

Tekelec EAGLE[®] 5
Integrated Signaling System

Release 35.1

Feature Notice

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TEKELEC

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Feature Notice Changes

The following changes have been made to the EAGLE 5 ISS Release 35.1 Feature Notice since Revision B:

- The IPGWx Data Feed and IPLIMx Data Feed features require that all STC cards be SSEDCCM cards if monitoring IP links on IPGW or IPLIM application cards.
- The EAGLE 5 ISS Resource Table is now referred to as the EAGLE 5 ISS Card Overview Table, and the part numbers have been updated.
- The Hardware Baseline has been updated to display all of the part numbers instead of a range and to display both ROHS and non-ROHS part numbers.

Introduction

Feature notices are distributed to customers with each new release of software.

The *Feature Notice* includes a brief feature overview and detailed feature descriptions, lists any new hardware required, provides the hardware baseline for this release, and explains how to find the *Release Notice* and other customer documentation on the Customer Support Site for Release 35.1 (see “How to Locate Documentation on the Customer Support Site” on page FN-38).

New Features

The following new features are included in the EAGLE 5 ISS Release 35.1:

- 50,000 GTT Capacity
- Enhance GSM MAP Screening to add TC_Continue and End
- Integrated Monitoring for E5-E1T1
- IPGWx Congestion Enhancement
- RTRV-STP on FTRA
- Support for 2000 ITU Links per Node

Enhanced Features

The following features have been enhanced since the General Availability Release of EAGLE 5 ISS 35.0:

- E1/T1 MIM on EPM
- IPGWx Data Feed
- IPLIMx Data Feed
- IPLIMx/IPGWx on EPM

Important Operational Changes

- “UIMs” on page FN-23
- “Hardware Verification Codes” on page FN-24
- “Error Codes” on page FN-25

Feature Overviews

The following sections describe the new features that are included in the EAGLE 5 ISS General Availability Release 35.1 and features that have been enhanced since the General Availability Release of EAGLE 5 ISS 35.0.

50,000 GTT Capacity

The 50,000 GTT Capacity feature increases the GTT transaction processing capability of the EAGLE 5 ISS from 40,800 TPS to 52,700 TPS through the use of 32 DSMs per node (31 active and 1 for +1 redundancy), each running at 1700 TPS per card (31 x 1700 = 52,700).

NOTE: The 50,000 GTT Capacity feature is available only on EAGLE 5 ISS nodes that are not equipped with MPS (such as LNP, G-Flex, G-Port, etc.).

See “50,000 GTT Capacity” on page FN-5 for more details.

E1/T1 MIM on EPM

The E1/T1 MIM on EPM feature is an enhancement to the E1/T1 MIM on EPM (E5-E1T1 Card) feature from Release 35.0. Release 35.1 adds EAGLE 5 ISS support for E1 functionality and SE-HSL links.

NOTE: Release 35.1 provides EAGLE 5 ISS support for IMF on low-speed links only. SE-HSL links do not have IMF support.

This feature requires a Feature Access Key to support SE-HSL links.

See “E1/T1 MIM on EPM” on page FN-7 for more details.

Enhance GSM MAP Screening to add TC_Continue and End

The Enhance GSM MAP Screening to add TC_Continue and End feature allows MAP screening to be performed on TC_Continue and TC_End messages.

See “Enhance GSM MAP Screening to add TC_Continue and End” on page FN-10 for more details.

Integrated Monitoring for E5-E1T1

The Integrated Monitoring for E5-E1T1 feature adds EAGLE 5 ISS support for use of the Integrated Message Feeder (IMF) platform to perform data feed on low-speed links for the E5-E1T1 card.

NOTE: Release 35.1 provides EAGLE 5 ISS support for IMF on low-speed links only. SE-HSL links do not have IMF support.

See “Integrated Monitoring for E5-E1T1” on page FN-12 for more information.

IPGWx Congestion Enhancement

The IPGWx Congestion Enhancement feature changes the origination point of a Route Congestion Test (RCT) message to enable the Transfer Congested (TFC) message that is sent in response to reach its destination.

See “IPGWx Congestion Enhancement” on page FN-14 for more information.

IPGWx Data Feed

The IPGWx Data Feed feature is an enhancement to the IPGWx Data Feed feature from Release 35.0. Release 35.1 adds EAGLE 5 ISS support for use of the IMF platform to perform data feed for the M3UA and SUA protocols on E5-ENET cards.

See “IPGWx Data Feed” on page FN-16 for more details.

IPLIMx Data Feed

The IPLIMx Data Feed feature is an enhancement to the IPLIMx Data Feed feature from Release 35.0. Release 35.1 adds EAGLE 5 ISS support for use of the IMF to perform data feed for the M2PA protocol on E5-ENET cards.

See “IPLIMx Data Feed” on page FN-17 for more details.

IPLIMx/IPGWx on EPM

The IPLIMx/IPGWx on EPM feature is an enhancement to the IPLIMx/IPGWx on EPM (E5-ENET Card) feature from Release 35.0. Release 35.1 adds EAGLE 5 ISS support for the SUA protocol on E5-ENET cards.

See “IPLIMx/IPGWx on EPM” on page FN-18 for more details.

RTRV-STP on FTRA

The RTRV-STP on FTRA feature allows a user to retrieve **rtrv-stp** command information in a CSVGEN comma-delimited format, using FTRA Release 4.0.

See “RTRV-STP on FTRA” on page FN-19 for more details.

Support for 2000 ITU Links per Node

The Support for 2000 ITU Links per Node feature increases the capacity of an EAGLE 5 ISS ITU node from 1500 to 2000 links.

This feature requires a Feature Access Key.

See “Support for 2000 ITU Links per Node” on page FN-20 for more details.

50,000 GTT Capacity

Description

The 50,000 GTT Capacity feature increases the GTT processing capability of EAGLE 5 ISS GTT-only nodes from 40,800 TPS to 52,700 TPS through the use of 32 DSMs per node (31 active and 1 for +1 redundancy), each running at 1700 TPS per card (31 x 1700 = 52,700).

Hardware Requirements

The 50,000 GTT Capacity feature requires 32 DSM cards exclusively for GTT functionality.

Refer to “Appendix B. Hardware Baseline” for the hardware baseline of this release.

Enhanced Commands

The following commands are enhanced to support the 50,000 GTT Capacity feature. See the *Commands Manual* of your Release 35.1 documentation set for a detailed description of all commands and their parameters.

- **chg-feat**—Enhanced to determine if G-Flex, G-Port, INP, or EIR features are active on the system. If any of these features is running, the maximum number of DSM cards allowed in the system is 25, which prevents the 50,000 GTT Capacity feature from being supported.
- **enable-ctrl-feat**—Enhanced to determine if G-Flex, G-Port, INP, or EIR features are active on the system. If any of these features is running, the maximum number of DSM cards allowed in the system is 25, which prevents the 50,000 GTT Capacity feature from being supported.
- **ent-card**—Enhanced to determine if G-Flex, G-Port, INP, or EIR features are active on the system. If any of these features is running, the maximum number of DSM cards allowed in the system is 25, which prevents the 50,000 GTT Capacity feature from being supported.

Limitations

The 50,000 GTT Capacity feature has the following limitations:

- The LNP, G-Flex, G-Port, INP, or EIR features cannot be activated if there are more than 25 DSM cards in the system. Therefore, these features are not supported in conjunction with the 50,000 GTT Capacity feature.

- The maximum number of SCCP cards allowed in a single EAGLE 5 ISS node is 32 (to provide n+1 functionality). 32 DSM cards are required to achieve 52,700 TPS; therefore, if any TSM cards are in the system, the total TPS rate will be less than the system maximum.
- The 50,000 GTT Capacity feature is not available on systems that are equipped with MPS.

Alarms

New or Changed UAMs

No new or changed UAMS are required to support the 50,000 GTT Capacity feature.

New or Changed UIMs

No new or changed UIMS are required to support the 50,000 GTT Capacity feature.

New or Changed Hardware Verification Codes

No new or changed hardware verification codes are required to support the 50,000 GTT Capacity feature.

UAM Format Changes

No new or changed UAM formats are required to support the 50,000 GTT Capacity feature.

UIM Format Changes

No new or changed UIM formats are required to support the 50,000 GTT Capacity feature.

Error Messages

New or changed error messages supporting the 50,000 GTT Capacity feature are listed in Table FN-3 on page FN-25.

E1/T1 MIM on EPM

Description

The E1/T1 MIM on EPM feature enhances the E1/T1 MIM on EPM feature from Release 35.0 by adding EAGLE 5 ISS support for E1 functionality and SE-HSL links. This Feature Notice documents only these enhancements. Refer to the EAGLE 5 ISS 35.0 Feature Notice for a detailed discussion of the E1/T1 MIM on EPM feature.

With support for the E1 functionality, the E5-E1T1 card can terminate 8 E1/T1 ports (trunks) and route them to the A and B ports of the EAGLE 5 ISS backplane. These ports can be configured to select which E1/T1 ports are active and which channels on each port are used for signaling links.

The E5-E1T1 card supports one SE-HSL signaling link on one of the 8 ports. Support for SE-HSL requires a system-level Feature Access Key.

