-1230-CORE

GF2029: GR-253-Core

Feature Description

Compliance to GR-253-CORE

GF2028: IEEE Power Plant Equip Spec.

Feature Description

Compliance to IEEE Power Plant Equip Specifications

GF2027: UL Certification UL 1950 / UL 60950 (1459?)

Feature Description

The NE is UL certified

GF1373: Environmental Priorities

Feature Description

The NE is compliant with the Environmental Priorities as defined in the Alcatel-Lucent Corporate Announcement « Environmental Affairs Organization », June 10, 2002

GF1374: Environmental Objectives

Feature Description

The NE is compliant with the Environmental Objectives as defined in the Alcatel Sustainable Development Objectives 2002

GF1375: Environmental Management

Feature Description

The NE is compliant with the « Alcatel Product Environmental Management » (APEM) Standard

GF1376: Ecological Design, Purchasing and Manufacturing

Feature Description

The NE is compliant with the Alcatel « Ecological Design, Purchasing and Manufacturing» Standard, according to 1AA 00266 0001 ASZZA, ed02

GF1377: Eco-Declaration

Feature Description

The NE is supported by an Eco-Declaration according to ECMA-TR/70

GF3634: Environmental, 6,000 ft. altitude

Feature Description

The NE is certified to operate at 6,000 ft elevation.

GF2044: Environmental, Storage -40-+85 Deg. C, 5-95% RH

Feature Description

The NE can be stored at the following environmental conditions: -40-+85 Deg. C, 5-95% RH

GF2048: Canadian Safety Assoc. CSA-22.2-No.25-M90

Feature Description

The NE is certified as per Canadian Safety Assoc. CSA-22.2-No.25-M90, as part of UL certification

GF2459: Dust filter

Feature Description

The NE supports the usage of a Dust filter for dirt environments exceeding class 3.2 ETSI (Dust OND requirement)

GF2752: FAN unit management

Feature Description

Management of the Fan unit

GF2754: Software Control of Fan Speed

Feature Description

The fan unit supports SW control of rotation speed, so the fans can be slowed down at lower temperatures, rather than always running at full speed. This feature helps to save power, reduce noise and increment fan lifetime.

GF2755: Product Safety

Feature Description

The equipment complies with the requirements for safety as stated in IEC 60850-1, EN 60950-1 (CENELEC), UL 60950-1, CAN/CSA-C22.2 No. 60950-1, GR-1089-Core, GR63-Core and UL94V-0.

GF2756: Optical Safety

Feature Description

All parts of the system are designed to operate and be capable of being maintained without hazard to personnel from optical radiation. In that respect, the systems complies with G.664 and IEC-60825-1 "Safety of Laser Products Part 1: Equipment classification, requirements and user's guide" and IEC-60825-2 "Safety of Laser Products Part 2: Safety of Optical Fibre Communication Systems (OFCS)".

GF2757: RoHS Compliance

Feature Description

The system fulfills the RoHS regulation of the European Community

GF2758: FDA Approval - Laser Safety

Feature Description

The system Optical Laser safety is certified with FDA approval.

GF2759: Jitter and Wander ITU-T / Telcordia compliant

Feature Description

Jitter and wander tolerance, transfer and production are according to ITU-T Recommendations G.783, G.813 (option 1), G.823 and G.825 and GR-253 issue 4

(2004). In addition all STM-N / STS-N outputs meet the 0.01 UI rms jitter production specification (12 kHz and above).

7 Opex Saving features

GF1379: Auto-provisioning

Feature Description

The system supports board auto-provisioning, to speed up NE configuration. Boards are automatically discovered and presented to the operator for confirmation.

GF1380: Auto-inventory

Feature Description

The NE supports auto-inventory of all equipment, including all pluggable modules

GF2183: In service Agnostic Matrix upgrade to LO switching capability

Feature Description

The system supports the in-service upgrade of the agnostic matrix without Low Order switching capability to a matrix with LO switching capability. The procedure requires an EPS protection switch between matrices.

GF1386: Fast SW download

Release Specific

R3.0 and later releases: Download time from ZIC is about 1 hour. SW activation is less than two minutes.

GF1393: Remote debug interface

Feature Description

Remote debug interface is available, to allow operation people to perform trouble clearing from remote locations.

GF3486: Remote debugging access

Feature Description

The system supports a remote debug LAN interface via DCN. This access is user configurable.

GF1395: NE addressing

Feature Description

MAC address is not lost in case of single HW failure

GF1396: Zero Installation CT (ZIC)

Feature Description

The system supports a web based craft terminal interface. The ZIC enables CT management connection to the NE with a personal computer equipped only with a web browser.

GF3392: Browser access to ZIC

Feature Description

Browser access to ZIC may be based on either HTTP or HTTPS

Release Specific

R3.0 and later releases: Browser access to ZIC is based on HTTP only

GF2054: Remote hard reset on a per module basis

Feature Description

It is possible to perform board hard reset from remote, with board granularity

GF2055: Card Hot replacement causing no far end alarms

Feature Description

This feature consists in not causing far end alarms when a protected resource that failed is substituted with a new one

GF2059: Central Office alarms (audible & Visual)

Feature Description

The system supports Central Office alarms (audible & Visual) for Critical/Major/Minor alarms

Release Specific

R3.0 and later releases: only visible alarms

GF2068: Auto turn up

Feature Description

The system software is able to auto detect the HW configuration and put the system in service consistent with the "Automatic in service" feature, and will require provisioning only for cross connections and synchronization

GF2814: AINS Automatic In-Service, fixed delay

Feature Description

The system supports an Auto turn up wait feature, that inhibits facility alarms until a good signal is received. Alarms and PMs are then activated.

8 Management

8.1 General

GF1399: Remote Craft Terminal (DCC, Serial port, dial up)

Feature Description

The system supports a remote CT with the same functionalities allowed by local CT (i.e. provisioning, alarm surveillance, SW downloading..)

GF2860: 1350OMS management

Feature Description

Support for 1350OMS management system

GF2760: LAN access for management

Feature Description

The NE provides a LAN access for management i/f

GF3489: LAN DCN negotiation capabilities

Feature Description

LAN DCN for management must be configurable in the following negotiation modes:

- auto-negotiation (default)

- no auto negotiation, with manual configuration of speed parameters

Release Specific

R3.1 and later releases: partial support

GF1400: ANTP Time Syncronization protocol

Feature Description

The NE supports the ANTP Time Synchronization protocol, to align NE time with an ANTP server

GF2017: SW Download

Feature Description

The NE supports SW download both locally and remotely

GF1402: Hitless SW upgraded

Feature Description

Upgrade from previous SW release is non-traffic affecting. Note: upgrade to an FPGA during a SW upgrade may not be hitless

Release Specific

R3.0 and later releases: The requirement does not apply to releases before R3.0 (i.e. from R1.4 to R3.0)

GF2011: Card Management

Feature Description

The Card Management is TL1 based.

GF2012: Card Equipment Inventory

Feature Description

The data of all active devices (e.g. Pluggable Optics, Shelf, boards, etc.) can be retrieved.

GF2015: Multiple Manager System

Feature Description

The system allows different managers to monitor the NE at the same time (e.g. one for Data and one for the Transport layer)

GF2016: Ping Management

Feature Description

The NE supports node ping functionality.

GF1404: ANSI Transport SW mgmt based on TL1

Feature Description

ANSI Transport SW management is based on TL1

GF1405: ANSI Data SW mgmt based on SNMP and CLI

Feature Description

SNMP and CLI interfaces are available for support of data service management (equipment management is provided via TL1)

GF2812: Full Data DCN management

Feature Description

In band DCN is available on Ethernet links (see linked features in data encapsulation part D12197 and D12198)

GF2013: IP Management Address configuration

Feature Description

It is possible to configure the IP address used for management

GF3522: Dual IP address per management interface

Feature Description

Nested inband management for managing stacked equipments

GF2813: Integrated IS-IS support

Feature Description

The NE supports Integrated IS-IS as per RFC1195

GF1408: Remote Back-up and Restore

Feature Description

The system supports remote back-up and restore for all the equipment and facility configuration data. It is possible to perform Remote Back-up and Restore in local and remote CT configuration.

GF1409: NE Auto Upload and Consistency Check

Feature Description

The system supports NMS autodiscovery. The NE self notifies itself to NMS as soon OS address information is set by CT, so that it can be automatically taken into account in the "newly discovered NE list" of NMS.

GF1411: Optical Module Management

Feature Description

The NE supports the management of SFP/XFP optical pluggable modules. The NE is able to declare a mismatch if the plugged optical module is different from the expected one, as provisioned by the operator.

GF2139: Digital diagnostics (DDM)

Feature Description

The NE supports DDM functionality management for pluggable optical modules.

GF2141: Support of Alien SFPs

Feature Description

The NE supports the possibility to use also pluggable optical module not sourced and certified by Alcatel-Lucent. In this case, some functionality may not be provided (e.g. DDM or PM), and Alcatel-Lucent does not guarantees function, performances or compatibility of the alien optical modules.

GF2142: Re-usage of Alcatel-Lucent qualified optical pluggable modules

Feature Description

The NE maximizes to the maximum extent possible the usage of SFP/XFP in common with other Alcatel-Lucent equipments, to allow the customers to reduce the inventories and ease inventory management.

GF2157: CLEI Code

Feature Description

CLEI Codes are available for all items composing the NE (e.g. shelf, boards, optical pluggable modules), both printed and in remote inventory (SW management), with the sole exception of pure mechanical items (e.g. dummy plates, air deflectors, etc.)

GF2075: TARP support (Need for DCC OSI support)

Feature Description

Application Layer protocol for name resolution via TARP (TL1 address resolution protocol). The NE implements TARP responder and propagator roles.

GF2081: Section and Line DCC OSI and TCPIP (D1-D12, E1)

Feature Description

The NE supports section and Line DCC OSI and TCPIP (D1-D12, E1)

GF2082: Primary Provisioning Non-Volatile backup memory

Feature Description

The NE supports a primary Provisioning Non-Volatile backup memory

GF2086: Equip. Self inventory, local and remote access

Feature Description

The NE supports Equipment Self inventory, on local and remote access

GF2087: Equip. Inventory Data, Service State

Feature Description

The NE supports Equipment Inventory Data for Service State retrieval

GF2088: Equip. Inventory Data, unit CLEI Code

Feature Description

The NE supports Equipment Inventory Data for unit CLEI Code retrieval

GF2089: Equip. Inventory Data, Unit full Mnemonic

Feature Description

The NE supports Equipment Inventory Data for Unit full Mnemonic retrieval

GF2090: Equip. Inventory Data, Unit Location

Feature Description

The NE supports Equipment Inventory Data for Unit Location retrieval

GF2091: Equip. Inventory Data, Unit Part Number

Feature Description

The NE supports Equipment Inventory Data for Unit Part Number retrieval

GF2092: Equip. Inventory Data, Unit Serial Number

Feature Description

The NE supports Equipment Inventory Data for Unit Serial Number retrieval

GF2093: Equip. Inventory Data, Unit Revision Level

Feature Description

The NE supports Equipment Inventory Data for Unit Revision Level retrieval

GF2468: TDM boards max number of line DCCs

Feature Description

The SDH/SONET boards support up to 4 line DCCs

GF2469: TDM boards max number of section DCCs

Feature Description

The SDH/SONET boards support up to 4 section DCCs

GF2102: Support of section DCC on all SONET/SDH optical interfaces

Feature Description

Maximum number is 4RS+4MS channels for each slot.

Total maximum number for shelf is 32RS +32MS channels.

GF2180: IP over OSI tunnelling (proprietary solution)

GF2181: IP over OSI tunnelling (standard solution)

Feature Description

IP over OSI tunnelling as per RFC 3147 standard

GF2182: OSI over IP (standard solution)

Feature Description

OSI over IP as per RFC 2784 standard

GF3521: OSI over PPP over MPLS

GF3390: DCC transparency

Feature Description

Support of DCC transparency, i.e. provisionable static forwarding of LAPD/PPP frames between a couple of Section or Line DCC

GF2780: Application Layer protocol for File Transfer (FTP)

Feature Description

The system supports FTP over TCP/IP (for SW download and database up-/download).

GF2765: T-TD: 300 logins per TCP/IP session

Feature Description

The system supports at least 300 parallel logins per TCP/IP session.

Release Specific

R3.0 and later releases: the system is limited to maximum 6 parallel logins

GF2771: TCP for support of IP-access networks

Feature Description

The network element provides the TCP service for end-to-end communication with the SNMS and CT via an IP-access network. This TCP service is used in the T-TD gateway and by the File Transfer Protocol in any network element.

GF2772: Network Neighbour visibility

Feature Description

Network Neighbours on the LAN are visible.

GF2773: Network Neighbour Visibility general

Feature Description

ECC network neighbors are visible to each other.

GF2774: MCN Network Info

Feature Description

The system can report other systems, reachable via the ISIS protocol, either for the level 1 area or for both, the level 1+2 area.

The reachable systems are reported with their NSAP and TID and a counter of reachable systems per level 1 area. This info is available per OSI node, or as a summary for all OSI nodes.

GF2863: User configurable NSAP fields (AFI, IDP, DFI)

Feature Description

The NE supports the possibility to configure NSAP fields (AFI, IDP, DFI) via TL1

GF2775: IP over Ethernet (LAN Layer 2 protocol)

Feature Description

The NE supports IP over Ethernet (LAN Layer 2 network) for management. The Lan layer 2 protocol is compliant to RFC894

GF2841: IP/CNLP over PPP over Ethernet tagged (802.1q) over GFP

Feature Description

In fiber in band management over GFP in case of TDM interworking. Provider Bridge scenario.

GF2842: IP/CNLP over PPP over MPLS tagged over GFP

Feature Description

The system supports In fiber - In band management over GFP in case of TDM interworking, for MPLS/TMPLS scenario.

GF2779: ECC Layer 3 protocol for IP

Feature Description

The system supports, as ECC layer 3 protocols on the management interface, IP, ARP, ICMP.

Note: Does not apply to SCN

Note: Use of ARP does not apply for internal DCC connectivity.

GF2782: SNMP MIB II

Feature Description

The system supports the mandatory aspects of the object types in RFC 1213.

Note: for packet only

GF2783: Generic Interface MIBs

Feature Description

The system supports the Generic interface MIBs as per RFC 2863 and RFC2864.

Note: for packet only

GF2784: Ethernet Interface MIB

Feature Description

The system supports the Ethernet Interface MIB as per IETF RFC 2358 and RFC 3635

Note: for packet transmission interfaces only

GF2790: In-Service Generic Upgrade - No Forwarding Engine

Feature Description

The system supports the ability to perform release upgrades without impact to service. In the initial release this does not apply to the forwarding engine and control plane on the Packet subsystem.

GF2791: Cold Start Time

Feature Description

The cold start time for initializing the system is 10 minutes

GF2792: Warm Start Time

Feature Description

The warm start time for initializing the system is 5 minutes

GF2793: Node Controller Reset

Feature Description

The system supports both local (cold boot) and remote (warm boot) node controller reset capability.

GF2794: Shelf Controller Reset

Feature Description

The system supports both local (cold boot) and remote (warm boot) shelf controller reset capability.

GF2795: Circuit Pack Controller Reset

Feature Description

The system supports both local (cold boot) and remote (warm boot) circuit pack controller (applicable to circuit packs with on-board controllers) reset capability.

GF2797: Database Maintenance Procedure

Feature Description

The system does support the backup and recovery procedure for database maintenance purposes.

The active progress status is indicated.

The information that are backed up are in maximum 30 hours old.

The system can handle either one database backup or one restore procedure at one time.

The database backup and recovery procedure can be either time scheduled or done per manual request.

The procedure is implemented according GR-2932-CORE.

GF3532: Proxy-ARP configurability and DB persistency

Feature Description

Feature supported

GF3533: L2 OSI routing, large networks

Feature Description

L2 OSI routing is capable to address networks larger than 240 nodes

GF3534: OSI area configurability

Feature Description

Feature supported

8.2 Logs

GF3081: Support of TL1 command log

Feature Description

The system supports TL1 command log in order to enhance the information content already given by the available TL1 notification log. This to improve diagnosis possibilities e.g. for the maintenance team. The system password is not logged.

GF2786: Enhanced Alarm events storage

Feature Description

The NE controllers can store the most recent alarm events. This alarm log can be forwarded via the EMS interfaces. The logs is stored in a non-volatile memory.

Release Specific

R3.1 and later releases: Limited to 500 alarms and events

GF2787: Enhanced Database change events storage

Feature Description

The NE controllers can store the most recent database change events. This database change log can be forwarded via the EMS interfaces. The logs is stored in a non-volatile memory.

Release Specific

R3.1 and later releases: Limited to 500 alarms and events

GF2789: Security events storage

Feature Description

The NE can store the 500 most recent security events. This security log can be forwarded via the EMS interfaces. The logs are stored in a non-volatile memory.

GF3399: Log retrieval via file transfer

Feature Description

Capability to store logs in a file that can be retrieved by the management system via FTP or FTAM, to optimize bandwidth and symplify the request mechanism

8.3 Alarms

GF1999: Alarm severity configuration

Feature Description

The NE supports the Alarm severity configuration

GF2001: Alarm severity management

Feature Description

The NE supports the Alarm severity management

GF2002: Current alarm management

Feature Description

The NE supports the Current alarm management

GF2003: History alarm management

Feature Description

The NE supports the History alarm management

GF2004: Alarm synchronization management

Feature Description

The NE supports the Alarm synchronization management

GF2798: Programmable Alarm severity

Feature Description

The NE supports the Programmable Alarm severity

GF2005: Inhibit alarm(s) filter

Feature Description

The NE supports the Inhibit alarm(s) filter

GF1412: Path Maintenance State

Feature Description

The NE supports enabling of alarm reporting to management system on service state

GF3639: ASAP profiles for ANSI and ETSI

Feature Description

Different default severity ASAP profiles are available for ANSI and ETSI functioning modes for global releases

GF2104: Alarm Correlation

Feature Description

The NE supports Alarm Correlation

GF2107: Near end/Far end visual indicator

Feature Description

The NE supports Near end/Far end visual indicator

GF2108: Module visual failure

Feature Description

The NE supports module visual failure via units front panel LEDs

GF2109: Far end alarm

Feature Description

The NE supports far end alarm

GF2110: Fault identification of failed equipment

Feature Description

The NE supports fault identification of failed equipment

GF2112: Remote alarms Craft retrieval

Feature Description

The NE supports remote alarms Craft retrieval

GF2318: Over-temperature alarm

Feature Description

Alarm at NE level based on measurements of absolute temperature of FAN units and of delta temperature between them. The alarm is generated when a (fixed) threshold(s) is crossed.

GF2800: Alarm performance

Feature Description

The system is capable to process and transmit up to 1000 Alarms per minute. The buffer capacity is 2000 alarms.

8.4 Protection

8.5 Security

GF2007: User login/logout (CT)

Feature Description

The NE supports User login/logout at CT

GF2008: Password management (CT)

Feature Description

The NE supports Password management at CT

GF2143: Provisionable password aging

Feature Description

The NE supports provisionable password aging on a system basis.

The password-aging interval is provisionable on a system wide basis from 0 to 999 days. The default is set at 30 days.

GF2144: Password format requirements

Feature Description

The password format requirements are: minimum 8 characters, including a capital, and a special character

GF2115: User management, Add/Delete Users

Feature Description

The NE supports addition and deletion of Users

GF2116: User management, User Privileges

Feature Description

The NE supports the management of User Privileges

GF2117: Security, Command access restriction

Feature Description

The NE supports command access restriction for Security

GF2147: Retrieval of Security Log

Feature Description

The NE supports retrieval of Security Log.

GF2148: Security Alarm Reports and Contents.

Feature Description

The NE supports Security Alarm Reports and Contents.

GF2149: Log-in time out

Feature Description

The NE supports a time-out feature, logging an user out after a period of inactivity. The period is settable by the security administrator (EMS User, Console, and CT) with a range of 1 to 999 minutes. The default value is 60 minutes.

GF2150: Security Report Event on excessive login attempts.

Feature Description

The NE supports a Security Report Event, as transient condition, on excessive number of login attempts.

GF2151: Command log

Feature Description

The NE provides and maintain a log in which most recent commands and

responses are stored. These events/responses are stored on non-volatile memory.

GF2802: UserID length

Feature Description

The user ID which is used for security purposes must be in minimum 5 characters long. Up to 10 characters are supported by the system

GF2803: Log-in Aging

Feature Description

The system supports the disabling of a user's login ID if not used over a period of time (days).

GF2949: Log-in Aging (Default User)

Feature Description

The system supports the disabling of a user's login ID if not used over a period of time (days).

GF2804: Failed Log-in Attempts Lockout

Feature Description

The system supports the locking out of a user for a period of time, based on a certain number of failed login attempts.

GF2805: Password Encryption

Feature Description

All user passwords are encrypted for storage and transport across management interfaces.

GF2806: User Privilege Categories

Feature Description

The system supports 7 user privilege categories for accessing functionality on the system - these include: system and security administration; test access; maintenance; provisioning; and performance monitoring.

GF3332: Security Requirements 8AY 03037 0001 ASZZA

Feature Description

Security requirements as per Alcatel-Lucent Security Requirements (8AY 03037 0001 ASZZA) are observed and implemented, particularly regarding the protocols inherent security features, such as peer authentication and data integrity.

SDH Features

1 Interface HW items

SDH589: 8 x STM-1 optical unit

Feature Description

SDH unit. The unit can perform 8 x STM-1 functionality. The unit can host pluggable MSA SFP modules.

SDH933: 8 x STM-1/4 4xSTM16 optical unit

Feature Description

SDH unit. The unit can perform 8 x STM-1 functionality. The unit can host pluggable MSA SFP modules.

Applicability

This feature is applicable to TSS-160 only

SDH590: 8 x STM-1/4 optical unit

Feature Description

SDH unit. The unit can perform both 8 x STM-1 and 8 x STM-4 functionality or a mix of the two. The unit can host pluggable MSA SFP modules.

SDH934: 8 x STM-1/4 optical access unit (to be combined with 8xstm1/4/16 optical port)

Feature Description

SDH unit. The unit can perform 8 x STM-1 functionality. The unit can host pluggable MSA SFP modules.

Applicability

This feature is applicable to TSS-160 only

SDH591: 4 x STM-16 optical unit

Feature Description

SDH unit. The unit supports 4x STM-16 traffic ports. It can host pluggable MSA SFP modules.

SDH592: 1 x STM-64 optical unit

Feature Description

SDH unit. The unit supports 1x STM-64 traffic port. It can host pluggable MSA XFP modules and XFP-Extended modules. When using standard XFP modules, the XFP-E to XFP adapter has to be used.

SDH612: Lower Order HOA unit

Feature Description

Lower Order Adaptation Card. The unit is a server card supporting 10Gb/s HPA functionality. It is plugged in the line card slots.

2 Optical Modules

SDH478: S-1.1 SFP module

Feature Description

S-1.1 SFP module.

Standard S-1.1 Small Form Pluggable interface.

SDH479: L-1.1 SFP module

Feature Description

L-1.1 SFP module

Standard L-1.1 Small Form Pluggable interface.

SDH480: L-1.2 SFP module

Feature Description

L-1.2 SFP module

Standard L-1.2 Small Form Pluggable interface.

SDH495: S-4.1 SFP module

Feature Description

S-4.1 SFP module

Standard S-4.1 Small Form Pluggable interface.

SDH496: L-4.1 SFP module

Feature Description

L-4.1 SFP module

Standard L-4.1 Small Form Pluggable interface.

SDH497: L-4.2 SFP module

Feature Description

L-4.2 SFP module

Standard L-4.2 Small Form Pluggable interface.

SDH491: I-16.1 SFP module

Feature Description

I-16.1 SFP module

Standard I-16.1 Small Form Pluggable interface.

SDH493: S-16.1 SFP module

Feature Description

S-16.1 SFP module

Standard S-16.1 Small Form Pluggable interface.

SDH494: L-16.1 SFP module

Feature Description

L-16.1 SFP module

Standard L-16.1 Small Form Pluggable interface.

SDH492: L-16.2 SFP module

Feature Description

L-16.2 SFP module

Standard L-16.2 Small Form Pluggable interface.

SDH498: C-WDM STM-16 SFP modules (PIN-40km, APD-80km)

Feature Description

Colored CWDM STM-16 SFP modules.

Set of eight STM-16 Coarse WDM modules with SFP transceiver (with APD or PIN receiver) for CWDM applications. Wavelength allocation according to the ITU-T grid (1470-1490-1510-1530-1550-1570-1590-1610 nm).

Applicability

This feature is applicable to TSS-320 only

SDH594: I-64.1 (VSR) XFP module

Feature Description

I-64.1 XFP module

Standard I-64.1 10G Small Form Pluggable interface.

SDH613: S-64.2b XFP module

Feature Description

S-64.2b XFP module.

Standard S-64.2b 10G Small Form Pluggable interface.

SDH615: P1L1-2D2 XFP module

Feature Description

P1L1-2D2 XFP module.

Standard P1L1-2D2 10G Small Form Pluggable interface.

SDH596: C-WDM STM-64 XFP module

Feature Description

Colored CWDM STM-64 XFP module.

Set of 10G Small Form Pluggable interfaces.

SDH597: D-WDM STM-64 XFP module

Feature Description

Set of 10G Small Form Pluggable interfaces on DWDM grid.

3 Equipment

SDH618: Optical Booster unit for 10Gb/s

Feature Description

The Optical Booster is a unit capable to improve the span length of 10G interfaces for single channel (black&white like)application, with or without the aid of an Optical Pre-Amplifier and suitable Dispersion Compensation units.

Release Specific

Both STM64 and 10GBE clients are supported.

Two applications are available: with FEC and without FEC.

SDH627: Optical preamplifier unit for 10Gb/s (ch 34)

Feature Description

The Optical Pre-Amplifier is a unit capable to improve the span length of 10G interfaces for single channel (black&white like) application, with or without the aid of an Optical Booster and suitable Dispersion Compensation units. The Pre-Amplifier works with the single DWDM channel 34, due to the need to filter out the ASE noise with a narrow grating.

Release Specific

Both STM64 and 10GBE clients are supported.

Two applications are available: with FEC and without FEC.

SDH145: Automatic Laser Shut-down

Feature Description

Automatic Laser Shutdown (ALS) procedure is supported in compliance to the ITU-T standards safety requirements for optical transmission systems. ALS is applicable to the individual STM-N interface and can be activated/deactivated by operator's command.

The basic handling is according to G.958.

SDH313: I/O Loop-back commands on SDH ports

Feature Description

I/O loopback is supported at the physical interface level of every SDH traffic board both payload and overhead informations are involved.

The commands allow to activate/deactivate on every I/O interface the loopback configuration at the "external side" or at the "internal side".

The modes can be supported: loop with AIS signal insertion and loop & continue.

Individual status signal of the I/O loopback condition of every interface is available for external CT and NMS monitoring.

An Abnormal condition information is reported on CT and NMS when a loopback is present in the Equipment.

Release Specific

Only loop & continue is supported

SDH147: VC-i Loop-back connections

Feature Description

VC-i loopback can be independently provided at every path level by means of the same connection facilities supported on the HO/LO matrices for the payload (as applicable).

The specific loopback commands and loopback status indication, above mentioned for the I/O loopback, are not supported by the VC-i loopback facility.

SDH364: Station Alarm Contacts

Feature Description

The equipment alarms summary is made available by electronic dry-contacts typically used to interface rack services (R/M) or generic audio/visual station devices (S/A).

Common logical and electrical characteristics:

- Alarmed => (close contact);
- Not Alarmed => (open contact).

The station alarm contacts report various equipment criteria like: power supply alarms, equipment alarm summary, Equipment Controller and TL1 interconnection status, etc.

For more details refer to the Technical Handbook of the specific product.

See below the mapping between the four standard alarm severity levels, supported at the CT/OS operator's interface and the three indications of equipment alarm summary reported by the external contatcs:

- MAJOR = CRITICAL or MAJOR;
- MINOR = MINOR;

- WARNING = WARNING.

SDH153: Programmable Alarm severity

Feature Description

The alarm severity classification is managed according to the ITU X.733 standard supporting programmable selection of the severity level.

The individual trail (PDH/SDH port or single VC-n) can be associated to one of the predefined Alarm Severity Associated Profiles. Six ASAPs are supported: four default profiles + two customizable profiles; at initialization time the NE associates automatically one default ASAP to every individual trail.

Programmability alternatives are (from the highest alarm severity level down to the lowest): CRITICAL, MAJOR, MINOR, WARNING.

