Alcatel·Lucent

1663 Add Drop Multiplexer-universal

Formerly: Metropolis ® ADM (Universal shelf)

Release Notes

Jupiter release (R5.0.5)

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.

Mandatory customer information

This information product does not contain any mandatory information.

Warning

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

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Warranty, support and trouble escalation procedures have been established on a per country basis.

Contact your Alcatel-Lucent account representative for details.

Ordering information

For information on how to order Alcatel-Lucent information products, see the "About this information product" section (Preface) of this document.

Support

Technical support
Technical assistance can be obtained by calling the Regional Technical Assistance Center (RTAC).

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1   General Information

About this Document

Document History:

Issue	Issue Date	Reason for re-issue
Issue 1.0	June-19-2009	Initial document

Purpose of this document: The release notes of *1663 Add Drop Multiplexer-universal* contain information supplementary to the user documentation including a list of relevant problems known at the time of the generation of this document. By providing this information, release notes assist the user in operating the system so that problems can be prevented or minimized. If problems do arise, the user will have an insight into the cause and potential solution of the problem. The problems and their solutions, called "work arounds," are discussed for *1663 Add Drop Multiplexer-universal*.

Important ! Always read the customer documentation together with these release notes. In this document, whenever applicable, references are made to the relevant guides and sections of the customer documentation.

Important ! Deviations from expected behaviour and non-compliances that are not subject of correction or fixing in future releases are not mentioned in this document but part of the customer documentation. Therefore such items from former releases of this document are not part of the Fixed Problems section, but have been described by the current customer documentation.

Intended audience: This document is intended to provide necessary supplementary information for all users of the standard documentation. This document contains the release notes pertaining to the *1663 Add Drop Multiplexer-universal*. For problems specific to another network element, consult the release notes of the particular network element. For problems related to the ITM-CIT, ITM-SC or OMS, consult the release notes for these products.

Network Element Software Release Information

NE Software Releases: Features and applications described in this guide are valid for *1663 Add Drop Multiplexer-universal* network elements.The software is delivered in three different versions, providing different (X-marked) feature set:

Feature support		SCA348F[*]	SCA350F	SCA352F[*]
R1.0 Core units	STM16 Core (LKA24/25)	-	X	X
	STM64 Core (LKA26/27/47)	-	X	X
R3.0 Quad- STM16/STM64 Core units (LKA28/29/48/49/350) R4.0 Core Unit (LKA281)	Utilizing up to 64 VC4 LO-XC capacity (10G LO-XC)	-	X	X
	Utilizing up to 128 VC4 LO-XC capacity (20G LO-XC)	-	X (with SC2 [LKA21] only)	X
R5.0 Core units	STM16 Core (LKA481/482)	X	-	X
SDH Trib cards	R1.0 STM1/1e/4[***] (LKA3/6/11/13/14)	X	X	X
	R3.0 STM-1/ STM-4 main board SFP: SI-1/M (LKA39)	X	X (not with LKA24/25)	X (not with LKA24/25)
	STM16 trib (LKA22/23/50)	X	X (not with LKA24/25)	X (not with LKA24/25)
PDH Trib cards	DS1, E1, E3DS3 (LKA 16/2/8)	X	X	X
Data interface cards	E/FE: IP-LAN/8 (LKA4)[**]	X	X	X
	R1.1 GbE: IP-GE/2 (LKA12)	X	X	X
	R3.0 GbE: IP-GE/2F-OS (LKA53)	X	-	X (not with LKA24/25)
System Controller cards	R1.0 SC: SC1 (LKA1D)	-	X	-
	R3.0 SC: SC2[*/**] (LKA21, LKA21B)	X	X	X

[*] SC2 is mandatory for new installations/orders and mandatory for SCA348/SCA352
[**] SC2 is mandatory for usage of QoS features
[***] LKA6/13 are not fully compatible with all Core Unit types, for use with R1.0 Core Units (LKA24/25/27/29/47); only ports 2, 3 and 4 can be used with R3/R4/R5 Core Units; 3.0_MUXnb42185

For a description of the new hardware see the Chapter 2, " New Features" section.

Product	ComCode		Release Information
1663 Add Drop Multiplexer-universal	109696013	ID.SW R5.0.5	Syst SW/init. Downld STM-16 Core related to LKA481 and LKA482 R5.0.5 (SCA348F).
1663 Add Drop Multiplexer-universal	109696021	CD.SW R5.0.5	Syst SW CD STM-16 Core related to LKA481 and LKA482 R5.0.5 (SCA349F) .
1663 Add Drop Multiplexer-universal	109696054	ID SW R5.0.5	Syst SW/init. Downld Metropolis 10G LO-CC Core R5.0.5 (SCA350F).
1663 Add Drop Multiplexer-universal	109696039	CD.SW R5.0.5	Syst SW CD Metropolis10G LO-CC Core R5.0.5 (SCA351F).
1663 Add Drop Multiplexer-universal	109696062	ID SW R5.0.5	Syst SW/init. Downld Metropolis 20G LO-CC Core Extended Version R5.0.5 (SCA352F).
1663 Add Drop Multiplexer-universal	109696047	CD.SW R5.0.5	Syst SW CD Metropolis 20G LO-CC Core Extended Version R5.0.5 (SCA353F).

1663 Add Drop Multiplexer-universal **release:**

Features and procedures described in this document are valid for Release R5.0.5 *1663 Add Drop Multiplexer-universal* SDH Add Drop Multiplexer.

1663 Add Drop Multiplexer-universal **related documents:**

For more information on the installation of the *1663 Add Drop Multiplexer-universal* system, and the use of "Fast Download" application, refer to the:
Metropolis® ADM (Universal shelf) Installation Guide

For more information on the *1663 Add Drop Multiplexer-universal* system, technical characteristics, features, cross-product interworking, and system planning and engineering, refer to the:
Metropolis® ADM (Universal shelf) Application and Planning Guide

For information on maintenance of the *1663 Add Drop Multiplexer-universal* network element, configuring or reconfiguring the Network Element, setting cross-connects, and synchronizing the network with the

use of the Integrated Transport Management-Craft Interface Terminal (ITM-CIT), refer to the:
Metropolis® ADM (Universal shelf) User Operations Guide

For information on corrective procedures and action tables of the *1663 Add Drop Multiplexer-universal* system refer to the:
Metropolis® ADM (Universal shelf) Alarm Messages and Trouble clearing Guide

Windows in the documentation: Figures appearing in the customer documentation are windows of the ITM-CIT, ITM-SC and the OMS. However when actions are performed, the contents of these windows may change and this cannot always be accurately reflected in the customer documentation.

Related Systems Software Release Information

ITM-CIT release: Features and procedures described are valid for ITM-CIT release 15.00.08

OMS release: Features and procedures described are valid for OMS release R5.0.2 and R6.3.2

Software License

The following open source software packages are used in the 1663 Add Drop Multiplexer-universal Release 5.0.5:

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For further details about handling/usage and licensing of the contained/used open source SW please check the open source declaration file which is available on the CD-ROM of the 1663 Add Drop Multiplexer-universal Network Element Software Release 5.0.5.

If you want to receive the sources of the mentioned packages please contact Alcatel-Lucent ICMC Helpdesk at +353 1 6924579 and open an AR ticket with short description "ADMu open source software license" on product "1663 ADMu", formerly called "Metropolis ADM Universal" and assign the ticket to the secondary support group.

Customer Support Information

Customer support: For support regarding the *1663 Add Drop Multiplexer-universal*, customers should contact the Local Customer Support Team as specified in their service contract.

Additional support information can be found on www.alcatel-lucent.com.

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2   New Features

Short Description Of New Features
Introduced By R5.0 wrt. R4.0

General: The new features are described in detail by the following document:

Metropolis ® ADM (Universal shelf)
Release R5.0
Application And Planning Guide
Comcode 109563940

At this point just a short overview on the added features:

Interfaces: - STM-16 Core Unit with 1 SFP port and 272/64 VC-4 (HO/LO) XC
(LKA 481), SI-16 SFP C3/1

- STM-16 Core Unit with 1 SFP port and 272/64 VC-4 (HO/LO) XC and
integrated OBA (LKA 482) for 120km target distance, SI-16VH C3/1

- 64 kHz input & 6312 kHz output synchronization panel, MIOR-J

Data (TransLAN™):   - Ingress Rate Control, CQS and QoS provisioning in
IEEE802.1Q/IEEE802.1ad mode for IP-GE/2F-OS (LKA53)

- Provisionable BPDU encoding for IP-GE/2F-OS (LKA53)

- L1 Loopback Detection (LKA53, start from R5.0.5)

Network Management: - ITM-CIT R15.00.08
- OMS R5.0.2 and R6.3.2

Short Description Of New Features Introduced
By R4.0 wrt. R3.0

New Features

Operations: LKA21B, redesigned System Controller, same functionality as LKA21 (supported with R5.0.1)

Short Description Of New Features Introduced By R4.0 wrt. R3.0

General: The new features are described in detail by the following document:

Metropolis ® ADM (Universal shelf)
Release R4.0
Application And Planning Guide
Comcode 109543413

At this point just a short overview on the added features:

Interfaces:
- STM-64 Core Unit with 1 x fixed port (120km) and 272/128 VC-4 (HO/LO) XC (LKA281) for usage with external booster amplifier (SBS suppression tone support)
- GBE ZX pluggable module (70km target reach)
- E1 Paddle board with enhanced port numbering scheme, 120 Ohms, protected/unprotected (PBE41, already software supported since R3.0)
- LKA12B, GBE 2 port (4 times VC-4 backplane capacity) supported with R 4.0.1

Alarming and Performance Monitoring:
- DS1 non-intrusive monitoring, AIS detection (line side)
- DS3 non-intrusive monitoring, AIS detection (line side)

Data (TransLAN™):
- RSTP and GVRP support for IP-GE/2F-OS (LKA53)
- Swapping of Ethertype (TPID) ("Ethertype swapping" for IEEE 802.1ad)
- Ingress Rate Control, CQS and QoS provisioning in IEEE802.1Q/IEEE802.1ad mode for E/FE (LKA4), SC2/LKA21 required to use this feature
- removed: Ingress Rate Control, CQS and QoS provisioning in Transparent Tagging mode (Virtual switch type LAN VPN-QoS, a.k.a MLAN-QoS) discontinued, see Chapter 6, " Release Upgrade Of The Network Element (Mars To Jupiter)"

Protection: - Local Link Aggregation (LAG) for IP-GE/2F-OS (LKA53)

Mechanics: - 2000 mm ETSI Rack (300mm, not earthquake certified)

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Short Description Of New Features Introduced
By R3.0 wrt. R2.0

New Features

- Semi-prefabricated Office Cables E1supporting 1008 E1 i/f per rack (UTP, impedance 120 Ohms, cable lengths 8, 15, 22, 30, 50, 70 and 100m)

- Rack Alarm Cable 2.5m (for LambdaUnite rack) and 3.25m (for MetropolisADM rack)

Operations:
- LKA21B, redesigned System Controller, same functionality as LKA21 (introduced with R4.0.3)

Network Management:
- ITM-CIT interface enhanced speed (115kbit/s)
- ITM-CIT R14.02
- ITM-SC R11.4.1
- ITM-NM R8.2
- OMS R3.2.1

Short Description Of New Features Introduced By R3.0 wrt. R2.0

General:
The new features are described in detail by the following document:

Metropolis ® ADM (Universal shelf)
Release R3.0
Application And Planning Guide
Comcode 109523167

At this point just a short overview on the added features:

Interfaces:
- STM-64 Core Unit with 1 x fixed port (120km, 80km, 40km, 600m optics) and 272/128 VC-4 (HO/LO) XC (LKA350, LKA28, LKA29, LKA49)

- STM-16 Core Unit with 0...4 x SFP ports and 272/128 VC-4 (HO/LO) XC (LKA 48)