The E5-E1T1 card provides copying and time-stamping of MSUs for all provisioned signaling links (up to 32 low-speed links) simultaneously when the EAGLE 5 Integrated Monitoring Support (E5IS) feature is turned on.

Modes of Operation

The E5-E1T1 card can be provisioned to operate in the E1 or T1 mode. The mode of operation defines the trunk format for the 8 ports on the card.

In T1 mode, a port represents a time-division-multiplexed data stream of 24 channels with an aggregate data rate of 1.544 Mbps. In E1 mode, a port represents a time-division-multiplexed data stream of 32 channels with an aggregate data rate of 2.048 Mbps.

E1 and T1 port configurations cannot be mixed on a single card. The E5-E1T1 card provides a Channel Bridging function that allows use of E1T1 bandwidth that is not used by EAGLE 5 ISS signaling links. E1 and T1 ports 1, 3, 5, and 7 (master ports) can be independently channel bridged with their adjacent even-numbered (slave) E1 and T1 ports 2, 4, 6, and 8 to allow non-signaling data pass-through.

In the E1 or T1 mode, the E5-E1T1 card generates an idle code in idle (unused) time slots. If the Channel Bridging function is used, idle codes are inserted into timeslots on even ports corresponding to the reflected signaling channels on the odd port.

EAGLE 5 ISS supports the Channel Bridging function for all combinations of master/line timing modes invoked by the adjacent equipment. Internal clock selection criteria ensure synchronous data paths through the bridged channels.

NOTE: Channelized operation cannot be performed on any E5-E1T1 card that is provisioned for SE-HSL.

Hardware Requirements

The E1/T1 MIM on EPM feature requires HIPR cards on each shelf that contains E5-E1T1 cards.

Refer to “Appendix B. Hardware Baseline” for the hardware baseline of this release.

Enhanced Commands

The following commands are enhanced to support the E1/T1 MIM on EPM feature. See the *Commands Manual* of your Release 35.1 documentation set for a detailed description of all commands and their parameters.

- **ent/chg/dlt/rtrv/tst-e1**—Added to support provisioning or retrieval of E1 interfaces on the E5-E1T1 cards.

The following examples show **rtrv-e1** output when the E1/T1 MIM on EPM feature is on.

Example 1 displays E5-E1T1 cards that are configured for channelized operation. Cards with **chanbrdg=master** or **chanbrdg=slave** have 2 ports configured in channel bridging mode to allow non-signaling data pass-through.

rtrv-e1

```
rlghncxa03w 06-06-01 09:07:58 EST EAGLE5 35.1.0
      E1
LOC  PORT  CRC4  CAS  ENCODE  E1TSEL  SI  SN  CHANBRDG  CLASS  RATE
1307  7      ON   OFF  HDB3    LINE    0  0  -----  CHAN   ----
1307  8      ON   OFF  HDB3    LINE    0  0  -----  CHAN   ----
1311  1      OFF  OFF  AMI     EXTERNAL 3  6  MASTER   CHAN   ----
1311  2      OFF  OFF  AMI     EXTERNAL 3  6  SLAVE    CHAN   ----
1311  5      OFF  OFF  AMI     RECOVERED 3  6  MASTER   CHAN   ----
1311  6      OFF  OFF  AMI     RECOVERED 3  6  SLAVE    CHAN   ----
;
```

Example 2 displays output for an E5-E1T1 card with an SE-HSL link.

rtrv-e1:loc=1307:e1port=7

```
rlghncxa03w 06-06-01 09:07:58 EST EAGLE5 35.1.0
      E1
LOC  PORT  CRC4  CAS  ENCODE  E1TSEL  SI  SN  CHANBRDG  CLASS  RATE
1307  7      ON   ---  HDB3    LINE    -- --  -----  UNCHAN 1000
;
```

Example 3 displays output for HC-MIM cards that are configured as E1 cards (E1 ports>1). Cards with **linkclass=unchan** contain SE-HSL links.

rtrv-e1

```
rlghncxa03w 06-06-01 09:07:58 EST EAGLE5 35.1.0
      E1
LOC  PORT  CRC4  CAS  ENCODE  E1TSEL  SI  SN  CHANBRDG  CLASS  RATE
1307  7      ON   ---  HDB3    LINE    -- --  -----  UNCHAN 1000
1307  8      ON   ---  HDB3    LINE    -- --  -----  UNCHAN 2000
1311  1      OFF  ON   AMI     LINE    1  1  -----  CHAN   ----
;
```

Limitations

The E1/T1 MIM on EPM feature has the following limitations:

- E1 and T1 port configurations cannot be mixed on a single card.
- Channelized operation cannot be performed for any E5-E1T1 card that supports SE-HSL links.

Alarms**New or Changed UAMs**

No new or changed UAMs are required to support the E1/T1 MIM on EPM feature.

New or Changed UIMs

No new or changed UIMs are required to support the E1/T1 MIM on EPM feature.

New or Changed Hardware Verification Codes

New or changed hardware verification codes supporting the E1/T1 MIM on EPM feature are defined in Table FN-2 on page FN-24.

UAM Format Changes

No new UAM formats are required to support the E1/T1 MIM on EPM feature.

UIM Format Changes

No new UIM formats are required to support the E1/T1 MIM on EPM feature.

Error Messages

New or changed error messages supporting the E1/T1 MIM on EPM feature are defined in Table FN-4 on page FN-25.

Enhance GSM MAP Screening to add TC_Continue and End

Description

The Enhance GSM MAP Screening to add TC_Continue and End feature enhances the GSM MAP Screening, Enhanced GSM MAP Screening, and MTP-based GSM Screening features by enabling MAP screening to be performed on non-segmented TC_Continue and TC_End messages.

In order for MAP screening to occur, the messages must meet the following requirements:

- TCAP-CONT messages must have an Invoke component type.
- TCAP-END messages must have a Return-Result (Test) type.

Screening is not performed on messages that do not meet these requirements.

Hardware Requirements

The Enhance GSM MAP Screening to add TC_Continue and End feature has no hardware requirements.

Enhanced Commands

The following commands are enhanced to support the Enhance GSM MAP Screening to add TC_Continue and End feature. See the *Commands Manual* of your Release 35.1 documentation set for a detailed description of all commands and their parameters.

- **chg/rtrv-sccpopts**—Enhanced to enable or disable MAP screening for TC_Continue or TC_End messages. The **rtrv-sccpopts** command is enhanced to display an SCCP option indicator that indicates whether GSM MAP Screening for TC_Continue and TC_End messages is enabled.

The following example displays **rtrv-sccpopts** output when the Enhance GSM MAP Screening to add TC_Continue and End feature is enabled. The GMSTCAPCE option indicates that the feature is enabled.

rtrv-sccpopts

```
07-01-06 05:46:41 EST EAGLE 35.1.0
```

```
SCCP OPTIONS
```

```
-----  
CLASS1SEQ                off  
DFLTGTTMODE              CdPA  
GMSTCAPCE                 on
```

```
;
```


Limitations

The GSM Map Screening feature must be on before the Enhance GSM MAP Screening to add TC_Continue and End can be enabled.

Alarms**New or Changed UAMs**

No new or changed UAMs are required to support the Enhance GSM MAP Screening to add TC_Continue and End feature.

New or Changed UIMs

No new or changed UIMs are required to support the Enhance GSM MAP Screening to add TC_Continue and End feature.

New or Changed Hardware Verification Codes

No new or changed hardware verification codes are required to support the Enhance GSM MAP Screening to add TC_Continue and End feature.

UAM Format Changes

No new UAM formats are required to support the Enhance GSM MAP Screening to add TC_Continue and End feature.

UIM Format Changes

No new UIM formats are required to support the Enhance GSM MAP Screening to add TC_Continue and End feature.

Error Messages

No new or changed error messages are required to support the Enhance GSM MAP Screening to add TC_Continue and End feature.

Integrated Monitoring for E5-E1T1

Description

The Integrated Monitoring for E5-E1T1 feature enhances the E1/T1 MIM on EPM (E5-E1T1) feature by adding EAGLE 5 ISS support for use of the Integrated Message Feeder (IMF) platform to monitor link status, link states, and MSU traffic on low-speed links for the E5-E1T1 card.

This Feature Notice documents only this enhancement. Refer to the EAGLE 5 ISS 35.0 Feature Notice for a detailed discussion of the E1/T1 MIM on EPM feature, and see “E1/T1 MIM on EPM” on page FN-7 for a discussion of support for E1 functionality and SE-HSL links.

NOTE: The Integrated Monitoring for E5-E1T1 feature is supported only for channelized links on E5-E1T1 cards.

Hardware Requirements

The Integrated Monitoring for E5-E1T1 feature has the same hardware requirements as the E1/T1 MIM on EPM feature. Refer to the EAGLE 5 ISS 35.0 Feature Notice for a list of these requirements.

New and Enhanced Commands

No commands are added or enhanced for the Integrated Monitoring for E5-E1T1 feature.

Limitations

EAGLE 5 ISS provides IMF support for only low-speed and channelized links. SE-HSL links and non-channelized links do not have IMF support.

