

Catalog of Products and Services

TruOps Telecom Routing Administration

The industry source for routing and rating information

August 2025



TruOps Telecom Routing Administration

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Welcome to the TruOps Telecom Routing Administration

Telecommunications data is essential for service providers, database managers and businesses across industries to optimize operations and drive growth. For communication service providers, critical applications such as call routing, call rating and billing, numbering assignment processes and nearly any application that utilizes TruOps Telecom Routing Administration's (TRA's) data depend on having access to the accurate, timely and comprehensive data provided. Data is also used by geographical information systems and applications, locator services, revenue assurance processes, financial services, customer relationship management, credit card services, least cost routing processes, call centers, law enforcement, mapping and countless related types of services.

Since 1984, TRA has delivered essential data that supports service providers in maintaining efficient networks and ensuring seamless call completion for customers. The extremely high percentage of call completion and billing accuracy within the areas covered by the North American Numbering Plan (U.S., U.S. Territories, Canada, Bermuda and parts of the Caribbean) are supported by the data that TRA provides. Numerous regulatory bodies, industry guidelines and industry standards cite TRA products as necessary and critical to telecommunications products and services within the NANP. TRA works together with these groups to address completeness, accuracy and consistency in as many areas as possible relative to the data it provides.

Why TRA Data Stands Out

- TRA products contain data obtained "directly from the source" (e.g., service providers, agencies assigning numbering, etc.), a large portion of which is input by service providers themselves.
- Because of the data sources, TRA data accuracy and timeliness are of the highest quality.
 This data helps to avoid increased operational and financial risks that could occur by using
 delayed, outdated, or incomplete data provided by other sources. Data quality is a major
 factor in regard to cost efficient operations.

Benefits of iconectiv TruOps TRA Data Products

- Save valuable staff time and reduce expenses incurred in compiling, assessing and maintaining data.
- Since the majority of TRA products constitute data in standard, easy-to-access formats, as
 opposed to hard-to-use, involved, self-contained applications, it is easy to manage the
 integration of this data into specific business applications, internal databases and
 operational processes.
- Through the enterprise licensing of TRA products, the single source of authoritative data can be used company-wide to meet a myriad of needs. Reduce the time spent on discrepancy resolution internally and other problems that can occur from obtaining similar data from a multitude of sources.
- TRA's Customer Care Center (CCC) and technical staff are available to assist with understanding of the data and in explaining how and why data variations may occur throughout the industry.
- TRA's ongoing interactions with industry service providers, regulators, industry standards groups and other related services and products managed by iconectiv permits TRA to serve as a conduit to align your needs, questions, etc., with other companies, industry standards and supporting applications, amounting to a win-win situation for all involved.

TRA is proud to serve as your number one source of telecommunications data. This catalog provides an overview of TRA's products and services. Please visit our website at www.trainfo.com, which provides additional information regarding TRA products.

If you have any questions or require further assistance, please contact the TRA Customer Care Center via email at TRA@iconectiv.com or via phone at 866-NPA-NXXS (866-672-6997) or 732-699-6700.

Sincerely,
Telecom Routing Administration (TRA)

iconectiv and TruOps are registered trademarks and LERG Routing Guide, TPM Data Source, and CLLI Code are trademarks and the intellectual property of iconectiv, LLC.

User Profile and Benefits

Since inception, TRA products have been utilized by many different types of businesses to meet an increasingly wide variety of needs. While continuing to work within and support its historic focus on the telecommunications industry, TRA is constantly working with its customers, both inside and outside the industry, to develop new approaches to using TRA data and maximizing its benefits.

The following table provides a quick summary of the type of jobs, functions and processes that each product can support, as well as potential benefits to your company. For additional product information, we invite you to review the product details provided in the remainder of the catalog, visit our website at www.trainfo.com, or contact the TRA Customer Care Center.