In addition you can setup the class = NOT ALARMED, meaning that the alarm report is disabled while the consequent actions are still kept active (e.g. Protection, AIS insertion). The alarm reporting associates the severity level INDETERMINATE if the ASAP association is missing; according to the alarm handling architecture this is an abnormal condition.

MON/NOT MON functionality defined in G.783 and ETS 300417 is managed via ASAP. This functionality allow to inhibits all the alarms of a functional block (VC TTP, POM, TCM,...CTP) by associating the functional blocks to the default NOT alarmed ASAP.

An important characteristic of the feature is the ability to dynamically adapt the severity associated to the alarm event according to the actual service affecting condition (e.g. in case of APS/EPS protection the severity associated to the alarm report will be MINOR if the protection is ready and MAJOR otherwise).

SDH154: LAN access for management

Feature Description

The equipment can be attached to a Local Area Network infrastructure of the office for direct interconnection to the Network Management systems. This interface provides the physical access to the TL1/SNMP or other communication protocol stack via the widely used IEEE-802.3 standard.

Dedicated LAN interface alarm is supported based on the hw/sw diagnostics provided by the physical and data-link layers circuits.

SDH159: FAN unit management

Feature Description

This feature provides fan management and alarm monitoring, also to support the fan unit maintenance operations.

SDH383: On-line bus diagnostic

Feature Description

On-line bus diagnostic is a hardware failure diagnostic and localization mechanism that provides information about problems affecting internal links, allowing more detailed monitoring with respect to the generic "Card Fail" alarm. The mechanism is referenced also as "NGI Monitor".

SDH384: ASAP configuration on port and NE basis

Feature Description

The feature has the target to allow the NMS/CT user to quickly configure Alarm Severity Alarm Profiles (ASAP) of all the Termination Points (TPs) of a port or a Network Element.

This feature allows the user to change the default ASAP of all the TPs of the board with a single command.

The feature allows as well the user to configure all the ASAPs of the TPs of a selected class of ports (2Mb/s, 34Mb/s, …, STM-1, STM-4, …) of a Network Element (as applicable).

4 Equipment Protection

SDH654: 2+1 LOA EPS

Feature Description

2+1 Lower Order Adapter board (LOA) protection

5 Management

SDH200: Perform. Monit. G826 for QoS

Feature Description

Performance Monitoring

Paths are often responsible of the end-to-end customer service, so they can be requested to provide monitoring for Quality of Service purposes and, in addition, to cooperate with specific monitoring to the network Maintenance applications.

PM data collection can be individually activated on the HO/LO-VC trail termination of the PDH tributary ports or on the HO-VC trail termination of the structured VC4 afterward groomed at LO-VC level. PM processing is performed according to the standard G.784 recommendation: BBE, ES, SES and UAS counters are collected.

NE-PM (near-end) monitoring on the incoming signal checks the BIP code violations using the B3 byte (VC4, VC3) or the bits 1-2 of the V5 byte (VC12); in addition the VCn termination can provide FE-PM (far-end) monitoring by REI&RDI information of G1 byte (VC4, VC3) or the V5 byte (VC12) processing.

On the same bidirectional VCn-TTP, the unidirectional PM collection for Maintenance application and bi-directional collection for Quality of Service can simultaneously be activated:

- Bi-directional Collection for QoS

As specified in G.826, G.784 and ETSI 300417, the bidirectional PM collection for Quality of Service has been supported by combining the information on each direction of transport to assess a single unavailability state: the bidirectional path is in the unavailable state if either one or both directions are in the unavailable state. PM data are collected by a single UAS plus two sets of three event counters (BBE,ES,SES) for NE-PM and FE-PM respectively. When the path transports unidirectional payload just the four counters for the NE-PM are activated (BBE, ES, SES and UAS).

Data collection is performed only on 24 hours registers and the NE maintains a buffer of two registers: the 24hours current registers and the historical one.

· Unidirectional collection for Maintenance application

Separate NE-PM and FE-PM set of four counters are collected inside the NE.

Data collection is performed on 15 minutes (quarter) and 24 hours (day) registers. The NE maintains a buffer with the history of the most recent registers value (2 days and 4 hours respectively) that can be retrieved, on request, by the OS/CT interfaces.

TCA are supported on both 15minutes and 24 hours registers on ES, SES, BBE events.

CSES event is not yet planned.

Performance Monitoring G.826 for QoS

This application is relevant for path layers only.

Performance monitoring for error performance purpose is intended to evaluate long term measurement (one month) for quality of service.

Performance monitoring events are counted during available time only over 24 hours.

If the path is bidirectional its availability is computed for the two directions together (G.826); so the 24 hours counters will contain the following events for both the two direction (bidirectional PM: near-end and far-end counters are correlated data):

· NE-BBE : near-end background Block errors;

· NE-ES: near end Errored seconds;

· NE-SES : near end severely errored seconds;

· FE-BBE: far-end background Block errors;

· FE-ES: far end Errored seconds;

· FE-SES: far end severely errored seconds;

· UAS: Unavailability seconds.

No Threshold crossing (TCA) is supported for this kind of collection.

UAT is evaluated.

Release Specific

R3.0: Only for VC4

SDH201: Perform. Monit. M2120 for Maintenance

Feature Description

Performance Monitoring

Paths are often responsible of the end-to-end customer service, so they can be requested to provide monitoring for Quality of Service purposes and , in addition, to cooperate with specific monitoring to the network Maintenance applications.

PM data collection can be individually activated on the HO/LO-VC trail termination of the PDH tributary ports or on the HO-VC trail termination of the structured VC4 afterward groomed at LO-VC level. PM processing is performed according to the standard G.784 recommendation: BBE, ES, SES and UAS counters are collected.

NE-PM (near-end) monitoring on the incoming signal checks the BIP code violations using the B3 byte (VC4, VC3) or the bits 1-2 of the V5 byte (VC12); in addition the VCn termination can provide FE-PM (far-end) monitoring by REI&RDI information of G1 byte (VC4, VC3) or the V5 byte (VC12) processing.

On the same bidirectional VCn-TTP, the unidirectional PM collection for Maintenance application and bi-directional collection for Quality of Service can simultaneously be activated:

· Bi-directional Collection for QoS

As specified in G.826, G.784 and ETSI 300417, the bidirectional PM collection for Quality of Service has been supported by combining the information on each direction of transport to assess a single unavailability state: the bidirectional path is in the unavailable state if either one or both directions are in the unavailable state. PM data are collected by a single UAS plus two sets of three event counters (BBE,ES,SES) for NE-PM and FE-PM respectively. When the path transports unidirectional payload just the four counters for the NE-PM are activated (BBE, ES, SES and UAS).

Data collection is performed only on 24 hours registers and the NE maintains a buffer of two registers: the 24hours current registers and the historical one.

· Unidirectional collection for Maintenance application

Separate NE-PM and FE-PM set of four counters are collected inside the NE.

Data collection is performed on 15 minutes (quarter) and 24 hours (day) registers. The NE maintains a buffer with the history of the most recent registers value (2 days and 4 hours respectively) that can be retrieved, on request, by the OS/CT interfaces.

TCA are supported on both 15minutes and 24 hours registers on ES, SES, BBE events.

CSES event is not yet planned.

Performance Monitoring M2120 for Maintenance

This application is used to monitor path or Section layers.

Performance monitoring for maintenance purpose is intended to evaluate long term measurement for preventive maintenance activity and short term measurement for maintenance activity.

Performance monitoring events are counted during available time over fixed periods of 15 minutes and 24 hours. 16 counters of 15 minutes , and 1 24 hours counter are stored in the NE.

The trail is always monitoring considering its two directions independently way; and availability is computed for each direction (M2101). So for each bi-directional TP 4 sets of counters can be activated : near end 15 min counters and near end 24 hours counters (NE-BBE, NE-ES, NE-SES, NE-UAS), far-end 15min counters and far-end 24 hour counters (FE-BBE, FE-ES,FE-SES,FE-UAS).

Degradation of the circuits is monitored with threshold crossing alerts (TCA). TCA is supported in both 24 hours and 15 minutes counters. (See TCA description for more details).

Release Specific

R3.0: Only for VC4

SDH202: Perform. Monit. On MS-TTP

Feature Description

Performance Monitoring on MS-TTP

MS terminations are not directly related to the customer service, so typically they are monitored for network Maintenance purpose. PM data processing can be individually activated on every STM trail termination according to the standard G.784 recommendation.

Near end primitives are: errored blocks (evaluated by B2 code violation in accordance with G.829 block based approach) and defected seconds (evaluated from server and section defects in accordance with G.829). They are used for collecting the following set of event counters:

- BBE = Background Block Errors;
- ES = Errored Seconds;
- SES = Severely Errored Seconds.

A fourth counter for monitoring of the MS availability state is provided:

UAS = Unavailable Seconds.

In addition to the NE-PM (Near End - PM, monitoring the incoming signal), the MS termination provides FE-PM (Far End - PM, monitored by the M1 byte processing).

As specified in M.2120, the bidirectional PM collection for maintenance has been supported by independent information on each direction of transport: NE-PM events and FE-PM events are collected on two separate set of four (BBE,ES,SES and UAS) unidirectional counters.

Data collection is performed on 15 minutes (quarter) and 24 hours (day) registers. The NE maintains a buffer with the history of the most recent register values (4 hours (16x

15minuts counters) and 1 days respectively) that can be retrieved, on request, by the OS/CT interfaces.

TCA on both 15minute and 24 hour counters are supported. 15min counter supports TCA with explicit clear notification; implicit clear mechanism is supported on 24 hour counters.

The Threshold values can be configured on counter base, by using threshold profiles.

The threshold profiles are created by the manager; if no threshold profile is created no TCA alarm is generated by the NE. As HW the Equipment can manage up to 256 threshold profiles for 15minute counters and 256 for 24 hours counters but in the equipment only 100 profiles for both for 15 minute and 24 H counters are managed

CSES events are not yet planned.

SDH203: Perform. Monit. On RS-TTP

Feature Description

Performance Monitoring on RS-TTP

RS can be monitored for Maintenance purpose, in addition to the MS, when Regenerators are present in the section. PM specs are based just on the RSOH information (e.g: LOS, LOF, B1) of the incoming signal. Only the near-end unidirectional PM can be activated according to G.784 standard.

The Process is based on error block approach according to ITU G. 829.

The BBE, ES, SES and UAS plus an additional counter for the collection of the Out of Frame Seconds (OFS) are collected.

Data collection is performed on 15 minutes (quarter) and 24 hours (day) registers. The NE maintains a buffer with the history of the most recent register values (4 hours =16 15 minutes counters and 1 days respectively) that can be retrieved, on request, by the OS/CT interfaces.

TCA on both 15minute and 24-hour counters are supported. 15min counters support TCA with explicit clear notification; TCA with implicit clear mechanism is supported on 24-hour counters.

SDH204: Perform. Monit. on AU-PJE

Feature Description

Performance Monitoring on AU-PJE

AU PJE (Administrative unit point justification event) is an optional parameters request in G.784.

For AU PJE counters , the positive and negative PJE shall be counted separately on one selectable AU within an STM-N signal, after the AU has been resynchronized to the local clock. Refer to G.783.

The number of positive and negative outgoing PJE per second are collected in 15 minutes and 24 H counters. A history of 16 x 15minutes counters and 2x 24H are stored in the NE for each AU selected.

No Threshold crossing mechanism is supported on AU-PJE counters.

SDH214: HO POM Path Overhead Monitoring (VC4)

Feature Description

HO & LO POM - Path Overhead Monitoring

The Path Overhead Monitor function is applicable to the supervision of equipped VCi path.

The POM function processes the overhead (POH) to monitor VC-n (n= 12, 3, 4, 4-4c,4-16c, 4-64c) for errors, and recovers the trail termination status.

This function is able to process:

· J1/J2: The trail trace identifier is recovered from VC-n POH and checked with the expected one to trace identifier mismatch processing;

· C2/V5( ): The signal label bits are checked for detecting AIS VC (VC-AIS) (if all "1" code is detected) or detecting Unequipped status (if all “0” pattern is detected);

· B3/BIP-2:BIP-n is computed for the VC-n frame. The computed BIP-n value for the current frame is compared with the recovered byte to detected errors and then the excessive errors and signal degrade ;

· G1[1-4]: The REI shall be recovered and the derived performance primitives should be used in PM process;

· G1[5]: The RDI defect is detected.

The function shall detect for dUNEQ, dTIM, dEXC, dDEG, dAIS and dRDI dSSF defects according to ITU G.783 and ETSI 300417 recommendation .

The function can be enabled/disabled by the manager.

The equipment allows the configuration of this function on CTP type basis: HO and LO orders, before and after the matrix, to monitoring the incoming and the outgoing signal.

SDH354: LO POM Path Overhead Monitoring (VC3, VC12)

Feature Description

The Path Overhead Monitor function is applicable to the supervision of equipped VCi path.

The POM function processes the overhead (POH) to monitor VC-n (n= 12, 3, 4, 4-4c,4-16c, 4-64c) for errors, and recovers the trail termination status.

This function is able to process:

· J1/J2: The trail trace identifier is recovered from VC-n POH and checked with the expected one to trace identifier mismatch processing;

· C2/V5( ): The signal label bits are checked for detecting AIS VC (VC-AIS) (if all "1" code is detected) or detecting Unequipped status (if all “0” pattern is detected);

· B3/BIP-2:BIP-n is computed for the VC-n frame. The computed BIP-n value for the current frame is compared with the recovered byte to detected errors and then the excessive errors and signal degrade ;

· G1[1-4]: The REI shall be recovered and the derived performance primitives should be used in PM process;

· G1[5]: The RDI defect is detected.

The function shall detect for dUNEQ, dTIM, dEXC, dDEG, dAIS and dRDI dSSF defects according to ITU G.783 and ETSI 300417 recommendation .

The function can be enabled/disabled by the manager.

The equipment allows the configuration of this function on CTP type basis: HO and LO orders, before and after the matrix, to monitoring the incoming and the outgoing signal.

Release Specific

R3.1 and later releases: partial support

SDH206: Perform. Monit. on HO (VC4, VC3) POM unidirectional for segment monitoring (near-end primitives)

Feature Description

Perform. Monit. on VCn-POM unidirectional for segment monitoring (near-end primitives)

VCn trails can be monitored in intermediate node through the activation of performance monitoring process on Monitoring function (POM).

The monitoring on intermediate nodes can be done for monitoring of a segment via near-end primitives.

The monitoring of a segment can be done for Maintenance or QoS purpose.

If SNCP is configured the Quality of Service collection have to be enable in the monitoring functions after the matrix .

Segment monitoring is achieved by activation Performance Monitoring unidirectional of near-end primitives: Ne-EB (checking the BIP code violations on the B3 byte (VC4, VC3) or the bits 1-2 of the V5 byte (VC12)), and Ne_DS (checking POH for defects: dSSF or dTim or dUneq.)

The 15 minutes and 24 hours collection can be activated.

The following history is supported :

· 16 x 15minute counters (1 current and 15 historical);

· 2 x 24H counters (1 current and 1 historical).

TCA is supported on ES, SES and BBE events for both 15 minute and 24h counters.

The Perf. Monitoring is allowed at High order trail (VC4, VC4-xc: x=4, 16,64) or Low order (VC3, VC12); the support of this feature in each layer will be supported when the relative layer is managed.

SDH355: Perform. Monit. on LO (VC3 & VC12) POM unidirectional for segment monitoring (near-end primitives)

Feature Description

VCn trails can be monitored in intermediate node through the activation of performance monitoring process on Monitoring function (POM).

The monitoring on intermediate nodes can be done for monitoring of a segment via near-end primitives.

The monitoring of a segment can be done for Maintenance or QoS purpose.

If SNCP is configured the Quality of Service collection have to be enable in the monitoring functions after the matrix.

Segment monitoring is achieved by activation Performance Monitoring unidirectional of near-end primitives: Ne-EB (checking the BIP code violations on the B3 byte (VC4, VC3) or the bits 1-2 of the V5 byte (VC12)), and Ne_DS (checking POH for defects: dSSF or dTim or dUneq.)

The 15 minutes and 24 hours collection can be activated.

The following history is supported :

· 16 x 15minute counters (1 current and 15 historical);

· 2 x 24H counters (1 current and 1 historical).

TCA is supported on ES, SES and BBE events for both 15 minute and 24h counters.

The Perf. Monitoring is allowed at High order trail (VC4, VC4-xc: x=4, 16,64) or Low order (VC3, VC12); the support of this feature in each layer will be supported when the relative layer is managed.

SDH220: Perform. Monit. on HO (VC4, VC3) POM unidirectional & bidirectional for end to end monitoring (far-end primitives)

Feature Description

Perform. Monit. on VCn-POM unidirectional & bidirectional for end to end monitoring (far-end primitives)

VCn trails can be monitored in intermediate node through the activation of performance monitoring process on Monitoring function.

As the trails are often responsible of the end-to-end customer service, the end-to-end monitoring can be requested to provide monitoring for Quality of Service purposes and , in addition, for network Maintenance applications.

If SNCP is configured the Quality of Service collection have to be enable in the monitoring functions after the matrix .

End to end monitoring is achieved by activation of Performance monitoring on the two direction of path and using far-end primitives. This process can be unidirectional (for Monitoring) or bidirectional process (for QoS).

In case of unidirectional process one direction can be monitored end to end and both 15minute and 24 h collection can be activated 15/ 24 FE_BBE, FE-ES, FE-SES, FE-UAS on incoming or egress signal depending of the POM is enable. The TCA are also evaluated in both 15 minute and 24 H counters.

The bidirectional process needs the presence on the two Monitoring functions in the two directions in one NE and among the two monitoring function a 24 hour collection can be activated with the collection of incFE_BBE, incFE-ES, IncFE-SES, UAS, eFE-BBE, eFE-es, eFE-SES.

Release Specific

R3.0: Only for VC4

SDH356: Perform. Monit. on LO (VC3 & VC12) POM unidirectional & bidirectional for end to end monitoring (far-end primitives)

Feature Description

VCn trails can be monitored in intermediate node through the activation of performance monitoring process on Monitoring function.

As the trails are often responsible of the end-to-end customer service, the end-to-end monitoring can be requested to provide monitoring for Quality of Service purposes and , in addition, for network Maintenance applications.

If SNCP is configured the Quality of Service collection have to be enable in the monitoring functions after the matrix .

End to end monitoring is achieved by activation of Performance monitoring on the two direction of path and using far-end primitives. This process can be unidirectional (for Monitoring) or bidirectional process (for QoS).

In case of unidirectional process one direction can be monitored end to end and both 15minute and 24 h collection can be activated 15/ 24 FE_BBE, FE-ES, FE-SES, FE-UAS on incoming or egress signal depending of the POM is enable. The TCA are also evaluated in both 15 minute and 24 H counters.

The bidirectional process needs the presence on the two Monitoring functions in the two directions in one NE and among the two monitoring function a 24 hour collection can be activated with the collection of incFE_BBE, incFE-ES, IncFE-SES, UAS, eFE-BBE, eFE-es, eFE-SES.

SDH211: UAT - Unavailable Time Alarm

Feature Description

UAT - Unavailable Time Alarm

A path or a section is defined Unavailable when it enters in a period of unavailable time.

A period of unavailability time begins at the onset of ten consecutive SES events. These ten seconds are considered to be part of unavailable time. When a resource enter in this unavailability time a spontaneous notification is sent to the manager (UAT alarms) This alarm is associated to PM counters so the alarm can be notified only if PM process is activated on TP or CTP.

A new period of available time begins at the onset of ten consecutive non-SES events. These ten seconds are considered to be part of available time. When the resource enters in an availability status a clear of UAT alarm is notified to the NM.

If the PM process is stopped , if UAT was active then it is cleared.

The configuration of UAT alarm severity is provided by CT & NM.

SDH212: UPA - Unavailable Path Alarm

Feature Description

UPA - Unavailable Path Alarm

The UPA alarm is the standard SSF (Server Signal Failure) defect which is provided by VCi-n TTP and on Connection Termination Point on POM function, when a server defect is active.

SDH213: TCA - PM Threshold Crossing Alarm

Feature Description

TCA - PM Threshold Crossing Alarm

Threshold crossing alerts are provided in maintenance application for monitoring degradation of the circuits.

TCA is supported in both 24h and 15 minutes unidirectional counters.

There are two types of thresholds according to the monitoring time-slot (15 minutes or 24 hours):

· TCA with reset: used in 15-minute period, to assist in detection of transition to the Unacceptable performance levels. A threshold report occurs when a threshold is exceeded by the related value(BBE, ES or SES). The reset threshold report occurs when the values of BBE, ES o SES is lower than or equal to the reset threshold;

· TCA with implicit clear: used in 24 h counters. 24 hour period is to assist in detection of transition to the degraded performance levels. A threshold report occurs when the BBE, ES or SES values exceed degraded performance levels. At the end of 24hour period the TCA is implicitly reset.

Two threshold levels for each parameter can be configured HI-TH or LO-TH (with the exception of SES where the Lo-TH is always fixed to 0).

TCA values configuration is performed through profile configuration. Several profiles can be created by NM or CT: operator can configure one of this profile for each PM counter.

SDH795: TCA - PM Threshold Crossing Alarm for LO

Feature Description

As feature SDH213, but for LO PM

SDH315: AUTO-MON status on SDH and PDH ports

Feature Description

AUTO-MON status on SDH and PDH ports

In order to prevent alarms from being raised and failures being reported during trail provisioning actions, trail termination functions shall have the ability to enable and disable fault cause declaration. This shall be controlled via their termination point mode or port mode parameter.

The termination point mode (see Fig.1) shall be either "monitored" (MON) or "not monitored" (NMON). The state shall be MON if the termination function is part of a trail and provides service and NMON if the termination function is not part of a trail or is part of a trail which is in the process of set-up, breakdown or re-arrangement.

In physical section layers, the termination point mode is called the port mode. It has three modes (see Fig. 2): MON, AUTO, and NMON. The AUTO mode is like the NMON mode with one exception: if the LOS defect clears, the port mode is automatically changed to MON. This allows for alarm-free installation without the burden of using a management system to change the monitor mode. The AUTO mode is optional. When it is supported, it shall be the default mode; otherwise, NMON shall be the default mode.

AS described above, the “AUTO-MON” implementation on OMSNs is compliant to ITU-T G.806 rec.

In addition the following feature-enhancement have been foreseen:

· provisioning at the Network Element level for the expected behavior (“two” or “three” states behavior - default “two states”) in order to avoid impact on other customer networks;

· a parameter at the physical port level allows management of the current state of the port (AUTO / MANUAL);

· no impact on current ASAP mechanism.

No Hold Off time is foreseen in a first step (only F4 filter applied).

SDH316: Alarm Filtering Configuration (F4 filter)

Feature Description

Alarm Filtering configuration (F4 filter)

The feature has the aim to avoid transient alarm conditions. To get this goal the network element performs a persistency check on the fault causes, before declaring a failure. Once

the failure is declared, it shall be cleared if the fault cause is absent continously for a persistency time.

Persistency F4 filter values for primary and secondary alarms (definded as alarms caused by a server failure) have to be distinguished. That is to avoid problems of flooding caused by a single primary alarm on the secondary alarms. Tab. 1 shows the values implemented for F4 persistency filter.

It has to be highlighted that the persistency time filtering mechanism affects only the alarm reporting and NOT the consequest action.

6 Network

SDH227: VC-i Signal Label management

Feature Description

VC-i Signal Label management

C2 byte and bits 5¸7 of V5 byte are used for HO-VCs and LO-VCs signal label. Tab.1 resumes the POH byte codes explicitly managed by the OMSNs and relating handling rules.

The Payload Mismatch alarm (PLM) is monitored and reported at the VC-TTPs only.

In general, from CT/NM the configuration of Signal label value is done via payload structure definition no explicit configuration, with the exception of ‘equipped -non-specific value’ which configuration needs specific configuration function.

For interworking with old equipment, is “equipped -non- specific” is received no PLM alarm is generated.

At the VC-CTPs in POM, the standard behavior ignores the payload type that is transparently pass through. The intermediate connection points (POM) use the Signal Label code to detect the unequipped (UNEQ) alarm.

The intermediate connection points where SUM/SUT is present, use the Signal Label code to detect and/or insert the unequipped (UNEQ) information.

In the equipment which does not support the VC termination points this feature address only the management of Unequipped condition in Monitoring function (POM) or SUT /SUM.

SDH228: J0 - Section Trace management

Feature Description

J0 - Section Trace management

The feature provides the ability to setup the section trace handling on the STM-N interface at Regenerator layer. The J0 byte of the RS-OH is used, according to the

standard 16 bytes multiframe format defined in the G.707 recommendation. The equipment supports setup, validation and monitoring of the section trace identifiers under control of the CT / OS sytems interfaces.

The Section trace monitoring can be enable/disable by operator.

A single byte format is optionally supported to allow interworking with Sonet Equipment.

SDH484: HEX management of J0

Feature Description

HEX management of J0

It is the capability to manage J0 values (by CT) with hexadecimal figures.

SDH358: J1 - Path Trace Management

Feature Description

J1 - Path Trace management

The feature provides the ability to setup the Trail trace handling on the VC . The J1 byte of the VC-OH is used, according to the standard 16 bytes multiframe format defined in the G.707 recommendation. The equipment supports in Trail termination point setup, validation and monitoring of the trail trace identifiers under control of the CT/OS system interfaces.

SDH463: HEX management of J1

Feature Description

HEX management of J1

It is the capability to manage J1 values (by CT) with hexadecimal figures.

SDH233: ExBER - Excessive BER alarms

Feature Description

ExBER - Excessive BER alarms

The excessive error alarm is detected only for networks where the network operator assumes a Poisson distribution of errors.

An excessive error (dEXC) shall be detected if the equivalent BER exceeds a preset threshold of 10E(-x), x = 3, 4 or 5. The excessive error defect shall be cleared if the equivalent BER is better than 10E(-x+1).

The Excessive error is detected in MS and VC-i layers. In case of VC-i layers the ExBer can be detected on trail termination point (TTP) and on connection termination point (POM, SUT/SUM function).

The threshold for detecting alarm is configurable

SDH234: SD - Signal Degrade alarms (Poisson distribution)

Feature Description

SD - Signal Degrade alarms (Poisson distribution)

For networks where the network operator assumes a Poisson distribution of errors, a degraded signal defects are to be detected according to the following process:

A degraded signal defect (dDEG) shall be detected if the equivalent BER exceeds a preset threshold of 10E(-x), x = 5, 6, 7, 8 or 9. The degraded signal defect shall be cleared if the equivalent BER is better than 10E(-x+1).

The Signal degrade error is detected in MS and VC-i layers. In case of VC-i layers the DEG can be detected on trail termination point (TTP) and on connection termination point (POM, SUT/SUM function).

The threshold for detect alarm is configurable. All the SFP/SFF interfaces show a lower accuracy in LOS detection with respect to previous technologies; so the Signal Degrade alarm is masked by the LOS alarm. The LOS alarm root is generated @ BER within 10E-8 / 10E-10.

SDH317: SD - Signal Degrade alarms (Bursty distribution)

Feature Description

SD - Signal Degrade alarms (burst error distribution)

For networks where the operator assumes a bursty distribution of errors, the degraded signal defect (dDEG) shall be declared if DEGM consecutive bad intervals (interval is the 1 second period used for performance monitoring) are detected. An interval is declared bad if the percentage of detected errored blocks in that interval >= Degraded Threshold (DEGTHR).

The degraded signal defect shall be cleared if M consecutive good intervals are detected. An interval shall be declared good if the percentage of detected errored blocks in that interval < DEGTHR.

The Two threshold DEGM and DEGTHR are provisionable by CT/ NM in the following range:

- DEGM in the range 2 to 10.;
- DEGTHR in the range 0 < DEGTHR <= 100%.

The signal degrade alarms is monitored MST and in Vc-i layer both on TTP or CTP (via POM, SUT/SUM) and also on 2Mbit POM.

7 Network Protection

SDH246: STM-1 linear single-ended 1+1 APS

Feature Description

STM-1 linear single-ended 1+1 APS.Unidirectional Linear protection applied at STM-1 level.

Multiplex Section linear trail protection.

The whole section is duplicated from the originating node for each direction of transmission.

Tx side is permanently bridged. In Rx side the best signal is selected. As the scheme is “unidirectional protection mode”, the switch occurs only at the near-end where the failure is detected and the K1/K2 messages are just devoted to carry info switch status to the far-end.

This protection protects against Transmission failures (LOS, LOF, MS_AIS) or section degradation (MS_SD or MS_EXBER) or HW failure which affects the traffic.

revertive & non-revertive

WTR 0 - 15 minutes selectable

Protection takes place within 50ms.

The implementation is compliant with the G841 - 7.1 clause: MSP protocol compatible with the 1:N MSP operation.