Alarms

New or Changed UAMs

No new or changed UAMS are required to support the Integrated Monitoring for E5-E1T1 feature.

New or Changed UIMs

No new or changed UIMS are required to support the Integrated Monitoring for E5-E1T1 feature.

New or Changed Hardware Verification Codes

No new or changed hardware verification codes are required to support the Integrated Monitoring for E5-E1T1 feature.

UAM Format Changes

No new or changed UAM formats are required to support the Integrated Monitoring for E5-E1T1 feature.

UIM Format Changes

No new or changed UIM formats are required to support the Integrated Monitoring for E5-E1T1 feature.

Error Messages

No new or changed error messages are required to support the Integrated Monitoring for E5-E1T1 feature.

IPGWx Congestion Enhancement

Description

The IPGWx Congestion Enhancement feature changes the origination point of a Route Congestion Test (RCT) message to enable the Transfer Congested (TFC) message that is sent in response to reach its destination.

When an abatement procedure for a congested SS7 destination for a IPGWx-connected endpoint begins, a message exchange, consisting of an RCT message sent from the EAGLE 5 ISS node and a TFC message returned from the point of congestion, is supposed to occur if the congestion does not abate. However, if the EAGLE 5 ISS node can not be reached from the point of congestion, the TFC response may not reach its destination.

The IPGWx Congestion Enhancement feature replaces the point code of the EAGLE 5 ISS with the point code of the IPGWx-connected endpoint in the originating point code subfield of the RCT. This replacement causes the IPGWx-connected endpoint to appear to be the originator of the RCT; therefore, the TFC can be routed to the IPGWx-connected endpoint instead of to the EAGLE 5 ISS since the EAGLE 5 ISS may not be reachable from the congested node.

Hardware Requirements

The IPGWx Congestion Enhancement feature has no hardware requirements.

New and Enhanced Commands

No commands are added or enhanced to support the IPGWx Congestion Enhancement feature.

Limitations

The IPGWx Congestion Enhancement feature has no limitations.

Alarms

New or Changed UAMs

No new or changed UAMs are required to support the IPGWx Congestion Enhancement feature.

New or Changed UIMs

No new or changed UIMs are required to support the IPGWx Congestion Enhancement feature.

New or Changed Hardware Verification Codes

No new or changed hardware verification codes are required to support the IPGWx Congestion Enhancement feature.

UAM Format Changes

No new UAM formats are required to support the IPGWx Congestion Enhancement feature.

UIM Format Changes

No new UIM formats are required to support the IPGWx Congestion Enhancement feature.

Error Messages

No new or changed error messages are required to support the IPGWx Congestion Enhancement feature.

IPGWx Data Feed

Description

The IPGWx Data Feed feature enhances the IPGWX Data Feed feature from Release 35.0 by adding EAGLE 5 ISS support for use of the Integrated Message Feeder (IMF) platform to monitor link status, link states, and MSU traffic on high-speed IPGWx links for the M3UA and SUA protocols on E5-ENET cards.

Other than support for the E5-ENET card and the hardware requirement shown below, the IPGWx Data Feed feature is not changed from Release 35.0. For a detailed discussion of the IPGWx Data Feed feature, refer to the EAGLE 5 ISS Release 35.0 Feature Notice.

Hardware Requirements

The IPGWx Data Feed feature has the following hardware requirements:

- IMF 2.1 platform
- When monitoring IP links on IPGW cards, all STC cards must be SSED CM cards. Dual-slot cards are not supported.

Refer to “Appendix B. Hardware Baseline” for the hardware baseline of this release.

IPLIMx Data Feed

Description

The IPLIMx Data Feed feature provides EAGLE 5 ISS support for use of the Integrated Message Feeder (IMF) platform to monitor link status, link states, and MSU traffic on high-speed IPLIMx links for the M2PA protocol on E5-ENET cards.

Other than support for the E5-ENET card, and the hardware requirement shown below, the IPLIMx Data Feed feature is not changed from Release 35.0. For a detailed discussion of the IPLIMx Data Feed feature, refer to the EAGLE 5 ISS Release 35.0 Feature Notice.

Hardware Requirements

The IPLIMx Data Feed feature has the following hardware requirements:

- IMF 2.1 platform
- When monitoring IP links on IPLIM cards, all STC cards must be SSEDCEM cards. Dual-slot cards are not supported.

Refer to “Appendix B. Hardware Baseline” for the hardware baseline of this release.

IPLIMx/IPGWx on EPM

Description

The IPLIMx/IPGWx on EPM feature enhances the IPLIM/IPGWx on EPM feature from Release 35.0 by adding EAGLE 5 ISS support for the SUA protocol on E5-ENET cards.

Other than the added support and the limitations shown below, the IPLIMx/IPGWx on EPM feature is not changed from Release 35.0. Refer to the EAGLE 5 ISS 35.0 Feature Notice for a detailed discussion of the IPLIMx/IPGWx on EPM feature.

Limitations

The IPLIMx/IPGWx on EPM feature has the following limitations:

- E5-ENET cards cannot be deployed in a mixed linkset with DCM cards.
- The maximum number of E5-ENET, DCM, and/or SSED CM IPLIMx and IPGWx cards in a system is 164. The mixture of these cards is a maximum of 100 cards for IPLIMx and 64 cards for IPGWx in any combination. However, due to the increased throughput of the E5-ENET card, the IMT system capacity has a limit of 100 E5-ENET IPLIMx and IPGWx cards in any combination.

RTRV-STP on FTRA

Description

The RTRV-STP on FTRA feature allows a user to retrieve **rtrv-stp** command information in a CSVGEN comma-delimited format, using FTRA Release 4.0. Refer to the *FTP-Based Table Retrieve Application (FTRA) User Guide* in your Release 35.1 Customer Documentation for more information on FTRA.

Hardware Requirements

The RTRV-STP on FTRA feature has no hardware requirements.

New and Enhanced Commands

No commands are added or enhanced to support the RTRV-STP on FTRA feature.

Limitations

The RTRV-STP on FTRA feature has no limitations.

Alarms

New or Changed UAMs

No new or changed UAMs are required to support the RTRV-STP on FTRA feature.

New or Changed UIMs

No new or changed UIMs are required to support the RTRV-STP on FTRA feature.

New or Changed Hardware Verification Codes

No new or changed hardware verification codes are required to support the RTRV-STP on FTRA feature.

UAM Format Changes

No new UAM formats are required to support the RTRV-STP on FTRA feature.

UIM Format Changes

No new UIM formats are required to support the RTRV-STP on FTRA feature.

Error Messages

No new or changed error messages are required to support the RTRV-STP on FTRA feature.

Support for 2000 ITU Links per Node

Description

The Support for 2000 ITU Links per Node feature increases the total capacity of an EAGLE 5 ISS node from 1500 to 2000 links.

NOTE: Although the Support for 2000 ITU Links per Node feature increases the total capacity of the node, the increase applies to ITU links only. The maximum number of ANSI links that can be supported by the node remains 1500.

This feature requires a Feature Access Key.

Hardware Requirements

The Support for 2000 ITU Links per Node feature has the following hardware requirements:

- HIPR cards installed on every provisioned shelf in the system
- The following link/card counts are supported:
 - Maximum 115 LIM-ATM cards
 - Maximum 100 IPLIM cards
 - Maximum 64 IPGWx cards
 - Maximum 64 SE-HSL links

Refer to “Appendix B. Hardware Baseline” for the hardware baseline of this release.

New and Enhanced Commands

The following commands are enhanced to support the Support for 2000 ITU Links per Node feature. See the *Commands Manual* of your Release 35.1 documentation set for a detailed description of all commands and their parameters.

- **enable/rtrv-ctrl-feat**—Enhanced to turn on the Support for 2000 ITU Links per Node feature and to display its status after activation.

The following example displays **rtrv-ctrl-feat** output when the Support for 2000 ITU Links per node is enabled.

rtrv-ctrl-feat

```
rlghncxa03w 06-05-29 16:40:40 EST  EAGLE5 35.0.0
The following features have been permanently enabled:
Feature Name           Partnum   Status   Quantity
IPGWx Signaling TPS    893012805 on        2000
HC-MIM SLk Capacity    893012707 on         64
ISUP Normalization     893000201 on         ---
Command Class Management 893005801 on         ---
```

LNP Short Message Service	893006601	on	----
Prepaid SMS Intercept Ph1	893006701	on	----
Intermed GTT Load Sharing	893006901	on	----
G-Port Circ Route Prevent	893007001	on	----
XGTT Table Expansion	893006101	on	400000
XMAP Table Expansion	893007710	on	3000
Large System # Links	893005910	on	2000
Routesets	893006403	on	8000
EAGLE5 Product	893007101	on	----
EAGLE Product	893007201	off	----
IP7 Product	893007301	off	----
Network Security Enhance	893009101	off	----
Telnet	893005701	on	----
Port Chk for MO SMS	893009301	on	----
LNP ELAP Configuration	893010901	on	----
LNP ported TNs	893011023	on	228000000
LNP ported LRNs	893010501	on	150000
LNP ported NPANXXs	893009402	on	300000
15 Minute Measurements	893012101	off	----
EIR	893012301	on	----
EAGLE OA&M IP Security	893400001	off	----
SCCP Conversion	893012001	on	----
SE-HSL SLK Capacity	893013005	on	64
GSM Map Screening (GMS)	893013201	on	----
Enhanced GMS (EGMS)	893012401	on	----
MTP MAP Screening	893013501	on	----
Spare Point Code Support	893013601	on	----
GSM MAP SRI Redirect	893014001	on	----
ISUP NP with EPAP	893013801	on	----
Origin-Based MTP Routing	893014201	on	----
Prepaid IDP Query Relay	893016001	on	----
IDP Screening for Prepaid	893015501	on	----
Flexible GTT Load-Sharing	893015401	on	----
Origin Based SCCP Routing	893014301	on	----

- **ent-slk**—Enhanced to allow a maximum of 2000 ITU links to be added to the EAGLE 5 ISS.
- **rept-stat-card**—Enhanced to allow the **iplim** and **iplimi** applications to support a maximum of 2000 ITU links.

