Tekelec EAGLE® 5 Integrated Signaling System

Related Publications

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TEKELEC

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EAGLE 5 ISS Publications

EAGLE 5 ISS Documentation Set

The EAGLE 5 Integrated Signaling System (ISS) customer-documentation set is a comprehensive group of electronic files available on an optical disc, such as DVD, and through the Tekelec Customer Support site (see *Locate Product Documentation on the Customer Support Site* on page 9). The disc shipped with each release contains the EAGLE 5 ISS core documentation, several reference manuals, and related hardware and installation manuals. Depending on the content and availability of an EAGLE 5 ISS release, some manuals might not be included in the documentation for a release (for example, EPAP manuals would not be included in a release that is available only to LNP customers). Some manuals, such as *Previously Released Features* and *Release Notices*, are available only through the support site.

The current releases of all manuals are available through the Tekelec Customer Support site.

A complete documentation set of the EAGLE 5 ISS provides information about the EAGLE 5 ISS and the following supporting systems:

*   EAGLE Collection Application Processor (ECAP)
*   Embedded Operations Support System Application Processor (EOAP)
*   EAGLE LNP Application Processor (ELAP)
*   EAGLE Provisioning Application Processor (EPAP)
*   FTP-Based Table Retrieve Application (FTRA)

For releases that exclude any of the supporting systems, the documentation set will be adjusted accordingly. Some information is available only on the Tekelec Customer Support site. Refer to this list of manuals. The manuals are listed per application; hardware manuals are listed separately.

EAGLE 5 ISS Core Documentation

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

*   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. This is available only in print.

*   The *Commands Quick Reference Guide* contains an alphabetical listing of the commands and parameters. The guide is smaller than the standard manuals and spiral bound for convenience. This is available only in print.

*   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.

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

- 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 to implement this feature.

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

- The *Database Administration Manual - IP7 Secure Gateway* contains procedural information required to configure the EAGLE 5 ISS to implement the SS7-IP Gateway.

- 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 the Database Administration Manuals for either Gateway Screening, Global Title Translation, or SS7.

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

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

- The *Maintenance* manual contains procedural information required for maintaining the EAGLE 5 ISS system. The *Maintenance* manual provides preventive maintenance procedures used in maintaining the different systems, including card removal and replacement procedures.

- The *UAM/UIM Pocket Guide* is an abridged version of the *Unsolicited Alarm and Information Messages* manual and contains all the corrective maintenance procedures used in maintaining the EAGLE 5 ISS. This is available only in print.

- The *UAM Emergency Pocket Guide* is an abridged version of the Maintenance Manual and contains the corrective maintenance procedures for critical and major alarms generated on the EAGLE 5 ISS. This is available only in print.

- The *Measurements* manual contains information related to the Maintenance and Administration Subsystem (OAM) and the Measurement Platform (MP) measurements for the EAGLE 5 ISS.

- 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.

  This manual is available only through the Tekelec Customer Support Site (see *Locate Product Documentation on the Customer Support Site* on page 9).

- The *Release Documentation* contains the following documents:

  - *EAGLE 5 ISS Feature Notice* - Describes the features contained in the specified release. The Feature Notice also provides the hardware baseline for the specified release, describes the

customer documentation set, provides information about customer training, and explains how to access the Customer Support website.

Additional Feature Notices may be provided per subsystem.

- *Related Publications* (this document) - Lists all documents published for the specified release.
- *Release Notice* - Contains Generic Program Loads (GPLs), a list of PRs resolved in a build, and the latest known PRs per system and subsystem.

  Note:

  The *Release Notice* is maintained solely on the Tekelec Customer Support site to provide you with instant access to the most up-to-date release information (see *Locate Product Documentation on the Customer Support Site* on page 9).

- *Systems Overview* - Provides high-level information on SS7, the IP7 Secure Gateway, system architecture, LNP, and EOAP.

- *Master Glossary* - Contains an alphabetical listing of terms, acronyms, and abbreviations relevant to the system.