TRA Product	Who Might Use the Product	Benefits to Your Company
LERG Routing Guide • LERG One Day Changes	 Engineers who manage how calls are routed and directed Engineers needing to set up the right network paths to keep calls connected and efficient 	 Properly route and complete all calls Avoid lost revenue and maintain customer satisfaction Get physical routing details to support your interconnection agreements and save your company
LERG Tools: • LERG OnLine	 Planners/architects needing to prepare for network changes Those involved with preparing, supporting and maintaining interconnection agreements Companies expanding into the telecommunications industry or a new market that needs reliable insights into existing network infrastructure and local IP partners 	 Prepare for the 2-3% per month network changes that occur by obtaining planned network change data months in advance Get Rate Center information used in rating and billing processes View daily updates of numbering and routing changes using LERG OnLine or LERG One Day Changes
RouteSelect	 Engineers who manage how calls are routed and directed Engineers needing to set up the right network paths to keep calls connected and efficient Planners/architects needing to prepare for network changes Those involved with establishing, supporting and maintaining interconnection and commercial agreements Companies entering the telecommunications industry or a new market area needing a recognized source for information on the existing circuit switched network routing options and IP partners in the area 	 Properly route and complete all calls via various routing options Support Least-cost routing options Avoid lost revenue and maintain customer satisfaction Get physical routing details to support your interconnection and commercial agreements and save your company time and money Prepare for the 2-3% per month network changes that occur by obtaining planned network change data in advance View daily updates of changes Customize data content for online viewing and scheduled downloads

TRA Product	Who Might Use the Product	Benefits to Your Company
TPM Data Source	Call rating and billing operations staff	Data to support accurate billing and avoidance of revenue loss
	Users needing to verify billing and call detail records	Associate appropriate revenue accounting office (RAO) to NPA NXXs
Emergency Notifications (ENs)	 Engineers who manage how calls are routed and directed Network planners/architects who need to prepare for coming changes Call rating and billing operations staff 	Stay ahead of disruptions with timely updates on area code additions and network changes, even when announcements come late Supports LERG Routing Guide, RouteSelect, and TPM Data Source products
Telemarketing Data Source (TDS)	 Call center operations and database engineers Financial institutions, telemarketers and others seeking to maintain compliance with the TCPA when performing outbound calls Anyone needing to distinguish wireless numbers from pager or landline numbers 	 Easy-to-use GUI that allows you to perform individual or bulk queries of number ranges segmented by Line Type, Time Zone, State and Region among other variables Identify ported telephone numbers and their associated line type with data sourced from the Number Portability Administration Center's (NPAC's) PortData Comply data Standard data files that can be integrated with other databases you may use in assessing calls API capabilities to automate call log verification to confirm the line type of all phone numbers on your customer list
NPA NXX Active Code List (NNACL) NPA NXX Activity Guide (NNAG)	 Telemarketers, credit card companies, customer service groups and others maintaining customer lists/databases PBX table maintenance staff 	 Maintain your internal operations and processes at peak efficiency with a complete listing of all ACTIVE NPA NXX codes (NNACL) within the NANP provided quarterly Stay ready for all upcoming area code and prefix changes with a complete monthly update covering additions, changes and disconnects across the NANP Includes Thousands-Block level details
LIDB Access Routing Guide (LARG)	 Alternate Billing Service providers and database maintenance staff Users needing to route Signaling System No. 7 (SS7) queries to Line Information Databases (LIDBs) 	Critical source of data to populate Global Title Translation Tables within the Signal Transfer Point (STP) of the network that saves time, increases accuracy and improves performance Reduces misrouted or failed calls for third-party billing, collect calls and calling card calls Recovers revenues and reduces customer complaints

TRA Product	Who Might Use the Product	Benefits to Your Company
Calling Name Access Routing Guide (CNARG)	Service providers and database maintenance staff who need access to calling name information in order to provide calling party's name to end users	 A complete source of data to populate global title translation tables within the STP that will save staff time and money Increase accuracy of data

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How to Use the TRA Product Catalog

Each product description in this catalog contains the following information: product applications, benefits and examples of data formats. Each product description indicates when the product is produced, its distribution frequency and its distribution formats. On Page 36 of this catalog, there is an explanation of TRA Product ordering procedures, Enterprise Licenses and policies.