Limitations

The Support for 2000 ITU Links per Node feature has the following limitations:

- This feature is supported for ITU links only. STP-LAN and ANSI links are not supported.
- The following cards are not supported for ITU configurations above 1500 links/node: MPL, MPL-T, LIM-ATM.
- The following cards are not supported for any configuration above 1500 links/node: LIM-DS0, LIM-OCU, LIM-V.35, LIM-AINF, LIM-ILA, LIM-EILA

Alarms

New or Changed UAMs

No new or changed UAMs are required to support the Support for 2000 ITU Links per Node feature.

New or Changed UIMs

No new or changed UIMs are required to support the Support for 2000 ITU Links per Node feature.

New or Changed Hardware Verification Codes

No new or changed hardware verification codes are required to support the Support for 2000 ITU Links per Node feature.

UAM Format Changes

No new UAM formats are required to support the Support for 2000 ITU Links per Node feature.

UIM Format Changes

No new UIM formats are required to support the Support for 2000 ITU Links per Node feature.

Error Messages

No new or changed error messages are required to support the Support for 2000 ITU Links per Node feature.

UIMs

The following UIM is not associated with a particular feature, but with the overall EAGLE 5 ISS.

This UIM is issued if an MSU that is less than 5 bytes or greater than 279 bytes is seen by the MTP Layer 3 software in an ATM card.

Table FN-1. New or Changed UIMs - EAGLE 5 ISS UIM

UIM	1349	Format	Output Group
Action	Added for Release 35.1		
Old data	N/A		
New data	MSU invalid size - discarded	I37	LINK MAINT

Hardware Verification Codes

The new hardware verification codes supporting the E1/T1 MIM on EPM feature are defined in Table FN-2.

Table FN-2. Hardware Verification Codes - E1/T1 MIM on EPM

H/W Code	134	Format	UAM
Action	Added for E1/T1 MIM EPM		
Old data			
New data	E5-E1T1 card with SLK provisioned on link > B15	CARD	99
H/W Code	135	Format	UAM
Action	Added for E1/T1 MIM EPM		
Old data			
New data	E5-E1T1 card supports only 1 SE-HSL link	SYS_MAINT	276

Error Codes

Attempting to activate the G-Flex, G-Port, INP, or EIR feature if there are more than 25 DSM cards in the system when the 50,000 GTT Capacity feature is enabled will generate the error message shown in Table FN-3.

Table FN-3. Error Messages - 50,000 GTT Capacity

Response ID Code	Error Message	New?	Used by Command:
E4558	Provisioned SCCP cards must not be greater than 25.	Y	chg-feat enable-ctrl-feat ent-card

Incorrect use of the enhanced commands for the E1/T1 MIM on EPM feature may generate the error messages listed in Table FN-4.

Table FN-4. Error Messages - E1/T1 MIM on EPM

Response ID Code	Error Message	New?	Used by Command:
E4281	Specified link not supported for SE-HSL	N	ent-slk
E4595	Only one E1 port allowed for Linkclass equal unchan	Y	ent-e1

EAGLE 5 ISS Card Overview Table

Table FN-5 is a resource table that provides an overview of information for cards that can be provisioned in the EAGLE 5 ISS. For a detailed description of all hardware supported by Release 35.1, see Appendix B. Hardware Baseline.

This table lists the following card information:

- The name of the card on the card label
- The card part number
- The provisioned card type
- The number of shelf slots that the card occupies (1 or 2)
- The number of physical ports on the card
- The maximum number of links that can be assigned to the card
- The GPLs and applications that can run on the card

Table FN-5. EAGLE 5 ISS Card Overview Table

Card Name as shown on card label	Part Number	Provisioned Card Type	Per Card Slots/Ports		Links per Card	Card GPLs	Card Applications
ACM	870-1008-02 870-1008-03 870-1008-04 870-1008-05	acmenet	2	1	1 IP Service	stplan imt	stplan
DCM	870-1945-01 870-1945-02 870-1945-03 870-1984-01	dcm	2	2	1 IP Service	bpdc ebdadcm	ebdadcm
				2	1 IP Service	vwxs slan	vwxs slan
				2	2	bpdc iplim iplimi	iplim iplimi
		2	1	bpdc ss7ipgw ipgwi	ss7ipgw ipgwi		
		stc	2	2	2 IP Service	bpdc eroute	eroute

Table FN-5. EAGLE 5 ISS Card Overview Table (Cont'd)

Card Name as shown on card label	Part Number	Provisioned Card Type	Per Card Slots/Ports		Links per Card	Card GPLs	Card Applications
EDCM (SSEDCM)	870-2372-01 870-2372-08 870-2372-13^	dcm	1	2	1 IP Service	bpdc vwxslan	vwxslan
					8	bpdc iplim iplimi	iplim iplimi
					1	bpdc ss7ipgw ipgwi	ss7ipgw ipgwi
	870-2372-01	stc	1	2	2 IP Service	bpdc eroute	eroute
EDCM-A (SSEDCM)	870-2508-01 870-2508-02^	dcm	1	2	1 IP Service	bpdc vwxslan	vwxslan
		stc	1	2	2 IP Service	bpdc eroute	eroute
DSM†	1 GB MEM 870-1984-02 870-1984-08 870-1984-09 870-1984-15^	dsm	2	2	2 IP service	bpdc vsccp gls	vsccp gls
	2 GB MEM 870-1984-03						
	4 GB MEM 870-1984-05 870-1984-06 870-1984-07 870-1984-13^						
DSM-1G	870-2371-02 870-2371-06 870-2371-08 870-2371-13^	ipsm	1	2 (use only A)	1 IP service	bpdc ips	ips
EDSM-2G*	870-2372-03 870-2372-07 870-2372-09 870-2372-14^	mcpm	1	2 (use only A)	1 IP service	bpdc mcp	mcp
E1/T1 MIM††	870-2198-01 870-2198-02 870-2198-03 870-2198-04 870-2198-07^	lime1 limt1 limch	1	2	8	ss7ml bpmplt	ss7ansi ccs7itu
E1 ATM	870-2455-01 870-2455-02 870-2455-03 870-2455-05^	lime1atm	1	2	1	atmitu bphcap bphcapt	atmitu

Table FN-5. EAGLE 5 ISS Card Overview Table (Cont'd)

Card Name as shown on card label	Part Number	Provisioned Card Type	Per Card Slots/Ports		Links per Card	Card GPLs	Card Applications
E5-E1T1	870-1873-02 870-1873-03^	lime1 limt1	1	8	32	ss7epm blbepm bldiag6 blvxw6	ss7ansi ccs7itu
		lime1 (for SE-HSL)	1	8	1		ccs7itu
E5-ENET	870-2212-02 870-2212-03^	dcm	1	2	16	bpdc bldiag6 blbepm iplhc	iplim iplimi
			1	2	1	bpdc bldiag6 blbepm ipghc	ss7ipgw ipgwi
EILA	870-2049-01 870-2049-02	limds0 limocu limv35	1	2 2 2	1 1 1	ss7ansi ss7gx25 ccs7itu imt	ss7ansi ss7gx25 ccs7itu
GPSM-II	870-2360-01 870-2360-05 870-2360-06 870-2360-08^	N/A	1	N/A	N/A	eoam bpdc	oam
HC MIM††	870-2671-01 870-2671-03^ 870-2671-02 870-2671-04^	lime1 limt1	2	8	64	ss7hc blbios blcpld blvxw bldiag blcpld plde1t1 pldpmc1 imtpci	ss7ansi ccs7itu
		lime1 (for SE-HSL)		8	2		ccs7itu
HIPR	870-2574-01 870-2574-02^	N/A	1	N/A	N/A	hipr	hipr
HMUX	870-1965-01 870-1965-03^	N/A	1	N/A	N/A	bphmux	bphmux
ILA	870-1484-01 870-1484-02	limds0 limocu limv35	1	2 2 2	1 1 1	ss7ansi ss7gx25 ccs7itu imt	ss7ansi ss7gx25 ccs7itu

Table FN-5. EAGLE 5 ISS Card Overview Table (Cont'd)