Different physical interfaces can be mixed in the same MSP protection group: e.g. at STM-1 level the feature is applicable at both electrical and optical ports.

Operator command are according G.841 and the following one are supported:

· Manual to protection: to switch from protected (main resource) to protecting unit (Spare resource). This command is accepted if no failure is present on protecting unit;

· Manual to protected: to switch from protecting unit (Spare resource) to protected one (main resource). This command is accepted if no failure is present on protected unit;

· Force to protection: to switch from protected (main resource) to protecting unit (Spare resource). This command is accepted if no failure is present on protecting unit;

· Force to protected: to switch from protecting unit (Spare resource) to protected one (main resource) This command is accepted if no failure is present on protected unit;

· Lockout: the protection is locked, the traffic is managed by protected unit independently of its status, in failure or not in failure;

· Clear: release command which is active.

· Exercise : not supported.

SDH314: STM-4 linear single-ended 1+1 APS

Feature Description

STM-4 linear single-ended 1+1 APS

Unidirectional Linear protection applied at STM-4 level (see STM-1 for description).

cription).

SDH341: STM-16 linear single-ended 1+1 APS

Feature Description

STM-16 linear single-ended 1+1 APS

Unidirectional Linear protection applied at STM-16 level (see STM-1 for description).

SDH342: STM-64 linear single-ended 1+1 APS

Feature Description

STM-64 linear single-ended 1+1 APS

Unidirectional Linear protection applied at STM-64 level (see STM-1 for description).

SDH343: STM-1 linear dual-ended 1+1 APS

Feature Description

STM-N linear dual-ended 1+1 APS

Multiplex Section linear trail protection.

The whole section is duplicated from the originating node for each direction of transmission.

Tx side permanent bridged. In Rx side the best signal is selected, in bi-directional operation mode the selector is moved only when the two sides agreed the operation; and for this reason a side makes requests then waiting for acknowledgements of switch action from other side by using the APS bytes

The implementation is compliant with the G841 - 7.1clouse MSP protocol compatible with the 1:N MSP operation.

This protection protects against Transmission failures (LOS, LOF, MS_AIS) or section degradation (MS_SD or MS_EXBER) or HW failure, which affects the traffic.

revertive & non-revertive

WTR 0 - 15 minutes selectable

Protection takes place within 50ms.

Different physical interfaces can be mixed in the same MSP protection group: e.g. at STM-1 level the feature is applicable at both electrical and optical ports.

Operator command are according G.841 and the following one are supported:

· Manual to protection: to switch from protected (main resource)) to protecting unit (Spare resource). This command is accepted if no failure is present on protecting unit;

· Manual to protected: to switch from protecting unit (Spare resource)) to protected one (main resource). This command is accepted if no failure is present on protected unit;

· Force to protection: to switch from protected (main resource)) to protecting unit (Spare resource). This command is accepted if no failure is present on protecting unit;

· Force to protected: to switch from protecting unit (Spare resource) to protected one (main resource) This command is accepted if no failure is present on protected unit;

· Lockout: the protection is locked, the traffic is managed by protected unit independently of its status, in failure or not in failure;

· Clear: release command which is active;

- Exercise : not supported

STM-1 linear dual-ended 1+1 APS

Bi-directional Linear protection applied at STM-1 level. It is applicable both on electrical or optical interface

SDH344: STM-4 linear dual-ended 1+1 APS

Feature Description

STM-4 linear dual-ended 1+1 APS

Bi-directional Linear protection applied at STM-4 level (see STM-1 for description).

SDH346: STM-16 linear dual-ended 1+1 APS

Feature Description

STM-16 linear dual-ended 1+1 APS

Bi-directional Linear protection applied at STM-16 level (see STM-1 for description).

SDH345: STM-64 linear dual-ended 1+1 APS

Feature Description

STM-64 linear dual-ended 1+1 APS

Bi-directional Linear protection applied at STM-64 level (see STM-1 for description).

SDH250: SNCP/I among LO VC-i trails (i=12, 3)

SDH251: SNCP/I among HO VC-i trails (i=4)

Feature Description

SNCP/I among VC-i trails

SDH252: SNCP/N among LO VC-i trails (i=12, 3)

Feature Description

SDH253: SNCP/N among HO VC-i trails (i=4)

Feature Description

SNCP/N among VC-i trails

SDH256: Hold-Off times for protection independency in SNCP

Feature Description

Hold-Off times for protection independency

It provides the ability to set an interval delay between the detection/clearing of the failure causes and the activation/releasing of the protection switches .The programmability rules for the delay values are still to be defined.

Hold-Off times for protection independency in SNCP

Programmable delay applied to a SNCP protection schema.

It is applicable to:

· HO/LO SNCP/I;

· HO/LO SNCP/N;

· HO/LO Drop&Continue (Drop&Continue +insertion SNCP, Drop&Continue + insertion MS-Spring RIW & RIP).

SDH318: Hold-Off times for protection independency in MS-SPRing

Feature Description

Hold-Off times for protection independency

It provides the ability to set an interval delay between the detection/clearing of the failure causes and the activation/releasing of the protection switches.

Hold-Off times for protection independency in MS-Spring

Programmable delay applied to a MS-SPRing protection schema.

It is applicable to 2F or 4F MS-SPRing. In case of 4F MS-SPRing, two values of Hold off time can be configured: for ring switch, for each span switch.

Release Specific

R3.1: 4F not supported

SDH257: Drop&Continue + Insertion SNCP

Feature Description

SNCP rings can be interconnected in dual node architecture, in this case the Drop & Continue functionality can be used: when each of the dual-fed signals hits an interconnection node, it is dropped at that node and continued onto the other interconnection node using the drop-and-continue feature. Thus, each interconnection node can select from two signals sent on a different way around the ring. The output of the selector in each interconnection node is then transmitted to the second ring. Each of the interconnection nodes in the second ring takes its respective signal and transmits it towards the sink node, away from the other interconnection node. Finally, the sink node makes the selection between the two signals from the two directions around the ring.

Due to the symmetry of this scheme, the two interconnection nodes are completely equivalent.

The functionality is supported according ITU G.842. The switching criteria and the operator command of the selector are those used for a SNC protection, so the selector can be configured as SNCP/I or SNCP/N (if supported by the release).

The selector can be configured to operate in revertive or not revertive mode. In case of revertive mode, fixed WTR = 5min is supported.

The description of the feature is applicable to the architecture which uses STM-N interfaces for interconnecting rings (4 nodes Architecture), as well as to collapsed dual node interconnections, which means that rings are interconnected inside the matrix (if supported by the release).

The Drop & Continue functionality is supported to interconnect HO SNCP ring, LO-SNCP rings, or mixed HO-SNCP with LO-SNCP (each interconnection type is supported if the release supports the related protection scheme).

For Hold-off time support, see Hold off time feature.

Release Specific

R3.0: Only HO-SNCP ring interconnection

SDH259: 2f MS-SPRing at STM-16 interfaces

Feature Description

See description for feature SDH260

SDH260: 2f MS-SPRing at STM-64 interfaces

Feature Description

It provides the support to the standard MS-SPRing protection scheme according to the G841 recommendation in two fibers bidirectional rings (max number of nodes: 16).

Two-fibre MS switched rings require only two fibres for each span of the ring. Each fibre carries both working channels and protection channels. On each fibre, half the channels are defined as working channels and half are defined as protection channels. The normal traffic carried on working channels in one fibre are protected by the protection channels travelling in the opposite direction around the ring .

Main characteristics:

· K1/K2 management: bridge & switch actions according to G84;1

· Switched entity: VC4 (but any type of trib port can access the ring);

· Switching criteria: MS-AIS, LOS, LOF, B2 exBER, B2 degrade;

· Revertive switching: programmable WTR = 0-15m with step of 1 min;

· Extra traffic: not supported.

Switching time: G.841 target < 50msec on ring level with 16 nodes, with the contribute of the 1.200Km fibre propagation time.

This technique restores all the traffic in case of single fiber failure, moreover it recovers from some classes of multiple faults; if a node fails or becomes isolated all VC4s terminated in that node will be squelched (AIS insertion).

The set of externally initiated commands of the G.841 are supported with the exception of the "Exercise ring" commands: Clear, Lockout of working channels ring, lockout of protection - span (lp-s), forced switch ring, manual switch ring.

NUT is not supported.

SDH925: Programmable WTR on MS-SPRing - extended time

Feature Description

Support of WTR up to at least 48 hours for MS-SPRing

SDH931: Programmable WTR on SNCP - extended time

Feature Description

Support of WTR up to at least 48 hours for SNCP

SDH932: Programmable WTR on MSP - extended time

Feature Description

Support of WTR up to at least 48 hours for MSP

SDH269: Collapsed single-node ring interconnection

Feature Description

In case of ring topology , rings can be interconnected in single node with D&C architecture. In the classic solution, the interconnection between rings is done through tributary ports.

If the equipments is used to close several ring on the same NE, this functionality allows to drop/insert traffic from one ring and insert/drop to another ring through the interconnection done directly in the matrix without using STM-N port for the interconnection.

The two architectures can be used to interconnect the following rings:

Two HO-SNCP rings, or one HO-SNCP ring with a LO-SNCP ring, a MS-Spring ring with HO-SNCP or 2 MS-Sping rings.

Each interconnection will be supported when the related protection is supported.

SDH270: Collapsed dual-node ring interconnection

Feature Description

In case of ring topology, rings can be interconnected in dual node with D&C architecture. In the classic solution, the interconnection between rings is done through tributary ports.

The equipments allow closing several rings on the same NE and this functionality allows to drop/insert traffic from one ring and insert/drop to another ring through the interconnection done directly in the matrix without using STM-N port for the interconnection.

The two architectures can be used to interconnect the following rings:

Two HO-SNCP rings, or one HO- SNCP ring with a LO-SNCP ring, a MS-Spring ring with HO-SNCP or 2 MS-Spring rings (each interconnection type is supported if the release supports the related protection scheme).

Release Specific

R3.0: Only for HO-SNCP rings

SDH271: AU/TU independent allocation SNCP

Feature Description

AU/TU independent allocation SNCP

In the SNCP configuration, at Higher order or lower order, the manager can select for each side of connection protect an AU-x (or TU-x) independently from the other side.

8 Connectivity

SDH275: VC-i xC: bidirectional point-to-point (i=12,3,4)

Feature Description

VC-i xC: bidirectional point-to-point (i=12,3,4)

Release Specific

R3.0: Only for VC4

SDH276: VC-i xC: bidirectional point-to-point (i=4)

Feature Description

VC-i xC: bidirectional point-to-point (i=4)

SDH277: VC-i xC: unidirectional point-to-point (i=12,3,4)

Feature Description

VC-i xC: unidirectional point-to-point (i=12,3,4)

Release Specific

R3.0: Only for VC4

SDH278: VC-i xC: unidirectional point-to-point (i=4)

Feature Description

VC-i xC: unidirectional point-to-point (i=4)

SDH279: VC-i xC: unidirectional point-to-multi-point (i=12,3,4)

Feature Description

VC-i xC: unidirectional point-to-multi-point (i=12,3,4)

Unidirectional, bidirectional and broadcast cross-connection are supported without any restriction .

Release Specific

R3.0: Only for VC4

SDH280: VC-i xC: unidirectional point-to-multi-point (i=4)

Feature Description

VC-i xC: unidirectional point-to-multi-point (i=4)

Unidirectional, bidirectional and broadcast cross-connection are supported without any restriction .

SDH281: AU4-4c: among STM-n interfaces (n >= 4)

Feature Description

AU4-4c: among STM-N interfaces (N >= 4)

Each kind of cross connection, unidirectional, bidirectional, broadcast is supported also for AU4-4c among the STM-4, STM-16 and STM-64 ports

SDH282: AU4-16c: among STM-n interfaces (n >= 16)

Feature Description

AU4-16c: among STM-N interfaces (N >= 16)

Each kind of cross connection, unidirectional, bidirectional, broadcast is supported also for AU4-16c among the STM-16 and STM-64 ports

SDH283: AU4-64c: among STM-n interfaces (n=64)

Feature Description

AU4-64c: among STM-N interfaces (N = 64)

Each kind of cross connection, unidirectional, bidirectional, broadcast is supported also for AU4-64c among STM-64 ports inside the single-shelf unit.

SDH601: VC4 Virtual Concatenation (G.707) 1..64

Feature Description

The NE supports VC4 virtual concatenation as per G.707

SDH602: VC3 Virtual Concatenation (G.707) 1..21

Feature Description

The NE supports VC3 virtual concatenation as per G.707

SDH603: VC12 Virtual Concatenation (G.707) 1..63

Feature Description

The NE supports VC12 virtual concatenation as per G.707

SDH604: LCAS for VC4 groups (G.7042)

Feature Description

The NE supports LCAS for VC4 virtually concatenated groups as per G.7042

SDH605: LCAS for VC3 groups (G.7042)

Feature Description

The NE supports LCAS for VC3 virtually concatenated groups as per G.7042

SDH606: LCAS for VC12 groups (G.7042)

Feature Description

The NE supports LCAS for VC12 virtually concatenated groups as per G.7042

9 Timing

SDH290: 4.6 ppm free-running stability

Feature Description

4.6 ppm free-running stability

Frequency stability in the free-running mode is better than 4.6 ppm, in compliance to the G.813 option 1 standard requirement.

SDH291: 0.37 ppm/day holdover accuracy

Feature Description

0.37 ppm/day holdover accuracy

The holdover mode will guarantee less than .37ppm of frequency drift within the first 24h.

SDH292: Programmable multiple synch sources

Feature Description

Programmable multiple synch sources

The equipment synchronization reference is generated in compliant with the T0 signal of the G.783 recommendation. Selection/configuration can be performed by software via CT and/or OS provisioning; up to six traffic ports can be selected by mixing timing sources of T1 type, T2 type. In addidion to this T3 type dedicated synch interfaces are supported. The configured list of multiple sources is prioritized and allows to statically define the source quality levels.

When all the selected references are missing or invalid the SEC goes usually into holdover mode, while it goes into free -running mode if during the last 30 minutes not suitable reference stability was stored.

The monitoring of source validity is based on the SF/SD indications coming from the physical interfaces itself; additionally every synchronization source is checked by frequency drift control with fixed threshold: ± 10 ppm. The individual source validity status can be externally monitored by specific alarms: separate signal defects and drift defects.

The source selection switching algorithm is revertive; when a higher priority source is restored the selection automatically switches back after a fixed WTR interval time.

The above mentioned validity criteria are always active and overrule the priority algorithm of the source selection circuitry. When multiple sources are valid, T0 signal will be selected according to the best quality level. The actual quality levels are obtained by the dynamic SSM info of the incoming stream or by the static values defined by the provisioning the sources. While different sources provide the same quality level then the software preset priorities are effective. The SSM based selection policy can be software activated/deactivated.

An external synchronization clock (2MHz output signal) is made available: generation is compliant to the T4 signal of G.783. Source can be selected by choosing the internal synchronization clock (T0) or anyone of the incoming timing sources of type T1 or T2. In the last case the programming rules for priorities and quality levels are the same above described for the generation of the T0 reference; the only constraint is that the list of up to six T1/T2 potential synch sources are shared between T0 and T4.

In case of APS protection the working and spare channels shall be deemed as distinct timing sources. In case of EPS protection only the working channels can be selected as valid timing sources.

SDH293: SSM standard interworking

Feature Description

SSM standard interworking

Every STM-N traffic interface supports the standard management of the Synchronization Status Messages in the S1 byte of the MS-SOH according to the G.707/G.783 handling rules. The supported quality levels are (b5-b8 code):

- G.811 - PRC;
- G.812T - SSUT;
- G.812 - SSUL;
- G.813 - SETS;
- Do Not Use.

The incoming values from the STM-N ports configured in the list of the synchronization sources are used by the SEC selection algorithm. The quality level of the actual SEC

reference is automatically inserted in the outgoing SSM fields; alternatively the operator can manually select a constant quality level code to be sent on the individual STM-N interface.

When 2.9.6 feature is supported, the same features is available on the 2Mbs external synch interface too, according to the standard rules based on the information field in time-slot 16 of the 2Mbs frame format.

SDH294: 2MHz external synch

Feature Description

2MHz external synch

The NE supports T3/T4 type external synch sources, handled according to G.783 standard.

SDH295: 2Mb/s external synch

Feature Description

2Mbs external synch

2Mb/s framed signal can be handled at T3/T4 synch interfaces in alternative to the basic 2MHz external synch references. The equipment provides software programmability to switch between the two mode; physical interfacing and access rule are in common.

The G.704 frame alignment infomation and the CRC-4 correctness affects the validity of the extracted clock. Additionally the SSM protocol is supported according to the standard rules based on the information field in time-slot 16 of the 2Mbs frame format. The management of SSM protocol on this interface is configurable by operator.

SDH296: STM-N synch references

Feature Description

STM-N synch references

T1 type of synch source handled according to the G.783 standard. Every STM-N port on every type of traffic interface board can be inserted in the list of external timing sources with the ability to manage the SSM protocol. The standard SF/SD indications automatically invalidate the synch source; the incoming B2 bytes are used to chek the error rate.

SDH298: Holdover/Free-running alarms

Feature Description

Holdover/Free-running alarms

Dedicated alarm indications occur when the timing circuitry enters in the holdover or in the free-running mode due to either quality criteria or signal validity. Signal defects of the individual SDH/PDH reference are available as independent alarms at the relevant interface.

SDH299: Holdover/Free-running commands

Feature Description

The NE supports standard operator's Force commands driving the timing circuitry into the holdover or the free-running mode. The Clear command releases any in action Force status.

SDH385: ADM with SSU functionality

Feature Description

This feature allows to use the NE in conjunction with Synchronization Supply Unit (SSU).

The synchronization chain from STM-N (T1) signal to SEC (passing through SSU) consists of the following steps:

· The External Reference (T4) is locked to a timing reference (T1/T2) in according to the SSM (Synchronization Status Message) algorithm;

· SSU is locked to 2MHz signal coming form SEC (or it is in free-running if the received 2MHz is squelched);

· SEC (Synchronous Equipment Clock) is locked to the filtered T3 (2MHz) coming from SSU.

The quality of the SEC output timing reference (T0) is set to:

· The quality of the timing reference selected to generate T4 (when SEC is locked to T3 coming form SSU);

· The quality of the SSU’s Internal Oscillator when T4 is squelched (T4 is squelched if the quality of the selected T1/T2 (in Selector A) is lower than SSU’s internal Oscillator);

· The quality of the SEC internal oscillator if no timing references are available to generate T0;

· The quality of the timing reference selected at the input T1 or T2, when T3 coming from SSU fails (DNU will be transmitted back on this interface).

DNU (Do Not Use) is transmitted back to the interface selected as timing source for T4.

10 Introduction

10.1 Change History

10.2 Legend for HC

SONET Features

1 Interface HW items

SONET832: 8 x OC-3/OC-12 optical unit

Feature Description

Multi-rate unit per port basis

SONET835: 4 x OC-48 optical unit

Feature Description

Support of 4 x OC-48 optical unit

SONET836: 1 x OC-192 optical unit

Feature Description

Support of 1 x OC-192 optical unit

1.1 Functionality on Iterface HW items

2 Optical Modules

SONET1141: S-1.1 SFP/OC3 SFP (IR-1) module

Feature Description

Support of pluggable optical module, to work in normal temperature environment (0-70C)

SONET1143: L-1.1 SFP/OC3 SFP (LR-1) module

Feature Description

Support of pluggable optical module, to work in normal temperature environment (0-70C)

SONET1144: L-1.2 SFP/OC-3 SFP (LR-2) module

Feature Description

Support of pluggable optical module, to work in normal temperature environment (0-70C)

SONET1145: S-4.1 SFP/OC12 SFP (IR-1) module

Feature Description

Support of pluggable optical module, to work in normal temperature environment (0-70C)

SONET1146: OC-12 SFP(SR)/I-4

Feature Description

Support of pluggable optical module, to work in normal temperature environment (0-70C)

SONET1147: L-4.1 SFP/OC12 SFP (LR-1) module

Feature Description

Support of pluggable optical module, to work in normal temperature environment (0-70C)

SONET1148: L-4.2 SFP/OC12 SFP (LR-2) module

Feature Description

Support of pluggable optical module, to work in normal temperature environment (0-70C)

SONET1149: OC-48 b&w/I-16.1 SFP module

Feature Description

Support of pluggable optical module, to work in normal temperature environment (0-70C)

SONET1150: OC-48 b&w/S-16.1 SFP module

Feature Description

Support of pluggable optical module, to work in normal temperature environment (0-70C)

SONET1151: OC-48 b&w/L-16.1 SFP module

Feature Description

Support of pluggable optical module, to work in normal temperature environment (0-70C)

SONET1152: OC-48 b&w/L-16.2 SFP module

Feature Description

Support of pluggable optical module, to work in normal temperature environment (0-70C)

SONET1093: C-WDM OC-48 SFP modules temp hardened (PIN-40km, APD-80km)

Feature Description

Support of pluggable optical module, temperature hardened

Applicability

This feature is applicable to TSS-320 only

SONET871: OC-192 b&w I.64.1 (VSR) XFP module

Feature Description

Support of pluggable optical module

SONET872: OC-192 b&w S.64.2b XFP module

Feature Description

Support of pluggable optical module

SONET873: OC-192 b&w L.64.2c XFP module

Feature Description

Support of pluggable optical module

SONET875: D-WDM OC-192 XFP module

Feature Description

Support of pluggable optical module

3 Equipment

SONET883: Automatic Laser Shut-down

Feature Description

Support of the functionality

SONET901: Terminal Loopback, OC-3

Feature Description

Support of the functionality

SONET902: Terminal Loopback, OC-12

Feature Description

Support of the functionality

SONET903: Terminal Loopback, OC-48

Feature Description

Support of the functionality

SONET1131: Terminal Loopback, OC-192

Feature Description

Support of the functionality

SONET906: Facility Loopback, OC-3

Feature Description

Support of the functionality

SONET907: Facility Loopback, OC-12

Feature Description

Support of the functionality

SONET908: Facility Loopback, OC-48

Feature Description

Support of the functionality

SONET1132: Facility Loopback, OC-192

Feature Description

Support of the functionality

SONET1916: TSS-320 / 160 HO matrices w/ 2GB memory

Feature Description

Support of TSS-320 / 160 HO matrices with 2GB of SLC memory

SONET1917: TSS-320 / 160 HO + LO matrices HW support

Feature Description

HW Support of TSS-320 / 160 HO + LO matrices (HO or LO functionality depending on specific feature requests)

Release Specific

R3.2: LO functionality is not available, but this Matrix is HW ready to support it

4 Equipment Protection

5 Management

SONET918: Perform. Monit. According to GR-253-Core and T1.231

Feature Description

Support of the functionality

SONET919: Perform. Monit. On SONET section

Feature Description

Support of the functionality

SONET920: Perform. Monit. On SONET line

Feature Description

Support of the functionality

SONET921: HO POM Path Overhead Monitoring (STS-3c)

Feature Description

PM collection

compliant with GR-253-CORE and T1.231.

SONET922: HO POM Path Overhead Monitoring (STS-1)

Feature Description

PM collection

compliant with GR-253-CORE and T1.231.

SONET1065: Near-End and Far-End PM counters for OC-3, OC-12, OC-48, OC-192

Feature Description

Provide both Near-End and Far-End PM counters for OC-3, OC-12, OC-48, OC-192, embedded STS-1,

embedded VT1.5, Embedded DS3 and embedded DS1. PM collection compliant with GR-253-CORE and T1.231. Far End DS1 PM (based on CSU support - primarily ANSI and 54016 optional).

Release Specific

R3.2: available for Higher Order only

SONET928: UAT - Unavailable Time

Feature Description

UAT is included into TCA feature

SONET1066: TC registers and TCA

Feature Description

The NE supports threshold crossing registers and TCA for the 15 minute and 1 day registers.

SONET937: Alarm Filtering (F4 filter)

Feature Description

Fixed F4 alarm filtering: default 2.5secs

SONET947: Non-terminated ADD/Drop, and through intermediate path PMs

Feature Description

Support of non-terminated ADD/Drop, and through intermediate path PMs for all STS1s, STS3Cs, STS12Cs, STS48Cs, and STS192Cs

SONET948: OPERATE-ALARM CUTOFF

Feature Description

OPERATE-ALARM CUTOFF instructs an NE to cut off the office audible alarm indications without changing the local alarm indications. This command does not have any effect on future alarms at the NE, but directs the NE to provide conditioning only on those alarms that are currently active. The NE remains able to transmit its current alarm or status condition if requested by the OS or other external command source.

SONET1119: Unequipped signal

Feature Description

In case an STS is not cross-connected, an unequipped signal is inserted into the source.

5.1 SONET PMs

SONET1057: Sonet PM storage registers

Feature Description

The system provides the following type and number of storage registers for each PM parameter monitored as per GR-253 and T1.231:

One (1) Current 15-Minute register,

One (1) Current Day Register,

One (1) Previous 15-Minute register,

One (1) Previous Day register,

Thirty-one (31) recent 15-Minute

SONET1058: Current registers reset

Feature Description

The system is able to reset the current registers.

SONET1061: PM disabling/enabling

Feature Description

The system provides a means of disabling/enabling the PM collection per port. The disabling of the PM do not affect the ability of the system to report alarms on the interface.

SONET1062: 15-minute and 1-day accumulation periods accuracy

Feature Description

15-minute and 1-day accumulation periods are accurate to within ±10 seconds.

SONET1063: Start of 15-minute and 1-day counts accuracy

Feature Description

The start of 15-minute and 1-day counts are accurate to within ±10 seconds with respect to the NE clock.

6 Network

SONET953: Section Trace management

Feature Description

Support of the functionality

SONET954: HEX management of Section trace

Feature Description

Support of the functionality

SONET956: HEX management of Path trace

Feature Description

Support of the functionality

SONET958: ExBER - Excessive BER alarms

Feature Description

Support of the functionality

SONET959: SD - Signal Degrade alarms (Poisson distribution)

Feature Description

Support of the functionality

7 Network Protection

SONET965: OC-3 linear single-ended 1+1 Terminal (APS) (Uni-Directional)

Feature Description

Support of the functionality

SONET966: OC-12 linear single-ended 1+1 Terminal (APS) (Uni-Directional)

Feature Description

Support of the functionality

SONET967: OC-48 linear single-ended 1+1 Terminal (APS) (Uni-Directional)

Feature Description

Support of the functionality

SONET968: OC-192 linear single-ended 1+1 Terminal (APS) (Uni-Directional)

Feature Description

Support of the functionality

SONET978: UPSR among STS-nc trails (n=3,12,48,192)

Feature Description

Support of the functionality

SONET979: UPSR among STS-1 trails

Feature Description

Support of the functionality

SONET980: Drop&Continue

Feature Description

Support of D&C onto 2F-BLSR and UPSR.

SONET999: Drop side subtended UPSR support

Feature Description

Support of the functionality

SONET1000: Simultaneously support any mix of supported protection mechanisms

Feature Description

Simultaneously support any mix of supported protection mechanisms, OC port based

SONET1001: Support of folded ring configurations

Feature Description

Support of folded ring configurations. Folded means "2 nodes" ring

8 Connectivity

SONET1117: Transfer Delay Performance < 30 microsecs

Feature Description

Support of the functionality

SONET1004: STS-1 Virtual Concatenation (G.707) 1..192

Feature Description

Support of the functionality

SONET1007: Hitless LCAS for STS-1 groups (G.7042)

Feature Description

Support of the functionality

SONET1118: VCAT Differential Delay Compensation - up to 32 msec

Feature Description

Support of the functionality

SONET1015: UPSR Ring Closure for both higher and lower rate rings

Feature Description

Support of the functionality

SONET1287: 2WAYDC

Feature Description

2WAYDC across different ring speeds, across UPSR-UPSR and UPSR-BLSR

SONET1101: X-Conn Provisionable STS-48c

Feature Description

Support of the functionality

SONET1114: X-Conn Provisionable STS-192c

Feature Description

Support of the functionality

SONET1028: X-Conn Provisionable STS-12c

Feature Description

Support of the functionality

SONET1029: X-Conn Provisionable STS-3c

Feature Description

Support of the functionality

SONET1032: Unidirectional (1-way) cross connects

Feature Description

Support of the functionality

SONET1115: Bi-directional (2-way) cross connects

Feature Description

Support of the functionality

SONET1116: Broadcast cross-connects (1:N, N=4)

Feature Description

Support of the functionality

9 Timing

SONET1034: Holdover/Free-running alarms

Feature Description

Support of the functionality

SONET1035: Holdover/Free-running commands

Feature Description

Support of the functionality

SONET1036: Stratum 3 int. Osc.