Note that TRA data products have been developed to support a wide range of users with varying needs. In this regard, some data elements such as NPA NXX block information are an integral, and common, part of several products. In choosing a particular product to meet your needs, you should consider your need for the extent of data being provided in a given product, how the data is provided, the product's production schedule and the product's distribution format choices.

To ensure a smooth process, it is recommended that you contact the TRA Customer Care Center with any questions about a particular product, and/or for assistance in completing the TRA Price and Order Request Forms.

Product Distribution / Format

Unless otherwise noted, all products are issued in their entirety with each issuance. For example, an annual subscription to a product created monthly equates to receiving a full new product each month whose data reflects any changes that occurred since the previous issuance.

The standard method of obtaining TRA products is via download from a secure TRA website. The Emergency Notification product is distributed via email.

Web Download: TRA products can be downloaded from a secure, username/password/IP address protected website maintained by TRA. An account set-up form needs to be filled out and returned to TRA to receive products via this method.

Email: The Emergency Notification product is delivered via email.

Product Examples / Samples

In several product descriptions in this catalog, examples of data in a screen-print or report format illustrate the type of data a product provides. These examples, as well as this catalog in general, are provided to assist in your understanding of the pertinent aspects of a product. Examples should not be considered tutorials, should not be deemed to reflect the most recent information and should not be considered all-inclusive.

NOTE: Some TRA products contain data available in a pre-loaded Microsoft® (MS) Access Database. These pre-loaded MS Access Databases will be eliminated over the next few years; therefore, it is recommended that customers do not implement the use of these MS Access Databases.

LERG Routing Guide

The LERG Routing Guide contains current information about the local Public Switched Telephone Network (PSTN) as well as additional information about IP Networks and includes scheduled future activity associated with the networks. Initially designed for the routing of Inter-Local Access and Transport Area calls across geographic regions made by interexchange carriers, the LERG Routing Guide has evolved to provide support for information exchange between all service providers, such as Competitive Local Exchange Carriers (CLECs), wireless providers, Internet Service Providers (ISPs), Voice over Internet Protocol (VoIP) providers, and more. It has grown to serve as a resource for performing network analysis, marketing and demographic analysis and many other uses.

The LERG Routing Guide provides routing details to support interconnection agreements, saving companies time and potential loss of revenue. It supports proper routing and completion of all calls and helps to maintain customer satisfaction.

The LERG Routing Guide is available for web download as a set of CSV files (preferred) or fixed formatted data files.

The LERG Routing Guide is a valuable resource for:

- Engineers who manage how calls are routed and directed
- Network planners/architects who need to set up the right network paths to keep calls connected and efficient
- Those involved with preparing, supporting and maintaining interconnection agreements and changes
- Companies expanding into the telecommunications industry or a new market that need reliable insights into existing network infrastructure

A free downloadable sample of LERG Routing Guide as seen in standard issuance that contains older data and a small percentage of the full volume of data, is available for review at https://trainfo.iconectiv.com/LERG-routing-guide.

Each issuance of the LERG Routing Guide supersedes all previous issuances. Files are available that indicate records that were added, changed or removed on a month-to-month basis.