Card Name as shown on card label	Part Number	Provisioned Card Type	Per Card Slots/Ports		Links per Card	Card GPLs	Card Applications
LIM-AINF**	870-1014-01 870-1014-02 870-1014-03 870-1014-04 870-1014-05 870-1014-06 870-1488-01 870-1488-02 870-1488-03 870-1488-04 870-1488-05 870-1488-06	limds0 limocu limv35	1	2 2 2	1 1 1	ss7ansi ss7gx25 ccs7itu imt	ss7ansi ss7gx25 ccs7itu
LIM-ATM	870-1293-02 870-1293-03 870-1293-06 870-1293-07 870-1293-08 870-1293-10 870-1293-13^	limatm	1	2	1	atmansi bphcap bphcapt	atmansi
LIM-DS0	870-1009-02 870-1009-03 870-1009-04 870-1485-01 870-1485-02 870-1485-03	limds0	1	2 2 2	2 1 2	ss7ansi ss7gx25 ccs7itu imt	ss7ansi ss7gx25 ccs7itu
LIM-E1††	870-1379-01	lime1 limch	1	2 2	1 1	ss7ansi ccs7itu imt	ss7ansi, ccs7itu
LIM-OCU	870-1010-03 870-1010-04 870-1010-05 870-1486-02 870-1486-03 870-1486-04	limocu	1	2 2 2	1 1 1	ss7ansi ss7gx25 ccs7itu imt	ss7ansi ss7gx25 ccs7itu
LIM-V.35	870-1012-02 870-1012-03 870-1012-04 870-1487-01 870-1487-02 870-1487-03	limv35	1	2 2 2	1 1 1	ss7ansi ss7gx25 ccs7itu imt	ss7ansi ss7gx25 ccs7itu
MDAL	870-0773-04 870-0773-05 870-0773-06 870-0773-08 870-0773-09^	N/A	2	N/A	N/A	N/A	N/A

Table FN-5. EAGLE 5 ISS Card Overview Table (Cont'd)

Card Name as shown on card label	Part Number	Provisioned Card Type	Per Card Slots/Ports		Links per Card	Card GPLs	Card Applications
MPL MPL-T	870-2061-01 870-2061-03 870-2061-04 870-2061-06^ 870-2061-02	limds0	1	2	8	bpmpl bpmplt ss7ml	ss7ansi
TDM	870-0774-10 870-0774-11	N/A	1	N/A	N/A	N/A	N/A
TSM-256	870-1289-02 870-1289-03 870-1289-04 870-1289-06^	tsm	1	N/A	N/A	sccp gls ebdablm	sccp gls ebdablm
TSM-512	870-1290-02 870-1290-03 870-1290-04	tsm	1	N/A	N/A	sccp gls ebdablm	sccp gls ebdablm
TSM-768	870-1291-02 870-1291-03 870-1291-04	tsm	1	N/A	N/A	sccp gls ebdablm	sccp gls ebdablm
TSM-1024	870-1292-02 870-1293-03 870-1294-04	tsm	1	N/A	N/A	sccp gls ebdablm	sccp gls ebdablm
<p>*Though the system allows 250 MCPM cards, practical usage is 2.</p> <p>**A LIM, EILA, or ILA is a link interface module using the AINF interface and can be installed in place of the LIM-DS0A, LIM-OCU, or LIM-V.35. It is configured in the database as either a LIM-DS0A, LIM-OCU, or LIM-V.35 card.</p> <p>†DSMs are required for the LNP, 50,000 GTT, G-Port, G-Flex, EIR, or INP feature. For more information about turning these features on, refer to the appropriate manual.</p> <p>††For the E1 or T1 interface, SS7 application (SS7ANSI or CCS7ITU) can be assigned to these cards. For more information on the E1 or T1 interface go to Chapter 3 "System Administration Procedures" in the Database Administration Manual - SS7.</p> <p>^This part number is the ROHS equivalent of the immediately preceding part number.</p>							

Customer Documentation

Documentation Set

The documentation set for EAGLE 5 ISS Release 35.1 comprises the following manuals and documents. The list is sorted by manual name and is followed by a brief description of each manual.

NOTE: The most current update of each manual can be found on Tekelec's Customer Support website.

- *Commands Error Recovery Manual*
- *Commands Manual*
- *Commands Pocket Guide*
- *Commands Quick Reference Guide*
- *Database Administration Manual – Features*
- *Database Administration Manual – Gateway Screening*
- *Database Administration Manual – Global Title Translation*
- *Database Administration Manual – IP7 Secure Gateway*
- *Database Administration Manual – SEAS*
- *Database Administration Manual – SS7*
- *Database Administration Manual – System Management*
- *Dimensioning Guide for EPAP Advanced DB Features*
- *ELAP Administration Manual*
- *EPAP Administration Manual*
- *EPAP DSM Dimensioning Tool*
- *ELAP Administration Manual*
- *Feature Manual - ECAP*
- *Feature Manual – EIR*
- *Feature Manual – G-Flex C7 Relay*
- *Feature Manual – G-Port*
- *Feature Manual – INP*
- *Hardware Manual – EAGLE 5 ISS*
- *Hardware Manual – Tekelec 1000 Application Server*

- *Hardware Manual – Tekelec 1100 Application Server*
- *Installation Manual – EAGLE 5 ISS*
- *Installation Manual - Integrated Applications*
- *LNP Database Synchronization (LSMS with EAGLE 5 ISS)*
- *LNP Feature Activation Guide*
- *Maintenance Manual*
- *Maintenance Pocket Guide*
- *Maintenance Emergency Recovery Pocket Guide*
- *MPS Platform Software and Maintenance Manual (EAGLE 5 ISS with Tekelec T1000 Application Server)*
- *MPS Platform Software and Maintenance Manual (EAGLE 5 ISS with Tekelec T1100 Application Server)*
- *Previously Released Features Manual*
- *Provisioning Database Interface Manual*
- *Release Documentation*
 - *Feature Notice*
 - *Master Glossary*
 - *Master Index*
 - *Release Notice (online only)*
 - *System Overview*
- *System Manual – EOAP*

Commands Error Recovery Manual

The *Commands Error Recovery Manual* contains the procedures to resolve error message conditions generated by the commands in the *Commands Manual*. These error messages are presented in numerical order.

Commands Manual

The *Commands Manual* contains procedures for logging into an EAGLE 5 ISS system, logging out of the system, a general description of the terminals, printers, the disk drive used on the system, and a description of all the commands used in the system.

Commands Pocket Guide

The *Commands Pocket Guide* is an abridged version of the *Commands Manual*. It contains all commands and parameters, and it shows the command-parameter syntax.

Commands Quick Reference Guide

The *Commands Quick Reference Guide* contains an alphabetical listing of the commands and parameters. The guide is sized to fit a shirt-pocket.

Database Administration Manual – Features

The *Database Administration Manual – Features* contains procedural information required to configure an EAGLE 5 ISS to implement these features: X.25 Gateway, STP LAN, Database Transport Access, GSM MAP Screening, and EAGLE 5 Integrated Monitoring Support.

Database Administration Manual – Gateway Screening

The *Database Administration Manual - Gateway Screening* contains a description of the Gateway Screening (GWS) feature and the procedures necessary to configure the EAGLE 5 ISS system to support this feature.

Database Administration Manual – Global Title Translation

The *Database Administration Manual – Global Title Translation* contains procedural information required to configure an EAGLE 5 ISS to implement these features: Global Title Translation, Enhanced Global Title Translation, Variable Length Global Title Translation, Interim Global Title Modification, ANSI-ITU-China SCCP Conversion, Intermediate GTT Load Sharing, Flexible GTT Load Sharing, and Origin-based SCCP Routing.

Database Administration Manual – IP⁷ Secure Gateway

This manual contains procedural information required to configure the system to implement the SS7-IP Gateway.

Database Administration Manual – SEAS

The *Database Administration Manual – SEAS* contains the EAGLE 5 ISS configuration procedures that can be performed from the Signaling Engineering and Administration Center (SEAC) or a Signaling Network Control Center (SNCC). Each procedure includes a brief description of the procedure, a flowchart showing the steps required, a list of any EAGLE 5 ISS commands that may be required for the procedure but that are not supported by SEAS, and a reference to optional procedure-related information, which can be found in one of these manuals:

- Database Administration Manual – Gateway Screening
- Database Administration Manual – Global Title Translation
- Database Administration Manual – SS7

Database Administration Manual – SS7

The *Database Administration Manual – SS7* contains procedural information required to configure an EAGLE 5 ISS system to implement the SS7 protocol.

Database Administration Manual – System Management

The *Database Administration Manual – System Management* contains procedural information required to manage the EAGLE 5 ISS's database and GPLs, and to configure basic system requirements such as user names and passwords, system-wide security requirements, and terminal configurations.

Dimensioning Guide for EPAP Advanced DB Features

The *Dimensioning Guide for EPAP Advanced DB Features* is used to provide EAGLE Provisioning Application Processor (EPAP) planning and dimensioning information. This manual is used by Tekelec personnel and EAGLE 5 ISS customers to aid in the sale, planning, implementation, deployment, and upgrade of EAGLE 5 ISS systems equipped with one of the EAGLE 5 ISS EPAP Advanced Database (EADB) Features.