- STM-16 trib with 1 x SFP port (LKA 50)

- STM-16 SFP optical modules for 80km, 40km and 2km reach

- 2.5G CWDM SFP (*4 colors, 2 ranges*) & OEM PWDM mux

- STM-4/1 optical with 10 x SFP port: SI-1/M (LKA39)

- STM-1 optical paddle board with 6 x SFP port (PBP8)

- STM-1 electrical paddle board with 12 ports 1+1 protected and unprotected (PBP6 and PBP5)

- STM-1/4 SFP optical modules for 80km, 40km and 2km reach

Short Description Of New Features Introduced
By R2.0 wrt. R1.1

New Features

- Full rate GbE (1 slot) with extended WAN port (64) capacity IP-GE/2F-OS (LKA53)

Data (TransLAN™):
- IEEE 802.1ad Provider Bridge VLAN tagging with provisionable Ethertype/TPID

- Double tagging on network LAN port

- Customer WAN port operation mode

- Increased number of IEEE VLAN instances (247 per pack, for LKA53:1024 with GVRP off)

- VC-3 LCAS support on GbE,

- Support of Extended Ethernet frame size: 9216 bytes of Ethernet payload for IP-GE/2F-OS (LKA53), 1650 bytes of Ethernet payload for IP-GE/2 (LKA12)

Operations:
- System Controller Enhanced SC2 (LKA21)

Network Management:
- ITM-CIT R13.04

- ITM-SC R11.2

- ITM-NM R8.2

- OMS R3.0

Short Description Of New Features Introduced By R2.0 wrt. R1.1

General:
The new features are described in detail by the following document:

Metropolis ® ADM (Universal shelf)
Release R2.0
Application And Planning Guide
Comcode 109470211

At this point just a short overview on the added features:

Interfaces:
- GBE LX pluggable module

- DS1interface (LKA16/PBE12): 63 ports (mapping of E11 in VC-11 via TU-12)

Alarming and Performance Monitoring:
- E1 line PM (non-intrusive CRC-4 monitoring)

- DS3 code violation monitoring (Moderate BER alarming)

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Short Description Of New Features Introduced
By R1.1.2 wrt. R1.1

New Features

- B1 monitoring on STM-1/4

Protection:	- DNI with D&C MS-SPring and LO SNCP
	- MSP annex B
	- SNCP revertive mode

Fault Location and Recovery:	- Loopbacks for STM-16, STM-1e and DS1

Network Management:	- CIT R12.01.01
	- ITM-SC R11.1

Mechanics:	- New racks with PDP-M

Short Description Of New Features Introduced By R1.1.2 wrt. R1.1

General:	The new features are described in detail by the following document:

Metropolis ® ADM (Universal shelf)
Release R1.1
Application And Planning Guide
Comcode 109454140

At this point just a short overview on the added features:

Interfaces:	- Core STM-64 1.3u IR (SI-I64.1R)
	- Core STM-64 1.5u LH (L-64.2/3)
	- OC-12 / STM-4 1.5u LH (L-4.2)
	- OC-3 / STM-1 1.5u LH (L1.2)
	- E3/DS3 12-port
	- GBE 2-port (600Mb), with SX pluggable Module
	- E1 Paddle board for Sub-D connector (no protection)

Operations:	- IP tunneling over OSI

Data (TransLAN™):	- GFP on FE, IW with Alcatel
	- GBE ptp promiscuous mode, VC4 LCAS

Short Description Of New Features Introduced
By R1.1.2 wrt. R1.1

New Features

- Capability to transport Ethernet-like frames (valid DA, SA and FCS) of up to 1650 bytes length

Added by R1.1.2:   - Provisioning of Gigabit Ethernet mapping type for VLAN Trunking

- Provisioning of Gigabit Ethernet mapping type for WAN-to-WAN grooming/aggregation

- LAN bridge mode on Gigabit Ethernet Hardware

- Multi-port LAN Bridging mode with L2 VPN support (M-LAN) for Gigabit Ethernet

- Port-based VPN Customer Tagging for Gigabit Ethernet (Transparent aka double tagging)

- IEEE 802.1Q VLAN Tagging for Gigabit Ethernet

- Gigabit Ethernet VLAN Trunking

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3 Fixed Problems

Problems fixed in R5.0.5 wrt R5.0.4

5.0_MUXnb83437
Structure VC3 into VC12

Problem Description: Change TUG structure on CC1.3 from VC3 to VC12, lead CTL reset.

5.0_MUXnb84109
The 3rd VC3 group of VC4 goes down when interfacing 5ESS OIU

Problem Description: Alarm TU12cAIS on 3rd VC3 group (the last 21 E1s) received when 1663 ADMu connects with 5ESS OIU at STM-1 level with MSP1+1.

5.0_MUXnb63802
DBS-license check-memory leakage

Problem Description: Memory leakage during DBS license check, where the expired time out message are not freed.

5.0_MUXnb84572
20G LO-XC capacity not blocked for C3 Core Units

Problem Description: A faulty operation is supported on ITM-SC and OMS to enabled the LO-XC for 20G capacity on LKA481/482 (LO-XC capactiy is only 10G).

5.0_MUXsh07285
LKA53 traffic lost after core unit plug out/insert in

Problem Description: In special configurations, plug out the core unit and insert it in, traffic may not recover.

1. Only for data traiffic, no SDH CP involved. e.g traffic between 2 LKA53.

2. The VCG must be VC3 TUG structure.

3. The core unit should be LKA48, LKA481 & LKA60.

5.0_MUXsh07864
When signal degrade, both
PTs had EQF alarm

Problem Description: Under special cases both PT report EQF alarm when feed with degrade signal.

5.0_MUXsh07870
Introduce L1 loopback
detection feature

Problem Description: L1 loops(P1) may cause traffic interrruptions/ outages. This is requested on LKA53.

Problems fixed in R5.0.4 wrt R5.0.3

5.0_MUXnb61442
LKA53: VCG disrupted
after change of TUG
structure

Problem Description: Changing the TUG structure for unused portions of the VC4 TTP on a LKA53 results in temporary traffic loss for VCG-members residing on the same VC4. The VC12s or VC3s affected by this problem will carry LP-UNEQ leading to a degradation or complete outage of the VCG. The problem is self-healing - after some minutes the traffic restores autonomously. The problem is deterministic and occurs every time a TUG structure is changed and other VC12 or VC3 TTPs of the VC4 are used in a VCG.

5.0_MUXnb83646
LAG interworking issue

Problem Description: An improvement in LACP protocol for LAG fixs the interworking problem if the remote device use LAG for protection only without load-sharing.

5.0_MUXsh06665
Traffic failure following
software upgrade

Problem Description: Provisioned MSP groups may interfer with existing STM1e ports on other slots in the system. In such case the system implements a wrong port-parameter athe STM1e port, resulting in LOF on the affected interface.

5.0_MUXsh06812
Improve transparency for
protocol PDU

Problem Description: On LKA53, incase Ethernet OAM (IEEE 802.3ah, EFM) / LAG (IEEE 802.3 Clause 43) feature have not been enabled (or feature not supported by the release) on a port, corresponding PDU shall be forwarded like normal traffic

Problems fixed in R5.0.3 wrt R5.0.2

4.0_1-1546110,
1-1530775,
1-1561541:
LKA53: traffic interruption

Problem Description: Under certain conditions the LKA53 experiences spontaneous resets of the data controller that result in a loss of traffic.

4.0_1519406:
PM data counted wrongly

Problem Description: The timestamp of 15min VC4ttp PM bin is not accurate. E.g. in several intervals of 4h, 7-15 UAS are missing and the suspect flag is not set. The 24h reports are affected in a similar way, although here the suspect flag is set after missing the corresponding number of UAS.

5.0_1-1404574:
LKA53: Deletion of a VCG fails

Problem Description: For a LKA53 in slot 9 the deletion of a VCG with VC12-63v fails due to the reset of the CTL

5.0_1-1413181:
LKA53: Change of TUG structure fails

Problem Description: In case the TUG structure at a LKA53 is changed from VC-12 to VC-3 the CTL will go through a reset, hence the configuration is not changed.

4.0_1-1525079:
LKA39: STM-4 mode set wrongly

Problem Description: After an upgrade to Rel 5.2 the STM-4 ports of the LKA39 are erroneously set to STM-1 mode if the following conditions are met:
- MSP is provisioned for the STM-4 ports and
- at 4 neighboring slots the same ports are used to form the MSP

4.0_1-1525079:
LKA39: traffic disturbed

Problem Description: A wrong configuration of unprotected STM-1 ports of the same STM4 group can occur if the following conditions are met:
- MSP is provisioned on the first port of a STM4 group of a LKA39 and
- this MSP group is switched to protection and
- a CTL (System Controller) reset is performed
This results in missing cross connections, hence traffic is lost.

Problems fixed in R5.0.2 wrt R5.0.1

4.0_1-1362009:
Permanent Lockup of LKA53

Problem Description: LKA53 might lock up permanently in case it is fed with certain traffic pattern. The RAM retiming function might become malfunctioning, thus all frames are impaired and dropped internally due to CRC errors. This can happen in all operation modes, regardless of the virtual switch settings.

1.1_1-0866193:
Autonomous Reboots of the CTL

Problem Description: The system controller can loose the internal communication to all circuit packs sporadically. To overcome this situation the CTL resets the packs, all slots will alarm the initialization phase (INIT or EQF for all provisioned tributary and Core packs). After this restores the connectivity the CTL will reset itself autonomously resulting in a temporary loss of association with the management system.

4.0_1-1418681:
No DCC after maintenance
upgrade

Problem Description: When the NE has finished initialization after an upgrade, sometimes the DCC channels are not re-opened correctly. In case the NE is not connected to the Q-LAN this leads to a permanent isolation of this NE from the DCN.

3.0_1-1369411:
Traffic stopped at LKA4

Problem Description: Due to wrong internal interrupt handling the LKA4 occasionally stopped passing all traffic. Various configurations are affected.

Problems Fixed In R5.0.1 wrt R5.0

5.0_MUXnb57788,
AR 1-1371625:
MS-SPring: AU4cLOP and
AU4cAIS alarms are
observed

Problem Description: After a MS-SPRing switch has been activated unexpected AU-LOP alarms are raised in the network. Those alarms reflect an improper AU-pointer signal created by the Rel 3 10G core units (LKA28, LKA29, LKA49, LKA281). This results in a traffic disturbance for the respective AU- numbers.

5.0_MUXnb51980:
LKA53: Disable TPID
swapping before change of
Ethertype to 8100

Problem Description: The Ethertype swapping functionality is supported in 802.1ad mode, while not in 802.1Q. Thus a transition from PBM to the Q-mode needs to disable this functionality (when enabled on a NR port), which may sometimes not be done correctly. As a result the tagging format on the affected port might be inappropriate.

5.0_MUXnb50948:
LKA53 QoS: Rate
Controller is inaccurate for
short frames and low rates

Problem Description: The ingress rate controller of LKA53 stays in its required measurement tolerance of 5% except for fixed frame lengths below 250 bytes. It stays in a tolerance of 10% for pseudo random frame lengths except for low rates below ~8 Mbit/s.

5.0_MUXnb51069:
LKA53 QoS: Weights in
case of mixed scheduling

Problem Description: If one queue (besides the queue 4) gets SP (strict priority) scheduled and the other 2 queues get WRR (weighted round robin) scheduled, then the WRR queues are not correctly served according the weights.