The LERG Routing Guide General Information Section is included with each LERG Routing Guide and provides information on:

- Data Glossary (data definitions)
- System Codes (Routing Code 1XX), Service Codes, North American Numbering Plan Universal Central Office Codes (NXXs), and Operator Service Codes
- Signaling System 7 (SS7) Network Codes
- Vertical Service Codes
- Automatic Number Identification Information Indicator (ANI II) Digits Codes

- Also, high level information regarding:
 - 900 NXX Codes
 - Toll Free (e.g. 800) Codes
 - 5XX-NXX Non-geographic Codes
 - 6YY Non-geographic Codes (Canada)
 - 710 (US Government) NXX Codes

Benefits of LERG Routing Guide:

- Properly route and complete all calls
- Avoid lost revenue and maintain customer satisfaction
- Get physical routing details to support your interconnection agreements and save your company time and money
- Prepare for the 2-3% per month network changes that occur by obtaining planned network change data months in advance
- Get Rate Center information used in rating and billing processes
- View daily updates of numbering and routing changes using LERG OnLine or LERG One Day Changes

LERG Routing Guide data files provide data regarding:

- Operating Company Numbers, Company Names, Routing Contacts
- Country Code Assignments
- NPA Information (i.e., Area Codes)
- LATA Codes By Region
- Destination Codes (Area Codes / Prefixes) (NPA NXX Thousands-Blocks assignments for the United States and its territories, Canada, Bermuda and 16 Caribbean countries)
- Oddball NXXs (e.g. 911, 976)
- Switching Entity Record detail (e.g. Equipment Type, Latitude and Longitude Coordinates)
- Rate Center details (e.g. Latitude and Longitude Coordinates) and Localities (including counties and postal codes)*
- Switch Homing Arrangements (tandem and other switch-to-switch interconnections)
- Operator Access Tandem Codes (ATCs)
- Location Routing Numbers (LRNs)
- Local Interconnection Regions (Canada)
- * Counties and postal codes currently pertain to only U.S. data

You may obtain a copy of LERG Routing Guide data file layouts and specifications at no charge by contacting the TRA Customer Care Center.

LERG Routing Guide:

Produced: first workday monthly

Distribution frequency: monthly

Distribution format: web download

The LERG Routing Guide has data provided in the following formats: (1) Comma Separated (CSV) files using pipe delimiters (preferred) and (2) fixed-record ASCII format.

LERG One-Day Changes Process

Subscribers to the monthly LERG Routing Guide have access to the LERG One-Day Changes Process at **no additional charge**. Data changes in the underlying databases are analyzed daily to provide files reflecting day-to-day changes. This produces a set of files that denote daily changes in a format consistent with the following subset of LERG Routing Guide files:

- LERG1 (OCN)
- LERG6 (NPA NXX)
- LERG7 (Switch)
- LERG7SHA (Switch Homing)
- LERG12 (Location Routing Numbers (LRNs))

The files provided in this process are in a flat (fixed-record) file format only (CSV format to be offered in the near future). They contain only those records that have undergone a change (added, removed and modified) each calendar day and are not a complete file replacement. Integration of the changes into the LERG is the responsibility of the end user.

The LERG One-Day Changes Process is available free of charge to customers with a monthly LERG Routing Guide Enterprise License.

LERG One Day Process:

Produced: daily (files issued each workday)

Distribution frequency: available to monthly LERG Routing Guide subscribers

Distribution format(s): web download

LERG Routing Guide Examples – Overview

The following pages provide LERG Routing Guide data examples from the LERG Routing Guide and are provided for illustrative purposes only. The examples represent some of the data files in the LERG Routing Guide.

Because NPA-NXX block data is the core element of the LERG Routing Guide, which connects to many other key data points, this series of examples begins with the LERG6 file, which serves as the primary source of NPA-NXX block information.