Feature Description

Support of the functionality

SONET1038: DS1 synch I/O - connector - wire wrap

Feature Description

Support of the functionality

SONET1039: DS1 synch I/O 2 inpout ,1 output min.

Feature Description

Support of the functionality

SONET1041: Sync Messaging (optical and DS1)

Feature Description

Support of the functionality

SONET1043: Clock MTIE Improvement, GR-253 mask for Clock wander

Feature Description

Support of the functionality

SONET1045: External BITS DS1

Feature Description

Support of the functionality

SONET1046: Line/Loop timing incoming OC-12

Feature Description

Support of the functionality

SONET1047: Line/Loop timing incoming OC-3

Feature Description

Support of the functionality

SONET1048: Line/Loop timing incoming OC-48

Feature Description

Support of the functionality

SONET1049: Line/Loop timing incoming OC-192

Feature Description

Support of the functionality

SONET1120: Hitless switching on selection of timing sources

Feature Description

Switching on selection of the timing sources is hitless

Data Features

1 NETWORK APPLICATIONS AND NETWORK ARCHITECTURE

1.1 GENERIC FEATURES

D12845: Virtual Switch Instances (VSI)

Feature Description

At the UNI, transport switches perform client-layer functionality. Per client service the client-facing transport switch hosts a VSI (refer RFC4026).

A VSI connects one or multiple UNIs to zero or multiple transport trails (on NNIs).

VSIs are running largely independently of each other, though making use of the shared NNI-transport resources.

VSIs shield user traffic from each other.

Client-layer OAM MIPs are supported per VSI (at edge nodes, or transit nodes if required).

Release Specific

Virtual Switch Instance forwarding via AC/PW binding; Bridge/Virtual Switch Istance functional behaviour (RFC 4664) allowing client traffic at UNI side (Attachment Circuit) to connect to an emulated LAN at NNI side via PW connectivity

R3.0, R3.1: Client-layer OAM MIPs are not supported

D12158: BTV distribution

Feature Description

The NE supports Multicast service with static or dynamic control of the Multicast Distribution Tree.

1.2 TECHNOLOGY SPECIFIC FEATURES

1.3 NETWORK ARCHITECTURE MODELS

D12963: TSS-320 / TSS-40 ring closure, Hierarchical architecture

Feature Description

The following network scenario is supported, composed by 2 separated domains:

- hub (TSS320 partial mesh)

- ring (TSS40 and TSS320)

For each end-to-end client service, the network is provisioned with 2 separated logical connections: one in the ring and one in the hub. Connectivity is based on T-MPLS PW and Tunnel entities

D12964: TSS-320 / TSS-40 ring closure, Flat architecture

Feature Description

Only ring domain - TSS320s close the ring and directly interconnect third-party equipments (i.e BNG), see also feature D12963

2 HW ITEMS

2.1 TSS CARDS

D12196: 10G Portless EoS packet module (1 slot)

Feature Description

MultiService card that has ability to terminate and process Packet traffic and TDM traffic (exchanged via fabric interface), and performing GFP EoS mapping. The card supports 10G packet and 10G TDM capacity.

D37: 10X GE packet module (REQ. SFP) (1 slot)

Feature Description

Packet interface capable to support up to 10xGE pluggable SFP modules. The card provides an overall throughput capacity of 10 Gbps.

D12959: 10X GE packet module Eth. Synch capable (REQ. SFP) (1 slot)

Feature Description

Packet module as per feature D37, adding the capability of supporting Synchronous Ethernet. The interface is external synch sources in TX (egress) direction, and internal synch source in RX (ingress) direction

Release Specific

R3.1: Only HW-ready to support Synchronous Ethernet. Synch Ethernet feature currently not supported.

D38: 1X 10GE packet module (REQ. XFP) (1 slot)

Feature Description

Packet interface capable to support 1x10GE pluggable XFP module. The card provides an overall throughput capacity of 10 Gbps.

D12960: 1X 10GE packet module Eth, Synch capable (REQ. XFP) (1 slot)

Feature Description

Packet module as per feature D38, adding the capability of supporting Synchronous Ethernet. All interfaces are external synch sources in TX (egress) direction, and one interface out of each group of five is internal synch source in RX (ingress) direction (i.e. there are two source interfaces in RX)

Release Specific

R3.1: Only HW-ready to support Synchronous Ethernet. Synch Ethernet feature currently not supported.

2.2 TTS CARDS

2.3 ISA CARDS

2.4 TSS PLUG IN MODULES

2.5 ELEC. AND OPT. MODULES

D12098: 100Base FX 2km (SFP)

Feature Description

Support of Optical FE interface, 2Km

Release Specific

R3.1: On 10xANY only

D12317: 100/1000 BaseT (SFP RJ-45)

Feature Description

Support of Standard 100/1000 BaseT (RJ45) Small Form Pluggable interface.

D46: 1000 BaseSX (SFP)

Feature Description

Support of Standard 1000 BaseSX Small Form Pluggable interface.

D47: 1000 BaseLX (SFP)

Feature Description

Support of Standard 1000 BaseLX Small Form Pluggable interface.

D48: 1000 BaseZX (SFP)

Feature Description

Support of Standard 1000 BaseZX Small Form Pluggable interface.

D13028: 1000 BaseZX (SFP) - temp. hardened

Feature Description

Support of Standard 1000 BaseZX Small Form Pluggable interface, temperature hardened

D50: 1000 C-WDM (SFP)

Feature Description

Support of C-WDM SFP modules with PIN and APD receivers

Applicability

This feature is applicable to TSS-320 only

D285: 10GE LAN b&w (XFP) (10GBase-SR)

Feature Description

Support of Standard 10GBase-SR (10GBE) 10G Small Form Pluggable interface.

D287: 10GE LAN b&w (XFP) (10GBase-ER)

Feature Description

Support of Standard 10GBase-ER (10GBE) 10G Small Form Pluggable interface.

D289: 10GE LAN b&w (XFP) (10GBase-LR)

Feature Description

Support of Standard 10GBase-LR (10GBE) 10G Small Form Pluggable interface.

D13090: 10GE LAN b&w (XFP) (10GBase-ZR)

Feature Description

Support of Standard 10GBase-LR (10GBE) 10G Small Form Pluggable interface.

D12984: 10GE LAN b&w (XFP) (P1L1-2D2 80Km)

Feature Description

Support of 10GBE XFP LAN module, 80Km

D366: 10GE LAN C-WDM (XFP) temp hardened

Feature Description

Support of C-WDM SFP modules with PIN and APD receivers, temperature hardened

D53: 10GE LAN D-WDM (XFP)

Feature Description

Set of 10G Small Form Pluggable interfaces (10GBE) on DWDM grid.

3 ETH INTERFACES

D55: Ethernet flow control (IEEE 802.3x) - RX pause frame always dropped (not configurable)

Feature Description

The NE supports the 'fixed' discarding of Pause frames received at an Ethernet interface.

D54: Ethernet flow control (IEEE 802.3x) - send pause frame (configurable)

Feature Description

The NE supports Ethernet Flow Control as specified in IEEE802.3_2002 - Part 3 - Section2 - Clause 31 / Annex 31A-31B: in case of “overwhelming” incoming Ethernet traffic leading to exhaustion of buffers on input queues, it is requested the capability to transmit PAUSE frames in order to slow down remote peer MAC sub-layer.

According to the provisioning, it is possible to enable or disable sending of Pause Frames (default condition is to send out pause frames).

D57: ETH port auto-negotiation

Feature Description

The Ethernet port supports autonegotiation protocol in order to communicate with the peer system the parameters set by the operator

D12986: Signal Degrade, RX input power based

Feature Description

Support of Signal Degrade alarm based on a fixed threshold of RX input power, with hysteresis. The SD alarm is declared before the complete LOS.

Release Specific

R3.1: based on threshold on DDM reading (needs DDM module capability). Not supported on 10xANY

D179: Regular Ethernet MTU (NNI =1600 bytes, UNI =1574 bytes)

Feature Description

The NE supports the 'Maximum Transmission Unit' (MTU)/ 'Maximum Receive Unit' (MRU), i.e. the maximum length of an Ethernet frame, as for the following values:

- MTU/MRU UNI = 1574 bytes, as per max allowed Ethernet frame length
- MTU/MRU NNI= 1600 bytes, as per max allowed Ethernet frame length

The minimum length of an Ethernet frame is assumed to be 64 bytes.

D180: Ethernet Jumbo frames MTU (up to 9242 bytes)

Feature Description

The NE supports the MTU/MRU 'jumbo' frame format.

The following 'jumbo' frame values are supported on 'port provisionable' basis:

- MTU/MRU UNI= values in the range from 1574 (default) to 9216 bytes
- MTU/MRU NNI= values in the range from 1600 (default) to 9242 bytes

D58: ETH port MAU auto MDI / MDX

Feature Description

The Ethernet port automatically senses the cable and adapts itself to either straight or crossed cables

D99: ETH Line loopback

Feature Description

The Ethernet port supports a Physical loopback towards the attached cable

Release Specific

R3.1: Only on 10xANY, only Loopback&Continue (no Loopback&AIS)

D837: ETH Internal looback

Feature Description

The Ethernet port supports an Internal loopback just before reaching the attached cable on the egress side

Release Specific

R3.1: Only on 10xANY, only Loopback&Continue (no Loopback&AIS)

D63: Link aggregation (802.3ad)

Feature Description

The NE supports the 'Link Aggregation' function, as specified in IEEE 802.3 - Chapter 43.

'Link Aggregation' is a method for aggregating into a single logical link, N parallel instances of full duplex point-to-point links operating at the same data rate (Fast Ethernet, Gigabit Ethernet, 10 Gigabit Ethernet), into a single logical link.

D842: GBE ports Link Aggregation (802.3ad)

Feature Description

Link Aggregation Group is done bundling N GE ports

D977: 10GBE ports Link Aggregation (802.3ad)

Feature Description

Link Aggregation Group is done bundling N 10GE ports

D844: Distributed LAG (across cards)

Feature Description

A Link Aggregation group can be configured bundling ports physically located on different access modules

D11921: Hashing key for LAG

Feature Description

Ability to configure the LAG Hashing key based on: MAC DA / SA

D12249: Enhanced Hashing key for LAG

Feature Description

Ability to configure the LAG Hashing key based on all the following criteria: MAC SA/DA + MPLS label (3) + VLAN (2) + IP@ SA/DA + L4 (TCP/UDP S/D port)

D64: Active / Standby configuration for LAG

Feature Description

The Link Aggregation Group can be configured in a way that one link is working and the other is in standby (not carrying traffic).

The LAG supports the option to define more LAG ports than active ports.

Active Stanby case is: two ports in a LAG group, of which only one is active.

D839: LACP protocol for LAG

Feature Description

The NE supports the Link Aggregation based on LACP.

The Link Aggregation Contro l Protocol (LACP) is used for automatic communication of aggregation capabilities between NEs and for automatic configuration of Link Aggregation.

Through LACP, the NE therefore supports the capability to re-configure the 'Link Aggregation Group' because of a failure and re-distribute the traffic among the available links, recovering, then, the 'aggregated' Ethernet data flow.

D12248: Disable LACP protocol on LAG

Feature Description

Ability to enable / disable the LACP protocol on LAG

D985: LAG and xSTP on same port

Feature Description

Ability to combine LAG and STP on the same port (run STP across a LAG)

4 VCG (logical) INTERFACES

D93: Rate limiting per VCG port

Feature Description

The NE supports the rate limiting feature per VGC port, applicable to Ethernet ports operating different speeds (e.g. 100M, 1G, 10G), in order to avoid traffic congestion between Ethernet ports communicating across an SDH/SONET transport network, possibly occurring due to the different operative rate.

Basing on rate limiting algorithm, the Ethernet mapping rate at 'ingress' node of transport network is configured so to match the lowest operative rate of the two communicating ports. The result is that the mapping rate of the 'highest' rate Ethernet flow is limited accordingly.

D423: LCAS (Link Control Adjustment Scheme)

Feature Description

Ability to dynamically adjust the link scheme and bandwidth for VC4 groups according to ITU-T G.7042

D845: VC-12 port

Feature Description

VC-12 port according to ITU-T G.707

D846: VC-3 port

Feature Description

VC-3 port according to ITU-T G.707

D847: VC-4 logical port

Feature Description

According to ITU-T G.707

Release Specific

R3.0: limited to Port-to-Port applications

D848: VC-12v VCG logical port

Feature Description

VC-12v port according to ITU-T G.707

D849: VC-3xv VCG logical port

Feature Description

VC-3xv port according to ITU-T G.707

D850: VC-4xv VCG logical port

Feature Description

According to ITU-T G.707

Release Specific

R3.0: limited to Port-to-Port applications

D851: STS-1xv VCG logical port

Feature Description

STS-1xv VCG logical port support according to ITU-T G.707

5 ATM INTERFACES

6 RPR INTERFACES

7 GENERIC

D855: Port settings administration

Feature Description

Ability to turn down / up a Port, change transmission capability, pause configuration, etc. even in presence of a configured service.

D946: LAG administration

Feature Description

Ability to turn down / up a LAG, change transmission capability, pause configuration, etc. even in presence of a configured service.

8 CLASSIFICATION

D178: Ethernet Header processing

Feature Description

The NE supports the processing of 'Ethernet Frame header' at Layer 2 ('Media Access Control' frame), as specified by IEEE 802.3 (2002) for data communication systems using the CSMA/CD MAC.

D127: Port

Feature Description

Ability to identify packets from the incoming Port

D129: IEEE 802.1.Q (former 802.1p) priority bits

Feature Description

Ability to identify packets from the 802.1Q priority field (aka p bit)

D130: IEEE 802.1.Q VLAN

Feature Description

Ability to identify packets from the 802.1Q VLAN field.

D12353: IEEE 802.1ad VLAN

Feature Description

Ability to identify packets from the 802.1ad VLAN field.

D133: IP v.4 DSCP

Feature Description

Ability to classify traffic based on IP DSCP or DiffServ bits.

D859: p bit markings from TOS

Feature Description

Ability to mark p bits of an Ethernet frame inheriting them from the IPv4 TOS value. If the TOS field is untrusted then a default p bit marking can be applied according to the service class.

D12320: MPLS EXP bit marking from IP DSCP

Feature Description

Classification of incoming IP traffic based on IP DSCP, marking of MPLS EXP bits accordingly (mapping of IP DSCP to MPLS EXP bits / internal CoS is configurable per attachment circuit)

D12321: Configurable mapping of MPLS EXP bits to CoS

Feature Description

Mapping of MPLS EXP to internal CoS is configurable per MPLS interface

D861: Ether Type classification

Feature Description

Ability to classifty traffic by looking at Ethertype value (e.g. 8x63, 8x62 for pppoE, IP, DHCP...)

9 TRAFFIC CONDITIONING

D137: Dual Rate Token Bucket

Feature Description

Dual Rate Token Bucket meter and policer according to IETF RFC 2698

D139: Metering, Policing and Marking IETF compliant

Feature Description

Ability to condition (meter and mark) and police traffic according to IETF RFC 2697, RFC 2698

D140: Color blind traffic conditioning

Feature Description

Ability to apply traffic conditioning (Meter/Police/Mark) without considering the colour information that is written within the packet (i.e. untrusted sources attached to a UNI or IWI port).

D141: Color aware traffic conditioning

Feature Description

Ability to apply traffic conditioning (Meter/Police/Mark) considering the colour information that is written within the packet (I.e. typical ENNI case, NNI general case). Green packets can be demoted to yellow while yellow cannot be promoted to green.

D142: Color aware ETH frame priority bits (S-VLAN 802.1ad) with double tagged frames

Feature Description

Ability to derive colour information from the p bits/ DEI bit of a S-VLAN tag when using Color Aware Traffic conditioning

D12105: PW CoS from MPLS tunnel EXP (Tunnel Termination) E-LSP mode

Feature Description

PW CoS+Color information is coded in the Tunnel header, instead of only in the PW header (i.e. PW CoS+Color = underlying TU CoS+Color).

If Tunnel is E-LSP, looking at Tunnel EXP field.

PW label is considered for forwarding purposes only

D143: Traffic dropping (out of profile)

Feature Description

Ability to specify if out of profile traffic has to be dropped immediately.

D867: MEF per UNI+EVC+CoS

Feature Description

Dual Rate Token Bucket meter and policer according to MEF per port + EVC + CoS

D138: Metering, Policing and Marking MEF compliant

Feature Description

Ability to condition (meter and mark) and police traffic according to MEF TMS (Draft V7.2.2 or later)

D868: Rate control MC frames per Service

Feature Description

Ability to set and control a rate for all the frames that have to be MultiCasted within a service domain

D869: BC/MC storm control (DOS, Ping, Flooding) per service

Feature Description

Ability to set and control a rate for all the frames that have to be BroadCasted within a service domain

10 UNI / IWI TAG MANAGEMENT

D191: ETH VLAN push

Feature Description

Ability to add a (C or S) VLAN to an Ethernet frame and set the repated Ethertype (I.e. push a C-VLAN or a S-VLAN)

Release Specific

R3.0: only in the context of Service Delimiting

D193: ETH VLAN pop

Feature Description

Ability to remove the outer VLAN tag from an Ethernet frame.

Release Specific

R3.0: only in the context of Service Delimiting

D192: ETH Sevice Delimiting

Feature Description

With Service Delimiting, a VLAN Tag may be popped at the ingress UNI and pushed at the egress UNI, to segregate service instances.

D221: MPLS label Push

Feature Description

Ability to Push an MPLS PW label

D12106: 2 MPLS label Push

Feature Description

Ability to Push two MPLS PW label

D222: MPLS label Pop

Feature Description

Abiliy to Pop an MPLS PW label

D12108: 2 MPLS label Pop

Feature Description

Abiliy to Pop two MPLS PW label

D223: MPLS label Swap

Feature Description

Ability to Swap an MPLS PW label.

11 TECHNOLOGY SPECIFIC

11.1 ETHERNET

D185: Per VLAN MAC@ auto-learning

Feature Description

Ability to configure the MAC adrresses learning process separatedly per VLAN. MAC@ tables are per VLAN.

D874: Disable Auto-Learning per Service

Feature Description

Ability to disable, per port per service, the MAC@ autolearning process.

Release Specific

R3.1: for PB and T-MPLS VSI. Only per service, not available per port.

D186: MAC DA static configuration

Feature Description

Ability to specify a set of "static" MAC@ that are not subject to the aging process.

Release Specific

R3.1: for PB only

D128: MAC Filtering DB management

Feature Description

Ability to support an Ethernet Source and Destination Address MAC database that is populated both from MAC auto learning process and statically provisioned MAC addresses.

D875: Black-Hole L2 Forwarding prevention (requires MAC@ table flushing event) via "OAM like" packet

Feature Description

Ability to automatically flush a MAC table on a remote NE upon network failure event. This prevents traffic to be sent to a (wrong) BlackHole Port until Aging timers expire and new learning happens.

D13029: MAC@ table flushing upon LOS event

Feature Description

LOS event is a trigger for the MAC table flushing operation

D13030: MAC@ table flushing upon ERP APS flushing packet detection event

Feature Description

ERP APS flushing packet detection event is a trigger for the MAC table flushing operation

D200: EtherType configuration per port

Feature Description

The NE supports the capability to configure the 'Type' field (i.e. EtherType) on per-port basis. In case of no protocol specified the default value '0x8100' is used.

D12113: MAC Address Table management per ELAN instance

Feature Description

Ability to support MAC address learning per VSI (virtual switching instance) base - E-LAN.

11.2 MPLS

D12337: Static MPLS LSPs

Feature Description

Support of static LSPs as head-end, tail-end, and transit LSR.

D227: MPLS-Diff-Serv management E-LSP

Feature Description

Ability to process the MPLS fields In accordance to E-LSP practice

D228: MPLS TTL management (short pipe model)

Feature Description

Ability to decrement the TTL field value of the MPLS frame when travelling across the network (i.e. One Hop MPLS LSP), according to RFC3443 short pipe model.

D12110: MPLS TTL management (pipe model)

Feature Description

MPLS TTL management according to RFC3443 pipe model.

D230: Per platform label space management and distribution

Feature Description

Ability to manage per platform (NE) label space and to reuse the same label value on different platforms

D12119: PW QoS management

Feature Description

Pipe model - the tail end node processes the EXP-bits for QoS treatment

D12323: Tunnel QoS management

Feature Description

Short pipe model

D12120: CAC

Feature Description

Ability to manage Connection Admission Control (CAC)

D12122: MPLS tunnel output shaping

Feature Description

Ability to support MPLS tunnel output shaping

11.3 ATM

11.4 PACKET RING

12 CONNECTIVITY

D424: Point to Point (REQ Disable Mac@ learning) EVC

Feature Description

Ability to forward traffic from one source to a single destination

D430: Point to MultiPoint (REQ Disable Mac@ learning) EVC mux

Feature Description

Ability to forward traffic from one source to multiple destinations. Forwarding criteria will be dictated by the network capability of the forwarding engine model (I.e. VLAN based forwarding)

D12350: Point to Multipoint EVC

Feature Description

Ability to forward traffic from one source to multiple destinations. Forwarding criteria are dictated by the network capability of the forwarding engine model (I.e. Bridging would rely on MAC destination adress)

D426: MultiPoint to MultiPoint

Feature Description

Ability to forward traffic from multiple source to multiple destinations. Forwarding criteria are dictated by the network capability of the forwarding engine model (I.e. Bridging would rely on MAC destination adress)

13 FORWARDING

D145: Port

Feature Description

Ability to perform packet forwarding decision based on the incoming port.

D189: IEEE 802.1Q (Virtual Bridges)

Feature Description

Ability to perform packet forwarding decision based on a IEEE Virtual Bridging model (I.e. MAC@ forwarding per VLAN domain)

D190: IEEE 802.1ad (Provider Bridge)

Feature Description

Ability to perform packet forwarding decision based on a IEEE Provider Bridging model (I.e. MAC@ forwarding per S-VLAN domain)

D991: P-bits (802.1P)

Feature Description

Ability to perform packet forwarding decision based on the incoming p bit value of the (outer) VLAN tag value.

D197: ETH Unicast traffic Forwarding

Feature Description

Ability to support unicast traffic forwarding of Ethernet frames.

D198: ETH Multicast traffic Forwarding

Feature Description

Ability to support multicast traffic forwarding of Ethernet frames. Specific Ethernet adresses are reserved by IEEE for Multicast forwarding. Such traffic can be subject to IGMP snooping/proxing for optimal BW utilization. The amount of bandwidth that is allowed to the Multicast can be subject to rate limiting to prevent starvation.

Release Specific

R3.0: IGMP not supported

D199: ETH Broadcast traffic Forwarding

Feature Description

Ability to support braodcast traffic forwarding of Ethernet frames. The amount of bandwidth that is allowed to the Multicast can be subject to rate limiting to prevent starvation.

D131: MPLS label (Tunnel or PW after Tunnel Termination) E-LSP mode

Feature Description

Ability to identify packets from the MPLS label / Experimental bits.

The NE is able to classify the incoming MPLS/T-MPLS packets by looking at a single <Label, EXP>.

- The label can be either the outer label or the one behind (after a pop operation)

- The label provides the flow identifier, and it is the only information used for forwarding purposes

- The EXP provides the <CoS, Color> information

D12324: Static MPLS LSPs

Feature Description

Support of static LSPs as head-end, tail-end, and transit LSR.

D12125: MPLS label + MAC DA

Feature Description

Ability to perform packet forwarding decision based on the label and MAC DA inspection .

D231: MPLS P2P unidirectional LSPs (unicast) forwarding

Feature Description

Ability to support MPLS unicast traffic forwarding.

D12126: MPLS P2P bi-directional LSPs (unicast) forwarding

Feature Description

Ability to support MPLS unicast traffic forwarding across bi-directional LSPs.

14 MULTICAST

15 QUALITY OF SERVICE

D902: QoS Classes

Feature Description

Ability to support three classes of service: Guaranteed (Green only), Regulated (Green and Yellow) and Best Effort (Yellow).

The three classes are associated with three different queues with a Strict (on the first queue) + Weighted Deficit Round Robin (the other two) schedluing practice.

D201: Best Effort Traffic (PIR > 0 ; CIR = 0)

Feature Description

Ability to support BE Traffic with a null CIR (all Yellow)

D202: Regulated Traffic (PIR > CIR > 0)

Feature Description

Ability to support REG Traffic with a non zero CIR and PIR (Green and Yellow)

D203: Guaranteed Traffic (PIR = CIR > 0)

Feature Description

Ability to support GUA Traffic with equal CIR and PIR (all Green)

D204: Hitless Bandwidth Modification

Feature Description

Ability to reconfigure CIR/PIR values (per Class) without perturbating the traffic (hitless)

D236: Default Effort Traffic

Feature Description

Ability to support Default Effort Traffic with a null CIR (all Yellow)

D237: Assured Forwarding Traffic

Feature Description

Ability to support Assured Forwarding Traffic with a non zero CIR and PIR (Green and Yellow)

D238: Expedited Forward Traffic

Feature Description

Ability to support Expedited Forward Traffic with equal CIR and PIR (all Green)

D903: QoS Classes Enhancements

Feature Description

Ability to support Enhanced Traffic Classes. Eight (8) Classes are supported.

The eight classes are associated with eight different queues with a Strict (on the first two queue) + Weighted Deficit Round Robin (the other two) schedluing practice.

This feature can be combined with Enhanced Traffic Conditioning and Enhanced Traffic Shaping

16 CONGESTION AVOIDANCE

D152: W-RED

Feature Description

Ability to support Weighted random early detector for congestion avoidance. The RED (Random Early Detection) discards (i.e. drops) packets randomly based on queue occupation. The Thresholds provided by WRED on each queue allow a gracefull drop of yellow packets as congestion starts and gaurantee availability for green packets

D12326: Enhanced WRED

Feature Description

Up to three WRED profiles per queue (thresholds expressable both, in absolute numbers and in percentage of queue filling)

17 SCHEDULING

D153: Strict Priority Scheduling (HOL)

Feature Description

Ability to schedule a queue with Strict Priority practice. The next queue is served when the served queue becomes empty.

D154: Weighted Deficit Round Robin (aka WFQ) - WC (Conteded Bandwidth)

Feature Description

Ability to schedule a queue with a WDRR practice. The weight assigned to the scheduler for that queue determines the relative percentage of bandwidth addressable to that queue. A Work Conservative scheduling practice allows a queue to gather additional bandwidth if the other queues are not feeding packets.

D12327: Configurable queue length

Feature Description

Ability to support configuration of queue length per queue

D904: Traffic shaping per port (sub line rate)

Feature Description

Ability to support a traffic shaping rate per output port

D905: Enhanced Shaping (per service)

Feature Description

Ability to support a traffic shaping rate per service per output port.

D12328: LSP or PW egress shaping

Feature Description

Configurable egress shaping per LSP or PW (in addition to per-port shaping)

D950: Virtual Transport management

Feature Description

Ability to associate a Virtual Transport (VT) to a service, as applicable and supported (e.g. SVLAN instance, MPLS Label)

18 ENCAPSULATION

D101: GFP-F mapping over VCG (ITU-T G.7041) null ext. header, no FCS

Feature Description

Ability to map traffic onto an Sonet/SDH VC/VCG port according to the ITU-T G.7041 Generic Framing Procedure (Framed), no 'Frame Check Sequence' field (FCS)

Release Specific

R3.0: limited to Port-to-Port applications

D1018: GFP-F mapping over VCG (ITU-T G.7041) null ext. header, with FCS

Feature Description

Ability to map traffic onto an Sonet/SDH VCG port according to the ITU-T G.7041 Generic Framing Procedure (Framed), with 'Frame Check Sequence' field (FCS). FCS containins a CRC-32 sequence protecting the content of 'GFP Payload Information' against errors.

D951: GFP CSF (client signal fail)

Feature Description

Ability to detect a client signal fail according to the ITU-T G.7041-2005 Generic Framing Procedure, signal such event on the remote peer and take consequent actions as appropriate (I.e. Tear down of the remote Port)

D13094: CSF (client signal fail) for Ethernet signals into ODUk (k=0, 2e) that are not GFP mapped.

Feature Description

Ability to detect a client signal fail according to the ITU-T G.7041-2005 Generic Framing Procedure, signal such event on the remote peer and take consequent actions as appropriate (I.e. Tear down of the remote Port)

D341: GFP-F mapping over STS (ITU-T G.7041) null ext. header, no FCS

Feature Description

Ability to map traffic onto a Sonet VCG port according to the ITU-T G.7041 Generic Framing Procedure (Framed)

D12981: GFP-F propietary I/W with TSS-40

Feature Description

The feature allows full GFP-F interworking with TSS-40

D105: ETH IEEE 802.3

Feature Description

Ability to generate (encapsulate into) Ethernet frames in accordance to IEEE 802.3

D12128: ETH over MPLS (PW encapsulation): Raw mode

Feature Description

The feature follow IETF RFC 4448, establishing how to encapsulate Ethernet/802.3 PDUs within a pseudowire. In the raw mode encapsulation when a frame is received from the Attachment Circuit (AC) with a VLAN tag:

- if the tag is service-delimiting (the tag is placed by Service Provider (SP) to distinguish traffic e.g for different customers), the tag has to be stripped.