5.0_MUXnb52079:
LKA53 QoS: Restriction
with combination of LAG
and E-NNI (with
DiffSerfEdge)

Problem Description: For the application of an E-NNI the following combination is not correctly supported:
Usage of Link Aggregation (LAG) between the 2 LAN ports AND DiffServEdge functionality (of a NR port) with a VPD which makes any specification for a subgroup of SVIDs, i.e. if S-VID =/ 'all'.
The system would not apply to all of the (in detail) specified S-VIDs, the assigned DiffServEdge behavior according the assigned QoS Profile, it would leave some of the specified S-VIDs treated by the 'NR port default' behavior, i.e. the DiffServInterior behavior.
Secondarily only one E-NNI port (NR port, regardless if WAN or LAN) per unit is supported to be DiffServEdge with a VPD with S-VID =/ 'all', while two ports have been specified.
The application of UNI, i.e. the CR ports are not affected at all.

3.0_MUXnb53769:
LKA53: Padding on WAN
ports

Problem Description: Some applications require the frame's VLAN tag to be removed at Customer Role WAN ports (i.e. Hub&Spoke), thus the packet size will be decreased by four bytes. For small frame sizes (64 to 67 including the VLAN tag) this untagging creates undersize frames (less then 64 bytes length) which might be discarded on the spoke device. The untagging process for such small frames has been adapted to pad those frames to the minimum 64 bytes frame length on LAN and WAN ports.

5.0_MUXnb49380:
LKA4 QoS: Missing ET-
check for IPTOS flow
classification

Problem Description: At NR ports of the FE unit, the QoS Flow Identification for IPTOS does not check the presence of Ethertype 0800, which identifies IP traffic.

4.0_MUXnb56209,
AR 1-1351181:
LKA4 QoS: Burst of packet
lost during low utilization.

Problem Description: Even though the utilization of one or more flows are well below the provisioned CIR values, considerable amount of packet loss that could last between 300 and 400ms was observed. This behaviour is noticeable when random frame sizes are being send on a VC3-2v WAN link in both direction and is caused by two buffer thresh-old settings being defined closer then 1 frame size. Besides many internal pause frames additional delay will occur as a device that has just received a pause 'off' frame need to wait at least 336ms before it is allowed to accept pause 'on' frames to continue transmitting new frames.

4.0_MUXnb54844,
AR 1-1287053
LKA4 QoS: Influence lower
priority traffic onto higher
queue.

Problem Description: Background traffic, i.e running in TC0, could cause remarkable framedrop on the traffic in higher priority queues. Due to limitations on buffer capacity and an internal flow control protocol frames were dropped to avoid buffer overrun situations. This release has been optimized to achieve lower frame drop rates in the higher priority queues.

4.0_MUXnb49229/ MUXsh01570: LKA4: performance problems when STP/GVRP changes

Problem Description: Operating an STP-controlled network (also GVRP in use) with many VLANs can lead to unpredictable network behavior. That includes instabilities of the Spanning tree controlling the operator network as soon as the amount of 150~200 VLANs has been reached.

4.0_MUXnb55358: Toggling switches for Line MS-SPRing

Problem Description: Toggling ring switches have been observed in one case for MS-SPRing on the R3 Core Unit's STM-16/64 ports. I.e. it could happen, that the ring needs several attempts to recover from a clearing of a Manual Switch. MS-SPRing instances on R1 Core Units are not affected.

4.0_MUXnb55601, AR 1-1345270: MS-protection schemes are not working on Tributary Units

Problem Description: After a System Controller reset (i.e due to MIB download) the MS protection schemes on tributaries do not switch any more. As a result traffic is unprotected, although MSP/MS-SPRing has been properly configured on the tributary ports.
Line port protection (i.e. STM-64 MS-SPRing) is not affected.

Problems Fixed In R5.0 wrt R4.0.1

3.0_MUXnb31423: LKA53: WTR and HO timers for LCAS not active

Problem Description: Wait-to-restore and Hold-off timers for LCAS are not active on IP-GE/2F-OS (LKA53). Though the timers can be changed on the GUI level, settings do not take any effect on the pack and no warning appears. The circuit pack will always behave as if these timers were set to zero (meaning they are disabled).

4.0_MUXnb48456: Traffic hits during bandwidth change

Problem Description: A traffic hit of 1-2 sec. can be observed if the bandwidth is manually changed although LCAS enabled. This is only visible if two WAN links are used where the change triggers a path cost update that results in a STP switch.
Note: dynamic changes, e.g. due to failures, will not be affected.

4.0_MUXnb46574: CTL Fail LED flashing without Q-LAN attached

Problem Description: If the NE is not connected to the Q-LAN (i.e. managed via DCC DCN) the Fail LED on the system controller will continuously flash.

4.0_MUXnb49438: LKA4: VLAN registration misbehavior in IEEE802.1Q mode

Problem Description: If the tagged membership for a VLAN on a virtual switch at LKA4 is changed, already learnt unicast traffic is sometimes not handled correctly w.r.t. the tagging/untagging rules. This may result in cases where formerly tagged traffic can leave the TransLAN network untagged at the egress port.

4.0_MUXnb49391: Impaired robustness of STP operation (2)

Problem Description: In a network operated with STP and parallel links the reconvergence time of STP, e.g. due to changed path cost, can be extended - approx. 1min, in case the traffic is unlearned (flooded / broadcasted). During this time it must be obeyed that there may occur a loop in the STP network, e.g. 2 parallel links between two stations remain in STP port status 'forwarding', which diminishes after the reconvergences. Note, that she problem does not occur in ring based STP applications.

4.0_MUXnb46509: LKA4 QoS: Flow Descriptor DA-MAC-VALUE

Problem Description: In case the flow descriptor DA-MAC-VALUE is chosen and the DA-MAC-mask indicates a don't care for a certain bit of the DA-MAC-value then the syntax check requires a '0' at the mask's corresponding bit position of the DA-MAC-value. This applies to the direct provisioning by 2x48 binary digits as well as to the compact hexadecimal syntax (bit by bit between value and mask).

4.0_MUXnb46646: LKA53: LAG does not pass Frames with internal used TPID

Problem Description: If a repeater mode switch with a LAG at the LAN side is used, then one of the two ports cannot pass all tagged frames. The frames that are tagged with the internally used Ethertype (by default 9100) are discarded at the LAN port.

4.0_MUXnb46001: LKA53: LAG causes unexpected alarms

Problem Description: In the case a LAG is provisioned (LKA53) and optical connectors are unplugged and re-plugged it may happen that invalid "Auto Negotiation Mismatch" alarms are raised occasionally. These alarms need to be ignored. With respect to the related problems 3.0_MUXnb38022 and 3.0_MUXnb41008 the alarm is to be considered irrelevant.

4.0_MUXnb44888: LKA53: CbR/CbS PM values

Problem Description: Performance Monitoring CbR/CbS counters on Ethernet Ports are required to count the octets of the layer 2 frames, but Ethernet PM counters for WAN ports of LKA53 include the GFP overhead into the counters. Thus the PM counters on WAN show values which are up to 12% above the really transported amount of bytes (depending on packet size).

4.0_MUXnb45761: LKA53: Unexpected VCG member being dropped

Problem Description: If a VCG (with more than one member) on an IP-GE/2F-OS unit is configured and an intermediate (not the highest sequence number of the VCG) member of this VCG is removed at the sink only, then the member with the highest sequence number will be dropped from the VCG (instead of the selected intermediate member) until the intermediate member is removed at the source of the remote VCG too.

4.0_MUXnb46167:
LKA53: Display of
VCxVcMND alarms

Problem Description: If an LCAS enabled VCG on an IP-GE/2F-OS unit contains a member that exceeds the differential delay compensation capabilities of the unit then the VCxVcMND alarm (x=12,3,4; MND: VC-X virtual concatenated group member differential delay out of range) will be raised. This alarm may be raised against the wrong member.

3.0_MUXnb38968:
GbE LKA53: Deleting
VCGs

Problem Description: If a VCG pair of an IP-GE/2F-OS (LKA53) is deleted on just one end of the link the VCG members cannot be used for another VCG pair. The former VCG member will invisibly remain 'locked up' for this VCG.

3.0_MUXnb37943:
GbE LKA53: LED test

Problem Description: The IP-GE/2F-OS (LKA53) link activity and link status LEDs will not participate in a LED test invoked from the CIT. Link status/activity LED defects will therefore not be revealed by a system LED test.

3.0_MUXnb38022:
3.0_MUXnb41008:
GbE LKA53: Auto-
negotiation mismatch alarm
/ status

Problem Description: In case the autonegotiation is switched off on the link partner of a GbE port of an LKA53, the GbE link is not established, as the autonegotiation bypass functionality does not work. Autonegotiation mismatch alarm and status retrieval are not supported for IP-GE/2F-OS (LKA53). In particular, the auto negotiation status displayed on the manager is either 'complete' or 'configuring'. The latter state is also displayed when autonegotiation fails. Alarming of 'autonegotiation mismatch' is also not supported.

4.0_MUXnb50056:
GbE LKA53: Double reset
of CTL drops traffic

Problem Description: Traffic passing the IP-GE/2F-OS (LKA53) is lost for up to twenty minutes in case two resets are performed within +- 18 minutes. Performing a reset of the CTL at some point in time, does not cause a traffic outage.

Problems Fixed In R4.0.4 wrt R4.0.3

4.0_1-1362009:
Permanent Lockup of
LKA53

Problem Description: LKA53 might lock up permanently in case it is fed with certain traffic pattern. The RAM retiming function might become malfunctioning, thus all frames are impaired and dropped internally due to CRC errors. This can happen in all operation modes, regardless of the virtual switch settings.

1.1_1-0866193:
Autonomous Reboots of the
CTL

Problem Description: The system controller can lose the internal communication to all circuit packs sporadically. To overcome this situation the CTL resets the packs, all slots will alarm the initialization phase (INIT or EQF for all provisioned tributary and Core packs). After this restores the connectivity the CTL will reset itself autonomously resulting in a temporary loss of association with the management system.

4.0_1-1418681:
No DCC after maintenance
upgrade

Problem Description: When the NE has finished initialization after an upgrade sometimes the DCC channels are not re-opened correctly. In case the NE is not connected to the Q-LAN this leads to a permanent isolation of this NE from the DCN.

Problems Fixed In R4.0.3 wrt R4.0.2

4.0_MUXnb55358:
Toggling switches for Line
MS-SPRing

Problem Description: Toggling ring switches have been observed in one case for MS-SPRing on the R3 Core Unit's STM-16/64 ports. I.e. it could happen, that the ring needs several attempts to recover from a clearing of a Manual Switch. MS-SPRing instances on R1 Core Units are not affected.

4.0_MUXnb55603:
MS-protection schemes are
not working on Tributary
Units

Problem Description: After a System Controller reset (i.e due to MIB download) the MS protection schemes on tributaries do not switch any more.As a result traffic is unprotected, although MSP/MS-SPRing has been properly configured on the tributary ports.
Line port protection (i.e. STM-64 MS-SPRing) is not affected.

4.0_MUXnb47587:
LKA 53/LKA 4: STP
changes causes longer
traffic loss

Problem Description: In configurations where two or more parallel WAN links exist between LKA53 and LKA4, changes of the STP result in a traffic restoration only after appr. 10min.
Note: Other unit combinations (i.e. LKA12/LKA4, LKA4/LKA4) are not affected.

4.0_MUXnb47568:
LKA 53: STP Status
information not shown

Problem Description: Under some circumstances the current status of the STP (e.g. forwarding, discarding) is not displayed at the management system, although the STP operates properly.

4.0_MUXnb47567: LKA 48: Unexpected STM16cNES alarm

Problem Description: After a node reset the STM16cNES alarm is raised for ports with no SFP inserted.

4.0_ MUXnb46382: LKA4: Increased frame drop rate in Spanning Tree Switch mode

Problem Description: In Spanning Tree Switch mode the traffic passing through an IP-LAN/8 (LKA4) unit undergoes an 10-5 frame drop rate.