LERG Routing Guide Example

LERG6 - NPA NXX Block Assignment

LERG6 contains data relative to assigned NPA NXXs. Currently, this amounts to approximately 205,000 assigned NPA NXX records, and over 850,000 assigned numeric blocks within NPA NXXs. In Figure 1 below:

- The phone number prefix 732-699 is active and currently in use. It is assigned to a main carrier, shown as Block A, meaning that carrier holds responsibility for the entire code unless otherwise noted. Thousands-blocks, also known as numeric blocks, within this prefix can be assigned to other carriers labeled 0 through 9 (i.e., a service provider assigned block 4 identifies that Service Provider as the carrier who can assign telephone numbers with the prefix through lines 4000–4999). The prefix 732-699 is classified as an end office code for landline or wireline service, with no special services assigned. It is associated with the Rate Center labeled NEWBRNSWCK in New Jersey, which refers to New Brunswick. This Rate Center determines how calls to and from numbers within the range are billed. The Rate Center area falls within LATA 224, a regional zone, with New Brunswick also identified as the Locality for this prefix. Telephone numbers assigned in 732 699 are dialable by end users (DIND=Y).
- Telephone numbers are subject to being "ported" across carriers (PORT=Y).
- Assignments to carriers for this NPA NXX are not subject to assignments at the Thousands-Block level (TBP=N). Note that if a carrier has retained all 10 blocks from an NPA NXX, the NPA NXX was assigned prior to thousands-block pooling becoming effective and, as is the case in this example, the LERG Routing Guide will only show the A block with a TBP=N. In cases where there have been numeric blocks assigned, both an A block record as well as numeric block record(s) will exist with a TBP value of Y.
- Carriers completing calls to either the end office or to the access tandem should send the full 10digit telephone number to the terminating switch in both cases (TD-EO=10, TD-AT=10).
- The switch this NPA NXX is native to is identified by the CLLI of PSWYNJPIDS5. The Switch
 Homing Arrangement (SHA) Indicator of 00 identifies the switch homing applicable to this NPA
 NXX / switch combination that can be determined from LERG7SHA.
- The NPA NXX has been assigned to Operating Company Number (OCN) 9206 (expanded further on the next page of this example). Data is administered for the LERG Routing Guide by AOCN (i.e. OCN) 9200.

Figure 1 (LERG 6):

LATA	LATA NAME	STATUS	EFF DATE	NPA	NXX	BLOCK ID	COC TYPE	SSC	DIND	TD-EO	TD-AT
224	NORTH JERSEY NJ			732	699	А	EOC	N	Y	10	10

PORTABLE	AOCN	OCN	LOC NAME	LOC	LOC STATE	RC ABBRE	RC TYPE	LINE FR	LINE TO	SWITCH	SHA INDICATOR
Y	9100	9206	NEWBRNSWCK		NJ	NEWBRNSWCK		0000	9999	PSWYNJPIDS5	00

TEST LINE #	TEST LINE RESPONSE	1000 BLK POOL	RC LATA	CREATION DATE	E STATUS DATE	LAST MODIFIED
		N	224	12/22/2004	12/29/2004	12/29/2004

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LERG1 – OCN / Company Name / Routing Contact

LERG1 contains data covering more than 17,000 assigned Operating Company Number (OCN) identifiers.

Many LERG Routing Guide data elements, and especially primary data elements such as NPA NXX Blocks and switches, are associated with an OCN. The LERG1 file provides a mapping of this four-character identifier to a specific company name and related company information. The LERG1OCN file (example not shown), includes additional contact information for various organizations, functions and services, for those companies choosing to provide it.

In this example (Figure 2),

- OCN 9206 shows as being assigned to Verizon New Jersey, Inc.
- The OVERALL OCN (a higher level of grouping, should it exist), in this example, is also 9206.
- The Operating Company is listed as a Regional Bell Operating Company (CATEGORY=RBOC).
 CATEGORY values, based on company, including CLEC, wireless, etc., can be keyed upon to further assess data in the LERG.
- The Routing Contact Information lists the name, title, company name, telephone number and address
 for the person to call regarding routing questions relative to the LERG Routing Guide (this information
 has been removed from the example).

