# EAGLE® LNP Application Processor (ELAP)

## Release 6.0

## Feature Notice

**909-0128-001 Revision B**
**August 2006**

**TEKELEC**

# Table of Contents

# Introduction

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

This *Feature Notice* includes a brief feature overview, lists new hardware required if any, 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 the Eagle LNP Application Processor (ELAP) or the EAGLE 5 Integrated Signaling System (ISS) (see "How to Locate Documentation on the Customer Support Site" on page FN-12).

## New Feature

ELAP 6.0 introduces the 228 Million LNP Numbers feature.

# Important Operational Changes

None

# Feature Overview

## 228 Million LNP Numbers

As Local Number Portability becomes more established, competition increases, and number pooling becomes more widespread, the number of ported TNs continues to increase. Customers would like to manage a single LSMS that is capable of maintaining the national LNP database. Increased capacity is required on the ELAP.

Currently, Tekelec supports 192 Million LNP numbers per node on a 4 GB DSM card. With the advent of wireless portability and continued wireline LNP porting and pooling activity, it is anticipated that the 192 Million LNP numbers capacity will be exceeded sometime early-mid 2007 as shown in Figure FN-1.

**Figure FN-1.**   Current LNP Growth Projections
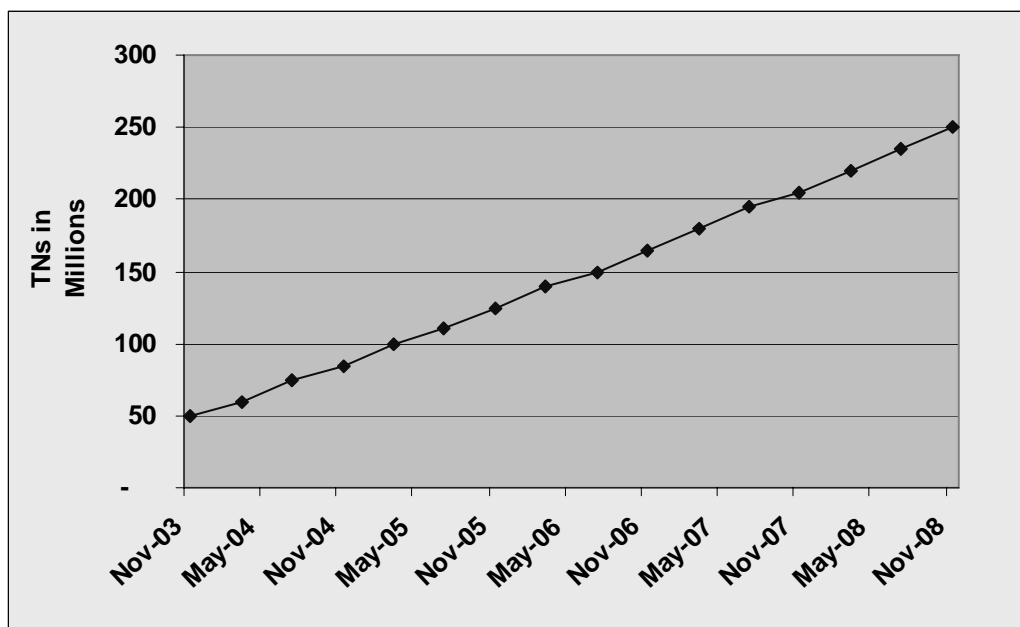


The 228 Million LNP Numbers feature allows customers to use their existing hardware and remain in a centralized Eagle LNP architecture (all LNP numbers in one node).

The 228 Million LNP Numbers feature expands the maximum number of ported/pooled LNP numbers supported on one EAGLE node to 228 million LNP numbers in increments of 12 million numbers. Additional database improvements include faster MPS-to-DSM audit reconcile and reload times, and LSMS-to-ELAP audit times.

# 228 Million LNP Numbers

The 228 Million LNP Numbers feature expands the maximum number of ported/pooled Local Number Portability (LNP) numbers supported on one on the ELAP to 228 Million LNP Numbers. The feature supports feature access keys for increments from 204, 216, or 228 million ported/pooled numbers across all NPAC regions.

## Hardware Requirements

The 228 Million LNP Numbers feature requires the existing 4 GB DSM card.

The 228 Million LNP Numbers feature runs on the T1100 platform.

## Enhanced Commands

The following commands have been enhanced to support the feature access keys (FAKs) of the 228 Million LNP Numbers feature.

* The **enable-ctrl feat** command supports the feature access keys to enable 228 Million LNP Numbers, and verifies that 4 GB DSM cards are present in the system.