- if the tag is not-service delimiting (the tag is placed in the frame by a customer) no operation is performed and the frame is passed transparently across the PW as part of payload.

When the PE receives a frame from the PW it must not rewrite or remove any tags already present. To add or not a service delimiting tag before sending the frame to attachment circuit is configuration depending.

D12334: Dry Martini

Feature Description

Support of MPLS PW encaplsulation of non-IP/MPLS PSNs (GFP-F, Ethernet link / LAG, 802.1q VLAN)

D12335: MPLS PW - Control Word Usage

Feature Description

Configuration option per PW whether or not Control Word is to be used.

D301: ETH / GFP-F

Feature Description

Ability to encapsulate a client Ethernet frame within an ITU-T G.7041 frame

Release Specific

R3.0: limited to Port-to-Port applications

D122: MPLS over IEEE 802.3 phy (IETF RFC 3032)

Feature Description

Ability to encapsulate an MPLS frame within an IEEE 802.3 frame.

D300: MPLS over GFP-F

Feature Description

Ability to encapsulate an MPLS frame within an ITU-T G.7041 frame

D219: MPLS Martini encapsulation w/o Control Word

Feature Description

Ability to not include the Martini Control Word during the encapsulation according to the interconnected device. Control word is in any case required in case of ECMP

D220: MPLS Martini encapsulation w/ Control Word

Feature Description

Ability to include the Martini Control Word during the encapsulation according to the interconnected device. Control word is in any case required in case of ECMP

D338: Interworking with MPLS Martini encapsulation w/ Control Word

Feature Description

Ability to interwork with an MPLS Martini encapsulation w/ Control Word even if not completely managed

D12198: IP/CLNP over PPP MPLS tagged

Feature Description

In fiber in band management with I/W based on dedicated MPLS label. PPP is used for connectivity verification of the control channel.

D12197: IP/CLNP over PPP Ethernet tagged

Feature Description

In fiber in band management with tagged Ethernet (Provider Bridge scenario). PPP is used for connectivity verification of the control channel.

Release Specific

R3.0: limited to Port-to-Port applications, even if not in Provider Bridge

D12130: MPLS over 802.1Q

Feature Description

Ability to map MPLS over a 802.1q trunk.

D12165: IP over ETH

Feature Description

Encapsulation related to CP in case of (G)MPLS

D12132: IP over GFP-F (direct encapsulation)

Feature Description

Encapsulation related to CP in case of (G)MPLS

19 NETWORK PROTOCOLS

D214: RSTP as per 802.1D (2004) on provider's network

Feature Description

Ability to prevent network loops within a bridged network by means of RSTP protocol

D215: MSTP as per 802.1Q (2003) on provider's network

Feature Description

Ability to prevent network loops within a bridged network by means of MSTP protocol. MSTP allows the operated network to perform per group of VLANs load balancing.

19.1 ML-PPP

20 INTER-WORKING PROTOCOLS

D12987: Eth OAM over T-MPLS interworking with Provider Bridge Eth OAM

Feature Description

Capability of Ethernet OAM over T-MPLS interworking with Provider Bridge Ethernet OAM

21 NETWORK PROTECTION

D1020: Enable/ Disable CSF consequent action (Port to Port)

D1021: Enable/ Disable SSF consequent action (Port to Port)

D351: ITU-T G.8131 bidirectional 1:1 linear trail protection (Tunnel level)

Feature Description

Bidirectional 1:1 linear trail protection for T-MPLS LSPs as defined in ITU-T Rec. G.8131, section 11.2. Swiching time <= 50ms

D174: Dual attachment (single node topology)

Feature Description

Ability to provide redundant interconnection between two network segments (intra-domain) via a double link functional interface towards two separated physical boards or access modules housed in the same node.

Release Specific

R3.1: STP based (selective tunneling)

D173: Dual attachment (double node topology)

Feature Description

Ability to provide redundant interconnection between two network segments (intra-domain) via a double link functional interface towards two separated physical boards or access modules housed in different nodes.

Release Specific

R3.1: STP based (selective tunneling)

D13037: FFP triggered on DDM-SD

Feature Description

ITU-T G.8131 bidirectional 1:1 linear trail protection triggered by degraded status of the line. The detection of the degraded status is based on monitoring of the input optical power using DDM capable SFP/XFP

D12968: Maintenance commands

Feature Description

Support of lock-out, manual, forced commands on protections

Release Specific

R3.1: for T-MPLS protection

D12983: Programmable WTR on protection - extended time

Feature Description

Support of WTR up to at least 48 hours

Release Specific

R3.1: for T-MPLS protection

22 INTERWORKING REDUNDANCY

D181: Customer protocols tunneling (transparency)

Feature Description

Ability to tunnel, according to operator choice, each one of the following customer protocols [Link Agg, STPs, GARP,GVRP, Broadcast, 802.1x]

Release Specific

R3.1: Includes OAM

D182: Customer protocols blocking (filtering)

Feature Description

Ability to discard, according to operator choice, each one of the following customer protocols [Flow control, Link Agg, STPs, GMRP,GVRP, Broadcast, 802.1x]

Release Specific

R3.1: Includes OAM

D183: Customer protocol peering (participation)

Feature Description

Ability to peer, according to operator choice, each one of the following customer protocols [Flow control, Link Aggregation]

Release Specific

R3.1: Includes OAM

D184: Dual Homing (Selective tunnelling of CBPDU)

Feature Description

Ability to support a customer Equipment or an External device interconnected in a Dual Homing configuration. Selective Tunnelling of customer BPDU allows to forward customer BPDUs for redundancy purposes in a specific service instance. This instance have to be protected within the network to work properly.

D12247: Dual Homing (Selective tunnelling of SBPDU)

Feature Description

Ability to support a customer Equipment or an External device interconnected in a Dual Homing configuration. Selective Tunnelling of ServiceProvider BPDU allows to forward customer BPDUs for redundancy purposes in a specific service instance. This instance have to be protected within the network to work properly.

23 SECURITY

D948: Port segregation

Feature Description

Ability to inhibit traffic forwarding among group of ports

Release Specific

R3.1: Only PB

D879: Enable / Disable flooding per Service / EVC

Feature Description

Ability to (operator configuration) flood or discard packets whose destination is unknown.

24 ALARMS

25 COUNTERS

D13118: Manual PM polling button

Feature Description

Support of manual polling button to retrieve the PM data at EVC, PW, Tunnel level

25.1 ETH COUNTERS

D256: Aggregate octects/frames counters (Maintenance counters :CD)

Feature Description

Ability to count RX, TX packets on a port basis and report those to the operator [RX Frames, RX Octects, …] - current counters

D12202: Interface Counters

Feature Description

Ability to count events related to the physical media and report those to the operator [MAU, Jabber Status , …]

D374: Aggregate octects/frames counters (HD)

Feature Description

Ability to count RX, TX packets on a port basis and hystorize those for later analysis [RX Frames, RX Octects, …] counter history

D257: Service flow octects/frames counters (CD/HD)

Feature Description

Ability to count RX, TX packets on a per flow/service basis and hystorize those for later analysis [RX Frames, RX Octects, …]

D928: ETH counters Enhancements (CD/HD)

Feature Description

Ability to measure a set of enhanced QoS Counters specific to each traffic direction;

· TRCO_Y (Total Received Correct Yellow Octets) - total number of octets of yellow Ethernet frames received correctly, including Ethernet header characters;

· TRCF_Y (Total Received Correct Yellow Frames) - total number of yellow Ethernet frames received correctly;

· TDF_G (Total Discarded Green Frames) - total number of green Ethernet frames which were chosen to be discarded due to buffer congestion.

· TDF_Y (Total Discarded Yellow Frames) - total number of yellow Ethernet frames which were chosen to be discarded due to buffer congestion.

· TTO_Y (Total Transmitted Yellow Octets): total number of octets of yellow Ethernet frames transmitted out, including Ethernet header characters;

· TTF_Y (Total Transmitted Yellow Frames): total number of yellow Ethernet frames transmitted out

D953: Counters History

Feature Description

Ability to store the measured values of counters for later processing. The counters are stored at the end of each interval. The intervall length can be configured between 15 min and 24 h; the default interval length is 60min.

25.2 MPLS COUNTERS

D277: Tunnel octects/frames counters (CD/HD)

Feature Description

Ability to count RX, TX packets on a per MPLS TUNNEL basis and hystorize those for later analysis [RX Frames, RX Octects, …]

D278: Aggregate octects/frames counters (CD/HD)

Feature Description

Ability to count RX, TX packets on a port basis and report those to the operator [RX Frames, RX Octects, …]

D279: PW octects/frames counters (CD/HD)

Feature Description

Ability to count RX, TX packets on a per PWE3 basis and hystorize those for later analysis [RX Frames, RX Octects, …]

25.3 RPR COUNTERS

26 OAM

26.1 EFM OAM IEEE 802.3ah

D957: Link Discovery OAM

Feature Description

Ability to support IEEE 802.3ah Discovery to identify the device at the link end and its OAM capability

D958: Link Monitoring OAM

Feature Description

Ability to support IEEE 802.3ah Link Monitoring

Release Specific

R3.1: Including counters as per 802.3ah (no historical)

D960: Remote Loopback OAM

Feature Description

Ability to support IEEE 802.3ah Remote Loopback

26.2 ETH C.F.M. IEEE 802.1ag

D937: ETH loopback message (aka MAC ping)

Feature Description

Ability to support ETH OAM loopback message as specified within IEEE 802.1ag/Y.1731

D939: ETH link trace message (aka MAC trace)

Feature Description

Ability to support ETH OAM link trace message as specified within IEEE 802.1ag/Y.1731

D940: ETH continuity check message

Feature Description

Ability to support ETH OAM continuity check message as specified within IEEE 802.1ag/Y.1731

D954: ETH OAM Maintenance End Points (MEP)

Feature Description

Ability to support ETH OAM MEP at Service and Operator maintenace levels

D955: ETH OAM Maintenance Intermediate Points (MIP)

Feature Description

Ability to support ETH OAM MIP at Customer, Service and Operator maintenace levels

D12980: ETH OAM over TMPLS

Feature Description

Ability to support all Eth OAM mechanisms provided by the release also over T-MPLS E-LAN, including MEPs and MIPs at the Eth - T-MPLS boundaries, UNI and IWI

26.2.1 MEF OAM E-LMI

26.3 ETH OAM ITU Y.1731

26.4 MPLS OAM

26.5 TMPLS OAM (ITU Y.1711)

D964: Connectivity Verification

Feature Description

Ability to support CV OAM as per ITU Y.1711

D12979: Connectivity Verification, unidirectional

Feature Description

Ability to support CV OAM in unidirectional mode

D963: Fast Failure Detection

Feature Description

Ability to support FFD OAM as per ITU Y.1711

D962: Forward Defect Indication

Feature Description

Ability to support FDI OAM

D965: Remote Defect Indication

Feature Description

Ability to support RDI OAM (within CV)

D12153: APS

Feature Description

Ability to support APS OAM as per ITU Y.1711

26.6 SERVICE OAM (ITU Y.17ethoam)

26.7 OAM Interworking

27 SYNCHRONIZATION

D11935: Synchronous ETH

Feature Description

Ability to support Synch ETH CDR at both line and client side

D13012: Synch Ethernet with SSM

Feature Description

Ability to support SSM messages on SynchEthernet capable interfaces

D13033: 1588v2 Transparent Clock

Feature Description

Ability to perform timestamp modification in the correction field of IEEE1588 Packets

28 SERVICES

28.1 PWE3 (CESoPSN, SAToPSN)

28.2 ITU SERVICES

D156: ETH Private Line

Feature Description

According to ITU-T EPL Model

D157: ETH Virtual Private Line

Feature Description

According to ITU-T EVPL Model

D158: ETH Private LAN

Feature Description

According to ITU-T EPLAN Model

D159: ETH Virtual Private LAN

Feature Description

According to ITU-T EVPLAN Model

D160: ETH Aggregation Services

Feature Description

According to ITU-T EMAPL Model

D161: ETH Virtual Aggregation Services

Feature Description

According to ITU-T EMAVPL Model

28.3 MEF SERVICES

D163: E-Line

Feature Description

According to MEF E-Line Model

D164: E-LAN

Feature Description

According to MEF E-LAN Model

D12965: E-Tree

Feature Description

Support of E-Tree Model according to MEF definition

D12354: T-MPLS E-LAN

Feature Description

Ability to support T-MPLS E-LAN services, based on Virtual Switching Instances (VSI)

D12966: T-MPLS E-LAN PW Spoke

Feature Description

Virtual Switch Instance forwarding via Spoke-PW/Hub-Pw binding.

Bridge/Virtual Switch Istance functional behaviour (RFC 4664, 4762) allowing client traffic at UNI/IWI side (Spoke Pw) to connect to an emulated LAN at NNI side via Hub Pw connectivity

D165: Aggregation Services

Feature Description

According to MEF (N x) E-Line Model

D12159: MEF9 certification

Feature Description

The equipment is MEF9 certified

D12160: MEF14 certification

Feature Description

The equipment is MEF14 certified

28.4 IETF SERVICES

D167: VPWS: SS-PW

Feature Description

According to IETF VPWS

D12161: VPWS: MS-PW (manual stiching of PWs)

Feature Description

According to IETF draft-ietf-pwe3-ms-pw-requirements-05. MS-PW architecture in order to: scale the PW emulation service when the number of PEs grows to many hundreds or thousands, while minimizing the complexity of the PEs and P routers, to provide PWE3 across multiple PSN routing domains or areas in the same provider, to provide PWE3 across multiple provider domains, and different PSN types.

28.5 SERVICE PERFORMANCE

D12194: p2p protection performance

Feature Description

The protection is provided within 50ms.

WDM Features

1 General WDM Features

1.1 WDM integrated configuration (HW and SW)

WDM99: Basic C-WDM configuration integrated in TSS shelf as HW & SW (single NE)

Feature Description

Metro access applications on C-WDM system 8chs, 20nm at 2.5G

Applicability

This feature is applicable to TSS-320 only

WDM312: FOADM - Fixed D-WDM application, 8 channels, no FEC, no OA

Feature Description

Support for Fixed OADM D-WDM application, with no G709 wrapping and no Optical Amplifiers, 8 channels in L1 band (i.e. XFP colored optical module qualification on TSS 10G cards + MUX/DMUX)

Fiber is G.652, target distance is 20 Km single-span

WDM634: FOADM - Fixed D-WDM application, 8 channels, no FEC, with OA and line protection

Feature Description

Support for Fixed OADM D-WDM application, with no G709 wrapping and with Optical Amplifiers, 1+1 line protection, 8 channels in L1 band (i.e. XFP module qualification on TSS 10G cards + OPS + MUX/DMUX + OA)

Introduction and qualification of XFP colored optical modules on 10GE cards, STM64 cards (8 channels in L1 band)

Fiber is G.652, target distance is max 100 Km for each span, up to two spans

Release Specific

R3.0, R3.1: Optical Protection Switch is not supported (i.e. no 1+1 protection)

WDM620: FOADM - Fixed D-WDM application, 16 channels

Feature Description

Support for Fixed OADM D-WDM application, with G709 wrapping and Optical Amplifiers, 16 channels in L1 band

1.2 Physical Topologies / Configurations

WDM161: C-WDM entry configuration in single TSS shelf

Feature Description

Support of MSTP integrated configuration integrated in TSS shelf

Applicability

This feature is applicable to TSS-320 only

1.3 Protection

1.4 Performance Monitoring

WDM432: Externally accessible Transmission Tap Points

Feature Description

Monitoring taps for external test equipment are available at:

Ingress of a node

Egress of a node

Output of a optical amplifier

WDM360: Error Performance Parameters OTUk - Section Monitoring

Feature Description

The following performance parameters are available to estimate the error performance of an OTUk termination - Section Monitoring:

- SES count: number of Severely Errored Seconds in the received signal
- ES count: number of Errored Seconds in the received signal
- BBE count: number of Background Block Errors in the received signal
- UAS count: number of UnAvailable Seconds in the received signal
- EC FECcorrErr count: number of bits corrected by the FEC

The performance monitoring complies to ITU-T G.874 and G.798.

WDM362: 24 Hour Registers (OTN: OTUk, ODUk)

Feature Description

There are one current and one recent register for the OTN Performance Data. Each register is time stamped and contains a suspect interval indication (this indicates that the duration of the interval is suspected of being unequal to 24 hours). The 24 hour intervals are synchronized to the time-of-day. The suspect indication is supported for all measurement periods.

Complies to ITU-T G.874.

WDM363: 15 Minute Registers (OTN: OTUk, ODUk)

Feature Description

There are one current and 32 recent registers for the OTN Performance Data. Each register is time stamped and contains a suspect interval indication (this indicates that the duration of the interval is suspected of being unequal to 15 minutes). The 15 minute intervals are aligned with the 24 hour intervals. The suspect indication is supported for all measurement periods.

Complies to ITU-T G.874.

WDM368: Near-End Error Performance Monitoring (OTN: OTUk, ODUk)

Feature Description

For near-end error performance monitoring the parameters are counted from the incoming Error Detection Code (EDC) and defects on the basis of errored blocks. This type of performance monitoring is uni-directional and mainly for maintenance purposes.

Complies to ITU-T G.874 and G.798.

1.5 Overhead Management

WDM570: Proprietary FEC Support, OT Line Side

Feature Description

Support of proprietary FEC with ~7% overhead and providing >8 dB coding gain.

1.6 Node Supervision

1.7 Transport of SDH/Sonet/Packet/CBR Traffic

1.8 G.709

1.9 System optical performances

WDM406: EDFA Amplification

Feature Description

The system supports Optical EDFA Amplification.

WDM401: 100 GHz Channel Spacing (C-Band)

Feature Description

The system supports wavelengths compliant with the ITU grid (ITU G.694.1) with 100Ghz channel spacing in the C-band.

1.10 Fiber types

WDM457: Single Mode Fiber (G.652)

Feature Description

The system works with one set of engineering rules and DCM for ITU-T G.652 fiber (a set of engineering rules specific to ITU-T G.652 fiber).

1.11 Engineering Planning Tool

2 WDM boards

2.1 WDM boards general requirements

2.2 WDM boards Optical Transponder

2.3 WDM line boards

WDM261: 10Gb/s D-WDM transparent transponder XFP based

Feature Description

10Gb/s D-WDM 10G Transponder G.709* (XFP on client side, XFP and XFP-E support on line side with SFEC) supporting STM64, OC-192, 10GE WAN/LAN.

WDM339: OTU-2 line card (single 1/2 slot)

Feature Description

Single 1/2 slot line card supporting mapping of VC/STS containers from Fabric Interface to ODU-2 line colored I/F.

2.4 WDM Mux/Demux boards

WDM317: 8-chs D-WDM master mux/demux L1 band w/ and w/o SPV

Feature Description

D-WDM 8chs L1 band mux/demux (8 out of 32chs D-WDM / 100GHz grid architecture, C band)

WDM625: 8-chs D-WDM slave mux/demux L2 band

Feature Description

D-WDM 8chs L2 band mux/demux (8 out of 32chs D-WDM / 100GHz grid architecture, C band), to be used with D-WDM 8chs L1 band mux/demux to extend the grid to 16 channels

WDM177: 8-chs C-WDM mux/demux (8chs C-WDM / 20nm grid architecture)

Applicability

This feature is applicable to TSS-320 only

WDM178: 2-chs C-WDM mux/demux

Applicability

This feature is applicable to TSS-320 only

WDM179: 1-channel C-WDM mux/demux

Applicability

This feature is applicable to TSS-320 only

2.5 WDM OADM boards

WDM183: 4-chs C-WDM fixed OADM

Applicability

This feature is applicable to TSS-320 only

WDM184: 2-chs C-WDM fixed OADM

Applicability

This feature is applicable to TSS-320 only

WDM185: 1-channel C-WDM fixed OADM

Applicability

This feature is applicable to TSS-320 only

2.6 WDM Optical Amplifiers

WDM191: D-WDM Metropolitan amplifiers for medium span (22/9)

Feature Description

D-WDM Metropolitan amplifiers for medium span (LOFA 1111), 22/9, 17dBm

2.7 WDM Optical Protection boards

2.8 WDM Tributary Boards

WDM338: 10xAny client traffic card

Feature Description

1/2 slot card supporting 10x Any type interfaces (GE, STM-1/4/16, OC-3/12/48), GFP VCAT mapping for Eth, SDH/SONET termination for clients.

Release Specific

R3.1: only SDH

2.9 Management boards

2.10 DCM

WDM622: External DCM Modules supported fiber types

Feature Description

The system supports external fiber-based DCMs which are applicable for applications using fiber types specified in the given release

CP Features

1 NETWORK APPLICATIONS AND NETWORK ARCHITECTURE

1.1 Generic Features

CP484: RFC 3031 MPLS Architecture

CP349: RFC 3945 GMPLS Architecture

CP176: Distributed SPC path setup

2 CONNECTION MANAGEMENT

2.1 Generic Features

CP370: uni-directional point-to-point connections

CP371: Support bi-directional, symmetric point-to-point connections.

CP182: Connection admission control (CAC)

Feature Description

The CAC function in each node checks whether sufficient resources are available on the outgoing link - if not enough resources available, the connection establishment is rejected and a crankback message is sent back in the upstream direction containing error information that indicates why the connection establishment process did not succeed.

2.2 Technology Specific Features

2.2.1 SONET/SDH

2.2.2 OTN

2.2.3 WDM

2.2.4 T-MPLS

2.2.5 IP/MPLS

2.2.6 Ethernet

CP508: L2 path setup

3 CONTROL PLANE COMMUNICATION

3.1 Generic Features

CP203: The system supports the establishment of bidirectional IP Control Channels (IPCCs) to its CP neighbors.

Feature Description

IPCCs are needed for carrying routing, signaling and link management protocol messages and can be categorized into

in-fiber in-band (IF/IB), out-of-fiber out-of-band (OF/OB).

IPCCs may be established such that their topology is congruent with the transmission topology (in-fiber/in-band) or it may be different (out-of-fiber/out-of-band).

It is possible to establish multiple IPCCs between the same pair of nodes to increase the IPCC availability.

CP872: In-fiber/in-band control channel

Feature Description

An in-fiber/in-band control channel utilizes the same physical infrastructure as the user traffic.

4 SIGNALING

4.1 Generic Features

CP351: RFC3471 GMPLS Signaling Functional Description

CP224: RSVP

Feature Description

RFC 2205

CP225: RSVP-TE refresh reduction: RFC 2961

Feature Description

Refresh messages are used to both synchronize state between RSVP neighbors and to recover from lost RSVP messages. The use of Refresh messages to cover many possible failures has resulted in a number of operational problems. One problem relates to scaling, another relates to the reliability and latency of RSVP Signaling. The scaling problems are linked to the resource requirements (in terms of processing and memory) of running RSVP. The resource requirements increase proportionally with the number of sessions. Each session requires the generation, transmission, reception and processing of RSVP Path and Resv messages per refresh period. Supporting a large number of sessions, and the corresponding volume of refresh messages, presents a scaling problem. The reliability and latency problem occurs when a non-refresh RSVP message is lost in transmission.

The extensions defined in this document address both the refresh

volume and the reliability issues with mechanisms other than adjusting refresh rate.

These extension present no backwards compatibility issues. RFC 2961

CP226: RSVP-TE: Extension to RSVP for LSP Tunnels

Feature Description

RFC 3209

CP565: GMPLS RSVP-TE

Feature Description

Support of RSVP-TE Extensions as defined in RFC 3473

CP228: Unnumbered Interfaces

Feature Description

RSVP-TE extension to support unnumbered interfaces. RFC 3477

CP274: RSVP-TE: Extension to RSVP for Graceful Restart

Feature Description

Permit recovery of signaling state from adjacent nodes when the data plane has retained the associated forwarding state across a restart. RFC 3473. Moreover, RFC5063 presents extensions enable a restarting node to recover all objects in previously transmitted Path

messages including the ERO, from its downstream neighbors.

4.2 Technology Specific Features

4.2.1 SONET/SDH

4.2.2 OTN

4.2.3 WDM

4.2.4 T-MPLS

4.2.5 IP/MPLS

CP324: MS-PW setup with manual stitching

4.2.6 Ethernet

5 ROUTING AND PATH COMPUTATION

5.1 Generic Features

CP192: NE-level Resource Discovery --> self-resource awareness discovery.

State Information and Topology Dissemination

Feature Description

Enhancements of the OSPF routing protocol to advertise availability of optical resources in the network

IGP/OSPF-TE [RFC2328, RFC3630, and GMPLS-Routing extension]

CP214: OSPF

Feature Description

RFC 2328

CP215: OSPF-TE

Feature Description

RFC 3630

CP216: Opaque LSA

Feature Description

Type 10 (for intra-area Traffic-Engineering). RFC 2370

CP217: Hitless Restart

Feature Description

Type 9 (for Graceful LSA). Hitless Restart (RFC 3623). Dynamic states are restored during graceful restart procedure

CP218: GMPLS Routing extensions RFC 4202

Feature Description

This document specifies routing extensions in support of carrying link state information for Generalized Multi-Protocol Label Switching (GMPLS). This document enhances the routing extensions required to support MPLS Traffic Engineering (TE). RFC4202

CP219: GMPLS-OSPF-TE RFC 4203

Feature Description

This document specifies encoding of extensions to the OSPF routing protocol in support of Generalized Multi-Protocol Label Switching. RFC4203

10 NETWORK MANAGEMENT

10.1 Generic Features

CP299: NMS driven path setup for single domain SPCs with source and destination and optionally intermediate hops

CP188: Possibility to Provision the path using the Strict Explicit Route option

CP189: Possibility to Provision the path using the Loose Explicit Route option

CP387: Management plane initiated connection tear down via Control Plane

Feature Description

Control Plane connections can be deleted from the Management Plane sending a request to the Control Plane. The Management Plane has also the option to “force” the deletion of connections created by the control plane.

10.2 Technology Specific Features

10.2.1 T-MPLS

CP321: SS-PW setup static

2 Problems fixed

Equipment Category

TSDrd29533 FLC1+1:Wrong LED management of ACT and STBY FLC

Severity:

Severity 3

10xANY

10xANY board is not supported

Electrical SFP

Electrical SFP is not supported

TSDnm81726 Hardware failure creating VCG on MSPP

Severity:

Severity 2

Description:

MSPP falls in OOS status. The reason is a misbehaviour: checkBoard process found a Source out of frame alarm in SPI4.2 bus (Jacobi/Gauss). Consequently raised the alarm. A call of this command without traffic flowing (from BSW test shell) returns NO error

TSDrd33375 ISU: After R2.32 -> R3.2.1 ISU, 10GMSPP IS,SECC but LED stays amber & no transmission

Severity:

Severity 2

Description:

During ISU from R2.0.7 -> R2.32-17 -> R3.21-40, after plugging out PP20G and replacing with 10GMSPP the 10GMSPP's LED stays in amber,though RTRV-EQPT indicated that the pack is IS,SDEE.In addition, data transmission is not restored.

Facility Category

TSDrd29866 DOSM:Long traffic hit during matrix eps by extraction

Severity:

Severity 2

Description:

Extracting the active MT320 card causes a traffic hit up to 400 msec on Lower Order VCG traffic

TSDrd29752 FM(ANSI):UNEQ-P on some VCGSTS1 facilities are cleared even though there are no cross connections

Severity:

Severity 2

Description:

Alarms are not correctly reported for all the STS1 facilities

TSDrd29094 LOA 1+1:Long traffic hit after LOA EPS on VCAT lower order with lcas enabled

Severity:

Severity 2

Description:

If LCAS protocol is enabled on a lower order VCG, a LOA (Lower Order Adapter) card EPS by command will cause a traffic hit up to 600 msec

TSDrd30292 ALM (ANSI) : On configuring STS3C some channels have unexpected AIS-P and SSF-P

Severity:

Severity 3

Description:

On assigning STSn for OCn facility, there should be only UNEQ-P alarm on the channels which are in closed loop. However, on assigning STS3c for OCn facility, other then UNEQ-P alarm, AIS-P and SSF-P alarms are observed. The channel number is not fixed after freshly creation of the facility.