Figure 2 (LERG 1):

OCN_#	OCN_NAME	ABBRE_OCN_NAME	OCN_STATE	CATEGORY	OVERALL_OCN	FILLER1	FILLER2	LAST	FIRST	MI	CO_NAME_SPEC
9206	VERIZON NEW	VERIZON NEW	NJ	RBOC	9206					VER	IZON
	JERSEY INC.	JERSEY								COM	MUNICATIONS

TITLE	ADDRESS1	ADDRESS2	FLOOR	RM	CITY	STATE	ZIP	PHONE	TARGET_OCN	OVERALL_TARGET_OCN	RLEC	SILEC

LERG7 – Switching Entities

LERG7 contains high level (not homing) data regarding approximately 50,000 iconectiv TruOps Common Language CLLI codes used in the LERG. Homing information is contained in LERG7SHA.

In Figure 3,

- Switch PSWYNJPIDS5 is physically located within LATA 224 in Northern New Jersey.
- Its Common Language equipment type designation, 5EH, is explained in a separately available document (BR 751-100-460, CL-DATA-SSC) available at www.commonlanguage.com.
- Latitude and Longitude Coordinates of the switch are provided (but noted in the example as 12345). Switch V&H values are often used in "access" pricing.
- PSWYNJPIDS5 has International Direct Distance Dialing (IDDD) capability.
- It is located at (street address is blanked out in the example) in Piscataway, NJ.
- The switch is owned by OCN 9206, which we previously noted as Verizon New Jersey, Inc.
- Data is administered for the LERG Routing Guide by AOCN 9200 (i.e. Verizon).
- The Switching Entity-Office Functionalities (SOF) noted by the data provider are End Office, Host, E.164, Local Number Portability (LNP) capable, 800 SSP support, serves as a CCS AC OFC, has CSP functionality and is provisioned to support Intra LATA Presubscription. These functionalities are explained to a greater degree in the LERG Routing Guide Glossary file.

Figure 3 (LERG 7):

LATA	LATA NAME	STATUS	EFF DATE	SWITCH	EQP TYPE	AOCN	FILLER1	OCN	V- COORD	H- COORD	IDDD	SW STREET	SW CITY	SW STATE	SW ZIP	PT CODE FLAG	CL 4/5 SW
	NORTH			PSWYNJPIDS5	5EH	9100		9206	05080	01444	Y	4	PISCATAWAY	NJ	08854	P	
224	JERSEY											SKILES					
	NJ											AV					

1-	2-	SOF S	1-	5-	SOF 6- WIRELESS	12- FG	13- FG C	D	SOF 15- OS	16- INT	17- DA		20- LOCAL	SOF 21- INTRA TDM		23- BCR5	SOF 24- BCR6		SOF 26- ISDN MULT		SOF 34- STP	SOF 35- CCS AC	SOF 37- 800 SSP	SOF 38- LNP	SOF 42- CIP	SOF 43- CSP
X	X	- -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Х	Х	Х	Х	Х

SOF 45- SW 56	SOF 46- FGD 56	SOF 47- FGD 64	SOF 48- INT PRSUB	SOF 49- CALL AGENT	SOF 50- TRUNK GATEWAY	SOF 51- ACCESS GATEWAY	CREATION DATE	E STATUS DATE	LAST MODIFIED	CLN INDICATOR	BILL_TO_RAO	SEND_TO_RAO
-	_	-	Х	-	-	_	8/5/1990	1/1/2000	1/1/2000	A		

LERG7SHA – Switch Homing Arrangements

STATUS EFF DATE

NBWKNJNB05T ELZBNJEL02T

SWITCH

LERG7SHA contains information about switch-to-switch interrelationships (e.g. homing). More than 60,000 homing relationships exist in the LERG. In the example, the switch PSWYNJPIDS5 with a Switch Homing Arrangement (SHA) Indicator of 00 (this is the switch and SHA Indicator that appeared for NPA NXX BLOCK 732 699 A in LERG6) is noted. The record shows several different intermediary tandem switches as well as an STP relationship relative to PSWYNJPIDS5 00. The originating and terminating tandems are the same for all the same functionalities. This is often, but not always, the case. Figure 4 indicates that traffic terminating to PSWYNJPIDS5 may be routed for Feature Group B as well as Feature Group D to NBWKNJNB05T; to NBWKNJNB04T in the case of local and intraLATA traffic; and to ELZBNJEL02T for operator services.