- The *SEAS Commands Error Messages Manual* lists the error messages generated by the EAGLE 5 ISS that are specific to the Signaling Engineering and Administration System (SEAS). It includes the SEAS commands that trigger the error messages, the equivalent system error messages and commands, and the explanatory text.
- The *SS7-over-IP Networks Using SIGTRAN* manual examines the reasons for transitioning to an SS7-over-IP network, the considerations that go into planning and dimensioning, and helpful information for implementing the network using EAGLE 5 ISS.
- The *Unsolicited Alarm and Information Messages* manual describes the EAGLE 5 ISS system unsolicited alarm and information messages sent to the system terminal whenever there is a system fault, whenever a previous fault condition is corrected, or when a subsystem, equipment, and/or service is placed in or taken out-of-service. Each message has a trouble code and text associated with the trouble condition.

- *Numbering Plan Processor (NPP) Overview* describes a generic software process to provision complex numbering plans and to modify parameters for digit string filtering, conditioning, and encoding. NPP is used by EAGLE 5 ISS features; other manuals in this documentation set describe the specific use of NPP for a feature. The manual defines the components of NPP and their interactions, and describes a test tool that can be used to verify NPP provisioning before it is used with live traffic.

ECAP Documentation

- 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.

EOAP Documentation

- 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, test devices, and perform basic troubleshooting.

ELAP Documentation

- 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.

- The *LNP Database Synchronization Manual - LSMS with 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.

- The *LNP Feature Activation Guide* contains procedural information required to configure the EAGLE 5 ISS for the LNP feature, including LNP services, LNP options, LNP subsystem application, automatic call gapping, the Triggerless LNP feature, Increasing the LRN and NPANXX Quantities on the EAGLE 5 ISS, and the Activating and Deactivating the LNP Short Message Service (SMS) feature.

- The *MPS Platform Software and Maintenance Manual - EAGLE 5 ISS with Tekelec 1100* Application Server describes the platform software for the Multi-Purpose Server (MPS) based on the Tekelec 1100 Application Server (T1100 AS) and describes how to perform preventive and corrective maintenance for the T1100 AS-based MPS. This manual should be used with the ELAP-based application (LNP).

EPAP Documentation

- 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 EPAP Advanced Database (EADB) Features.

- 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.

- The *MPS Platform Software and Maintenance Manual - EAGLE 5 ISS with Tekelec 1000* 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).

- 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.

EAGLE 5 ISS Features that Use Data Downloaded from EPAP

- The *Feature Manual - A-Port* provides an overview of a feature providing the capability for IS41 mobile subscribers to change service provider while retaining their original Mobile Directory Number (MDN). This manual gives the instructions and information on how to install, use, and maintain the A-Port feature on the Multi-Purpose Server (MPS) platform of the EAGLE 5 ISS.

- *Feature Manual - ATINP* provides an overview of a feature providing the capability for IS41 subscribers to migrate to a GSM network and GSM mobile subscribers to migrate to an IS41 network. This manual gives the instructions and information on how to install, use, and maintain the IS41 GSM Migration (IGM) feature on the Multi-Purpose Server (MPS) platform of the EAGLE 5 ISS.

- 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.

- 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 G-Flex features on the MPS/EPAP platform of the EAGLE 5 ISS.

- 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.

- The *Feature Manual - INP/AINPQ* provides information and instructions on how to implement, utilize, and maintain either the INAP-based Number Portability (INP) feature or the ANSI-41 INP Query (AINPQ) feature or both features on the Multi-Purpose Server (MPS) platform of the EAGLE 5 ISS.

- The *Feature Manual - IS41 GSM Migration* provides an overview of a feature providing the capability for IS41 subscribers to migrate to a GSM network and GSM mobile subscribers to migrate to an IS41 network. This manual gives the instructions and information on how to install, use, and maintain the IS41 GSM Migration (IGM) feature on the Multi-Purpose Server (MPS) platform of the EAGLE 5 ISS.

- The *Feature Manual - V-Flex* provides instructions and information on how to install, use, and maintain the V-Flex Voice Mail Router (V-Flex) feature on the MPS / EPAP platform of the EAGLE 5 ISS. The feature allows calls to be routed to a specific voice mail server (VMS) based on subscriber and call context data. These data are provisioned using the EAGLE 5 ISS MMI port and EPAP PDBI interface.