ELAP Administration Manual

The *ELAP Administration Manual* defines the user interface to the EAGLE LNP Application Processor (ELAP) on the Multi-Purpose Server (MPS)/ELAP platform. The manual defines the methods for accessing the user interface, menus, screens available to the user and describes their impact. It provides the syntax and semantics of user input and defines the output the user receives, including information and error messages, alarms, and status.

EPAP Administration Manual

The *EPAP Administration Manual* describes how to administer the EAGLE Provisioning Application Processor (EPAP) on the MPS/EPAP platform. The manual defines the methods for accessing the user interface, menus, and screens available to the user and describes their impact. It provides the syntax and semantics of user input and defines the output the user receives, including messages, alarms, and status.

Feature Manual - ECAP

The *Feature Manual - ECAP* provides instructions and information on how to install, use, and maintain the Integrated Accounting Feature Application feature on the Eagle Collector Application Processor (ECAP). This feature collects raw MSU data from the EAGLE 5 ISS, categorizes the data into groups, and feeds those groups to another system for accounting activities. Additional features will be added to this manual at a later date.

Feature Manual – EIR

The *Feature Manual - EIR* provides instructions and information on how to install, use, and maintain the Equipment Identity Register (EIR) feature on the MPS/EPAP platform of the EAGLE 5 ISS. The feature provides network operators with the capability to prevent stolen or disallowed GSM mobile handsets from accessing the network.

Feature Manual – G-Flex C7 Relay

The *Feature Manual - G-Flex C7 Relay* provides an overview of a feature supporting the efficient management of Home Location Registers in various networks. This manual gives the instructions and information on how to install, use, and maintain the G-Flex feature on the MPS/EPAP platform of the EAGLE 5 ISS.

Feature Manual – G-Port

The *Feature Manual - G-Port* provides an overview of a feature providing the capability for mobile subscribers to change the GSM subscription network within a portability cluster while retaining their original MSISDNs. This manual gives the instructions and information on how to install, use, and maintain the G-Port feature on the MPS/EPAP platform of the EAGLE 5 ISS.

Feature Manual – INP

The *Feature Manual - INP* provides the user with information and instructions on how to implement, utilize, and maintain the INAP-based Number Portability (INP) feature on the MPS/EPAP platform of the EAGLE 5 ISS.

FTP-Based Table Retrieve Application (FTRA) User Guide

The *FTP-Based Table Retrieve Application (FTRA) User Guide* describes how to set up and use a PC to serve as the offline application for the EAGLE 5 ISS FTP Retrieve and Replace feature.

Hardware Manual – EAGLE 5 ISS

The *Hardware Manual - EAGLE 5 ISS* contains hardware descriptions and specifications of Tekelec's signaling products. These include the EAGLE 5 ISS, Multi-Purpose Server (MPS), and the Integrated Sentinel with Extended Services Platform (ESP) subassembly.

The Hardware Manual provides an overview of each system and its subsystems, details of standard and optional hardware components in each system, and basic site engineering. Refer to this manual to obtain a basic understanding of each type of system and its related hardware, to locate detailed information about hardware components used in a particular release, and to help configure a site for use with the system hardware.

Hardware Manual – Tekelec 1000 Application Server

The *Hardware Manual - Tekelec 1000 Application Server* provides general specifications and a description of the Tekelec 1000 Application Server (T1000 AS). This manual also includes site preparation, environmental and other requirements, procedures to physically install the T1000 AS, and troubleshooting and repair of Field Replaceable Units (FRUs).

Hardware Manual – Tekelec 1100 Application Server

The *Hardware Manual - Tekelec 1100 Application Server* provides general specifications and a description of the Tekelec 1100 Application Server (T1100 AS). This manual also includes site preparation, environmental and other requirements, procedures to physically install the T1100 AS, and troubleshooting and repair of Field Replaceable Units (FRUs).

Installation Manual – EAGLE 5 ISS

The *Installation Manual - EAGLE 5 ISS* contains cabling requirements, schematics, and procedures for installing the EAGLE 5 ISS along with LEDs, connectors, cables, and power cords to peripherals. Refer to this manual to install components or the complete systems.

Installation Manual - Integrated Applications

The *Installation Manual - Integrated Applications* provides the installation information for integrated applications such as EPAP or earlier (Netra-based Multi-Purpose Server (MPS) platform) and Sentinel. The manual includes information about frame floors and shelves, LEDs, connectors, cables, and power cords to peripherals. Refer to this manual to install components or the complete systems.

LNP Database Synchronization (LSMS with EAGLE 5 ISS)

The *LNP Database Synchronization Manual - LSMS/EAGLE 5 ISS* describes how to keep the LNP databases at the LSMS and at the network element (the EAGLE 5 ISS is a network element) synchronized through the use of resynchronization, audits and reconciles, and bulk loads. This manual is contained in both the LSMS documentation set and in the EAGLE 5 ISS documentation set.

LNP Feature Activation Guide

The *LNP Feature Activation Guide* contains procedural information required to configure the EAGLE 5 ISS for the LNP feature and to implement these parts of the LNP feature on the EAGLE 5 ISS:

- LNP services
- LNP options
- LNP subsystem application
- Automatic call gapping
- Triggerless LNP feature
- Increasing the LRN and NPANXX Quantities on the EAGLE 5 ISS
- Activating and Deactivating the LNP Short Message Service (SMS) feature.

Maintenance Manual

The *Maintenance Manual* contains procedural information required for maintaining the EAGLE 5 ISS system. The *Maintenance Manual* provides preventive and corrective maintenance procedures used to maintain the different systems.

Maintenance Pocket Guide

The *Maintenance Pocket Guide* is an abridged version of the *Maintenance Manual* and contains all the corrective maintenance procedures used to maintain the EAGLE 5 ISS.

Maintenance Emergency Recovery Pocket Guide

The *Maintenance Emergency Recovery Pocket Guide* is an abridged version of the *Maintenance Manual* and contains the corrective maintenance procedures used for critical and major alarms generated on the EAGLE 5 ISS.

MPS Platform Software and Maintenance Manual (EAGLE 5 ISS with Tekelec T1000 Application Server)

The *Tekelec T1000 Application Server* describes the platform software for the Multi-Purpose Server (MPS) based on the Tekelec 1000 Application Server (T1000 AS) and describes how to perform preventive and corrective maintenance for the T1000 AS-based MPS. This manual should be used with the EPAP-based applications (EIR, G-Port, G-Flex, and INP).

MPS Platform Software and Maintenance Manual (EAGLE 5 ISS with Tekelec T1100 Application Server)

The EAGLE 5 ISS *STP with Tekelec T1100 Application Server* describes the platform software for the Multi-Purpose Server (MPS) based on the Tekelec 1100 Application Server (T1100 AS). This manual describes how to perform preventive and corrective maintenance for the T1100 AS-based MPS. This manual should be used with ELAP-based applications (EIR, G-Port, G-Flex, LNP, and INP).

Previously Released Features Manual

The *Previously Released Features Manual* summarizes the features of previous EAGLE, EAGLE 5 ISS, and IP⁷ Secure Gateway releases, and it identifies the release number of their introduction.

Provisioning Database Interface Manual

The *Provisioning Database Interface Manual* defines the programming interface that populates the Provisioning Database (PDB) for the EAGLE 5 ISS features supported on the MPS/EPAP platform. The manual defines the provisioning messages, usage rules, and informational and error messages of the interface. The customer uses the PDBI interface information to write his own client application to communicate with the MPS/EPAP platform.

Release Documentation

The *Release Documentation* is a release-specific compilation of the following documents:

- *Feature Notice* - Describes the features contained in the specified release; also provides the hardware baseline, describes the customer documentation set, provides information about customer training, and explains how to access the Customer Support website.
- *Master Glossary* - Contains an alphabetical listing of terms, acronyms, and abbreviations relevant to the system.
- *Master Index* - Lists all index entries used throughout the documentation set.
- *Release Notice* - Describes the changes made to the system during the lifecycle of a release. The final Release Notice provides a list of Generic Program Loads (GPLs), PRs resolved in a build, and all known PRs.

NOTE: The *Release Notice* is maintained solely on Tekelec's Customer Support Website to provide you with instant access to the most up-to-date release information.

- *System Overview* - Provides high-level information on SS7, EAGLE 5 ISS system architecture, LNP, and EOAP. The document provides a basic understanding of Tekelec Signaling systems and how those systems work together in a network. The document also provides a high-level overview of each system and its subsystems.

System Manual – EOAP

The *System Manual – EOAP* describes the Embedded Operations Support System Application Processor (EOAP) and provides the user with procedures on how to implement the EOAP, replace EOAP-related hardware, device testing, and basic troubleshooting information.

How to Locate Documentation on the Customer Support Site

Access to Tekelec's Customer Support area is restricted to current Tekelec customers. This section describes how to log into Tekelec's Customer Support site and how to locate customer documentation. Viewing these files requires Adobe Acrobat Reader.

- 1 Go to Tekelec's Customer Support login page at <https://support.tekelec.com/index.asp>
- 2 Enter your assigned username and chosen password, then click **Go**.

Or, if you do not have access to the Customer Support site, click **Need an Account?**

Follow the instructions on the screen.