4.0_MUXnb46395: LKA4 QoS: Flow Descriptor IP-TOS at NR ports

Problem Description: For IEEE 802.1Q mode the flow descriptor 'IP-TOS (C-untagged)' is allowed to be provisioned at network role ports, although this flow is not possible in this configuration. At network role ports in this mode only flows with the FD 'IP-TOS (C-tagged)' are useful

3.0_MUXsh00626: Irrelevant STP info on ITM-SC

Problem Description: The ITM-SC GUI displays STP information for WAN ports in customer role. This information is irrelevant, because all customer role ports do not participate in the operator (provider) spanning tree.

Problems Fixed In R4.0 wrt R3.0.2

3.0_MUXnb46096: LKA 4: Traffic disturbed in Repeater mode

Problem Description: LKA4 operating in transparent mode blocks the traffic of any additional repeater switch if there are already two switches configured.

3.0_MUXnb46518: STM-64 MS-SPRing problems on R3 Core Units

Problem Description: STM64 Multiplex Section Protection schemes (MS-SPRing or MSP) on R3 STM64 Core Units might not be working properly. Unexpected protection group states of the involved ports could be observed (i.e. the protection group threads a Line port being failed (SF) or degraded (SD) although the port is working error free and has no alarms/anomalies thus the ring never becomes IDLE or APS alarms generated). Typically this can be observed directly after enabling the protection, or after switching the Core Unit equipment protection.

3.0_MUXnb40685: Phantom AU-alarms

Problem Description: Unexpected HP-UNEQ or AU-AIS alarms might be persistent in the system. Those alarms are raised without an existing reason (i.e. the traffic on this AU is running errorfree) and cannot be cleared (i.e. by creating a LOS or restarting the NE by resetting the controller). During MS-protection scheme (MS-SPRing/MSP) switching the Non Intrusive Monitor point (NIM) of the protected MS-TP has to be transferred to the corresponding NIM on the protecting MS-TP (i.e. MSP1+1 on STM64: LP1.1,1 is being protected by the NIM LP2.1,1). The status of such a transferred NIM is not cleared afterwards, when the NIM was alarmed during the switching.

3.0_MUXnb41188: LKA39: Recovery of STM1o Paddle Board

Problem Description: The paddle board PB-STM-1o/6 (PBP8) which is used with the SI-1/16-4/4 unit does not recover properly after a system power-cycle. The same problem applies, when the PB is provisioned during the initial node creation.

3.0_MUXnb45288: LKA4: Unexpected VC3cDEG

Problem Description: After a reset of the IP-LAN/8 unit an unexpected VC3cDEG alarm is raised for all monitored VC3 TTPs on the unit.

3.0_MUXsh01221: Cascading MSP and HO-SNC

Problem Description: When an MSP protection group is to be established and the working section contains the leg of an HO-SNC cross connection the creation of the MSP group is rejected.

3.0_MUXnb41002: ITM-CIT: VCG differential delay for VC-12 based VCG on LKA53

Problem Description: If a VC-12 Virtual Concatenation Group is established on an IP-GE/2F-OS unit and the differential delay for a member is retrieved via the CIT, the value that will be shown will be four times smaller than the actual differential delay. As an example, if 1 ms is shown on the CIT the actual delay is 4 ms.

3.0_MUXnb37948: LKA53: LPT: does not react on SDH defects

Problem Description: IP-GE/2F-OS does not execute a consequent action on SDH path SSF or SSD defects towards the LAN interface. On the one hand the Link Path Through (LPT) feature leads to consequent actions due to RCF (remote client failure) scenarios. Also a SSF (server signal fail) or SSD (server signal degrade) from the SDH layer should be handled by LPT but it is not.

3.0_MUXnb40278: LKA53: VC4cTIM not raised for substructured VC-4

Problem Description: The trace identifier mismatch alarm for a VC-4 signal that is terminated on an IP-GE/2F-OS unit will not be raised if this VC-4 is substructured into VC-3 or VC-12 containers, regardless of whether the TIM defect exists or not. The consequent actions will work properly.

3.0_MUXnb40939: LKA53: EMACcLOF alarm

Problem Description: The EMACcLOF alarm is not properly working and needs to be ignored.

3.0_MUXnb40751: MS-SPRing switch status display on the ITM-SC

Problem Description: ITM-SC shows wrong MS-SPRing state information (switch status and line status) if a switch request is currently served in the ring. Only for the NE acting as head-end node (i.e. the node actively involved in executing a protection switch, which received a bridge request from another node) the proper state information is displayed.

3.0_MUXnb40524 GbE LKA12: missing LOPC and LOTC alarms

Problem Description: In the case of failures of VC connections of LCAS connections on LKA12 the related alarms LOPC and LOTC indicating the loss of transport capacity are not raised for VC-3s.

**3.0_MUXnb40412
HO-SNCP: Switching
limitations**

Problem Description: HO-SNCP does not consider any NIM related defects for automatic protection switching if the termination point is set to not- monitored for the two input tributaries. This concerns all types of core units.
In detail all SNC/N defects are not considered as contributor:
- dAIS (all-ones in C2 POH byte)
- dUneq (Unequipped)
- dTIM (Trace Identifier Mismatch)
- dDEG (Degraded)
However all SNC/I defects will be used for HO-SNCP, regardless of the TP mode configuration:
- dLOP (Loss of Pointer)
- dAIS (all-ones in H1, H2 MSOH bytes - AU-Pointer)
- dTYM (Au Type Mismatch)

**3.0_MUXnb40155:
3.0_MUXnb41044:
LKA53: Capacity reduction
of a VCG**

Problem Description: If two systems are connected over virtual concatenation groups (VCGs) on the WAN side of IP-GE/2F-OS units and the capacity of the VCG is reduced at one of the two systems, with the aim to decrease the bandwidth available for traffic, then the bandwidth may not be reduced. Instead the traffic will continue to run over the deleted VCG members. The bandwidth reduction will occur after the members have been deleted at both ends of the connection. The deletion of an VC member of an VCG leads to an short hit on the Ethernet traffic (some frames are lost) although it is expected to work hitless. A remaining portion of this problem is covered by the KPNC 4.0_MUXnb45761.

**3.0_MUXnb40158
LKA53: Missing SQM
alarm**

Problem Description: In the case on the LKA53 a SQM (Sequence Number Mismatch) defect is present in the incoming virtual concatenated stream this is not alarmed by the SQM fault cause but the detected defect will lead to a server signal fail condition of the concatenation group

**3.0_MUXsh00754
LO-SNCP on R1.0 Core
Units**

Problem Description: LO-SNCP does not consider any defects for protection switching if the termination point is set to not- monitored for the two input tributaries. Therefore an automatic switching will not take place for R1.0 core units (LKA 24/25/26/27/47).

**3.0_MUXsh00801
SNCP mode change**

Problem Description: The operator should not change the revertive mode (from revertive to non-revertive or vice versa) for an existing SNCP. In some cases the new state is not correctly initialized. This will results in traffic loss for a signal fail scenario.

**3.0_MUXnb37958
GbE LKA53: Amount of
Termination Points
restricted**

Problem Description: Currently the number of termination points and VLAN/port associations is restricted for LKA53. Therefore the following rules must be obeyed:
- for fully VC12 substructured VCGs on LKA53, no more then 3 circuit packs should be provisioned in the system.
- for fully VC3 or VC4 substructured VCGs on LKA53, no more then 5

packs should be provisioned in the system.
- for any mixture, no more then 4 packs should be provisioned in the system. Note: Any other Ethernet unit (LKA4, LKA12) does not contribute to this limitation

3.0 MUXnb37880 GbE LKA53: VC-12 substructuring	**Problem Description:** The LKA53 supports 16 vc4. Each VC-4 can be sub-structured into VC-12 which can then be used as member of a virtual concatenation group. This results then worst case in 1008 vc12. ITM-SC cannot parse some notifications in such configuration. This has the following impact: - no provisioning of VCGs at all for this card via ITM-SC - manager database and NE database will be out-of sync - The mib download for such a configuration will not work - as side effect, the upgrade to the next major release needing a MIB transformation is not possible.
3.0 MUXnb39915 GbE LKA53: Interworking with X8PL	**Problem Description:** LCAS is having trouble if there exists a gap in the sequence of cross connections between a LKA53 and X8PL. In this case only unidirectional traffic can be established. This does not happen in case of an active group that looses one of its active VC members. Also there is no issue if VC members need to be added later to the VCG, e.g. going from VC-12-4v to VC-12-5v.
3.0_MUXnb39910 GbE LKA12/53: VC12 sequence number not visible on ITM-CIT	**Problem Description:** The sequence number of a VC path (VC12) that belongs to a virtual concatenation group can not be retrieved on ITM-CIT for LKA12 and LKA53. It is therefore difficult to set up the correct TP sequence for a virtual concatenation group on the RX side, e.g. in case of non-LCAS operation where the binding has to be done by hand.
3.0_MUXnb39916 GbE LKA53: Display of active capacity	**Problem Description:** When removing cross connections on higher layer paths carrying lower order transport containers used for virtual concatenation with LCAS, the resulting capacity is not correctly displayed on the Management system. Nevertheless the corresponding tribs are correctly removed from the transport.
3.0_MUXnb39904 LKA53: No STP and GVRP	**Problem Description:** There is no Spanning Tree and GVRP running on LKA53. This results in: 1. Misleading operator interface because STP, GVRP is visible and command entries are not prohibited 2. STP is not operational and hence an always loop free network must be ensured by configuration. There is no resiliency apart from the underlying SDH protection.
3.0_MUXnb39843 GbE LKA53: LOPC and LOTC alarming not correct	**Problem Description:** For a switch in repeater mode with LCAS enabled the loss of total transmission capacity alarm (LOTC) is not raised if all VCs are lost, instead the LOPC (loss of partial transmission capacity is raised after the last VC is lost). The LOPC alarm however is cleared correctly if the full capacity is re-established and all VCs are available again.

**3.0_MUXnb39736
GbE LKA53: Flow Control
limitations**

Problem Description: The flow control mechanism (used at repeater mode) shall guarantee that the native ethernet LAN port shall be throttled to the available WAN bandwidth. If the WAN size changes (e.g. SDH path failures of multiple VC's) then this is no longer reflected in the PAUSE thresholds, and thus packets might be dropped on ingress as long as the path failure persists. As a second effect the transport capacity can not be utilized to 100%. For VC3-xv and VC4-xv, only the pipes providing full Gigabit transport (VC4-7v, VC3-21v) will ensure 100% throughput. For all other configurations below 7v, and 21v respectively, only 93% of the provisioned WAN bandwidth can be transported without frame loss.

**3.0_MUXnb39641:
SC reboots, when PBP6 will
be unassigned**

Problem Description: When PM points are provisioned for ports on the electrical paddle board PBP6, every time, when an unassignment of the paddle board is made, the System Controller will reboot. The traffic is not affected here, but the association to ITM-SC and ITM-CIT is lost, when an SC reboot happens. A new login to ITM-SC and ITM-CIT is necessary after an SC reboot.

**3.0_MUXnb39070:
LKA12, LKA4: VC3VcSSF
is raised unfunded**

Problem Description: In case of using a single VC3 for data transport on LKA12/LKA4 units a VC3VcSSF (The lower order network connection is unavailable due to faults in the serving higher order and/or section layers) is alarmed due to the fact that the virtual concatenation group is consisting out of only one VC3. This alarm needs to be ignored.

**3.0_MUXnb38028:
GbE LKA53: VC12
performance monitoring**

Problem Description: VC12 Performance Monitoring is not supported by IP-GE/2F-OS (LKA53). The results when retrieving PM information for lower order VC12 on this card are undefined, PM is currently not supported.

**3.0_MUXnb38790:
GbE LKA53: Asymmetric
LCAS mode**

Problem Description: If a VCG pair of an IP-GE/2F-OS (LKA53) is operating with asymmetric LCAS settings (one direction with LCAS enabled while the other is disabled) no traffic will pass through.