- *Feature Manual - TIF* describes the functions and use of the Triggerless ISUP Framework (TIF) and the TIF Number Portability (TIF NP), TIF SCS Forwarding, and TIF Simple Number Substitution (TIF SNS) features. TIF provides a method for querying entities (such as gsmSCF) to obtain number portability and routing information for subscribers directly from an EAGLE 5 ISS acting as MNP SRF. The TIF NP feature uses TIF and NPP for incoming ISUP IAM message decoding, number conditioning, RTDB lookup for number portability information, and outgoing message formatting. The TIF SCS Forwarding feature determines when to use DTA to send relayed IAM and SAM MSU information to the SCS. The TIF SNS feature substitutes the calling party number in the ISUP IAM message with a single configured calling party number. The

manual provide instructions and information about configuring and using TIF and the TIF features on the Multi-Purpose Server (MPS) platform and the EAGLE 5 ISS.

- *Feature Manual - MO SMS* addresses the number portability requirements of wireless network operators for delivery of Mobile Originated SMS messages in a number portability environment for GSM and IS41 and in the IS41-to-GSM Migration environment . The EAGLE 5 ISS MO SMS features apply number portability database lookup to SMS messages for IS41 and GSM networks. The MO SMS features are based on the EAGLE 5 ISS platform with EPAP.

FTRA Documentation

- 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.

- The *FTP-Based Table Retrieve Application (*FTRA*) Software Installation Instructions* describes the FTRA software installation and upgrade on the Windows and Unix platforms.

Hardware and Installation Documentation

- The *Hardware Manual - EAGLE 5 ISS* contains hardware descriptions and specifications of Tekelec signaling products. These include the EAGLE 5 ISS, OEM-based products such as the ASi 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.

- 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.

- 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 to physically install the T1100 AS, and troubleshooting and repair of Field Replaceable Units (FRUs).

- 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 to physically install the T1000 AS, and troubleshooting and repair of Field Replaceable Units (FRUs).

Locate Product Documentation on the Customer Support Site

Access to Tekelec's Customer Support site is restricted to current Tekelec customers only. This section describes how to log into the Tekelec Customer Support site and locate a document. Viewing the document requires Adobe Acrobat Reader, which can be downloaded at www.adobe.com.

1. Log into the Tekelec **new** Customer Support site at *support.tekelec.com*.

Note: If you have not registered for this new site, click the **Register Here** link. Have your customer number available. The response time for registration requests is 24 to 48 hours.

2. Click the **Product Support** tab.
3. Use the Search field to locate a document by its part number, release number, document name, or document type. The Search field accepts both full and partial entries.
4. Click a subject folder to browse through a list of related files.
5. To download a file to your location, right-click the file name and select **Save Target As**.

Glossary

A

ANSI

American National Standards Institute

An organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system. ANSI develops and publishes standards. ANSI is a non-commercial, non-government organization which is funded by more than 1000 corporations, professional bodies, and enterprises.

AS

Application Server

A logical entity serving a specific Routing Key. An example of an Application Server is a virtual switch element handling all call processing for a unique range of PSTN trunks, identified by an SS7 DPC/OPC/CIC_range. Another example is a virtual database element, handling all HLR transactions for a particular SS7 DPC/OPC/SCCP_SSN combination. The AS contains a set of one or more unique Application Server Processes, of which one or more normally is actively processing traffic.

D

Database

All data that can be administered by the user, including cards, destination point codes, gateway screening tables, global title translation tables, links, LNP services, LNP service providers, location routing numbers, routes,

D

shelves, subsystem applications, and 10 digit telephone numbers.

DB

Database

Daughter Board

Documentation Bulletin

E

EIR

Equipment Identity Register

A network entity used in GSM networks, as defined in the 3GPP Specifications for mobile networks. The entity stores lists of International Mobile Equipment Identity (IMEI) numbers, which correspond to physical handsets (not subscribers). Use of the EIR can prevent the use of stolen handsets because the network operator can enter the IMEI of these handsets into a 'blacklist' and prevent them from being registered on the network, thus making them useless.

ELAP

EAGLE Local Number Portability Application Processor

EOAP

Embedded Operation Support System Applications Processor

Also, Enhanced OSS Application Process.

EPAP

EAGLE Provisioning Application Processor

ESP

Expanded Services Platform

The Sentinel system with the hardware and software platform that provides the interface to the

E

Integrated EAGLE and Sentinel
monitoring system. The ESP
hardware and software platform
runs on the model 120 server.