NOTE: After 20 minutes of inactivity, you will be logged off, and you must repeat this step to regain access.

- 3 After successful login, select a product from the Product Support drop-down menu.
- 4 Select a release number from the Product Support Release drop-down menu.
- 5 Locate the appropriate documentation section (i.e., a Feature Notice would be under **Notices**, and user documentation would be under **Manuals**).
- 6 To open the documentation in the same window, double click the document name. To open the documentation in a new window, right-click the document name and select **Open in New Window**.
- 7 To download the document, right-click the document name and select **Save Target As**.

Customer Training

Tekelec offers a variety of technical training courses designed to provide the knowledge and experience required to properly provision, administer, operate and maintain the EAGLE 5 ISS. To enroll in any of the courses or for schedule information, contact the Tekelec Training Center at (919) 460-3064 or E-mail eagletrain@tekelec.com.

A complete list and schedule of open enrollment can be found at www.tekelec.com.

Customer Care Center

The Tekelec Customer Care Center offers a point of contact through which customers can receive support for problems that may be encountered during the use of Tekelec's products. The Tekelec Customer Care Center is staffed with highly trained engineers to provide solutions to your technical questions and issues seven days a week, twenty-four hours a day. A variety of service programs are available through the Tekelec Customer Care Center to maximize the performance of Tekelec products that meet and exceed customer needs.

Technical Assistance

To receive technical assistance, call the Tekelec Customer Care Center at one of the following locations:

- Tekelec, Europe and UK
Phone: +44 1784 467 804
Fax: +44 1784 477 120
Email: ecsc@tekelec.com
- Tekelec, USA
Phone (within the continental US) 1 888-FOR-TKLC
(outside the continental US) +1 919-460-2150
Fax: +1 919 460 0877
Email: support@tekelec.com

When your call is received, the Customer Care Center issues a Customer Service Report (CSR). Each CSR includes an individual tracking number. When a CSR is issued, the Customer Care Center determines the classification of the trouble. The CSR contains the serial number of the system, problem symptoms, and messages. The Customer Care Center assigns the CSR to a primary engineer, who will work to solve the problem. The Customer Care Center closes the CSR when the problem is resolved.

If a critical problem exists, the Customer Care Center initiates emergency procedures (see the following topic, "Emergency Response").

Emergency Response

If a critical service situation occurs, the Customer Care Center offers emergency response twenty-four hours a day, seven days a week. The emergency response provides immediate coverage, automatic escalation, and other features to ensure a rapid resolution to the problem.

A critical situation is defined as an EAGLE 5 ISS problem that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical problems affect service or system operation, resulting in:

- Failure in the system that prevents transaction processing
- Reduction in system capacity or in system traffic-handling capability
- Inability to restart the system
- Corruption of the database
- Inability to perform maintenance or recovery operations
- Inability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity, traffic, and billing. Maintenance capabilities may be defined as critical by prior discussion and agreement with the Customer Care Center.

Appendix A. Acronyms and Terminology

Adjacent Point Code—APC
Application Services Module—ASM
Basic Call State Model—BCSM
Basic Input Output System—BIOS
BIOS—Basic Input Output System
Called Party Number—CPN
Calling Party Address—CPA
Common Screening List—CSL
Eagle Router GPL—EROUTE
EDCM—Enhanced Data Communication Module
EGMS—Enhanced GMS
EIR—Equipment Identity Register
Enhanced Data Communication Module—EDCM
Enhanced GMS—EGMS
Enhanced OAM—EOAM
EOAM—Enhanced OAM
Equipment Identity Register—EIR
EROUTE—Eagle Router GPL
FAK—Feature Access Key
Feature Access Key—FAK
Frame Power Budget Alarm—FPBA
Frame Power Threshold—FPT
G-Flex—GSM Flexible Numbering
G-Port—GSM Mobile Number Portability
General Purpose Service Module—GPSM
Generic Program Load—GPL
Global Title Address—GTT
Global Title Translation—GTA
GMS—GSM Map Screening

GPL—Generic Program Load

GPSM—General Purpose Service Module

GSM—Global System for Mobile Communications

GSM Flexible Numbering—G-Flex

GSM Mobile Number Portability—G-Port

GTA—Global Title Address

GTT—Global Title Translation

HC-MIM—High Capacity Multi-channel Interface Module

High Capacity Multi-channel Interface Module (HC-MIM)—Provides access to eight E1/T1 ports residing on backplane connectors A and B

High Speed IMT Packet Router (HIPR)—An IMT for EAGLE 5 ISS systems that provides increased system throughput and traffic capacity.

High Speed Link—HSL

High Speed Multiplexer—HMUX

HIPR—High Speed IMT Packet Router

HMUX—High-speed Multiplexer

HSL—High Speed Link

IMEI—International Mobile Equipment Identity

In-Network Subscriber List—INSL

INAP-based Number Portability—INP

Integrated Message Feeder—IMF

IMT—Inter-processor Message Transport

Initial Detection Point—IDP

Inter-processor Message Transport—IMT

International Mobile Equipment Identity—IMEA

Internet Protocol Link Interface Module—IPLIM

Internet Protocol Services—IPS

INP—INAP-based Number Portability

IP Services Module—IPSM

IPGWI—An ITU version of SS7IPGW

IPGW_x—Generic reference to both ANSI (SS7IPGW) and ITU (IPGWI) IP7 Application.

IPLIM—Internet Protocol Link Interface Module. Point to Point IP7 Application.

IPLIMI—An ITU version of IPLIM

IPS—Internet Protocol Services

IPSM—IP Services Module

ITU version of IPLIM—IPLIMI

ITU version of SS7IPGW—IPGWI

LIM—Link Interface Module

LFS—Link Fault Sectionalization

Link Fault Sectionalization—LFS

Link Interface Module—LIM

Link Service Name—LSN

Link Status Out of Service—LSO

Link Status Proving Emergency—LSPE

Link Status Proving Normal—LSPN

Link Status Ready—LSR

LNP—Local Number Portability

M2PA—SS7 MTP2-User Peer-to-Peer Adaptation Layer

M3UA—SS7 MTP3 Adaptation Layer

MCPM—Measurement Collection and Polling Module

Measurement Collection and Polling Module—MCPM

MIM—Multi-Channel Interface Module

MPL—Multi Port LIM

Multi Port LIM—MPL

Multi-Channel Interface Module—MIM

OAM—Operations, Administration, & Maintenance Application

Operation Code—OPCODE

Operation Name—OPNAME

Operations, Administration, & Maintenance Application—OAM

RAM—Random Access Memory

Random Access Memory—RAM

RCT—Route Congestion Test

Relative Cost—RC

SCCP—Signaling Connection Control Part

SCCP User Adaptation Layer—SUA

SDRAM—Synchronous Dynamic Random Access Memory

SDS—System Debug Services

SE-HSL—Synchronous E1 High Speed Link

Secondary Adjacent Point Code—SAPC

Sentinel Transport Card—STC

Service Selector—SRVSEL

SIFB—Switched IMT Fabric Board

Signaling Connection Control Part—SCCP

Signaling System 7/Internet Protocol Gateway—SS7IPGW

SRAM—Static Random Access Memory

SRVSEL—Service Selector

SS7 MTP3 Adaptation Layer—M3UA

SS7IPGW—Signaling System 7/Internet Protocol Gateway. Point to Multipoint IP7 Application.

STC—Sentinel Transport Card

Static Random Access Memory—SRAM

SUA—SCCP User Adaptation Layer

Switched IMT Fabric Board—SIFB

Synchronous Dynamic Random Access Memory—SDRAM

System Configuration Manager—SCM

System Debug Services—SDS

TDM—Terminals, Disk, & Maintenance card, or time division multiplex

Terminals, Disk, & Maintenance card, or Time Division Multiplex—TDM

TFC—Transfer Congested (traffic)

TFR—Transfer Restricted

TLNP—Triggerless LNP

TPS—Transactions per Second

Transfer Congested (traffic)—TFC

Transfer Restricted—TFR

Triggerless LNP—TLNP

UAM—unsolicited alarm message

UIM—unsolicited information message

unsolicited alarm message—UAM

unsolicited information message—UIM

VSCCP—VxWorks Signaling Connection Control Part

VxWorks Signaling Connection Control Part—VSCCP

Appendix B. Hardware Baseline

The following hardware baseline supports this release. This list shows top-level part numbers (in bold) and assembly part numbers (if applicable).