TSDrd30211 Traffic status of Remote Port is always shown as "DOWN" state

Severity:

Severity 3

TSDrd29775 FM(ANSI):UNEQ-P CL auto msgs on first STS1 of all groups are reporting after logical removal of OCn

Severity:

Severity 3

Description:

MAN condition on OCn facility should not affect any alarms on path facilities under that OCn. However, UNEQ-P CL autonomous message is reported after logical removal of an OCn facility.

TSDrd30214 FM(ANSI): MAN condition is not reported on OTU2 card

Severity:

Severity 3

TSDrd30166 FM(ANSI):SSF-P is not reporting on path facilites under OC192 facility in OT2TDM card

Severity:

Severity 3

TSDrd28930 FM(ANSI): RMV/RST-GBE command does not set/clear MAN condition

Severity:

Severity 3

TSDrd29772 FM(ANSI):Mapping between PMODE and PST/SST values are not mananged on MAU facility

Severity:

Severity 3

TSDrd30078 FM (ETSI):RTRV-PATHSL against GBEVCG does not work

Severity:

Severity 3

TSDrd28774 CTLC TL1(ETSI):INIT-SYS with WARM phase restarting MT320 board

Severity:

Severity 3

Description:

The INIT-SYS command with WARM phase should not reboot the MT320 board as per normal behavior. Only RAM DB shoul be reloaded. However, INIT-SYS command with WARM phase on SLC is rebooting the MT320 board.

TSDrd29669 FM(ETSI):RTRV-TL1-SYNTAX does not support OPR-ALS and RTRV-LASER-STATE commands

Severity:

Severity 3

UNEQ-P for VCGSTS1 and STS

UNEQ-P is not available for VCGSTS1 and STS facilities

AINS not managed for VCG

Automatic In-Service is not managed on VCG member facility

TSDrd30894 LPBK(ANSI):Terminal loopback on OTU2 doesn t work

Severity:

Severity 2

Description:

Terminal loopback doesn't work in OTU2

TSDnm79495 Not possible to set autonego via PKT on 3.2

Severity:

Severity 2

Description:

It is not possible to modify the autonegotiation from PKT

Protection Category

TSDrd30047 1+1 APS : False DBCHG message on creation of path facility

Severity:

Severity 3

Description:

False DBCHG message on creation of path facility

Linear FFP deletion

On deleting Linear FFP, the protection STS are not automatically restored

Work around:

Delete and provision again parent SFP-XFP

MS-SPRing LOCKOUT SPAN with FORCED or MANUAL

The combination of LOCKOUT SPAN command and FORCED or MANUAL in MS-SPRING is not supported

TSDrd32850 SDH application, 1850TSS-320: trail protection (SNCP) protec

Severity:

Severity 2

ONDvx27801 MSP informations

Severity:

Severity 3

Description:

enhancement feature to alignment to legacy equipments about some missing information related to MSP: particularly the source request, local or remote

Connection Category

Cross-connection search for LOVC3 on ZIC is not supported

Cross-connection search for LOVC3 on ZIC is not supported

Work around:

Use TL1 command

TSDrd29884 DOSM:traffic hit on LOVC12 VCAT after members XC deletion in idle state

Severity:

Severity 2

Description:

Deleting crossconnection involving idle LOVC12 VCG members, may cause traffic hit on other members of the same VCG

TSDrd30216 CONN(ANSI): Not able to create a multicast cross connections.

Severity:

Severity 2

Description:

It is not possible to create point to multipoint crossconnection

TSDrd30200 CONN(ANSI):Addition of 1WAYPR leg to 2-1WAYTHRU X-con leads to database inconsistency

Severity:

Severity 2

Description:

Adding 1WAYPR xconn to any UPSR protected xconn leads to DB inconsistence

TSDrd30048 CONN (ANSI/ETSI): 1WAY cross connection never comes to IS state though the traffic is up

Severity:

Severity 3

Data Category

TSDrd30250 VPLS - Frames lost when PW is binded in VPLS istance

Severity:

Severity 2

Description:

Binding a new Pseudowire to an existing VPLS causes loss of some frames on already bound PW

TSDrd29295 TMPLS: wrong state of tunnel and tuseg

Severity:

Severity 3

Description:

When LOC alarm is present on TUSEG, the state of tunnel is UP (correct behaviour: state should be DOWN)

EOAM Linktrace with untagged CCM in Provider Bridge

EOAM Linktrace is not supported with untagged CCM in Provider Bridge

Ingress filtering not supported

Ingress filtering is in restriction

Port shaping

Port shaping offset is not supported

TSDnm80932 SKT: added VCG not correctly uploaded by VT

Severity:

Severity 2

Description:

Increasing a VCG from 3xVC4 to 7xVC4 it is not possible to implement a tunnel with CIR/PIR equal to 1GBE: IDNC Input data not consistent Cannot reserve 1000000 Kbits.

TSDrd33412 EQPT : Board extraction impact traffic on LAG service implemented on other boards

Severity:

Severity 2

Description:

The procedure of extraction of a data board does not work correctly: Deprov ok, Delete the board from ZIC -----> trafic impact, extraction ok

TSDnm82063 Provider Bridge EVC partially deimplemented

Severity:

Severity 1

TSDnm82019 Wrong LT report for OAMETBEVC on TSS320 v3.2

Severity:

Severity 2

Description:

Wrong LT report for OAMETBEVC

TSDnm82259 LAC state changed not notified to PKT

Severity:

Severity 2

Description:

If EML set the local access, this LAC state change is not notified to PKT at SNMP level

TSDrd33648 EOAM: EOAM connectivity fails on VPLS/VPWS scenario when PW is FRCD to PROT tunnel on FFP

Severity:

Severity 2

Description:

The CCM are transimted on working tunnel after the deletion of FFP with PW movement to spare

TSDrd33619 Traffic stop transmitting when double failing happened on tw

Severity:

Severity 2

Description:

In a configuration with two protected tunnels terminating on the same node, with pw stitching, if a simultaneous double failure on the two segments occurs, the protection fails

WDM Category

DWDM Transponder

The DWDM XFP-based Transponder is not supported

Loopback on OTU-2

Loopback on OTU-2 is in restriction

Enhanced FEC on OTU-2

Enhanced FEC is not available on OUT-2 (only Reed-Solomon FEC supported)

Alarm Category

TSDrd30222 ANSI PM VCG TCA Treshold not correct

Severity:

Severity 3

TSDrd29876 ALM (ANSI) : ABNORMAL condtype not managed for OCn facilites

Severity:

Severity 3

TSDrd28424 FM (ANSI): Alarms are not reporting autonom. on 8th & 11th group of STS

Severity:

Severity 3

EBER alarm on OTU-2 card

EBER alarm on STS48c and STS192c related to embedded OC192 facility of OTU2TDM card are not managed

VCGPLM alarm

VCGPLM alarm is not managed in ANSI configurations on PP10MS (VCGPLM PayLoad Mismatch defect indicates if the signal label of a VCG member does not match the expected value "GFP mapping".)

Alarm and condition reporting on OTU-2

Alarms & Conditions are not reported on OC192 under OT2TDM card using RTRV-ALM/COND-OC192 command

VCGLPF alarm

VCGLPF alarm is not raised on CRC failure

VCGSSF alarm

VCGSSF alarm is not managed in non LCAS configurations

AINS per node

AINS per node is not supported, default value for AINS is 8 hours

Alarm reporting on rack lamps

Critical or Major alarm of the EQPT are not reported on rack lamps

TSDnm81895

Severity:

Severity 2

Description:

A TSS320 managed and supervised by TMN reports a different number of alarms between ZIC and ASUSM-EML.The problem arises when the node is locked to a LineRef. If the node is in Free Running or in HoldOver state, the number of alarms is the same on ZIC and EML

Performance Monitoring Category

TSDrd33608 PM+ZIC+VCG+ ANSI: Not possible to create current data PM on VCG

Severity:

Severity 2

Description:

ANSI: Not possible to create current data PM on VCG

TSDnm83292 Retrieve perf on tunnel not working due to n

Severity:

Severity 3

Description:

retrieval of PM on PW and TUNNEL displays no information. The following error message appeared: IDNC Information Input,Data Not Consistent

Management Category

TSDrd29431 DBM: CANC-COPY-RFILE seems not immediately applied

Severity:

Severity 3

TSDrd30332 DBM(ETSI): COMPLETION report goes directly to 100% once COPY-RFILE started

Severity:

Severity 3

TSDrd29219 DBM (ETSI/ANSI) : RTRV-DB-LABEL output shows wrong release version

Severity:

Severity 3

Description:

RTRV-DB-LABEL output shows releaseID R03.01.00 instead of R03.02.00

IP adjacency report

IP adjacency learned over IP tunnel is not shown in ZIC

Work around:

Use TL1 command

PP1GESY GbE ports used as input synch reference

After a DB restore, GbE ports (different from the first one) of PP1GESY card selected as input synch reference are always in SF status

NTP server failure

ZIC session is not supported upon NTP server failure

Work around:

Reconnect to ZIC after the event

TSDrd30333 ZIC_DBM(ETSI): # and $ are not set togather while setting SID using ZIC

Severity:

Severity 3

Description:

Special characters “$” and “#” are not set in SID by ZIC

Work around:

Use TL1 command

Static route mounting

An FLC reboot is needed after creation of the static routes in order to mount them

Control Plane not supported

The Control Plane is not supported

Migration to R3.2

Migration to 3.2 from older releases is not supported

TSDnm83046 LAC variable causes a continue restart on FL

Severity:

Severity 1

Description:

The start supervision of this NE causes a problem on NE: TSS160 FLC continue to restart due to a variable that is not correctly initialized, and NE is no more reachable from NMS. The only way to block this continue reboot is to stop the supervision.

Security Category

None

External Communication Category

TSDrd34616 TSS320 vs. resource isolation

Severity:

Severity 2

Description:

After a double fiber cut / restore event in both sides of a redundant DCN connection using integrated IS-IS, the traffic is restored but the DCN channels present on that links are down. No problem is present if you use static routes.

Work around:

Reboot all FLC on the path used to reach the isolated node

TSDrd30246 XCOM(ETSI): Static route goes down if OSI on the interface is altered

Severity:

Severity 2

Description:

Changing OSI status (on/off) on DCC interfaces causes loss of existing static routes

Work around:

Reboot the FLC

Full/Half Duplex information on Q-LAN i/f

Full/Half Duplex information on Q-LAN interface is available for the stand-by Matrix card (always reported as Half Duplex)

Maximum number of IPT

Is not possible to create more than 20 IPT (IP over OSI tunnel)

Synchronization Category

TSDrd30381 FOADM+SYNC(ANSI):Client of OTU2 stays in syncfail forever after board restarting or plugging out/in

Severity:

Severity 3

Contro Plane Category

None

3 Known Problems

Equipment Category

TSDrd33298 EQPT(ETSI):INITIALIZE SYSTEM on LOA10G module caused MTXLNKFAIL

Severity:

Severity 3

Description:

Init sys on working or protection LOA10G module caused MTXLNKFAIL condition. The alarm is cleared after some time. There is no traffic impact

TSDrd28894 EM (ETSI) Init-sys causes wrong state change sequence on packet processo

Severity:

Severity 3

Description:

Upon successful completion of Init-sys on packet processor cards, a wrong state change sequence is being emitted "OOS-AU,HWFAIL,SWDL,(SWDWN)]=>IS,,]" a HWFAIL autonomous report against the module

TSDrd31554 FOADM(ANSI): LOFA leds AB1 and AB2 switched ON after plug out plug in

Severity:

Severity 3

Description:

After plugging out/in LOFA board, leds AB1 and AB2 stay ON even if traffic is working. The expected status of leds is restored when a real LOS

happens and disappears. After INIT-SYS of the board, the same behaviour occurs.

TSDrd33428 DBM(ANSI):Wrong REPT^DBCHG message format for GBE/MAU facility.

Severity:

Severity 3

Description:

REPT DBCHG message displayed while deleting GBE/MAU message is incorrect

TSDrd33522 EM(ANSI):Matrix PROVISIONEDTYPE MT320LO allowed

Severity:

Severity 3

Description:

In ANSI context, the command to change the PROVISIONEDTYPE of one matrix from MT320 to MT320LO should be denied with the following error code: IPNC Input, Parameter Not Consistent. BUT by using TL1 command ED-EQPT, after logical remove, the operation is performed

TSDrd33675 CLEI code is not reported in the Remote Inventory of electrical module

Severity:

Severity 3

Description:

CLEI code is not reported in the Remote Inventory of electrical module

TSDrd30929 FM_ETSI(CWDM): Able to delete CWLA module when traffic is being carried

Severity:

Severity 3

Description:

Deletion of CWLA module is not denied even if traffic is being carried

Facility Category

TSDrd29579 EM (ETSI): WARM reset is not managed for data cards.

Severity:

Severity 3

TSDrd29727 FM(ETSI): Puls width timer is not restarted after reissuing OPR-ALS command

Severity:

Severity 3

Description:

If the laser is turned on (as a result of the OPR-ALS command) and the user reissues an OPR-ALS command, the laser remains on, but the pulse width timer is restarted.

TSDrd28854 LPBK(ANSI):Matrix loopback doesn't work after changing the existing setup

Severity:

Severity 3

Description:

After operating an STS1 with matrix loop back, all matrix loopback functions are working fine. But after deletion of the existing cross connection, the Matrix loopback was not present any more but the operated STS facility still carried LPBK in its SST.

TSDrd28735 CTLC:(ETSI/ANSI) INIT and SYSTEM-READY conditions not raised upon NE restart

Severity:

Severity 3

TSDrd28848 LPBK(ANSI):Matrix loopback not inserted maintenance signal in downstream

Severity:

Severity 3

TSDrd31337 LPBK(CWLA): MAN condition is cleared on line and client facilities of CWLA after power cycle

Severity:

Severity 3

Description:

LPBK(CWLA): MAN condition is cleared on line and client facilities of CWLA after power cycle

TSDrd30219 FM(ETSI): FECTYPE value EFEC2 should be denied on DWLA10X

Severity:

Severity 3

Description:

As per DWDM FM TL1 RRS FECTYPE, value EFEC2 is applicable only for OTU2 facility on OT2TDM. So EFEC2 should not be allowed for OTU2 on DWLA10X

TSDrd31249 FM(CWLA): URU-O is not reporting on client facilities of CWLA module

Severity:

Severity 3

Description:

Provisioning client and line facilities on a CWLA w/o SFP, URU-O alarm is not reported for all the facilities

TSDrd31332 LPBK(CWLA): ACTLPBK condition is not reporting on line facility under CWLA module

Severity:

Severity 3

Description:

ACTLPBK condition is not reported on line facility under CWLA module

TSDrd33229 DOSM(ETSI):DOSM:Monitor LCAS for LO-VCAT carried wrong MST received value.

Severity:

Severity 3

Description:

Retrieval of VCG information in case of LCAS disabled shows in the parameter LO-VCG CHNSTATERX"OK" instead of "FAIL" . It works fine with HO-VCG.

TSDrd32980 FM(ETSI):MGRACD output parameter not shown on OG port.

Severity:

Severity 3

Description:

RTRVOG command doesn't display MGRACD output parameter on OG port of CWLA module. AMGR ACD determines how the facility is managed (i.e. to which manager assigned). The port should be either not managed, or managed by TDM Control Plane, or by Management Plane

TSDrd33354 FM(ETSI):Condition on VCG members changed after logical RMV/RST of VCG

Severity:

Severity 3

Description:

UNEQ-P condition on VCG member reported after deleting cross connection on VCG with no LCAS. This UNEQ-P condition on VCG member cleared and reported EBER and RFI, after logical remove amd restore of VCG

TSDrd31927 ALM(ETSI):Wrong management VCLOM condition on Lo-VCAT members

Severity:

Severity 3

Description:

Wrong management VCLOM condition on Lo-VCAT members: Lower order VCG members carries wrong VCLOM conditions along with UNEQ-P condition on some members

TSDrd32224 ZIC_LPBK(ETSI): DENY pop up errror message on completion of OPR-LPBK on DWLA client

Severity:

Severity 3

Description:

Its observed that on selecting OPR-LPBK-STM64 on DWLA client, the command is COMPLD, but the pop up message shows DENY instead of COMPLD

TSDrd30783 FOADM(ANSI): Client of DWLA10x always OOS-AU even if traffic is working

Severity:

Severity 3

Description:

On STM64 facility the Primary state of OTPORT-1-1-x-C1 is always OOS-AU even if no condition is reported

TSDrd33080 AID(ETSI):Retrieve condition on OG port with ranging and grouping not working

Severity:

Severity 3

Description:

TL1 retrieve condition specifying range and groupe on OG port does not work properly (displays only the first value of the range)

TSDrd31490 DOSM(ANSI):All disabled members in GBE/MAU VCG carried GFPLOF condition.

Severity:

Severity 3

Description:

In a point to point connection between two Non-LCAS enabled VCGs, after making all VCG members idle on both side, both VCGs carry GFPLOF instead of null alarms

TSDrd31345 LPBK(ETSI):SST of SDEE not set on LPBK particpated GBE10 facility.

Severity:

Severity 3

Description:

On GBE10 card with configured lpbk, secondary state SST is not properly set in SDEE

TSDrd32521 DBM(ANSI):Wrong REPT^DBCHG message format for GBE/MAU facility.

Severity:

Severity 3

Description:

GBE/MAU get provisioned with wrong format REPT^DBCHG message

TSDrd31663 FM(ANSI) :States on OTU2 not shown on pre-provisioning

Severity:

Severity 3

Description:

It is observed that on pre-provisioning the OTU2TDM card (w/o plugging in physically the card) the states of the OTU2 are not correctly shown on retrieval. In both ANSI & ETSI region

TSDrd31354 FM(ETSI): ACT and SDEE states are not set on all VC4nC facilities of OTU under OT2TDM module

Severity:

Severity 3

Description:

After Provisioning two OTU facilities and performing all AU416C/AU44C level cross connections, ACT and SDEE states are not set on all VC4nC path facilities

TSDrd30571 FM(ETSI): Remove AINSTH parameter from OTU2 line facility on DWLA10X

Severity:

Severity 3

Description:

AINS functionality is not supported on line facility of DWLA10X. So RTRV-OTU2 against line facility should not show AINSTH parameter in the output, BUT it does even if Modifying AINSTH value using ED-OTU2 is correctly denied

TSDrd30135 FM(ANSI):SDEE state is not set on OT2TDM when LPBK is present

Severity:

Severity 3

Description:

on OTU2 facility SDEE state is not set on EQPT and facilities when LPBK is present on underlying facilities

TSDrd29475 LPBK(ANSI):SDEE stae not carried by OTU2 upon loopback.

Severity:

Severity 3

Description:

SDEE is not reported on SST of facility on OTU2

TSDrd29877 DOSM: Wrong management of MON-LCAS

Severity:

Severity 3

Description:

On VCG LOVC3 / LOVC12, activating LCAS (without XC), MON-LCAS will show NORMAL for all members instead of ADD. MON-LCAS should show ADD for all members

TSDrd28848 LPBK(ANSI):Matrix loopback not inserted maintenance signal in downstream

Severity:

Severity 3

Description:

After having performed a matrix loopback on the STS1, creating a new cross-connection on it to another STS1 does not cause the insertion of maintanance signal AIS-P in downstream direction. But if the loopback is performed on a STS1 already cross-connecte

TSDrd28952 LPBK(ANSI):ACTLPBK condition on OTU2 facility not retrieved.

Severity:

Severity 3

Description:

ACTLPBK condition is not retrieved correctly by RTRV-COND-OTU2 command when the facility is in under loopback.

TSDrd31139 FM_ETSI(CWDM): MAN condition on OG ports are not reporting autonomously

Severity:

Severity 3

Description:

during removal of OGPORT, MAN condition is not reported by autonomous messages

TSDrd31340 ALM(ETSI):Changed ASAP profile not affected to OTU2 facility of DWLA10X module.

Severity:

Severity 3

Description:

The changing of ASAP profile from default to None (LBL-ASAPOTU2-None) does not affect OTU2 facility of DWLA10X module: LOS alarm not cleared from alarm list.

TSDrd30925 ETSI(DWDM): Line OTU2 facility under DWLA module is reporting wrong AINSTH value

Severity:

Severity 3

Description:

AINSTH value of OTU2 line facility on DWLA10X is reporting as 000-00 instead of AINSTHDFLT value

TSDrd30989 FM(DWDM): ACTLPBK command is not reporting autonomously on DWLA line and client facilities

Severity:

Severity 3

Description:

IN ANSI region, operating on a provisioned DWLA card a Facility and Terminal loopback on DWLA line facility, ACTLPBK Autonomous msgs are not reported

TSDrd33380 DBM(ETSI):EDIT ACCESS CONTROL DEVICE for DWLA10X module Line and Client facility denied

Severity:

Severity 3

Description:

TL1 command "EDIT ACCESS CONTROL DEVICE" appplied to DWLA10X module, denies the setup of Line and Client facilities without error message

TSDrd28828 LPBK(ANSI):RTRVLPBKOC/STS command compledted for wrong AID

Severity:

Severity 3

Description:

RTRV-LPBK-OC/STS command completed for wrong AID, even if there is no output response.

TSDrd32111 DOSM(ANSI):EDVCG command denied with wrong error code.

Severity:

Severity 3

Description:

If the VCG specified in the AID field is in a UAS secondary state, the command should be denied and an error message with the following

error code shall be sent to the user. SNVS Status, Not in Valid State. But ED-VCG command, changing PST of a VCG not provisioned (i.e. in UAS secondary state) into OOS, is denied with error message SAOS instead of SNVS.

TSDrd32981 DBM(ETSI):EDIT ACCESS CONTROL DEVICE with OGPORT AID denied.

Severity:

Severity 3

Description:

TL1 command "EDIT ACCESS CONTROL DEVICE" appplied to OG port is denied with out any error message

TSDrd31077 DBM(ETSI):REPT DBCHG for OGPORT contains dissimilar TL1 command

Severity:

Severity 3

Description:

Creation and deletion of OGPORT in CWLA3 have different REPT DBCHG format. For OGPORT creation REPT the DBCHG message contains a TL1 command as ENT-STM16:OGPORT-1-1-x-xx but for deleting it is DLT-OG:OGPORT-1-1-x-xx command.

TSDrd33521 DOSM(ANSI):EDVCG command denied with wrong error code.

Severity:

Severity 3

Description:

ED-VCG command is applied to a VCG not provisioned (i.e.in UAS state) changing PST into OOS, gives a SAOS error message instead of SNVS Status, Not in Valid State

TSDrd33532 FM(ETSI):Logical restore of GBE10 facility not denied when facility under LPBK state.

Severity:

Severity 3

Description:

RMV-GBE10 is completed even if the facility is involved in a loopback. After that there was no LPBK SST value on that facility but LPBK was present

TSDrd33506 DOSM:EDVCG format shown extra prameter

Severity:

Severity 3

Description:

ED-VCG shows a wrong additional parameter 'GB'

TSDrd33526 CONN(ETSI): ACT& SDEE states missing on cross connected AU4nCs on OTU2

Severity:

Severity 3

Description:

Some concatenated facilities AU44C and AU416C do not have SDEE& ACT state present on them even though they are involved in a cross connection

TSDrd33530 FM(ETSI):Retrieve STM16 facility denied on 1st port of CWLA module

Severity:

Severity 3

Description:

Retrieve STM16 facility denied on port without provisioned SFP in CWLA module

TSDrd33431 EM(ANSI):DIGITAL DIAGNOSTIC MONITORING retrieved for electrical SFP

Severity:

Severity 3

Description:

DIGITAL DIAGNOSTIC MONITORING retrieved for electrical SFP . It displays faked vaules.

TSDrd33531 FM(ETSI):OG line facility retained connected client port aid in absence client port.

Severity:

Severity 3

Description:

removal of the client port didn't match with the retrieval of teh status of the CONPORTAID field

TSDrd33425 EM(ETSI): INIT-SYS is allowed on OMDX8

Severity:

Severity 3

Description:

INIT-SYS should not be supported on OMDX8

TSDrd33462 AID(ANSI): ISU commands are not denied even if the extrablocks are given in command.

Severity:

Severity 3

Description:

TL1 ISU commands are not denied if extrablocks are given in the command

TSDrd33662 DBM(ANSI):EDIT ACD denied for ANSI facility.

Severity:

Severity 3

Description:

EDIT ACCESS CONTROL DEVICE (ED-MGRACD) command action denied for ASNI facility

TSDrd33703 LPBK(ETSI) : RTRV-LPBK-STM64 on DWLA client retreives the loopback on STM64 with wrong output format

Severity:

Severity 3

Description:

RTRV-LPBK-STM64 with wrong output format for the DWLA client port STM64.Due to this ZIC is not retrieving the current Loopback status and hence gives the "Parser Error"

TSDrd33747 FM(ETSI) : It is possible to Restore the OTU2 under Loopback(i.e. OTU2 witha LPBK secondary state)

Severity:

Severity 3

TSDrd33699 DOSM(ANSI):HLDOFFTIME functionality not working on VCAT

Severity:

Severity 3

Description:

Holdoff time can be specified while editing a VCG. It specifies the time, in number of 100milliseconds, to wait before considering a member of the addressed virtual concatenation group in failure condition after a defect has occurred on that member. Valid only if LCAS is Enabled. Results not consistent with expectation

TSDrd30213 PM Ansi Data : THP missing for Data module

Severity:

Severity 3

Description:

the output of command RTRV-TCAP-ASGNMT for Data card is missing

TSDrd28854 LPBK(ANSI):Matrix loopback not functioned after changing the existing setup

Severity:

Severity 3

Description:

On a cross connected STS facility with matrix LPBK anabled, once the Xc is deleted, STS facility still carry LPBK in its SST

TSDrd30814 FM(ANSI) : RTRV-STM64 retrieves OTPORTs in ANSI region

Severity:

Severity 3

Description:

The command RTRV-STM64, applied to DWLA, is COMPLD with output parameters in an ANSI environment

TSDrd31924 ALM(ETSI):Wrong management of LOA on LOVCAT

Severity:

Severity 3

Description:

Wrong management of LOA on LOVCAT

TSDrd33852 FM(ETSI):VCG member states are not managed correctly in physical obsence of LOA module.

Severity:

Severity 3

Description:

LO VCG members' states on PP10MS are not managed correctly in physical obsence of LOA module

TSDrd31240 FM(ETSI): Some parameters are missing on retrieval of OGClient on CWLA

Severity:

Severity 3

Description:

Retrieval of OG client port does not display RSBRSINTVL & RSBRSTTH fields. TCAPROF parameter is reported as UNKNOWN

TSDrd33959 FOADM(ANSI): Client of DWLA10x always OOS-AU even if traffic is working

Severity:

Severity 3

Description:

The Primary state of OTPORT-1-1-x-C1 on OC192 is always OOS-AU even if no condition is declared against the facility

TSDrd33748 FM(ANSI/ETSI) : MODE parameter not managed in RMV-GBE10 command

Severity:

Severity 3

Description:

Not possible to set MODE parameter for the GNE10 facility (both ETSI/ANSI) Command is denied with IBEX

TSDrd33830 PM(ETSI) : MONVAL,THLEV,TMPER are not reported in RTRV-ALM-OTU2 output response.

Severity:

Severity 3

Description:

MONVAL,THLEV,TMPER are not reported in RTRV-ALM-OTU2 output response

TSDrd33799 DOSM(ETSI):Logival removal of VCG in NORM mode denied

Severity:

Severity 3

Description:

Logival removal of VCG in NORM mode denied

TSDrd33787 DOSM(ETSI):Undesired alarms on just created lower order VCG members

Severity:

Severity 3

Description:

When VCG has been just created, no cross -connection is in place for members ,some of the VCG members reported with UNEQ-V and rest of all with EBER, VCLOM, RFI. This EBER, VCLOM, RFI. alarms on members not cleared even after cross connection (traffic was flowing)

TSDrd33765 ALM(ETSI):Service Effecting code for VCG member changed after enter/delete cross conn

Severity:

Severity 3

Description:

VCG members, before cross connecting them, are in "NSA " condition, as expected. After cross connecting and deleting of the Xc, some of the VCG members kept the "SA" condition.

TSDrd29727 FM(ETSI): Puls width timer not restarted after reissuing OPR-ALS command

Severity:

Severity 3

Description:

After reissuing the OPR-ALS::STMn:::MODE; the laser remains on, but the pulse width timer is not restarted

TSDnm82644 MS-SPRING wrong with TSS320

Severity:

Severity 2

Description:

The NE sometimes sends wrong 2Fibre FFP AID in the TL1 answer. This could lead to misalignment between OMS and NE states.

Protection Category

TSDrd31618 CONN(ANSI): PSI state set on the PTED & PING leg on the 1WAYPR & 2WAYPR connections.