**3.0_MUXnb38810:
GbE LKA53: TUG-3
Substructuring not possible**

Problem Description: TUG-3 substructuring is not possible if other parts of VC-4 are assigned to a VCG. If an IP-GE/2F-OS (LKA53) unit is in use and parts of a particular VC-4 are assigned already to virtual concatenation groups, then it is not possible to change the substructure of TUG-3s within that VC-4. This is the case even if the TUG-3 that is to be substructured is not itself in use.

**3.0_MUXnb35727:
LKA4: QoS restriction in
Provider Bridge Mode**

Problem Description: Provider Bridge Mode does not provide QoS classification, queueing and scheduling "QoS_CQS".
- Don't enable "QoS_CQS" in Provider Bridge Mode
- Egress port provisioning does not support queueing and scheduling in the currently available submode of IEEE802.1ad tagging mode
- if "QoS_CQS" is disabled, the management systems will display the

'''Rate Control Mode" with the value "None".
This applies to the per flow rate controlling mechanism only. A rate controlling per physical port is nevertheless possible.

3.0_MUXnb38324:
GbE: Port Monitoring State

Problem Description: The transition of the port monitoring mode "AUTO" to "MONITORED" does not work as expected for GbE packs IP-GE/2 and IP-GE/2F-OS (LKA12 and LKA53). Thus the state "AUTO" is to be avoided and the monitoring has to be enabled manually.

3.0_MUXsh00378:
LKA4: Static VLAN
configuration is not cleared

Problem Description: When making use of the create-node command to an already configured and running the data unit IP-LAN/8 (LKA4), then this does not clear the currently provisioned data configuration from the unit's volatile memory (RAM) if the command list contains more than just assigning the card to its system slot. This has the effect that e.g. VLAN lists are still filled with old entries until the unit is unplugged or the work around is done.

3.0_MUXnb36173:
GbE LKA53: Throughput
with short Ethernet packet
length

Problem Description: The throughput through the IP-GE/2F-OS (LKA53) unit with short Ethernet frames (i.e. 64 bytes Ethernet frames) gives a measured full bandwidth of two gigabit full duplex streams of approximately 70-75% (as one can see on test equipment). This is due to the fact that the packets are treated internally as 64+4 bytes, reducing the available bandwidth. For average packets of ~500 bytes length, this is 100% and the same for jumbo frames.

3.0_MUXnb36953:
Fault List per Instance
settings

Problem Description: If an alarm in the Global Fault List is set to "Not Reported" but in the Specific Fault List per Instance it is set to "Reported" the alarm is not reported. The other direction is working as expected.

3.0_MUXsh00608:
Alarms during set-up of 1+1
STM-1e equipment
protection

Problem Description: If the operator assigns and inserts a PBP6 (STM-1e 1+1 protection PB for use in conjunction with SI-1/M (LKA39) into a paddle board slot pair, the alarms
- PBcUPF: Paddle board failure
- PBcEQF: Paddle board failure - protected
will be present permanently: The alarms will be cleared in the moment that the 1+1 equipment protection group for the slot pair is created. The paddle boards are not defective, unless the alarms are still present after the protection has been established.

3.0_MUXnb37969:
MSP: Number MSP
protection pairs

Problem Description: Due to performance constraints the number of MSP protection pairs has to be restricted to 32. The NE will no reject if the restriction is violated. But the operator might see performance impairments if the restriction is not obeyed.

3.0_MUXnb38756:
Alarming for MSP1+1opt
on LKA39 units

Problem Description: In the case of assigning an optimized MSP group on the SI-1/M (LKA39) the alarming on AU level is not correct:
- AU-AIS and AU-LOP alarms are reported against the protection TP if the defects are present on the inactive port

- AU-AIS and AU-LOP of the active protection bandwidth will be reason for an AU-LOP alarm on this port if the protection bandwidth is selected.

3.0_MUXnb37527:
PM: PJE Monitoring

Problem Description: The standard requests, that for each STM-N interface one PJE monitor for a provisionable time slot shall be supported. This requirement is met. But the NE allows the provisioning of a second PJE monitor, but this should be rejected.

3.0_MUXnb38474:
LKA50: Incorrect ES and SES counter

Problem Description: When enabling MS, RS PM on a SI-x16 SFP/1 (LKA50), sometimes the ES and SES counter will be set to 1 even monitored signal is errorfree.The problem only occurs at the moment that the provisioning is done.

3.0_MUXnb38661:
LKA39, LKA50: User byte access not working

Problem Description: Even though it is possible to provision the user bytes (E1, F1, E2) to be available at customer overhead ports, this provisioning takes no effect for the SI-1/M (LKA39) and SI-x16 SFP/1 (LKA50) units. For these units, the user bytes are not connected to the overhead ports regardless of the provisioning.

3.0_MUXnb38665:
LKA39, LKA50: Potential loss of DCC connectivity

Problem Description: If a SW upgrade or a replacement of the system controller unit is performed while the core unit in the lower core unit slot (LS2, protection) is active, the DCC connectivity for ports hosted on SI-x16 SFP/1(LKA50) and SI-1/M (LKA39) units may be lost.

3.0_MUXnb39302:
LKA48: VC4-4C NIM reports wrong Alarms

Problem Description: If the NIM is enabled for a AU4-4c on SI-16SFPc2/4 (LKA48) an error free signal will be declared degraded and UAS will be declared in PM.

2.0_MUXnb29934:
Pause Mode provisioning

Problem Description: Set pause mode to enable for ports not used in port groups: The NE does not set the pause mode to enable if the port is not used in a port group although this is the initial values after unit assignment. Therefore you can disable the pause mode after unit assignment but you cannot change again back to enabled.

1.1_TGMnb00081:
GbE: QoS related provisioning

Problem Description: When setting up data traffic on GbE cards, the customer can select an MLAN-QoS mode that is de facto not yet implemented. The system does neither block or alarm these settings, instead it returns to default settings silently.

1.0_1020020:
Alarming for removed Core unit on ITM-SC

Problem Description: When a Core unit is removed from the shelf, at the GUI of the ITM-SC only the Cross-Connect part of the Core unit is declared failed (red color). The Line and Timing parts of the Core unit show no red color.

Alcatel-Lucent - Proprietary
See Notice on first page

Problems Fixed In R3.0.2 wrt R3.0.1

**3.0_MUXnb40347:
LKA4: Change of
provisioned Ethertype**

Problem Description: After changing the ethertype of an Virtual Switch of an LKA4 unit, the STP state of WAN ports might be broken. Thus a Change of provisioned Ethertype should not be executed without additional actions.

**3.0_MUXnb38204:
VCG differential delay**

Problem Description: The ITM-SC currently displays the delay in units 'us' (it does not show the unit's type of the measured delay on the screen) and does not display delay times higher than 4 ms. The ITM-CIT currently displays the actual delay value multiplied with 125 (it shows values from 0...4000 ms which actually means 0...32 ms).

**3.0_MUXnb40151
LKA53: LCAS limitations**

Problem Description: Signal Degrade conditions of members of a VCG hosted on an IP-GE/2F-OS unit will not lead to the exclusion of the member from the active set of members, but will result in the member continuing to be used for payload purposes. Since the degraded member will continue to be used, the transport of the data over the VCG will be degraded as a result.

**3.0_MUXnb39918:
GbE LKA12/53: VC12
sequence number not visible
on ITM-SC**

Problem Description: When trying to retrieve the sequence number of a VC in a VCG with ITM-SC on LKA12 and LKA53, the information is not visible within the first attempt.

**3.0_MUXnb39995
GbE LKA53: VC12
alarming**

Problem Description: The IP-GE/2F-OS supports 16 VC-4. Each VC-4 can be sub-structured into 63 x VC-12. The VC-12 termination points of VC-4 number 5 and higher can not be enabled. This results in the absence of fault management for the respective VC12's

**3.0_MUXnb37836:
GbE LKA12: Changing
LO-cross connection**

Problem Description: In case of a LAN interface transporting already Ethernet data in a point to point repeater mode application with pause mode enabled a delete and create of a LO cross connection may result in a permanent disturbance of the transmit direction of the GbE LAN port.

Problems Fixed In R3.0.1 wrt R3.0

3.0_MUXnb39022:
3.0_MUXnb39311:
New R3.0 Core Units:
Signal Degradation
threshold settings

Problem Description: The only available signal degraded threshold profile (for VC3 and VC12) on Core units of types SI-16SFPc2/4 and SI-64c2/1 (R3.0 core units) is the default threshold, what means the user cannot set different degraded thresholds. However the system accepts setting different values/profiles which however are not used. This means the operator can set different values and they seem to be accepted but still only the defaults are used.

3.0_MUXnb39033:
LKA24, LKA25: Alarming
of LO-cross connect TPs

Problem Description: On the LO-cross connect on STM16 Core units the alarms for AU- and TU-AIS and LOP are not raised when the termination point is not monitored.

3.0_MUXnb40125:
MS-SPring: Signal fail

Problem Description: Unexpected signal fail condition in a ms-spring ring although no LOS condition exists.

3.0_MUXnb39930:
SNCP: Long switch times

Problem Description: The SNCP switching times are out of specifications in case of a core unit removal.

3.0_MUXnb39894:
LKA48: Unexpected
AU4cTYM alarms

Problem Description: At the LKA48 unexpected concatenation type mismatch alarms (AU4cTYM) can be seen at ports that transport AIS signals in some of the AU4. Condition: A Loss of Signal is first generated at such a port and afterwards cleared.

3.0_MUXnb39878:
PBP5/PBP8 initialization
problem

Problem Description: The LKA39 paddle boards PBP5 andPBP8 (STM-1e and STM1o) frequently don't get out the UNITcINIT state after removal/insertion. As a consequence the traffic is not restored and no alarm is raised at the ITM-SC/ITM-CIT.

3.0_MUXsh00727:
LKA4: VLAN
configuration mismatch
alarm

Problem Description: If an IP-LAN/8 (LKA4) unit is running in IEEE mode an unfounded alarm MACcVCM (VLAN configuration mismatch) might raised after some time. The data traffic is not affected.

3.0_MUXnb37779:
CC recovery interrupts
traffic for protection STM-4
ports

Problem Description: If the active Core unit recovers (i.e. performs SW warmstart) and an STM-4 MSP protection port on an SI-1/M (LKA39) carries the worker traffic, the traffic for AU4 timeslots 2, 3 and 4 will be interrupted for several seconds (the exact amount depends on the configuration but it may be in the range of minutes). The protection MSP port may carry the traffic due to the following causes:
(1) a pending external switch request (i.e. Manual or Forced Switch)
(2) an SD/SF condition on the worker port
The core unit's software warmstart may be caused by the following scenarios:
(A) spontaneous reset of a unit due to a software exception

(B) Core unit warmstart due to the activation of a new software image (i.e. upgrade)

3.0_MUXnb38922: NUTRcPND alarm not cleared

Problem Description: The NUTRcPND (NUT Switch Request Pending) alarm is intended to indicate that a request to enable NUT on a time slot on an MS-SPRing was not successful. Occasionally this alarm may be wrongfully present after the successful setup of NUT on a time slot. Check that the time slot was successfully activated as NUT using the CIT or the SC and ignore the alarm.

Problems Fixed In R3.0 wrt R2.0

2.0_MUXnb31636: Bit errors in case of not synchronized 10G NEs

Problem Description: The problem exists if 10G systems (equipped with SI-64 C1/1 core units LKA26, LKA27, LKA47) are in freerunning mode or if there is a frequency offset between the received 10Gbit/s line signal and the system clock. Depending on the frequency offset there is a traffic interruption which could be detected as B3 errors (on a SDH system) or bit errors e.g. for a 2 Mbit/s signal. The frequency of interruption depends on the frequency offset between the received 10Gbit/s line signal and system frequency. In case of e.g. 0.1 ppm the errors will occur every 131 seconds. The problem will also occur after some time in case of a synchronized network where one is going in holdover state. However a short time in holdover should not cause any biterrors. The problem only affects systems equipped with SI-64 C1/1 core units.