- Control Shelf **870-2321-02 Rev A** or
870-2321-08 Rev A (R)^{1 2}
Control Shelf **870-2321-04 Rev A**³ or
Control Shelf **870-2377-01 Rev A** or
870-2377-02 Rev A (R)^{2 4}
- Control Shelf Backplane **870-0775-03 Rev E**
- Extension Shelf **870-2378-01 Rev A** or
870-2378-02 Rev A (R)^{2 5}
Extension Shelf **870-0776-02 Rev C**⁶
Extension Shelf **870-0776-03 Rev D**
Extension Shelf **870-0776-06 Rev A**
Extension Shelf **870-0776-07 Rev A**
- Extension Shelf Backplane **870-0776-08 Rev A** or
Extension Shelf Backplane **870-0776-11 Rev A**
- ACM **870-1008-02 Rev D** or
ACM **870-1008-03 Rev A** or
ACM **870-1008-04 Rev A** or
ACM **870-1008-05 Rev A**
- Air Management Card **870-1824-01 Rev A** or
870-1824-02 Rev A (R)^{2 7}
- DCM **870-1945-01 Rev A**
DCM **870-1945-02 Rev A**
DCM **870-1945-03 Rev A**
- EDCM (single-slot) **870-2372-01 Rev E**
EDCM **870-2372-08 Rev A** or
870-2372-13 Rev A (R)²
- EDCM-A (single-slot) **870-2508-01 Rev A** or
870-2508-02 Rev A (R)²
- DCMX **870-1984-01 Rev A**

¹ Required for HMUX.

² ROHS equivalent of immediately preceding part number

³ Required for HMUX, Standard Frame

⁴ Required for HMUX, Heavy Duty Frame

⁵ Required for Heavy Duty Frame

⁶ Required for Standard Frame

⁷ Required for Shelves with HC-MIM Cards

- DSM, 1GB MEM
DSM, 1GB MEM

DSM, 1GB MEM
DSM, 2GB MEM
DSM, 4GB MEM
DSM, 4GB MEM
DSM, 4GB MEM
 - DSM-1G
DSM-1G
DSM-1G
 - EDSM-2G (MCPM)
EDSM-2G (MCPM)
EDSM-2G (MCPM)
 - E1/T1 MIM
E1/T1 MIM
E1/T1 MIM
E1/T1 MIM
 - E1-ATM
E1-ATM
E1-ATM
 - E5-E1T1
 - E5-ENET
 - EILA
EILA w/ DIMM
 - FAP
FAP

FAP
FAP
 - FAP-CF/EF
FAP-MISC
 - GPSM-II
GPSM-II

GPSM-II
- 870-1984-02 Rev A or
 870-1984-09 Rev A or
 870-1984-15 Rev A (R)¹ or
 870-1984-15 Rev A or
 870-1984-03 Rev A or
 870-1984-05 Rev A² or
 870-1984-06 Rev A or
 870-1984-07 Rev A or
 870-1984-13 Rev A (R)¹

 870-2371-02 Rev A
 870-2371-06 Rev A
 870-2371-08 Rev A or
 870-2371-13 Rev A (R)¹

 870-2372-03 Rev A
 870-2372-07 Rev A
 870-2372-09 Rev A or
 870-2372-14 Rev A (R)¹

 870-2198-01 Rev G or
 870-2198-02 Rev A
 870-2198-03 Rev A
 870-2198-04 Rev A or
 870-2198-07 Rev A (R)¹

 870-2455-01 Rev B
 870-2455-02 Rev B
 870-2455-03 Rev A or
 870-2455-05 Rev A (R)¹

 870-1873-02 Rev A or
 870-1873-03 Rev A (R)^{1 2}

 870-2212-02 Rev A or
 870-2212-03 Rev A (R)¹

 870-2049-01 Rev A or
 870-2049-02 Rev A

 870-1606-01 Rev A or
 870-1606-02 Rev A^{3 4}
 870-2320-01 Rev A or
 870-2320-03 Rev A (R)^{1 5 6}
 870-1823-01 Rev A

 870-0243-08 Rev C
 870-0243-09 Rev C

 870-2360-01 Rev E
 870-2360-05 Rev A
 870-2360-06 Rev A or
 870-2360-08 Rev A (R)¹

¹ ROHS equivalent of immediately preceding part number
² Required for 192 Million LNP Numbers
³ Required for Standard Frame
⁴ Required for Frames with HC-MIMs
⁵ Required for Heavy Duty Frame
⁶ Required for Frames with HC-MIMs

- HC-MIM
HC-MIM
870-2671-01 Rev P or
870-2671-03 Rev A (R)¹
870-2671-02 Rev B or
870-2671-04 Rev A (R)¹
- HIPR
870-2574-01 Rev D or
870-2574-02 Rev A (R)¹
- HMUX
870-1965-01 Rev A or
870-1965-03 Rev A (R)¹
- LIM-AINF
LIM-AINF
LIM-AINF
LIM-AINF
LIM-AINF
LIM-AINF
LIM-AINF w/ DIMM
LIM-AINF w/ DIMM
LIM-AINF w/ DIMM
LIM-AINF w/ DIMM
LIM-AINF w/ DIMM
LIM-AINF w/ DIMM
LIM-AINF w/ DIMM
870-1014-01 Rev D or
870-1014-02 Rev A or
870-1014-03 Rev B or
870-1014-04 Rev A or
870-1014-05 Rev A or
870-1014-06 Rev A or
870-1488-01 Rev A or
870-1488-02 Rev A or
870-1488-03 Rev A or
870-1488-04 Rev A or
870-1488-05 Rev A or
870-1488-06 Rev A
- LIM-ATM
LIM-ATM
LIM ATM
LIM ATM
LIM-ATM
LIM-ATM
870-1293-02 Rev A or
870-1293-03 Rev A
870-1293-06 Rev A
870-1293-07 Rev A
870-1293-08 Rev A
870-1293-10 Rev A or
870-1293-13 Rev A (R)¹
- LIM-DS0
LIM-DS0
LIM-DS0
LIM-DS0 w/ DIMM
LIM-DS0 w/ DIMM
LIM-DS0 w/ DIMM
870-1009-02 Rev D or
870-1009-03 Rev A or
870-1009-04 Rev A or
870-1485-01 Rev A or
870-1485-02 Rev A or
870-1485-03 Rev A
- LIM-E1
870-1379-01 Rev A
- LIM-ILA
LIM-ILA w/ DIMM
870-1484-01 Rev E or
870-1484-02 Rev C
- LIM-OCU
LIM-OCU
LIM-OCU
LIM-OCU w/ DIMM
LIM-OCU w/ DIMM
LIM-OCU w/ DIMM
870-1010-03 Rev D or
870-1010-04 Rev A or
870-1010-05 Rev A or
870-1486-02 Rev A or
870-1486-03 Rev A or
870-1486-04 Rev A
- LIM-V.35
LIM-V.35
LIM-V.35
LIM-V.35 w/ DIMM
LIM-V.35 w/ DIMM
LIM-V.35 w/ DIMM
870-1012-02 Rev D
870-1012-03 Rev A
870-1012-04 Rev A
870-1487-01 Rev A or
870-1487-02 Rev A or
870-1487-03 Rev A

¹ ROHS equivalent of immediately preceding part number

• MDAL MDAL MDAL MDAL	870-0773-04 Rev B or 870-0773-05 Rev A or 870-0773-06 Rev A or 870-0773-08 Rev A or 870-0773-09 Rev A (R) ¹	
• MPL MPL MPL MPL-T	870-2061-01 Rev A 870-2061-03 Rev A 870-2061-04 Rev A or 870-2061-06 Rev A (R) ¹ 870-2061-02 Rev C	
• MPS DC Frame Assembly	890-1843-01 Rev C or 890-1843-02 Rev A (R) ¹	
• MPS EPAP	890-1801-02 Rev A	
• TDM TDM	870-0774-10 Rev A or 870-0774-11 Rev A	
• TDM GTI	870-0774-15 Rev B or 870-0774-18 Rev A (R) ¹	
• TSM-256 TSM-256 TSM-256	870-1289-02 Rev A 870-1289-03 Rev A or 870-1289-04 Rev A or 870-1289-06 Rev A (R) ¹	
• TSM-512 TSM-512 TSM-512	870-1290-02 Rev A 870-1290-03 Rev A or 870-1290-04 Rev A	
• TSM-768 TSM-768 TSM-768	870-1291-02 Rev A 870-1291-03 Rev A or 870-1291-04 Rev A	
• TSM-1024 TSM-1024 TSM-1024	870-1292-02 Rev A 870-1292-03 Rev A or 870-1292-04 Rev A	
• Single EOAP	890-1050-03 Rev H	
• Dual EOAP	890-1050-01 Rev K	
• Kit, E1	890-1037-01 Rev A or 890-1037-06 Rev A (R) ¹	
• Kit, Holdover Clock Assy	890-1013-01 Rev A	
• Fan Assy (Standard Frame)	890-1038-01 Rev D	
• Fan Assy (Shelves with HC-MIM cards) Fan Assy (Shelves with HC-MIM cards)	890-0001-01 Rev A 890-0001-02 Rev A or 890-0001-04 Rev A (R) ¹	
• T1000 Application Server	870-2640-03 Rev A	
• Dual Port G-Bit E-Net Card	870-2706-02 Rev A or 870-2706-04 Rev A (R) ¹	
• Quad Serial Exp. Card	870-2708-02 Rev A	
• 120 GB Hard Drive Assy	870-2721-04 Rev A	
• T1100 (Application Server - DC)	870-1893-03 Rev A	

¹ ROHS equivalent of immediately preceding part number

- PCI Card - Dual Port Ethernet **870-2706-04 Rev A**
- Hard Disc Drive - 250 GB SATA **870-2787-02 Rev A**
- Upgrade kit, MPS Netra-to-T1000 Application Server **870-2735-02 Rev A**