Severity:

Severity 3

Description:

In case of 1WAYPR & 2WAYPR connections, protection switch inhibit is displayed only on ED and ING facilities instead of on the TO one

TSDrd30163 CONN(ANSI) In a 2WAYPR X-Con, the ACTIVE shows PREF when WKSWPR is active

Severity:

Severity 3

Description:

When the traffic is switched to the ALTERNATE/WORKING facility in consequence of a failure or external switch request, the current ACTIVE parameter of a 2WAYPR connection should show ACTIVE=ALTERNATE/PREF. Also an EVENT should notify that the selector is on ALTERNATE/PREF by raising WKSWPR/WKSWBK autonomous report respectively BUT It is seen that when a WKSWPR event is notified, the current active parametr of a 2WAYPR shows PREFERED.

TSDrd29516 LOA 1+1: MAN command is not maintained after INIT-SYS

Severity:

Severity 3

Description:

Performing a manual command to switch from working LOA A to protecting LOA B and then performing INIT-SYS (COLD-FRCD) on LOA A, MAN command is lost.

TSDrd33263 UPSR(ANSI): WTR reported on editing RVRTV=N to RVRTV=Y.

Severity:

Severity 3

Description:

The Wait To Restore (WTR) period should only be initiated when 1. path provisioned is revertive and 2. at the time all SF or SD defects on the Preferred path are cleared. BUT after editing the RVRTV parameter from N to Y with out any failure on the preffered path, WTR condition is reported (causing a switch from alternate path to preferred one if the traffic was running in the alternate one)

TSDrd28989 MSP(ETSI): SF on protn raises APSB; FOP does not clear LOCKOUT

Severity:

Severity 3

Description:

When LOCKOUTOFPR on MSP is present on the near-end FFP and SF is injected on FarEnd-protection APSB (alarm on K1,K2) is raised due to mismatch between SF and LOCKOUT on the near-end STM4 facility. CURRREQ=FOP (failure of protocol) on near-end FFP is raised due to consequent action of APSB 3. Even though FOP is present, LOCKOUTOFPR is not cleared on the near-end FFP.

TSDrd33241 UPSR(ANSI): CURREQ showing as NR when we have EBER on the path facility.

Severity:

Severity 3

Description:

After injecting the EBER on the working path facility, traffic is correctly switched, but WRSWPR condition is cleared after injecting the EBER. Because of this condition, CURREQ parameter value shown as NR

TSDrd32454 SDH application, 1850TSS-320: trail protection (SNCP) protec

Severity:

Severity 3

Description:

(SNCP) - protection switching is not possible (nor Manual, neither forced). Synchronize Switch function does not work

TSDrd29579 EM (ETSI): WARM reset is not managed for data cards.

Severity:

Severity 3

Description:

Warm reset is not allowed from TL1 on data cards

Connection Category

TSDrd32697 ZIC : Xconn "Deactivate" option should be removed

Severity:

Severity 3

Description:

For a SVLAN Xconn Ingress flow & Egress flow, ZIC displays an option "Deactivate" .When clicked on "Deactivate" it denies saying "Flow is connected". Since connection deactivation is not supported, the "Deactivate" option should be removed from ZIC as it might mislead the user

TSDrd28368 CONN:ENTCRSSTS denied with wrong error code.

Severity:

Severity 3

Description:

If this command ENTCRSSTS1 is issued with FROM and TO addressing a different shelf, then the command shall be denied and an error message [ANSI] IPNC Input, Parameter Not Consistent BUT there is a wrong error message: SNVS instead of IPNC

TSDrd31551 CONN(ANSI):The STS path doesnt show all possible states, if it is involved in multiple 1WAYPR

Severity:

Severity 3

Description:

The STS path doesnt show all possible states (i.e. switch condition, IS, OOS), if it is involved in multiple 1WAYPR

TSDrd28996 CONN(ANSI):EDCRSSTS command modified the CKTIDTF value to CKTID

Severity:

Severity 3

Description:

Editing a Xc, if CKTID field is defined and CKTIDTF is not, both will be filed with CKTID

TSDrd32139 DBM(ANSI):KYWDBLK parameter value in REPTDBCHG unpopulated for modify Conn

Severity:

Severity 3

Description:

TL1 command ED-CRS-STS should be followed by a REPTDBCHG autonomous message carrying, among all, also the KYWDBLK field, but it is unpopulated

TSDrd29843 CONN(ANSI):NE is capable of executing only 9 X-con per second instead of 20 connections

Severity:

Severity 3

Description:

NE is able to execute 9 cross connections per second. As per the RRs it should be able to execute 20 connections per second.

TSDrd32525 CONN(ANSI) 1WAY cross connection comes to OOS state upon traffic disruption.

Severity:

Severity 3

Description:

For facilities which are 1 way connected, the cross connection should transit into OOSAU, SGEO state only if the FROM path is in OOS state It is seen that some of the multicast 1WAY connection come to OOS state when the FROM path facility is in IS state.

Work around:

Work around: delete the 1WAY cross connection and recreate it

TSDnm69509 Impossible to split bidir conn into unidir

Severity:

Severity 3

Description:

Split of a bidir Xc is not working using TL1 command if the AID is specified with FROM. It works if the command is specified with TO. On Zic the issue is not present.

TSDrd33649 FM(ANSI): Wrong deny descrption upon edit the STS facility under Linear FFP

Severity:

Severity 3

Description:

Upon editing the STS facility in a linear FFP, comand is denied with a wrong descrption saying that "The UPSR companion facility is not provisioned. Even though the command is denied, the requested modification is actually performed

TSDrd32185 CONN(ANSI) Wrong state management of a 2WAYPR cross connection for logical RMV

Severity:

Severity 3

Description:

For facilities which are path protected connections, the cross connection should transit into OOS-AU, SGEO state if the selected (e.g. WRK) path is in OOS state and/or if the associated TO facility is in OOS state (e.g., if the connection is a 2WAY type protection connection). In a 2WAYPR connection, the cross connection does not transit into OOS-AU, SGEO state when the selected (WRK) facility (OCn/STSn) is logically removed (i.e OOS-MA).

Work around:

W/A Note: the cross connection transits into OOS-AU,SGEO when both the facilities (WEST & EAST)are logically removed

TSDrd29093 CONN(ANSI):RTRVCRSSTS comamnd retrieved xconn with descending order.

Severity:

Severity 3

Description:

RTRV-CRS-STS command retrieves cross connections in descending order (from lowest FROM AID to largest FROM AID) instead of ascending order (from lowest FROM AID to largest FROM AID).

Data Category

TSDrd33458 MSTP:Traffic loop for nealy 1-3 secs during new root bridge election based on MAC address

Severity:

Severity 2

Description:

During the root bridge transition there is a traffic loop for 2-3 secs.

TSDrd33559 MSTP: MAC flushing KO on multiboard upon MSTP reconvergence

Severity:

Severity 3

Description:

MAC flushing KO on multiboard upon MSTP reconvergence

TSDrd33717 EOAM: NO linktrace response from remote MEP when the MIP is activated on transmission path

Severity:

Severity 2

Description:

NO linktrace response from remote MEP when the MIP is activated on transmission path. Only the MIP is responding for the linktrace messages

TSDrd33738 EOAM connectivity Ko if the MIP is created with different vpls having same UNI with dontcare classifier

Severity:

Severity 2

Description:

Unidirectional EOAM connectivity Ko if the MIP is created on different vpls instance having same UNI interface involved on EOAM transmission path with dontcare classifier

TSDrd31829 LINKOAM:l2cp_rx_frame and linkoam_max_symberror parameters in LinkOAM are not updated

Severity:

Severity 3

Description:

PM on message on linkOAM are not working

TSDrd32895 Port MRU: Remote Port MRU value can be configured lesser than 1574.

Severity:

Severity 3

Description:

Remote Port MRU value can be configured less than 1574 but as per the External spec-320-Ed-4-It-10, configuration is limited between 1574-9242

TSDrd32897 DBM(ANSI):No REPT^DBCHG msg for provisioning changes to GBE10 entity

Severity:

Severity 3

Description:

No REPT^DBCHG msgs observed for any parameter change and PST change of GBE10 facility

TSDrd32848 ZIC:Invalid VLAN protocol profile creation:no error message

Severity:

Severity 3

Description:

During the creation of VLAN protocol profile throught ZIC, when user enters a non-hexadecimal value ethertype or an empty profile name in the vlan protocol profile, the creation doesn't give any error message such as "invalid protocol profile EtherType".

TSDrd32571 Deny check needed for creation of user def vlanprotocol profile with type value less than 600(hex)

Severity:

Severity 3

Description:

The system (agent) should deny creation of vlan protocol profile with type value less than 600 (hex), BUT The ethernet frame with ether type field with value less than 600(hex) will be misinterupted as lenth field (Ethernet I) and the frames are discarded

TSDrd32541 RSTP: Designated port priority is wrongly reported

Severity:

Severity 3

Description:

priority of the designated port is wrongly reported on CLI (in ZIC it's ok) even if works properly:

TSDrd32646 ZIC+LAG:LAG HASH input default value is selected wrongly in ZIC while creating.

Severity:

Severity 3

Description:

When LAG is created, HASH key is set by defualt to "C000" instead of "EAF0".

TSDrd33062 CLI:Showing Static mac for VPlS binded PW command discrepancy

Severity:

Severity 3

Description:

CLI Expected Syntax for showing PW static entry in a VPLS lacks of PW ID field.

TSDrd33331 EOAM: Runtime CCM interval modification is effective only after existing CCM timer expiration

Severity:

Severity 3

Description:

changing the CCM interval and then reverting it back to previous value won't clear immediately the EOAM alarm. The alarm gets cleared after 10 mins

TSDrd32616 ZIC+Static MAC:No option to modify the Static MAC entries.

Severity:

Severity 3

Description:

Once created a Static Unicast entry as for any Port & VLAN, it's not possible to modify it via ZIC

Work around:

Modify it via CLI

TSDrd33273 TMPLS:ZIC: Can able to create Traffic Descriptor CBS,PBS value more than 64MB

Severity:

Severity 3

Description:

CBS,PBS max value defined by pop up window on ZIC can be wrongly overcome. An error message is displayed but nonetheless the Traffic Descriptor is created as Inactive TD

TSDrd33292 VPLS:CLI error while creating a mac for a PW which is not presnt in ELAN service

Severity:

Severity 3

Description:

CLI should display an error message when creating a mac for a pw which is unavailable at the mentioned ELAN service: but if tried twice, it will be showed a message saying mac entry is already present.

TSDrd32589 ZIC_DOSM(ANSI/ETSI):Remove "Last change" parameter from local and remote port.

Severity:

Severity 3

Description:

Last change parameter on local and remote port is not working: its value is always 1970-01-01 00:00:00

TSDrd32772 Runtime Change of Bridge Default pri is allowed for ETB LAG on CLI

Severity:

Severity 3

Description:

Runtime Change of "Bridge Default pri" value is allowed for ETB LAG on CLI. But there is no impact on Traffic. It should be denied

TSDrd33048 FFP: Wrong reporting of current request after deletion & recreation of FFP in remote node.

Severity:

Severity 3

Description:

Wrong reporting of the current request after deletion and recreation of FFP in the remote node: condition of the current request is not reset properly at the time of deletion of FFP, and it will be restred once teh FFP is recreated.

TSDrd31201 CLI+Clienttype: Change of client type from MPLS to ETS for Remote ports is not effective in CLI

Severity:

Severity 3

Description:

Change of client type from MPLS to ETS for remote ports is not effective in CLI. message as "already present values"

TSDrd33332 EOAM: Possible to modify the VPLS/Vlan id on MA after the MEP creation

Severity:

Severity 3

Description:

The modification of Vpls/vlan id associated to a MA containing a MEP on it, should be denied.

TSDrd33477 MSTP: Traffic KO for 1 min upon changing the vlan-MSTI association on root bridge

Severity:

Severity 3

Description:

Changing the association of the multiple spanning tree instance with vlan the traffic will drop for 1 minute

TSDrd33684 ZIC:accepts vlan id with a special charechter for pushing.

Severity:

Severity 3

Description:

ZIC should display an pop up error as follows: "Invalid value on VLANId"

TSDrd33712 VT+LAG:ZIC allows to bind VT to a LAG (not supported in R3.2)

Severity:

Severity 3

Description:

ZIC is not denying to bind a VT to a LAG (binding VT to a LAG port is a feature not supported)

TSDrd33681 ZIC:Mac address is deleted when refreshing the page.

Severity:

Severity 3

Description:

Once a MAC has been assigned to a port, refreshing the page shows a pop up error and deletes the created MAC.

TSDrd34323 MSTP: port pathcost on LAG is not considered for port election during MSTP reconvergence

Severity:

Severity 2

Description:

MSTP: port pathcost on LAG is not considered for port election during MSTP reconvergence

TSDrd34177 OAM:MIP on MPLS configuration doesn't work

Severity:

Severity 2

Description:

In some specific conditions, MIP on MPLS configuration doesn't work

TSDrd34328 MSTP: MSTP convergence gets blocked when contineous MSTP reconvergence is initiated

Severity:

Severity 2

Description:

Changing the VLAN-MSTI mapping and then restoring it, the port states may get blocked if the transition time is less than 2 secs. Ports states are not updated. The time needed to update the port state may vary depending upon network scenario.

Work around:

Wait more than 10s between the transitions

TSDrd33836 TMPLS+PM:PM counter for tuseg stops working after PW movement.

Severity:

Severity 3

TSDrd31858 ETHOAM: Creation of MEP with invalid values or alphabets is accepted by CLI and created as MEP 0

Severity:

Severity 3

Description:

Creation of MEP with invalid values or alphabets is accepted by CLI and created as MEP 0. It should accept only numbers 0-8191

TSDrd32410 ETS inflow: L2control frames not managed on ETS LAG

Severity:

Severity 3

Description:

L2Control frames (tunneling) are not managed on ETS LAG. L2control frames are not dropped when the L2control bits are set to drop

TSDrd33780 ZIC:Disabling admin state for a ETS LAG throws Error.

Severity:

Severity 3

Description:

ZIC when disable the admin state of ETS LAG is throwing an Error

TSDrd32716 Signaling: the srcport-id and destport-id are still present in the ent-tmpls-tunnel command

Severity:

Severity 3

Description:

In the tl1 command ent-tmpls-tunnel the fields srcport-id and destport-id are present while they should not

TSDrd34320 MSTP: MSTI bridge mac address is not updated when DB is taken from another node

Severity:

Severity 3

Description:

MSTI bridge mac address is not updated when DB is taken from another node. The mac address is updated with the previous nodes MAC information

TSDnm80340 No check on Traffic desc for PIR values

Severity:

Severity 3

Description:

there's no check on PIR value inserted on Traffic descriptor configuration

TSDrd34310 EOAM UNP alarm is not getting cleared even after the deletion of EOAM entities like MD,MA,MEP

Severity:

Severity 3

Description:

EOAM UNP alarm is not getting cleared even after the deletion of EOAM entities like MD,MA,MEP

TSDrd34281 ZIC does not display EOAM linktrace's test result correctly.

Severity:

Severity 3

Description:

OAM over PW interworking test between TSS5 (release 7.2) and TSS320 (release 3.2.1 SWP3.21.55), it was observed that the WEB GUI does not display link trace's test result correctly: the format for egress MAC address is not displayed correctly. Issue present only on ZIC, not on CLI

TSDrd31819 LINKOAM+CLI: Maximum or greater value of Threshold for LinkOAM events hangs the CLI

Severity:

Severity 3

Description:

Configuring the Errored Frame Seconds Event threshold value above the maximum value, CLI hangs and throws an message "Unreachable NE". CLI gets operational again only after some time

Work around:

Configure the threshold via ZIC

TSDrd32251 CLI+PM: Not able to deactivate CD & HD counters for Flows (15min & 24h)

Severity:

Severity 3

Description:

Not able to deactivate CD & HD counters for Flows (15min & 24h)

Work around:

Deactivate the counters via ZIC

TSDrd33749 inflow: CLI crash for the retrieval of inflow classifier having range of values

Severity:

Severity 3

Description:

CLI gets crashed when the inflowclasifier with range of value is retrieved

WDM Category

TSDrd32994 FM(CWDM): REPT^DBCHG not reported for state change from OOS-AU,AINS->IS-NR on CWLA OG port

Severity:

Severity 3

Description:

No REPT^DBCHG message is reported when the state of the CWLA line port changes from OOS-AU,AINS to IS-NR,due to the decrement of the AINS-timer

TSDrd31677 DBM(ANSI):Incomplete DBCHG msg for ent GBE10 belongs to DWLA10X module

Severity:

Severity 3

Description:

The REPT DBCHG message for provisioning of GBE10 facility in DWLA10X module does not show PST value (IS-NR or OOS-AU)

TSDrd32188 FM(ETSI): Incorrect state shown for the DWLA client facility, when no alarms present

Severity:

Severity 3

Description:

On retrieval of STM64 facility(DWLA client), the state shows OOS-AU when it should be IS-NR as there are no alarms or conditions present on the facility

Alarm Category

TSDrd33960 DOSM(ANSI):Backward CSF does not persistent with module plugout/plugin

Severity:

Severity 3

Description:

in front of a detected SDH AIS, a VCG forwards a CSF alarm. It can also be sent backward a CSF alarm. These two alarms are not correctly managed

TSDrd33226 DOSM(ETSI):LOP-V condtion on LO-VCAT members

Severity:

Severity 3

Description:

After increasing VCG size from 21 to 63 members (21 are cross connected and without alarm),22nd and 43rd members of the VCG reported with LOP-V alarm and UNEQ-V instead of UNEQ-P (High order). All remaining members reported with UNEQ-V (low order) alarm.

TSDrd31702 ALM(ANSI):User created DFLT profile not assigned to newly provisioned TUSEG entity.

Severity:

Severity 3

Description:

User created DFLT profile should be assigned to every newly provisioned entity, but it doesn't for TUSEG.

TSDrd33313 SNCP(ETSI):WTR is not cleared on new time, if the RVRTTIM is set to some valid value

Severity:

Severity 3

Description:

WTR is not cleared on new time, when the RVRTTIM is reset to some valid value. If the current state is WTR and RVRTTIM=1 and then RVRTTIM

is set to new value, say, 2 minute, WTR will be cleared in 1 minute time.

TSDrd31470 ALM(ANSI):LOS defect on OTU2 not re-reported after its SST change.

Severity:

Severity 3

Description:

Upon LOS condition on OTU2 port NTFCNCDE=MN,SRVEFF=NSA as expected (AINS was deactivated), after provisioning OC192 and STS1 in side that, after SST got changed by cross connection on OTU2, the LOS not re-reported as NTFCNCDE=CR,SRVEFF=SA but after deactivate and activating AINS on OTU2 port, LOS reported with NTFCNCDE=CR,SRVEFF=SA

TSDrd33024 ALM(ETSI):Condition log omitted STM16 condition of CWLA module under aidtype STM16.

Severity:

Severity 3

Description:

Condition log omitted STM16 condition of CWLA module when retrieved under aid of STM16 (RTRV-COND-LOG::STM16), but it was retrieved along with AID of ALL with AIDTYPE as OGPORT (RTRV-COND-LOG::ALL)

TSDrd32714 DOSM(ETSI):SSF condition on LOVCAT reported along with LOA.

Severity:

Severity 3

Description:

Some of the VCG of type LOVC12 carried VCGLOA along with a faked condition: VCGSSF,after activating members.

TSDrd31904 ALM(ETSI):User Defined ASAP profile not effective on VC4 facility.

Severity:

Severity 3

Description:

User Defined ASAP profile not effective on VC4 facility.

TSDrd32998 DOSM(ANSI):Undesired GFPEXM on GBEVCG.

Severity:

Severity 3

Description:

There was point to point connection between two Non-LCAS VCGs with 21 ACTIVE members on both side, after disabling 9 members on one end VCG, other end VCG reported GFPEXM instead of GFPLOF

TSDrd33377 FM(ETSI):Remove SSBITS parameter from STMn facility.

Severity:

Severity 3

Description:

Retrieve STMn facility by using TL1 command RTRV-STMn shows SSBITS parameter, but it should not

TSDrd30834 DOSM(ANSI/ETSI):Wrong reporting of VCGPLC in MAU and GBE VCG

Severity:

Severity 3

Description:

After having configured two point to point connections with LCAS enabling VCG with 21 members and routing separately 12 VCGs in one way and 9 VCG in another way, a cut on the path involving the 9 VCG has affected on the other path involving the 12 VCG. On the second path the traffic keeps running fine but VCGPLC were raised

TSDrd32529 ALM(ANSI):SRVEFF not managed on GBE facility for LOS condition.

Severity:

Severity 3

Description:

in GBE facility for lOS condition SRVEFF should be "SA" regardless of it SST, but it is not managed

TSDrd32726 ALM(ETSI):Retrieve profile not shown assigned VCGLOVC3 entity.

Severity:

Severity 3

Description:

VCGLOVC3 entities assigned with system default alarm profiles cannot be correclty retrieved specifying USERLABEL=LBL-ASAPLOVC3-SYSDFLT

TSDrd31929 ALM(ETSI):User Defined ASAP profile not effective on GBE10 facility.

Severity:

Severity 3

Description:

ASAP profiles created and assigned by user for GBE10 of DWLA10X module entity are not effective: After changing the NTFCNCDE, LANLOS alarms are not re-reported

TSDrd33079 ZIC: Runtime change of ASAP is not allowed in LAG

Severity:

Severity 3

Description:

Runtime modification of ASAP is not allowed for LAg on ZIC. ASAP can be only modified during LAG is Admin down

TSDrd31705 ALM_XCOM(ANSI):User Defined ASAP profile not effective on LANFAIL Alarm.

Severity:

Severity 3

Description:

a LANFAIL alarm (with default ASAP profile) is reported as MN. Creating a new ASAP profile and defining the LANFAIL as CR and assigning it to the NE doesn't change the report of the alarm, still MN,SA instead of CR,SA

TSDrd33366 DOSM(ETSI):Failed lovcat member carried Differential delay in out of range.

Severity:

Severity 3

Description:

The Differential delay measured by TL1 MONLCAS command on failed member shows different values on each retrieval and these values may be out of range. Differential delay is a parameter calculated with respect to the Virtual Concatenation group Master channel (given in CHFRDIFFDLY parameter), and it is measured in milliseconds (DIFFDLYRX= {0-64})

TSDrd33023 DOSM(ANIS):Hierarchy of the VCG conditions are not managed

Severity:

Severity 3

Description:

The hierarchy of VCG conditions should be as follows in descending order

VCGURU

VCGLOA

VCGSSF

VCGRFI (only applicable with LCAS, does not hide further conditions)

VCGPLC (only applicable with LCAS, does not hide further conditions)

VCGPLM

GFPLOF

GFPEXM

GFPUPM

GFPCSF

But the Observed Behavior is that a VCGLOA condition on VCG is cleared by VCGSSF and same behavior was observed for GFPUPM and

GFPCSF

TSDnm66426 Granularity not sent for UAT alarms

Severity:

Severity 3

Description:

inconsistency between RPT ALM and RTRV ALM ALL. On automnomous RPT alarmit is specified what time period the TCA refers to (i.e. 1DAY). On RTRV ALM ALL this information was missing

TSDrd33427 ALM(ETSI):User Defined ASAP profile not effective on VC4 facility.

Severity:

Severity 3

Description:

There was user created ASAP profiles for VC4 entity and it was assigned. After changing the NTFCNCDE for the any VC4 alarms, the alarms are not re-reported.

TSDrd33557 ALM(ANSI):Alarms on OTU2 facility not reported autonomously.

Severity:

Severity 3

Description:

There was OTU2 facility provisioned with user created ASAP profile. After modifying the profile, LOS condition not re-reported

autonomously but RTRV-COND-OTU2 carried the changed notification code value

TSDrd33549 ALM(ETSI):Alarms on OTU2 path facilities reported with wrong format.

Severity:

Severity 3

Description:

Clearing of UNEQ-P condition on STS1 cross connections belonging to OTU2 were reported with aid genericaly as 'MDL' and instead of reporting

REPT ALM STS1, was reported with REPT ALM VC4.

TSDrd33448 ALM(ANSI):Retrieve profile not shown assigned TUSEG entity.

Severity:

Severity 3

Description:

There was TMPLS TUSEG entities assigned with system default alarm profiles.the retrieve profile not shown these entities in the list when we retrieved with ASAPTYPE=TUSEG but it is working with USERLABEL, ASAP-AID

TSDrd33691 ZIC:RACK state not managed correctly.

Severity:

Severity 3

Description:

The PST and SST values of RACK are not shown in the home window.

TSDrd32945 DOSM(ETSI):SDMODE enabled LO-VCAT doesn't fail its member when signal degrade condition.

Severity:

Severity 3

Description:

Signal Degrade Mode. Indicates if the signal degrade on the constituent member of the VCG contributes to its fail condition. Valid only when LCAS is Enabled. LO-VCAT doesn't fail its member when there is a signal degrade condition: SDBER alarm is reported but VCGs do not report VCGPLC condition and there is no impact on traffic also

TSDrd33788 DOSM(ETSI):Making ACTSTE=IDLE on lovcat member caused UNEQ-V defect

Severity:

Severity 3

Description:

After making ACTSTATE=IDLE on VCG on local node, corresponding remote VCG members receive UNEQ-V condition

TSDrd31890 ALM(ANSI/ETSI):Alarm Log file size limited to 1 MB

Severity:

Severity 3

Description:

The log file size should be 5 MB (mega bytes), Not persistent (i.e. it is not required to survive NE restart), Circular (i.e. events logging shall wrap the event file and old events shall be overwritten. Alarm Log file size limited to 1 MB instead of 5MB

Performance Monitoring Category

TSDrd29969 PM LO:Wrong management of history PM after NE time change (ETSI)

Severity:

Severity 3

TSDrd28671 PM ANSI: increment ahead time not OK

Severity:

Severity 3

Description:

Changing the time, the current measurement period shall be closed immediately and the current registers values saved into the history data. BUT after 15min expired the data is lost

TSDrd29676 PM : TTO not correctly reported

Severity:

Severity 3

Description:

Maintenance TX PM counters reports (egress port) wrong TTO value (lower than expected)

TSDrd33050 FM(CWDM): PMMODE does not change to MON after AINS timer value reaches 0 on CWLA client port.

Severity:

Severity 3

Description:

Even after the AINS timer is decremented to zero,the state of the CWLA client port doesn't to change to IS-NR

TSDrd31586 PM : EINF - EINB local port aggregate current data incoming counters are not correctly reported

Severity:

Severity 3

Description:

EINF (ethernet incoming frames)- and EINB (ethernet incoming byte) counters on ingress ETS port involved in a P2P Xc are not correclty reported

TSDrd30121 PM DATA inflow counters: sometimes Frame SIZE is with decimals

Severity:

Severity 3

Description:

Sometimes the Octets/frames size reported in the PM counters give a value with decimals.

TSDrd29969 PM LO:Wrong management of history PM after NE time change (ETSI)

Severity:

Severity 3

Description:

If the NE clock is adjusted ahead increasing it by Nx<period>, following should happen: The current measurement period should be closed immediately and the current registers values saved into the history data. BUT in our case the current measured period is lost

TSDrd29891 PM (ETSI): ED-TH-PROF with THLEV and w/o MONTYPE-TMPER should be denied.

Severity:

Severity 3

Description:

ED-TH-PROF (threshold profile) should be denied if the command is issued with THLEV parameter but without setting the related MONTYPE-TMPER parameter (TimePeriod type)

TSDrd31754 PM+ZIC: Creation of 15m/24H Performance Monitoring throws an error message in ZIC.

Severity:

Severity 3

Description:

Creation of 15m/24H Performance Monitoring is not possible in the ETSinflow

TSDnm80541 TSS320: validity wrong if card plug out

Severity:

Severity 3

Description:

Setting two NTP server on NE, the NE switch from server to the other having as consequence a not correct PM report. removing one server from the NTP configuration the validity is correctly reported.

TSDrd33483 CurrentData CLI cmd gives error for Port & Flow counters.

Severity:

Severity 3

Description:

CLI command show of the CD counters for Port and Flows doesn't work. No display.

TSDrd33547 PM (ANSI): UASS not managed for OC192 in system/user defined TCA profiles

Severity:

Severity 3

Description:

UASS montype should be supported for OC192 facility but it is not managed in the system defined and user defined

TCA profiles for OC192 facilities. It is also observed that UASS is correctly managed for OC12, OC3 and OC48.

TSDrd33600 PM: Reporting fake PMGLBREADY autonomous message without creating the global file.