2.0_MUXsh00210: STM1o: TTI in case of SF

Problem Description: During LOS and LOF conditions on STM1o ports, the value retrieved by the management system for the "accepted J0 TTI" parameter will equal the provisioned value for the "expected J0 TTI".

2.0_MUXnb32294: Configuring VC-n SNCP sections with CIT

Problem Description: Configuring VC-n SNCP sections back-to-back is not possible with CIT. The NE supports the concept of virtual CTP in order to allow the configuration of a SNCP back-to-back application. This back-to-back SNCP application is characterized by: (1) the signal is selected from either the worker or the protection tributary of the path selector; e.g. the signal is dropped from the first SCNCP ring. The output of the selector is modelled by means of a virtual CTP. (2) the output of the selector is then bridged to two different output; e.g. the signal is added to a second SNCP ring. The provisioning of this virtual CTPs is not possible via CIT for VC3 and VC-12.

2.0_MUXnb32062: DNI between SNCP and MSP-SPRing

Problem Description: Continue on protection for DNI does not work in case of a node failure of the primary node. I.e. the secondary node has to add the circuit not only to the protection timeslot as extra traffic but also

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to the corresponding protection timeslot as part of the loopback switch. This special behavior does not work; i.e. traffic is lost in case of a primary node failure.

2.0_MUXnb29783: MSP1+1 on STM1e tribs

Problem Description: The creation of an MSP1+1 Group with electrical tributary units is not denied, although this operation is not supported.

2.0_MUXnb29742: AU-PJE PM on STM-16 trib

Problem Description: The counting of Pointer Justifications Events occurred on an STM16 trib port is done correctly only on AU4#1. All other AUs display incorrect values.

1.1.1_MUXnb26887: Auto negotiation bypass functionality

Problem Description: The system will only support link partners that have the 'Auto-negotiation' functionality enabled. If this functionality is disabled or not supported, the auto-negotiating equipment will declare the link as 'down', therefore a two way communication cannot be established. Also, transmission is not possible, and an alarm is raised: 'PHY_GEcANM' (Auto negotiation mismatch). This behavior is standard compliant acc. IEEE 802.3 chapter 37 for Gigabit Ethernet PHY operation, where the auto negotiation functionality is stated mandatory for Gigabit Interfaces. Nevertheless it precludes operation with a link partner that does not support Auto negotiation.

1.1.1_MUXnb32053: IP-GE/2: LAN port monitoring state

Problem Description: A CTL reset flips the port state of the GbE-ports from "MONITORED" to "AUTO" in case there is no signal applied to this GbE-port during the reboot.

1.1.1_SC_CPDnb01149: WAN port state update

Problem Description: ITM-SC does not correctly display port state information w.r.t the (in-)active topology of the Spanning Tree. Especially the state 'Forwarding' is sometimes confused with the state 'Broken', which suggests to the user that transmission is affected.

1.1.1_CPDnb01359: ITM-CIT VLAN information

Problem Description: The window "Edit Static VLAN Entry" at ITM-CIT for assigning a VLAN to a tagged or untagged port membership is not displayed correctly. Also at window "VLAN Information" of ITM-CIT it is shown in column "Status" always "Static" while ITM-SC shows "composite".

1.0_1022910: Incorrect alarms for equipment protected LKA3 units

Problem Description: In case a 1+1 equipment protection group exists for STM-1E units, the raising and clearing of alarms (AIS, SSF) is not always done correctly when changing the port mode or performing an equipment protection switch.

Problems Fixed In R2.0 wrt R1.1.2

**1.0_1023129:
MS-SPRing traffic lost
when pulling/re-inserting
both Core units**

Description: When pulling/inserting both 10G core units, traffic is not always restored for a tributary MS-SPRing group.

**1.0_1023075:
No AU type mismatch
alarm on STM-4 port when
input is AU4-4c**

Description: When the AU type of an STM-4 port has been provisioned as 4 x AU4, no AU Type Mismatch alarms are raised when the input signal AU type is AU4-4c.

**1.0_1023256:
ITM-CIT online WEB
documentation cannot be
opened from Help Menu**

Description: When, after logging into an NE, menu "Help" is selected, and subsequently "ITM-CIT RX.Y Help" is selected, one should see an Internet browser pop up and open the online WEB help document for that type of NE. However, for some PCs installed with Microsoft Windows, especially those installed with Non-MS IE internet browsers (Netscape, Opera, etc.), this document does not become available.

**1.0_1023076:
No AU type mismatch
alarms for all AU4s when
input is AU4-16c**

Description: When the AU type of an STM-16 line port has been provisioned as 16x AU4, and uni-directional cross-connections have been provisioned towards the other STM-16 line port, not for all 16 AU4s an AU Type Mismatch alarm is raised when the input signal AU type is AU4-16c.

**1.0_1022314:
Incorrect ring map on ITM-
CIT**

Description: When the ITM-CIT is logged into one of the NEs of an MS-SPRing ring, the port information in the ring map of that NE is correctly displayed on the ITM-CIT. However, the ring map of other NEs in that ring (to which the ITM-CIT has not directly logged-in) contains incorrect port information.

**1.0_1022243:
Far End SES Declaration
Threshold not functioning
for the Line side**

Description: The Bi-directional Performance Monitoring does not start to count Forward or Backward SES (severely errored seconds) for AU4, AU4-4c and AU4-16c when the HPREI is far above the Far End SES Declaration Threshold of 2400 (BER: 1.6x 10-5 in case of AU4), it simply continues to count BBEs.

**1.0_1021500:
Changed Time Interval only
used by NE after changing
the Errored Blocks/Seconds
value**

Description: When changing the Time Interval for any Signal Degrade Threshold, the value is accepted by the NE and is shown on the managers (ITM-SC and ITM-CIT). The value internally in the NE is not used until the work around is applied.

**1.1_MUXhz04190:
Backup store errored after
power down/up**

Description: The backup store of the system software has state "Error" after reseating the controller or power cycling the system, even though it was "Inactive" after finishing the download.

**1.1_1023673:
ITM-CIT needs to update
twice**

Description: Retrieving the PM data for GbE the CIT does not show the actual values.

1.1_TGMhz11369:
J1 Path trace not working
in TS9 on STM1/STM4

Description: AU4 J1 path trace monitoring is not available for STM4 and STM1 tributaries in slot 9. In the case an STM4 or STM1 tributaries are inserted in Slot 9 using a STM64 core unit no J1 monitoring is supported. This is independent of the used J1 pattern and also independent of the used configuration. However the slot is supported with an STM16 core.

1.1_TGMnb00123:
STM-1 trib reports
AU-LOP and AU-AIS

Description: AU-LOP is not alarmed correctly for STM-1 tributary packs. Instead of alarming AU-LOP only an additional AU-AIS alarm is raised. This AU-AIS alarm is unexpected.

1.1_TGMnb00190:
STM-16 trib reports
AU-AIS iso AU-LOP

Description: AU-LOP is not alarmed correctly for STM-16 tributary packs (LKA22/LKA23). Instead of alarming AU-LOP an AU-AIS alarm is raised.

1.1_TGMhz09472:
NE does not clear NIDcFLR
- Node ID conflict alarm

Description: If NEs are added or removed to a MS-SPRing ring, it can happen, that a NIDcFLR alarm is not cleared, although all nodes in the ring have a proper node ID assigned during automatic ring discovery.

1.1_TGMhz11356:
AU-4 Path PM
Thresholding

Description: No AU-4 Path PM Thresholding is possible for STM-1o, port 4 if is set to AU-4 Mode. If Performance Monitoring is enabled on path level on the fourth port of a STM-1 optical unit, no Threshold Alerts are raised in AU4 mode for the AU-4 non-intrusive monitoring function.

1.1_TGMhz11247:
Incorrect Reset Threshold
Reports sent at the end of
the interval, despite having
UAS

Description: After inserting BBE, ES, SES and UAS above it Thresholds for all parameters the TR Thresholds are sent. Then in the next PM interval only UAS errors are inserted (above RTR Threshold). (BBE, ES and SES values are below it's RTR Thresholds). If the values for BBE and/or ES and/or SES are below the individual RTR threshold at the end of an subsequent interval, a RTR has to be sent if UAS is Zero for this interval. However, the UAS contribution is not taken into account, i.e. the RTR will be sent with UAS not equal Zero, as well.

1.1_TGMhz11241:
Creation of 1+1 Equipment
Protection Group rejected
after unassign failed

Description: The problem exists if a TS or PB is set to unassign but this unassignment is not possible because this board carries traffic or a DCC channel is enabled. The command will be rejected which is correct. But after this procedure an 1+1 equipment protection group provisioning is no longer possible. The customer see an error "...board not present"(CIT) and the ITM-SC responses with "unsuccessful".

1.1.1_MUXsh00040:
Incorrect alarming on the
VCG

Description: A Virtual Concatenation Group raises an misleading alarm (e.g. VC12 iso VC3)in case of Server Signal Fail. The VCG that has SSF status (e.g. it is missing it's corresponding partner pack) associates the payload VC12 to the SSF instead of the (provisioned) VC3.

**1.1.1_MUXnb23982:
Usage of EOW-bytes**

Description: Currently there are two limitations for the use of the EOW-bytes. 1) E1 and F1 (RSOH) cannot be used from the same section at the same time. 2) E2 (MSOH) may not work on STM16 tributary units and on the STM64 ports.

**1.1.1_MUXnb27971:
Abnormal State not cleared
by MSP**

Description: If the operator makes a protection switch (e.g. manual switch to protection in revertive scheme) for 1+1 MSP group and therefore causing abnormal condition and afterwards that protection state is changed due to the detection of an SF/SD condition, then the abnormal condition is not cleared.

**1.1.1_MUXnb27726:
Timing switch during
upgrade**

Description: In case of an upgrade of an NE from Rel.1.1 to R.1.1.1 or R.1.1.1 to R.1.1.2 and if the neighboring NEs using this NE as timing source the neighboring NEs can go in "HOLDOVER" and then the complete synchronization chain will switch to another timing source. After some time the neighboring NEs go back in "LOCKED". This causes some alarming and timing switching but does not interrupt the traffic. An additional problem can occur if the NEs use the station clock outputs. Depending on configuration the output clock of the NEs are squelched. The network behavior depends on the architecture of the synchronization network.

**1.1.1_MUXnb28017:
Persistent Path Alarm on
Protection Timeslots**

Description: If MS-SPRing ring switches take place, it can happen, that persistent path alarms are reported for protection timeslots where corresponding worker timeslot are used for traffic and therefore the TPMode is set monitored.

**1.1.1_MUXnb28137:
VC-4 and VC-4-4c
threshold crossing alarms
on LKA11**

Description: For Higher Order Non Intrusive Monitors, supervising traffic from STM-1/STM-4 tributary units no Threshold Crossing Alerts are reported. PM counters in general work as expected.

**1.1.1_MUXnb28272:
LCAS sink problem**

Description: When creating a group of 4 VC4s for transmission with 600MBit/s and one by one adding the individual VCs to it, traffic can be lost when the fourth VC4 is added.

**1.1.1_MUXnb27344:
Overflow of 24h Counters
for LAN&WAN**

Description: PM can count the amount of traffic passing through the LAN/WAN port. This counter can overflow, resulting in a negative value.

Problems Fixed In R1.1.2 wrt R1.1.1

1.0_1023011:
AU4 AIS alarms on CIT
when J0 mismatch detected

Description: When a Trace Identifier Mismatch is detected for J0 on the 10G Core unit, incorrectly also AU4 AIS alarms are raised for all 64 AU4s. Additionally, these AU4 AIS alarms are not visible on the ITM-SC, they are only visible on the ITM-CIT.

1.1_TGMnb00218:
GbE: LCAS does start with
reduced bandwidth

Description: LCAS should only be enabled before setting up cross-connections (when designing the VCG) or if the provisioned VCG is fully operational, and NOT if the provisioned VCG is in a faulty state.