F

FTRA   FTP-based Table Retrieve
                               Application

                               An application that runs in a PC
                               outside of the EAGLE 5 ISS and
                               that communicates with the
                               EAGLE 5 ISS through the IPUI
                               feature and the FTP Retrieve and
                               Replace feature.

G

G-Flex   GSM Flexible numbering

                               A feature that allows the operator
                               to flexibly assign individual
                               subscribers across multiple HLRs
                               and route signaling messages,
                               based on subscriber numbering,
                               accordingly.

G-Port   GSM Mobile Number Portability

                               A feature that provides mobile
                               subscribers the ability to change
                               the GSM subscription network
                               within a portability cluster, while
                               retaining their original MSISDN(s).

GSM   Global System for Mobile
                               Communications

GWS   Gateway Screening

                               Used at gateway STPs to limit
                               access into the network to
                               authorized users. A gateway STP
                               performs inter-network routing
                               and gateway screening functions.
                               GWS controls access to nonhome
                               SS7 networks. Only an MSU that

G

matches predefined criteria in the EAGLE 5 ISS's database is allowed to enter the EAGLE 5 ISS.

I

INP

INAP-based Number Portability

Tekelec's INP can be deployed as a stand-alone or an integrated signal transfer point/number portability solution. With Tekelec's stand-alone NP server, no network reconfiguration is required to implement number portability. The NP server delivers a much greater signaling capability than the conventional SCP-based approach.

Intelligent Network (IN) Portability

Integrated Sentinel

The Integrated Sentinel product provides monitoring capabilities for Signaling System 7 (SS7) links. Integrated Sentinel includes network surveillance capabilities and fault-management functions.

IP

Internet Protocol

IP specifies the format of packets, also called datagrams, and the addressing scheme. The network layer for the TCP/IP protocol suite widely used on Ethernet networks, defined in STD 5, RFC 791. IP is a connectionless, best-effort packet switching protocol. It provides packet routing, fragmentation and re-assembly through the data link layer.

ITU

International Telecommunications Union

L

L

LNP   Local Number Portability

LSMS   Local Service Management System

M

MAP   Mobile Application Part

MPS   Multi-Purpose Server

The Multi-Purpose Server provides database/reload functionality and a variety of high capacity/high speed offboard database functions for applications. The MPS resides in the General Purpose Frame.

O

OEM   Original Equipment Manufacturer

P

PC   Point Code

The identifier of a signaling point or service control point in a network. The format of the point code can be one of the following types:

- ANSI point codes in the format network indicator-network cluster-network cluster member (**ni-nc-ncm**).

- Non-ANSI domestic point codes in the format network indicator-network cluster-network cluster member (**ni-nc-ncm**).

- Cluster point codes in the format network indicator-network cluster-* or network indicator-*-*.

- ITU international point codes in the format **zone-area-id**.

P

- ITU national point codes in the format of a 5-digit number (**nnnnn**), or 2, 3, or 4 numbers (members) separated by dashes (**m1-m2-m3-m4**) as defined by the Flexible Point Code system option. A group code is required (**m1-m2-m3-m4-gc**) when the ITUDUPPC feature is turned on.

- 24-bit ITU national point codes in the format main signaling area-subsignaling area-service point (**msa-ssa-sp**).

The EAGLE 5 ISS LNP uses only the ANSI point codes and Non-ANSI domestic point codes.

PDB	Provisioning Database
PDBI	Provisioning Database Interface

The interface consists of the definition of provisioning messages only. The customer must write a client application that uses the PDBI request/response messages to communicate with the PDBA.

S

SCCP	Signaling Connection Control Part
SCP	Service Control Point

Service Control Points (SCP) are network intelligence centers where databases or call processing information is stored. The primary function of SCPs is to respond to queries from other SPs by retrieving the requested information from the appropriate database, and sending it back to the originator of the request.

S

	Secure Copy
SEAC	Signaling Engineering and Administration Center
SEAS	Signaling Engineering and Administration System
	An interface defined by Bellcore and used by the Regional Bell Operating Companies (RBOCs), as well as other Bellcore Client Companies (BCCs), to remotely administer and monitor the signaling points in their network from a central location.
SS7	Signaling System #7
STP LAN	Signaling Transfer Point Local Area Network.
	A feature in the EAGLE 5 ISS that copies MSUs selected through the gateway screening process and sends these MSUs over the Ethernet to an external host computer for further processing.

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