Severity:

Severity 3

Description:

PMGLBLREADY report is wrongly reported in case PM global file creation is started twice, without waiting the correct reporting of the first creation. The Copy of the global file to RFS server will consequently fail as "PM Global files does not Exist". Actually collecting the PM global file is not stopped (even if not reported). After some time it is possible to copy the file to RFS server successfully

TSDrd33599 PM: PM global file descriptor have rel 3.00.00 instead of 3.02.00

Severity:

Severity 3

Description:

PM global file descriptor file is showing indication of release 3.00.00.

TSDrd33598 TL1: PMGLB commands not denied if the Extra input Blocks are given.

Severity:

Severity 3

Description:

Giving the STA-PMGLB with extra blocks like STA-PMGLB::::::; is completed successfully. Giving the RTRV-PMGLB-STATUS with extra blocks like rtrv-pmgLB-STATUS::::::; is completed successfully.

TSDrd33775 PM(ETSI):RTRV-PMMODE-OTU2 retreives the values in different lines (if TMPER=BOTH & PMSTATE are same)

Severity:

Severity 3

Description:

If the PMMODE is retrieved for both 15-MIN and 1-DAY (means TMPER=BOTH) and the PMSTATE for both are same, they are reported separately (in two lines).

TSDrd33781 ZIC+TMPLS:PM counter time period15min retrive option is not available for TUSEG/PWSEG.

Severity:

Severity 3

Description:

In ZIC,PM retrive do not have an option for retriving PM counters for 15 min

Management Category

TSDrd29430 XCOM(ANSI): LAPD bouncing during SW download only if the FTP server is a Linux Machine

Severity:

Severity 3

TSDrd29514 DBM (ANSI/ETSI): REPT^COPY^RFILE autonomous msg: commas omitted

Severity:

Severity 3

Description:

COPY-RFILE command should have an autonomus message response with a particular format, with commas among optional parameters:

BUT mandatory commas among optional position-defined parameters are omitted.

TSDrd33144 DBM(ANSI) : % completion not reported in the REPT^COPY^RFILE for STBYDB to RFSDB transfer

Severity:

Severity 3

Description:

Copying the database from NE to local PC doesn't report %COMPLETION neither the final completion report.

TSDrd32803 In ZIC second DB entry is not requesting to update ELAN service option

Severity:

Severity 3

Description:

In ZIC, while creating a second filtering DB entry without editing ELAN service of previous entry is not thorwing. Any error msg however the second DB is not created its displays DB entry is created

TSDrd31449 XCOM(ANSI): RTRV-NSAP with L1ROUTID not showing the TID values

Severity:

Severity 3

Description:

L1ROUTID This function retrieves the NSAPs and the TIDs of all the reachable Level 1 ISs within all the areas, the NE is part of, including NEs and Gateway NEs. BUT RTRV-NSAP with L1ROUTID not showing the TID values

TSDrd28735 CTLC:(ETSI/ANSI) INIT and SYSTEM-READY conditions not raised upon NE restart

Severity:

Severity 3

Description:

Rebooting the FLC, INT and SYSTEM-READY conditions should be raised by the active processor but they are not.

TSDrd32461 DBM_XCOM(ANSI): After XCOM DB UPLOAD the Default route not shown in the RTRV-NE-IPRT

Severity:

Severity 3

Description:

TBUS module shall contain a copy of FLC XCOM data. At the NE restart, if FLC deep switches are in the NORMAL position, FLC data shall be copied to TBUS. At the NE restart, if FLC deep switches are in the UPLOAD position, TBUS data shall be copied to FLC.BUT After Keeping the DIP switch in UPLOAD position, the default route learnt is not shown in the RTRV-NE-IPRT

TSDrd33304 ZIC_XCOM: Not possible to set the Gateway MAP with the Special Characters within the NETID field.

Severity:

Severity 3

Description:

With TL1 it is possible the set the Gateway MAP with the NETID which has special characters within. (for example "ABCDEFGHG1234%^&*") But when you try to configure the same using ZIC (COMMUNICATION >> NETWORK DOMAIN >> GATEWAY MAP TABLE), the Error message comes with "REQUEST MESSAGE IS NOT IN EXPECTED FORMAT" Obviously the MAP created with such NETID using TL1 are not able to get deleted with ZIC page

TSDrd29547 ANSI CTLC: SWDWN on FLC stan-by

Severity:

Severity 3

Description:

Pressing Standby FLC reset button States of the Standby FLC should be reported SWDWN. After downloading software state changes to IS, STBYH and the LED colors should be amber and green. BUT No SWDWN report by TL1

TSDrd29733 XCOM(ANSI): ri_dum_grt reports unexpected number of entries

Severity:

Severity 3

Description:

ri_dum_grt (debug command) should display also a list of all IPoverCLNP tunnels. It reports unexpected number of entries

TSDrd32828 XCOM(ANSI): TL1 session over OSI is KO (DCC over OC192, DCC-S over LAPD)

Severity:

Severity 3

Description:

The command shall support the following input parameter and input parameter value and format. TID <VALID TID VALUE> <1-40 HEXADECIMAL NSAP CHARACTERS> Default: <SID> Addressing: None Description: Target IDentifier, identifies the network node TID for the command but the NE is not accepting NSAP while CANC-USER with NSAP. (works well with SID)

TSDrd29901 UITS DCC dependent on US/NS

Severity:

Severity 3

Description:

When provisioning DCC with L3QOS=UITS, one NE must be provisioned with L2SIDE=USER and the other NE must be provisioned with 2SIDE=NETWORK. If both NEs are provisioned the same, DCC will fail. This will be a silent failure, meaning there will be no alarm or condition reported

TSDrd33311 ZIC_XCOM: Retrieval of NSAP using ZIC not showing NETID with "" when TID is having spl. characters

Severity:

Severity 3

Description:

If the SID has the special characters within then Retreival of NSAP with TID using ZIC not showing the NETID with double quotes ("")

TSDrd33372 XCOM : RTRV-NE-IPRT shows the routes learnt via IFIB (incosistet behavior in different types routes)

Severity:

Severity 3

Description:

Routes are not managed by RTRV-NE-IPRT for the entries learnt via IFIB. (due to lack of the AID). Consequently routes should not be (direct or over dynamic) shown by RTRV-NE-IPRT

TSDrd33121 XCOM_ANSI:RTRV-NE-IPT shows REMOTE TID for tunnel made with FAKE NSAP values

Severity:

Severity 3

Description:

The retrieve of NE-IPT should omit in the reply response the Remote TID information if this cannot be resolved. RTRV-NE-IPT shows the TID of of the NE even if the NSAP given while creating the IPT was Fake

TSDnm75787 Tss320v.3.0:question mark not managed by zic

Severity:

Severity 3

Description:

Question marks are not accepted in SID definition

TSDrd31384 TSS160C: EML Constructur user cannot execute mib backup and software download

Severity:

Severity 3

Description:

ZIC using operator constructor of EML is not able to execute MIB backup and software download. Same operations are possible directly by EML. Functional Access Domains (FAD) should be sinchronize with EML in order to allow Constructure to execute MIB backup and Software download. Opening zic via EMl with operator and viewer profile it is possible change admin password from ZIC Giving a look at FAD, ED_PID is allow for admin constructor operator and viewer while it should be available only for admin and constructor

TSDnm66260 Wrong DLT-NTP-ADDR TL1 command syntax

Severity:

Severity 3

Description:

manager is waiting IP=X instead of NETADDR=X

TSDnm69831 can not supervise NE when NE SID has :

Severity:

Severity 3

Description:

Can not supervise TSS 320 with SID set in double quotes"

TSDnm75781 TSS320v3.0:\ characters not managed from zic

Severity:

Severity 3

Description:

\(back slash) character should not be managed in setting the SID. But it works.

TSDrd31008 NTP server can not be deleted via ZIC

Severity:

Severity 3

Description:

When deleting a NTP server via the ZIC menu, you will get an errormessage " Input Parameter not valid " (see attachment) The same errormessage appers, when using the TL1 command " DLT-NTP-ADDR::::::NETADDR=<IP address of NTP server> Workaround:To get rid of the NTP server the TL1 command "DLT-NTP-ADDR::::::IP=<IP address of NTP server> has to be used.

TSDrd32718 TSS320/160, System ID of OSI address cannot be changed

Severity:

Severity 3

TSDrd33661 DBM Ansi-Etsi: Modify SID and DB-LABEL

Severity:

Severity 3

Description:

Backup DB, then change SID. This action should change the label of DB, BUT retrieving the label of DB shows it is not changed.

TSDrd33463 EQPS(ANSI): FLC switch not taking place after initiating the switch duplex on EC320

Severity:

Severity 3

Description:

After switch duplex, observed that EC320 slot 1 is ACTIVE and EC320 in slot 20 is STANDBY. Same PST states are shown before and after SWITCH duplex

TSDrd29430 XCOM(ANSI): LAPD bouncing during SW download only if the FTP server is a Linux Machine

Severity:

Severity 3

Description:

During SW download, LAPD, that carries traffic on, goes periodically down and up. The interval of LAPD failure varies between 50 seconds and a couple of minutes. The download process survives the interface failure

TSDrd31202 XCOM(ANSI): FLC reboot on issue of RTRV-TARPCACHE after RTRV-TARPLDB deny.

Severity:

Severity 3

Description:

RTRV-TRAPCACHE command reboots FLC

TSDrd29499 XCOM(ANSI): MASK of loopback Address is always /32 in spite of user's configuration

Severity:

Severity 3

Description:

PLATFORM can not manage MASK different from 255.255.255.255 about loopback address (host_id); so reporting and accepting an other MASK might be misleading for the user

TSDnm83189 TSS320 NE not sending REPT^ISU

Severity:

Severity 3

TSDrd34309 Activation date and time is missing

Severity:

Severity 3

Description:

After installation of R3.2.1 or after a upgrade to R3.2.1 the fields "Activation date" and "Activation time" are missing

TSDrd30983 tl1 and ftp via IP Tunnel drop due to slow osi re-routing (with fiber cut)

Severity:

Severity 3

Description:

tl1 and ftp via IP Tunnel drop due to slow osi re-routing (with fiber cut)

TSDrd34318 ZIC: FLC/SLC/LDC sw version is cut

Severity:

Severity 3

Description:

FLC/LDC/SLC sw version showed by ZIC in the FW/SW version field is not displayed in complete way: the last characters are missing

TSDrd33442 IPv6 pass through with the IPv4DSCP classification

Severity:

Severity 3

Description:

IPv6 is not discarded at TSS160/320 with IPv4 classifier

TSDrd30836 TARP TID to NSAP request from ACT-USER does not wait for TARP T1 Timer to expire.

Severity:

Severity 3

Description:

TARP T1 Timer is listed as 15 seconds, but ACT-USER request fails in a few seconds, not waiting the TARP T1 timer.

Security Category

TSDrd29505 SECU (ANSI): CLI login/logout events not stored in SECU log file

Severity:

Severity 3

TSDrd30343 XCOM_SECU: More than 12 TL1 users are permited per IP session & more than 12 TL1 users active per NE

Severity:

Severity 3

TSDrd29505 SECU (ANSI): CLI login/logout events not stored in SECU log file

Severity:

Severity 3

Description:

CLI login/logout security events are not stored in the SECU log file.

TSDrd30343 XCOM_SECU: More than 12 TL1 users are permited per IP session & more than 12 TL1 users active per NE

Severity:

Severity 3

Description:

It is possible to create up to 24 users through the ENT-USER-SECU command.12 Users through the 3083 port and 12 users enter through the 3082 port.

TSDrd33447 SECU(ETSI):Facility protection switching events are not logged in security log

Severity:

Severity 3

Description:

Facility protection switching events are not recorded in security log for ETSI (ANSI is working)

TSDrd33119 CrossConnection Unprotect action not logged in securitylog.txt

Severity:

Severity 3

Description:

CrossConnection Unprotect action not logged in securitylog.txt

External Communication Category

TSDrd29499 XCOM(ANSI): MASK of loopback Address is always /32 in spite of user's configuration

Severity:

Severity 3

Description:

The NE can not manage MASK different from 255.255.255.255 about loopback address (host_id); so reporting and accepting any other MASK might be misleading for the user.

TSDrd34693 TSS320 vs sw download problem on NE reached via lap-d

Severity:

Severity 3

Synchronization Category

TSDrd30017 SYNC(ANSI):SYNCREFFAIL on ext ref upon matrix sw

Severity:

Severity 3

TSDrd29549 SYNC(ANSI):Wrong adaptor value for 1,5Mbit signal.

Severity:

Severity 3

Description:

Software shall be able to check the following identifier types:

No external adapter, compatible with SDH 2MHz/2Mbit signal and SONET 1,5Mbit signal, [ANSI] wire wrap adapter, compatible with SONET 1,5Mbit signal.

But, retrieving BITS and BITSOUT, adaptor value is mantained as NOADAPT instead of wire wrap adapter

TSDrd29797 SYNC(ETSI):Frequency off set of 20ppm causes MISC-1 and MTXLNKFAIL conditions.

Severity:

Severity 3

Description:

NE with locked onto one line reference. Changing frequency off set of this line reference to 20ppm causes SLTMSIG on line reference and MISC-1 and MTXLNKFAIL conditions on matrix

TSDrd30547 SYNC(ANSI):SYNCREFFAIL on ext ref upon matrix sw

Severity:

Severity 3

Description:

Matrix switch on a node A providing a syncreference via BITS to another node B (locked to this clock) will cause a syncref failure on the second node B. It will last a couple of minutes

TSDrd30548 SYNC(ANSI):Switching between two references caused MISC-1 condition.

Severity:

Severity 3

Description:

Node A LOCKED via external reference to another node B falls in MISC-1 condition when changing the quality of the reference in node A or after a failure. The failure is recovered after a couple of minutes.

TSDrd32925 EM (ANSI): Remove SSBIT parameter from EC320-1-1-20

Severity:

Severity 3

Description:

SSBIT parameter is applicable only for IO modules and it should not be managed on EC320 module BUT currently SSBITS attribute is managed on EC320-1-1-20 module. It was decided that there will be no denial if SSBIT is entered for equipments that do not support it. But SSBIT cannot be retrieved for other equipments than 10GSO, 2G5SO, 8XSO, 10XANY, OT2TDM

TSDrd31395 Ext. Synch not converted with 1.30.14 migration tool

Severity:

Severity 3

Description:

Assignment of EXTREF to BITS is twisted by the conversion tool 1.3.14 when both external timing references are used in R1.4A13.Thus TL1 command failes to implement the ext. timingsources in R3.0.This leads to heavy pointer justification events until @ the external timing references are implemented manually in R3.0

TSDrd29417 (Sync)-RMV-EQPT::SFPxxx ,used for Sync, with NORM mode show wrong “error message”

Severity:

Severity 3

Description:

Now logically remove the line timing reference with NORM mode(Result:Command is denied with error message SROF: Status, Requested 0peration Failed Equipment is in SDEE state , but the correct error message should be SNVS

TSDrd32513 TODS:Wrong NTP server management when more than one NTP server are configured

Severity:

Severity 3

Description:

Assigning to a NE two NTP servers, NE starts to jump from first NTP server to second NTP server, passing by HOLDOVER status and back in a loop

TSDrd33851 SYNC(ETSI):EDBITSOUT denied with wrong error code.

Severity:

Severity 3

Description:

If the command is issued with FMT equal to 6.3MHZ and the provioned type of the Power Supply board is not the Japanese type (PROVISIONEDTYPE not equal to PSF320JP), then the command shall be denied with the following error code (and error reason) SNVS Status, Not in Valid State. But ED-BITS-OUT command with FMT=6.3MHZ is denied with error code IDNV.

TSDrd31250 SYNC(ANSI):SYNCREFFAIL on reference after matrix switch

Severity:

Severity 3

Description:

SYNC on reference moves temporary from LOCKED to FAIL, after matrix switch

Contro Plane Category

TSDrd32280 CP:after a power off/on the tunnel shoves a wrong Hop List-ID

Severity:

Severity 3

Description:

In Control Plane context, a tunnel is configured. after a power off/on, Hoplist and restored Hoplist fields don't match

TSDrd31119 Wrong deny message in case of change about IPADDR with TE-LINK configured

Severity:

Severity 3

Description:

In a control plane environment, once the TELINK is configured, TL1 commands to change loopback configuration ED-TMPLS-CPGLOBAL gives a wrong deny message

TSDrd33076 CP: the TL1 comand rtrv-cp-hoplist is still present in the command menu

Severity:

Severity 3

Description:

rtrv-cp-hoplist should not be available. Even iof present, the command shows wrong information

TSDrd31177 CP: Maximum Reservable Band Width of a TE-LINK is not managed

Severity:

Severity 3

Description:

Maximum Reservable Band Width of a TE-LINK is not managed

TSDrd33586 CP:the option ROUTE=COMPUTED is empty

Severity:

Severity 3

Description:

A rtrv-tmpls-tunnel with option ROUTE=COMPUTED command applied to a working tunnel should display the path computed.BUT The command with option ROUTE=COMPUTED is empty.

TSDrd33651 Signalling: An ADMIN=OFF tunnel is removed from transit/tail nodes in case of signaling failure.

Severity:

Severity 3

Description:

In front of a LOS alarm on the port involved by a tunnel a different system behavior will be detected on the head and tail nodes. On the head node the tunnel is in LOST condition as it must be. On the tail and transit node the tunnel is missing, instead the tunnel should be present in LOST condition

4 Restrictions

Equipment Category

SLC memory requirements

To run the current SW release, the Second Level Controller hosted on the Matrix board needs 2GBytes of memory. Matrix board versions mounting SLCs with less than 2GB will not start-up

CWDM 10G XFP

The support of CWDM 10G XFP modules is available on STM64 board (1X10G SYNC OPTICAL 3AL92111AA**) starting from ICS04

Packet Modules extraction

The Packet Module cards must be put in out of service before physical plug out

Facility Category

Autonegotiation remote capability

Autonegotiation: remote capability (pause frame) is not available

CWLA not available in ANSI

CWLA Not Supported in ANSI Environment

Loopbacks not working on DWLA

Facility and terminal loopbacks are not working on DWLA client facility.

CWLA transponder not available

CWLA transponder is in restriction

Protection Category

WTR and Hold-Off times for VCAT not supported

WTR time and HOLDOFF time for VCAT services are not managed

EPS protection on NGI fail

EPS protection is not performed in case of internal line card – matrix link (called NGI) fail

MS-SPRing SF vs. FORCED priority

MS-SPRING Signal Fail has more priority than Forced command

Connection Category

None

Data Category

Flow control accuracy for Packet Modules

On Packet Modules, the quanta sent for flow control are not accurated

Pause frames are not dropped at UNI port

Frames with Destination MAC address of Pause Frames (01-80-c2-00-00-01) are not dropped by UNI port

LAG interworking with TSS-3

When LACP is disabled and you recover from fault condition, the TSS-3 is revertive and set the primary path as working, while the TSS-320 is not revertive and continue to stay in the spare path.

MP2MP T-MPLS linear 1:1 protection time

T-MPLS tunnel linear 1:1 protection time in MultiPoint to MultiPoint scenarios is higher than 100ms, and typically around 250ms

MTU and MRU value limits

MTU is fixed to 9216 and MRU can manage only even values. Moreover, MRU is limited to 8978 at the UNI and 9000 at the NNI

Policing for “Flow group” not available

Policing for “Flow group” is not supported

Work around:

The functionality is available via CLI

Maximum number of VT per port

The maximum number of VT available is:

- 409 VT for each GBEthernet port

- 4090 for each 10GBEthernet port

Root port election criteria

Default Root port election is based on the MAXMBR bandwidth and it doesnt depend upon the no. of Active members in the VCG. For example, the vcg MAX member is 21 (Bandwidth= around 1Gbps] and the active menber is 9 (bandwidth=450 Mbps), the Default root port should be elected as per the active member bandwidth irrespective of the max member. The problem is observed on LCAS disable

Bidirectional traffic impact on unidirectional LOS on 10xANY

On 10xANY card, a LOS failure on GBE port is correctly reported with CSF on remote VCG but traffic is affected bidirectionally instead of unidirectionally

PM counter is not available for LAG with VPLS

PM counter is not available for LAG bound with VPLS

MAC static entry not supported on LAG ports

MAC static entries are not supported on LAG ports

WDM Category

CWDM Transponder

The CWDM is not supported

Alarm Category

BER threshold not supported value

The BER threshold 1E-3 for AU4-16C and AU4-64C cannot be set

Path label mismatch on VCG LO not supported

Path label mismatch on VCG lower order is not supported

Editing of ALMPROF for OTU2 not allowed

Editing of ALMPROF for OTU2 facility on OT2TDM module is not allowed

Performance Monitoring Category

PM collection time stamp reference

Timestamp of PM collected for T-MPLS reports the starting time of the time interval, while the timestamp of PM collected for Ethernet reports the ending time of the interval

Data PM not available per logical port (LAG)

Data Performance Monitoring information (counters) not available per logical port aggregate (i.e. LAG). That is, there are no LAG port counters, and flow counters are available only on physical ports

Management Category

Migration from R3.1A1 to R3.2.1

Migration from R3.1A1 to R3.2.1 is available with the following notes:

1. For the already installed GBE ports, the Synch Eth SSM is enabled in output. To enable it, the command mode must be forced (CMDMDE=FRCD)

2. The AINS threshold is reset to 8 hours instead of 1 minute. The retrieve reports 0. The value must be reset on the facilities

3. RTRV-ASAP with type ALL is not working from ZIC. Retrieve of the ASAP for the single facilities is available.

Migration from R3.1A2 to R3.2.1 not supported

The migration from R3.1A2 to R3.2.1 is not supported

OSI only over PPP

OSI only over PPP is in restriction

DataBase restoration interrupts VCAT traffic

DataBase restoration causes an interruption of VCAT traffic, that is then automatically recovered after 10 minutes

Release rollback to R3.0 not possible

Once migrated from 3.0 to 3.2, init-sys-old command is not successful: SLC is blocked.

Default rout advertise time

Default route propogation takes >10 Mins to get advertised on RNE when Q- gateway is modified

Default route is lost after migration

Default route is lost after migration

Security Category

None

External Communication Category

TSS-5 connection with TL1 DENY response

In case a TSS-5 managed through the TSS320 as TTD gateway sends a TL1 DENY response, the connection with the TSS-5 is lost, due to a wrong format of the TSS-5 DENY response message, in case TSS-5 is equipped with VLNC2.

Work around:

Reconnect to the TSS-5

OSFP support

OSPF on DCN is not supported

Maximum number of InFiber-InBand connections

The maximum number of InFiber-InBand connections is 80

Software download FTP server bandwidth

FTP server bandwidth used for downloading the SW package must be limited to 50Kb/s

Synchronization Category

None

Contro Plane Category

Routing: TELink Bundle are not supported

The BUNDLE LINK option is not supported

5 Physical Resources

Overview

Purpose

All the items managed by this release of Alcatel-Lucent 1850 TSS-320/160 are listed in this chapter.

The minimum ICS revision of each items indicates the minimum version of the hardware required to support the software release (i.e. equal or greater ICS values of the hardware are valid to support the software release).

Common Parts for Alcatel-Lucent 1850 TSS-320

Part Number	Description	ICS
3AL92151AA**	SHELF (TSS-320) (ETSI)	01
3AL79242AA**	SHELF IDENTIFICATION	01
3AL92108AA**	UNIVERSAL MATRIX (TSS-320) (ETSI) Remark: only if memory upgraded from 512MB to 2GB	03
3AL92108AD**	UNIVERSAL MATRIX (TSS-160) (ETSI) Remark: only if memory upgraded from 512MB to 2GB	01
3AL92108AB**	UNIVERSAL MATRIX (TSS-320) (ANSI/ETSI)	02
3AL92108AC**	UNIVERSAL MATRIX (TSS-320) W/ 40G LO (ANSI/ETSI)	01
8DG07747AA**	LOWER ORDER ADAPTER 10G (1/2S)	01

Part Number	Description	ICS
3AL92110AA**	EQUIPMENT CONTROLLER (TSS-320)	05
3AL92191AA**	POWER 2.0KW (TSS-320) (ETSI)	03
8DG07990AA**	POWER 3.5KW (TSS-320) (ANSI/ETSI)	01
8DG90031AA**	FAN UNIT (TSS-320) (ETSI)	01
8DG90031AB**	FAN UNIT/2 (TSS-320) (ANSI/ETSI)	01

Common Parts for Alcatel-Lucent 1850 TSS-160

Part Number	Description	ICS
8DG87303AA**	SHELF (TSS-160) (ETSI)	01
3AL92108AE**	UNIVERSAL MATRIX (TSS-160) (ANSI/ETSI)	01
3AL92108AF**	UNIVERSAL MATRIX (TSS-160) W/ 20G LO (ANSI/ETSI)	01
8DG87202AA**	FAN UNIT (TSS-160) (ANSI/ETSI)	01

Line Cards

Part Number	Description	ICS
3AL92111AA**	1X10G SYNC OPTICAL (REQ. XFP) (1/2S)	02
3AL92112AA**	4X2.5G SYNC OPTICAL (REQ. SFP) (1/2S)	01
3AL92113AA**	8X155/622M SYNC OPTICAL (REQ. SFP) (1/2S)	01
8DG08049AA**	1X10GE PACKET MODULE (1S)	01

Part Number	Description	ICS
8DG08051AA**	10X1GE PACKET MODULE (1S)	01
8DG08049AB**	1X10GE PACKET MODULE (1S) SYNC	01
8DG08051AB**	10X1GE PACKET MODULE (1S) SYNC	01
8DG08226AA**	MS PACKET MODULE (1S)	01
8DG07885AA**	OMDX 8100 L1 DWDM (FOADM) (3/4S) Remark: for TSS-320 only	01
8DG07885AB**	OMDX 8100 L1 DWDM (FOADM) (1S)	01
8DG08665AA**	OMDX 8100 L2 DWDM (FOADM) (1S)	01
8DG07852AA**	BOOSTER	01
8DG07855AA**	PRE-AMPLIFIER	01

Pluggable Optical Modules

Part Number	Description	ICS
1AB359780001	EL TRX SFP 1000BASE-T	N/A
1AB187280033	OPTO TRX SFP 1.25GBE SX DDM	N/A
1AB187280031	OPTO TRX SFP 1.25GBE LX DDM	N/A
1AB187280042	OPTO TRX 1.25GBE SFP-ZX DDM	N/A
1AB194670004	OPTO TRX SFP S-1.1 DDM	N/A
1AB194670005	OPTO TRX SFP L-1.1 DDM EXTEMP	N/A
1AB194670006	OPTO TRX SFP L-1.2 DDM	N/A
1AB196360004	OPTO TRX SFP S-4.1 DDM	N/A

Part Number	Description	ICS
1AB196360006	OPTO TRX SFP L-4.1 DDM -40/+85	N/A
1AB196360007	OPTO TRX SFP L-4.2 DDM -40/+85	N/A
1AB196370005	OPTO TRX SFP I-16.1 DDM	N/A
1AB196370006	OPTO TRX SFP S-16.1 DDM	N/A
1AB196370007	OPTO TRX SFP S-16.1 ANYRATE DDM	N/A
1AB196370008	OPTO TRX SFP L-16.1 DDM -5/+80	N/A
1AB196370009	OPTO TRX SFP L-16.2 DDM -5/+80	N/A
1AB214540002	XFP 10GBE BASE S	N/A
1AB214540001	XFP I-64.1/10GBE BASE L	N/A
1AB217280001	XFP S64-2B/10GBE BASE E	N/A
1AB217280002	XFP P1L1-2D2	N/A
1AB356630041	OE-TRX XFP DWDM CH20	N/A
1AB356630040	OE-TRX XFP DWDM CH21	N/A
1AB356630039	OE-TRX XFP DWDM CH22	N/A
1AB356630038	OE-TRX XFP DWDM CH23	N/A
1AB356630036	OE-TRX XFP DWDM CH25	N/A
1AB356630035	OE-TRX XFP DWDM CH26	N/A
1AB356630034	OE-TRX XFP DWDM CH27	N/A
1AB356630033	OE-TRX XFP DWDM CH28	N/A
1AB356630031	OE-TRX XFP DWDM CH30	N/A
1AB356630030	OE-TRX XFP DWDM CH31	N/A

Part Number	Description	ICS
1AB356630029	OE-TRX XFP DWDM CH32	N/A
1AB356630028	OE-TRX XFP DWDM CH33	N/A
1AB356630027	OE-TRX XFP DWDM CH34	N/A
1AB356630026	OE-TRX XFP DWDM CH35	N/A
1AB356630025	OE-TRX XFP DWDM CH36	N/A
1AB356630024	OE-TRX XFP DWDM CH37	N/A
1AB356630023	OE-TRX XFP DWDM CH38	N/A