1.1_TGMhz11375:
GbE: Permanent and
unreasonable auto-
negotiation mismatch alarm

Description: The network element will report auto negotiation mismatch alarm permanently via ITM-SC and ITM-CIT for the IP-GE/2 without cause, while traffic is error free. Traffic will be established on all LAN ports without problems and transmission is not effected. Per current experience this is restricted to LAN port 2. Though this is a problem of wrongly displayed information there is no work around and also it can not be checked from the NE that there is really no problem in the negotiation of the PAUSE operation, flow control and duplex mode. (Duplex mode anyway not supported on GE, always full duplex). This is because the Auto negotiation status will always display 'complete' and the Remote fault status does also not report an error in case of a mismatch.

1.1_1023600:
EoS encapsulation on FE

Description: EoS with Metro-ADM does only work for signals without concatenation, thus limiting the TransLAN interworking capabilities with equipment which only supports EoS (instead of GFP). This affects e.g. old releases of WaveStar ADM16/1 (Senior) and WaveStar ADM16/1C (Compact).

Problems Fixed In R1.1.1 wrt. R1.1

1.1_MUXnb24568:
Unexpected SF condition
after core switch

Description: After a switch of the core unit there might be an unexpected MS-SPRing protection switch on the line ports. This is caused by an incorrectly detected "Signal Failed" condition while the request should be "No Request". This problem does only appear if a core unit is reseated and becomes activated (in terms of CORE 1+1 equipment protection) within 20 minutes after the reset. Any later core switch will not trigger this problem.

Problems Fixed In R1.1.1 wrt. R1.1

Fixed Problems

1.0_1019306:
Unexpected change of active
Core unit after SC reset

Description: In case the equipment protection switch state of the Core units is "Manual to Protection", and the system controller resets (e.g. due to an MIB Download), the service switches back to the worker unit, thus causing a short traffic hit.

1.0_1020795:
PJE counters stay zero
when no bi-directional
connection present

Description: With 2.5G Core units in the system, PM counters for pointer justification events for AU4 CTPs and AU4-4c CTPs are only active in case such a CTP is involved in a bi-directional cross connection.

1.0_1021603:
Unexpected alarms when
removing input signal and
outloop active

Description: When, for STM-1 and STM-4 (tributary) units, an outloop has been provisioned for a port, and the incoming signal of that port is removed, Loss-Of-Signal and Laser Failure alarms show up for that port. When the outloop is removed, the alarms are cleared.

1.0_1023123:
VC4cSSF alarms dependent
on PM enabling on LKA3

Description: When enabling/disabling Performance Monitoring on an AU4 CTP of an LKA3 unit, existing VC4cSSF failures are raised/cleared, whereas these failures should not depend on Performance Monitoring being enabled or not.

1.0_1021677:
VC4cTIM alarms having
wrong location, or not being
raised

Description: When an 2.5G Core unit is used, and an AU4/VC4 TP of a tributary unit in one of slots TS6-TS9 is connected to an AU4/VC4 TP of an other tributary unit (in any tributary slot), any VC4 Trail Trace Identifier mismatch detected on the first unit leads to an alarm being reported with the location of an AU4 CTP of line port LP1.1.
Also, when one of the AU4 CTPs of the tributary unit in TS6-TS9 is connected to an AU4 CTP of line port LP1.1, and Trail Trace Identifier mismatch detection has been enabled for the line port, any such mismatches do not lead to a VC4cTIM alarm being reported.

1.0_1022282:
No TTI information
available when protection
STM-1E unit active

Description: When a 1+1 equipment protection group is created for STM-1E units, and a connection is made between one of the AU4 CTPs to an AU4 CTP of an other unit, no TTI information is available in case the service has been switched to the protection STM-1E unit.

1.0_1022419:
MS-SPRing alarms
displayed with unknown
location

Description: On the ITM-SC and ITM-CIT the MS-SPRing related "Ring open" and "Ring startup in progress" alarms are displayed with "unknown" location.

1.0_1022555:
Transmitted ss-bits fixed to
"SDH mode" for STM-16
and STM-64

Description: Irrespective of what has been provisioned, the actually transmitted ss-bits of STM-16 and STM-64 interfaces is always "01" (SDH mode).

1.0_1022557:
No alarm when extra MS-SPRing traffic being pre-empted

Description: When in an MS-SPRing ring, with extra traffic connections towards both LP1.1 and LP2.1, a manual switch to protection is executed on LP2.1, the ATPcPRM ("Extra traffic pre-empted") alarm is correctly raised. However, when in this situation only the extra traffic connections to LP1.1 are removed, this alarm disappears, even though the extra traffic towards LP2.1 is still being pre-empted

1.0_1022609:
No LKA13 and LKA14 in Release 1.0

Description: The LKA13 and LKA14 units are not supported in R1.0 of Metropolis® ADM (Universal shelf).

1.0_1022623:
AU4 PJE PM can not always be started

Description: As long as PM has not been started for more than 928 different TPs, PJE (adaptation) PM for AU4, AU4-4c and AU4-16c CTPs can be started. However, when PM has already been started for 928 different TPs, PJE PM for an AU4, AU4-4c or AU4-16c CTP can only be started when the termination type of PM has already been started for that CTP.

1.0_1022847:
No NUT (Selective MS-SPRing) in R1.0

Description: NUT (Selective MS-SPRing) is not supported in R1.0 of Metropolis® ADM (Universal shelf).

1.0_1022873:
AU4 LOP on STM-4 unit reported as AU4 AIS

Description: When the input signal received on an STM-4 unit contains AU4 LOP, this is visible as AU4 AIS on the management systems.

1.0_1022914:
No fault status update after equipment protection switch

Description: When an 1+1 equipment protection group exists for STM-1E units, the worker unit being active, and the System Controller restarts and consequently a switch to the protection unit is done, the alarms at the ports of the protection unit are not cleared.

1.0_1023128:
Persistent Signal Fail condition after re-inserting Core unit

Description: When MSP or MS-SPRing has been provisioned for the lines of the 10G Core units, and the active Core unit is pulled and re-inserted again, it can occur that the other (newly active) Core unit keeps seeing a Signal Fail condition for the mate line.

1.0_TGMhz11334:
Failure of Power supply is not reported

Description: If one of the redundant power supply lines is missing or failing, the system does not report any alarm. The Power LED on the PUR/PUL is lit green when proper power is connected, otherwise it is dark.

1.0_1021463:
LKA6 power-up while interworking with Metropolis® AM 1 (Plus)

Description: In a configuration which has interworking of Metropolis® AM 1 (Plus) and Metropolis® ADM (Universal shelf), if the Metropolis® AM 1 (Plus) is up and running; and connected to the STM1o tributary unit LKA6 [housing the Infineon V23806 A84 C5 transceiver] via an optical cable attenuation of <4 dB, there is a high risk that the STM1 channel(s) will not give fault free transmission and a high probability that associated LOF and BER alarms will be raised

Problems Fixed In R1.1.1 wrt. R1.1

Fixed Problems

intermittently. In the same configuration, if the Metropolis® ADM (Universal shelf) powers down and up again; or the LKA6 is inserted with the fibres attached, the same risks apply.

1.0_1022759:
System Controller hangs after provisioning DCN parameters

Description: When DCN parameters which cause a reset of the System Controller to take place (Manual Area Address, Node IS-IS Level, LAN IS-IS Level) are provisioned, it may occur that the NE does not become operational and manageable any more.

1.0_1022866:
MIB Download takes long

Description: An MIB Download for a maximally provisioned NE (maximum number of PM points, maximum number of TU12 cross connections) can take up to 3 hours.

1.0_1022333:
Unexpected alarm when activating PM for AU4 CTP

Description: When Performance Monitoring is started for an AU4 CTP of a line port of a Core unit, and the CTP mode is "NOT MONITORED", nevertheless a VC4 Unequipped alarm is raised for that AU4 CTP.

1.0_1023561:
STM1e 1+1 protection not always switching as expected

Description: When 1+1 Equipment Protection for STM1e is used, the protection might fail. A forced switch is done to working, while the working pack is removed. After clearing the situation by inserting the pack and clearing the switch the protection can fail for the next switch requests.

1.0_TGMhz11251:
MSP not allowed with different 10G Core units

Description: MSP 1+1 on STM-64 is only fully functional if both local core units are the same type, e.g. LS1 and LS2 are both LKA27. In mixed configurations the protection might fail.

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See Notice on first page

Problems Fixed In R1.1.1 wrt. R1.1

Fixed Problems

4   Known Problems

Known Problems For R5.0.5

**5.0_MUXsh09335
LKA53: The WAN STP
machine has error while L1
loop enabled**

Problem Description: On the WAN port of LKA53, during the period where the WAN port is blocked upon of detection of L1 loopback, the STP status may not show correct value on this port.

Work around: No workaround. Just ignore the setting since they are meaningless.

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See Notice on first page

5   New Installation

New Installation of a Network Element In R5.0.5

New Installation of the Network Element:

Description: This task is described in detail by the following document:

Metropolis ® ADM (Universal shelf)
Release R5.0
User Operations Guide
Section 4 "Equipment Provisioning"
Comcode 109563981

Issue 1.0, June-19-2009

6 Release Upgrade

Release Upgrade Of The Network Element (Mars To Jupiter)

Upgrade of the Network Element:

Description: To upgrade the NE to R5.0.5 the NE needs to run R4.0.4 software. The database of the new releases is not compatible with the R4.0.4 information model - thus the upgrade has to be performed with database conversion.

The database migration is an element manager functionality, thus it is part of the ITM-SC and OMS features. Please consult the ITM-SC or OMS documentation for a specific procedure.

Software Load Variants:

Three available software loads deliver different feature support, as described in Chapter 1, " General Information". Please be aware that the SCA348F is not the successor of the R4 loadline SCA338 (or the related maintenance load SCA338B, SCA338C, SCA338D) ! Network elements running SCA338 need to be upgraded to the SCA350F load variant. In case a different target load is intended, a System Controller Upgrade to LKA21 has to be performed beforehands, see Chapter 8, " System Controller Exchange Procedure".

Upgrade Preparations:

Before carrying out the software activation the network element should be prepared to work in a "clean" condition:
- no unexpected alarms are present
- transmission protection schemes (SNC, MSP, MS-SPRing) are in IDLE/NO REQUEST state and have the working section selected.
- equipment protection schemes (1:N: E1, DS1; 1+1: E3/DS3, STM1e; Core unit protection) are in NO REQUEST state and have the working unit active (2.0_MUXnb40822).

Introduction of PreEQF alarm	In case the system detects an Equipment Failure condition the respective circuit pack is declared EQF and the unit is taken out of service (i.e. SF generation for all traffic). Due to improved Equipment Failure detection mechanism in the newer software an NE software upgrade might result in permanent and non-reversible unit failures. Only an exchange of the failed unit would clear the EQF condition.
	In an established network it is expected, that traffic affecting but not detected EQF conditions are recognized by the network operation, i.e. by troubleshooting unexpected alarms.
	However, for unused parts of the units (i.e. non-used crossconnection timeslots) a hardware problem might be hidden which can be detected by the improved EQF detection mechanism.
	During upgrade scenarios this might result in the situation, that a unit with a hidden hardware problem is taken completely out of service during the upgrade, whilst no service was affected during the operation in the old release.
	To avoid this situation but still to gain the benefits of the improved EQF detection, the improved sensors are not correlated into a permanent EQF situation but the raise of a so called "pre-EQF" alarm. For this purpose the SCcEQF alarm will be raised for the respective unit, but the unit remains operational as it was before the upgrade. This allows the operator to replace the alarmed unit at a convenient timeslot, rather than during the upgrade process.
SFP mismatch	The optical SFP units contain some inventory data that identify the SFP's signal rate, serial number, comcode, Lucent serial number etc. To ensure the SFP's compatibility this data is processed in the NE and the SFP is accepted or rejected.
	In case the SFP does not provide this information or invalid contents - the NE cannot validate the SFP, thus the module is declared "Not Accepted" and the alarm "Wrong Pluggable Module Present" (PMcWUP) is raised. In contrast to former releases, the new R5.0 software might disable the laser of such not properly identified SFP's and block their operation completely.
	Thus it is important to ensure before upgrading the NE, that all used SFP's contain proper inventory data and have the administrative state "Accepted". All "Not Accepted" SFP's will switch of their lasers during the upgrade causing permanent traffic loss until the stick is exchanged against a proper module.
Primary Boot Upgrade:	During the upgrade from R4.0.4 to this release the primary boot code (a piece of software, located in the nonvolatile memory of each circuit pack) of some packs is updated. This is indicated by a red flashing Fault-LED on the pack. During this time the pack must not be removed nor power cycled. When the primary boot upgrade fails the pack cannot boot up any more and needs to be sent to repair.
SDH Traffic Disturbance:	None.