* The **rtrv-ctrl-feat** command output shows the maximum quantity of LNP ported TNs that was enabled with the feature access key.

As shown in Table FN-1, additional feature access keys can be purchased to accomodate future LNP growth beyond 192 Million LNP numbers in 12 million LNP number increments.

**Table FN-1.**    Feature Access Keys

| Feature | Feature Access Key Part No. |
|---|---|
| 192 Million LNP | 893-0110-20 |
| 204 Million LNP | 893-0110-21 |
| 216 Million LNP | 893-0110-22 |
| 228 Million LNP | 893-0110-23 |

## Compatibility

ELAP 6.0 is fully compatible with EAGLE 5 ISS Release 35.0. Table FN-2 identifies the compatibility requirements of this feature.

**Table FN-2.**   Compatibility Matrix - ELAP 6.0

| Feature Name | LSMS | Compatibility |
|---|---|---|
| 228 Million LNP Numbers | 6.5 | Not Compatible |
| | 7.0[a] | Partially Compatible - compatible but not fully functional (feature dependent) |
| | 8.0[b] | Partially Compatible - compatible but not fully functional (feature dependent) |
| | 8.5 | Fully Compatible |

a. LSMS capacity is limited to a maximum of 120 million.
b. LSMS capacity is limited to a maximum of 192 million.

## Limitations

The 228 Million LNP Numbers feature is available only for North American LNP customers.

The 228 Million LNP Numbers feature requires the LNP 228 Million numbers feature on the LSMS.

## Feature Activaton

Activation of the 228 Million LNP Numbers feature on the EAGLE 5 ISS is based on the following conditions:

– The ELAP LNP Configuration feature access key must be on.

– 4 GB DSM cards are required; at least one 4 GB DSM card must be provisioned in the system.

## Alarms

The 228 Million LNP Numbers feature uses the existing alarming (SCCP and LNP) for the MPS.

# Customer Documentation

## Documentation Set

The ELAP documentation is included in the documentation set for EAGLE 5 ISS Release 35.0, which 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*

- *Feature Manual - ECAP*

- *Feature Manual – EIR*

- *Feature Manual – G-Flex C7 Relay*

- *Feature Manual – G-Port*

- *Feature Manual – INP*

- *FTP-Based Table Retrieve Application (FTRA) User Guide*

- *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 1000 Application Server)*

- *MPS Platform Software and Maintenance Manual (EAGLE 5 ISS with Tekelec 1100 Application Server)*

- *Previously Released Features Manual*

- *Provisioning Database Interface Manual*

- *Release Documentation*

  – *Feature Notice - EAGLE 5 ISS 35.0*

  – *Feature Notice - ELAP 6.0*

  – *Feature Notice - EPAP 7.0*

  – *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 or an IP$^7$ Secure Gateway system 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 or IP$^7$ Secure Gateway 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, Flexible GTT Load Sharing, and Origin-based SCCP Routing.

### Database Administration Manual – IP$^7$ Secure Gateway

This manual contains procedural information required to configure the EAGLE 5 ISS 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 or an IP[7] Secure Gateway 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 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 5 ISS LNP Application Processor on the 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 5 ISS Provisioning Application Processor 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 EIR feature on the Multi-Purpose Server (MPS) 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 Multi-Purpose Server (MPS) 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 provides instructions and information on how to install, use, and maintain the G-Port feature on the Multi-Purpose Server (MPS) 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 Multi-Purpose Server (MPS) 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 system, OEM-based products which include the AS*i* 4000 Service Control Point (SCP), the Netra-based 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 Applications Server (T1000 AS). This manual also includes site preparation, environmental and other requirements, procedures used to physically install the Tekelec 1000 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 Applications Server (T1100 AS). This manual also includes site preparation, environmental and other requirements, procedures used to physically install the Tekelec 1100 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 used 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 4.0 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 and the IP[7] Secure Gateway 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 1000 Application Server)**

The *EAGLE 5 ISS with 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 1100 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 the EPAP-based applications (EIR, G-Port, G-Flex, and INP).

**Previously Released Features Manual**

The *Previously Released Features Manual* summarizes the features of previous EAGLE, EAGLE 5 ISS, and IP[7] 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, the IP$^7$ Secure Gateway, system architecture, LNP, and EOAP.

### 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 Email `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

**LNP**—Local Number Portability

**LSMS**—Local Service Management System

**NPAC**—Number Portability Administration Center

**TN**—Telephone Number