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Ethernet Traffic Disturbance:	Traffic passing through IP-GE/2F-OS (**LKA53**) might be disrupted for less than three minutes during the upgrade. Traffic passing through IP-LAN/8 (**LKA4**)/IP-GE/2 (**LKA12**) will be disrupted for less than 30 seconds during the upgrade. In a switched Layer2 network a re-configuration of the Spanning Tree Network will be another consequence.
Internal loop backs:	Software loop backs (i.e. in-loops) might cause an additional traffic hit during this upgrade, influencing every traffic in the node, not only the looped transmission. Therefore it is advised to clear this abnormal condition by releasing all loops before the new software is activated (2.0_MUXnb31907).
LED indication at circuit packs:	During the upgrade, i.e. the switch of the software and the subsequent recovery the Fail LED's of the circuit packs may be lit and shall be ignored. They will extinguish after the the upgrade is completed.

Maintenance Upgrade Of The Network Element (Jupiter to Jupiter)

Maintencance Upgrade of the Network Element:	**Description:** All remarks in section "Release Upgrade Of The Network Element" are applicable for a maintenance upgrade as well - as long as not explicitly stated differently in this section. If the NE is already running a Jupiter release load (05.00.x) the upgrade can be initiated without MIB transformation. Thus the software switch can be done with "Retain MIB", without clearing the MIB.
SDH Traffic Disturbance:	None.
Ethernet Traffic Disturbance:	Traffic passing through IP-GE/2F-OS (**LKA53**) will be disrupted for less than three minutes during the upgrade. Traffic passing through IP-LAN/8 (**LKA4**)/IP-GE/2 (**LKA12**) will be disrupted for less than 30 seconds during the upgrade. In a switched Layer2 network a re-configuration of the Spanning Tree Network will be another consequence.

7   Operational Hints

Operational Hints

General: This section provides you helpful hints&tricks that might pop up during operation of the network element. Severe problems and issues are tracked in section "Known Problems".

ITM-SC/OMS related problems: This document provides only known/fixed problems for the network element. However, there might be issues related to the management systems. These are not part of this document, please refer to the software release description of the ITM-SC or OMS.

Primary Boot Upgrade: When a circuit pack that contains an old version of the primary boot code (a piece of software, located in the nonvolatile memory of each circuit pack) is inserted to the system, the primary boot is automatically upgraded by the system. This is indicated by a red flashing Fault-LED on the pack. During this time the pack must not be removed or power cycled. When the primary boot upgrade fails the pack cannot boot up any more and needs to be sent to repair.
The primary boot upgrade happens during upgrades but also if a pack with an older primary boot version (i.e. from spare stock) is inserted to the system.

Fast Download Tool: In order to use the Fast Download Tool it is required, that the PC and the NE are in a separated LAN-segment, without any other MetropolisADM NE present on the LAN. In order to achieve this, the PC-LAN interface has to be connected directly to the MIOL Q-LAN connector.

Equipage of Fans: Contrary to former issues of the Application and Planning Guide the network element needs to be equipped with (only) one Fan Unit in both STM-64 and STM-16 Core Unit configuration.
In the case the IP-GE/2F-OS (LKA53) is equipped in the system, the Fan Middle slot is mandatory to be equipped. In other configurations without the LKA53 the slot FANB (bottom) can be used in stead of FANM (middle).
For more details please refer to the latest issue of the APG:

Metropolis ® ADM (Universal shelf)
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Comcode 109563940

Flow Control is enabled in IEEE mode If a switched network is built (i.e. more than two virtual switches form a logical L2 network) in "IEEE 802.1Q/IEEE 802.1ad"-mode, the philosophy is to disable Flow Control on LAN ports, as unwanted behavior can result. E.g. traffic will be stopped on ingress ports that has destination on not-congested egress ports. Check whether Flow Control (pause status) is enabled on a LAN port, if so then disable (2.0_MUXnb32225).

Limitation in feature Get/Send Config The user has the option to re-provision the network element database from the CIT by recreating the node and consequently providing the provisionable parameters (a subset of the parameters is available in this process). During this task the Network Element will continue to operate with the old database until the user confirms the new database. Some system commands cannot be handled with this facility:
- switch commands for SNCP, MS-SPRing and MSP
- equipment protection.

Single fiber SFP wavelength/laser status after port type change For single fiber SFP which supports both STM-1 and STM-4 speeds, when customer changes port type from STM-4 to STM-1 or vice versa, please pull out and plug in the SFP, otherwise it will display unknown optical wavelength and unavailable laser status, although the SFP works correctly.

Pairing of R1.0 /R3.0/R4.0 STM-64 Core Units With R4.0 and R3.0 new sets of new STM-64 Core Units where introduced. R5.0 brought improved STM16 Core Units.
Pairing of the R5.0 STM16 Core Units with other Core Units is not possible.
Pairing of the R4.0 Core Unit (LKA281) with R3.0 Core Units is possible.
A pairing of the legacy R1.0 STM-64 Core Units and newR4.0/R3.0 Core Units (i.e. LS1 containing an LKA26 and LS2 containing LKA28) is not an allowed operation mode due to architectural differences in the Core Unit designs.

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Please be aware that a mixture of R1.0 STM16 Core Units (LKA24/25) with the R3.0/R5.0 STM16 Core Units (LKA48/481/482) is not possible at all.

However, mixed short-term operation of some unit types is possible but intended for hardware upgrade scenarios only (i.e. exchange a R1 STM64 Core Unit to a R3/4 STM64 Core Unit, or a R5 STM16 Core Unit to a R3/4 STM64 Core Unit) but not for permanent operation of the node. Be advised that a downgrade is not supported (i.e. a transition from a R3/4 STM64 Core Unit to a R5 STM16 Core Unit).

The following tables provides an overview of the possible combinations:

Core Unit Pairings	R1.0 STM16 (LKA24/25)	R3.0 STM16 (LKA48)	R5.0 STM16 (LKA481/482)	R1.0 STM64 (LKA26/27/47)	R3.0 STM64 (LKA28/29/49)	R4.0 STM64 (LKA281)
R1.0 STM16 (LKA24/25)	X	-	-	-	-	-
R3.0 STM16 (LKA48)	-	X	-	-	-	-
R5.0 STM16 (LKA481/482)	-	-	X	-	U	U
R1.0 STM64 (LKA26/27/47)	-	-	-	X	U	U
R3.0 STM64 (LKA28/29/49)	-	-	U	U	X	X
R4.0 STM64 (LKA281)	-	-	U	U	X	X

X: Pairing allowed, -: Pairing not possible; U: Short term pairing possible for upgrade purposes

Reassignment of circuit packs (5.0_MUXnb50773)

The system allows the reassignment of an unit to a different type (i.e. a slot provisioned for LKA12 is re-assigned to LKA53) without recreating the whole NE.
The user could unassign the old board and thereafter assign the new board - or do a direct transition by just changing the expected unit type. The later way could cause unexpected behavior, however. Thus the operator should always unassign a slot before assigning a functionally different unit type to a slot.

8   System Controller Exchange Procedure

System Controller Exchange

General: This section provides you the procedure how to exchange a System Controller (SC1/LKA1D to SC1/LKA1D or SC1/LKA1D to SC2/LKA21).

System Controller exchange: The System Controller SC1 (LKA1D) is interchangeable within the Metropolis ADM family (Universal Shelf and Compact Shelf). As the network element software is stored on the System Controller a mismatch between the network element type and the network element software on the controller might occur, i.e. during circuit pack exchange after a failure a LKA1D containing Compact Shelf software might be inserted to a Universal Shelf.
If you want to insert a System Controller to a network element carrying service and you are not sure about the software contents of this pack ask your Local Support Team for advice.

Hardware Restrictions: The System Controllers SC1 and SC2 are not fully compatible to each other and cannot be exchanged against each other in all scenarios. LKA1D does not provide enough memory to store extended NE software or MIB database, thus the following limitations are applicable:

- LKA1D cannot hold all available software versions (for details please refer to Chapter 1, " Network Element Software Release Information".
- LKA1D does not support QoS applications.
- LKA1D does not support the IP-GE/2F-OS (LKA53).
- LKA1D support for R3/R4 Core Units is limited to10G LO-XC capacity.

- LKA1D does not support the R5.0 STM16 Core Units LKA481/482.

Furthermore LKA21 shall not be used with software before R3.0 (SCA3XX) nor software for the Metropolis ADM Compact shelf. Those software versions might load incompatible boot software versions to the unit causing the LKA21 to be stuck permanently.

Prerequisite:
- Before starting the System Controller exchange perform a backup of the element management system, i.e. ITM-SC/Navis OMS. This ensures that the node's configuration can be restored in case the MIB on the element manager is lost by accident.
- Determine the NE software and hardware equipage of the running systems and check that the application is compatible to the new System Controller type.
- Make sure that the installers PC has installed the correct ITM-CIT version and the Fast Download Tool and that adequate cables are available (ITM-CIT cable and crossed LAN cable). For more details of the needed ITM-CIT software load please refer to Chapter 1, " Related Systems Software Release Information".
- Make sure that the installers PC has installed the correct NE software.
- Ensure the DCN connectivity and availability of the element management system.
- Check the NE that no unexpected alarms are present.
- Transmission protection schemes (SNC, MSP, MS-SPRing) should be in IDLE/NO REQUEST state and have the working section active.
- Equipment protection schemes (1:N: E1, DS1; 1+1: E3/DS3, STM1e; Core Unit protection) are in NO REQUEST state and have the working unit active (2.0_MUXnb40822).

Hardware exchange:
- Replace the System Controller by the new card.
- After a short time (approximately 1 minute) the System Controller is ready. Please be aware that the System Controller does not contain a MIB nor does it load an existing MIB from it's flash bank, since it is recognized that this MIB would not belong to the running configuration. Thus the FAIL LED will not die out.
  Note: Do NOT confirm the MIB or upload the MIB to the element manager!
- Login to the NE using the ITM-CIT and determine the contents of the software stores. If needed use the ITM-CIT or the Fast Download Tool to load the correct software on the System Controller. The switch of the software should inherit a cleaning the MIB.

- After the system's restart without a MIB the formerly provisioned DCN parameters (those are stored in the backplane EEPROM) are restored. Please note, thate the NE needs approximately 20 minutes before it can re-open DCC channels (Q-LAN connections are established immediately after the reboot). During this timeframe the user must not login to the system via ITM-CIT, because this would stop the NE's attempt to open the DCC connections.

- The NE will regain associatioin to it's corresponding element manager after the correct software has been loaded and download the MIB from the element manager autonomously.

- After the NE has finished the reboot the management system will do a resync with the node. Thereafter login to the system and provision the correct System Controller type.

- The features that are bound to LKA21 only are now usable.

Fallback Procedure:
- Re-insert the old System Controller card.
- Contact your next level of support.

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