Figure 4 (LERG7SHA):

NBWKNJNB05T

LATA NAME

224 NORTH JERSEY NJ	PSWYNJPI	DS5 00					
H-ORG B TDM H-ORG C H-ORG D TDM	H-ORG OS TDM	H-ORG B INT TDM	H-ORG C INT TDM	H-ORG D INT TDM	H-ORG LOCAL TDM	H-ORG INTRA-L TDM	H-ORG CIR SW TDM

SHA INDICATOR

H-TRM B TDM	H-TRM C	H-TRM D TDM	H-TRM OS TDM	H-TRM B INT TDM	H-TRM C INT TDM	H-TRM D INT TDM	H-TRM LOCAL TDM	H-TRM INTRA-L TDM	H-TRM CIR SW TDM
NBWKNJNB05T	1	NBWKNJNB05T	ELZBNJELO2T				NBWKNJNB04T	NBWKNJNB04T	

NBWKNJNB04T

NBWKNJNB04T

HOST	STP1	STP2	ORIG 800 SSP	ISDN FOREIGN OFF	ACTUAL SW ID	CALL AGENT	TRUNK GATEWAY	OCN	AOCN	CREATION DATE	E STATUS DATE	LAST MODIFIED
	NBWKNJNB01W	NWRKNJ0201W						9206	9100	8/5/1990	1/1/2000	8/19/2002

LERG8 files – Rate Center and Locality Information

LERG8, LERG8LOC and LERG8PST contain information covering more than 22,000 Rate Centers within the NANP area, approximately 65,000 U.S. localities (e.g. towns) within those Rate Centers, each locality's county and associated USPS postal code(s). In Figure 5, NPA NXX BLOCK 732 699 A rates to the New Brunswick, NJ Rate Center which has the noted Rate Center Latitude and Longitude Coordinates and the NPAs that can be associated with it.

Figure 5 (LERG 8):

LATA	LATA NAME	STATUS	EFF DATE	RC STATE	RC ABBR	NAME RC	TYPE	RC FULI	NAME	MAJOR-V	MAJOR-H	MINOR-V MI	NOR-H
224	NORTH JERSEY NJ			NJ	NEWBRNSW	ICK		NEW BRUI	NSWICK	05085	01434		

NPA1	NPA2	NPA3	NPA4	NPA5	NPA6	NPA7	NPA8	NPA9	NPA10	MTA1	MTA2	SPLIT INDICATOR	EMB OVERLAY NPA1	EMB OVERLAY NPA2	EMB OVERLAY NPA3	EMB OVERLAY NPA4
732	848									01		N	908			

LERG12 - Location Routing Numbers

LERG12 contains information about Location Routing Numbers (LRNs). LRNs are used in regard to Local Number Portability (LNP) call processing within the NANP. Approximately 45,000 LRNs are in the LERG. LRNs are similar to NPA NXXs in format and map to a switch for routing purposes. The NPA NXX 732 699 used in these LERG Routing Guide examples is not the basis for an LRN, nor does it need to be. However, the LERG12 file indicates that the switch PSWYNJPIDS5, used in these examples, has 7324579999 as the LRN. In Figure 6, this is the sole LRN associated with this switch. Therefore, any numbers "ported-in" to this switch would use this LRN for local number portability routing.

Figure 6 (LERG12):

LATA	LATA NAME	STATUS	EFF DATE	LRN	SWITCH	AOCN	OCN	RC ABBRE	RC TYPE	RC STATE	SHA INDICATOR
224	NORTH JERSEY NJ			7324579999	PSWYNJPIDS5	9100	9206				00

LERG OnLine

LERG OnLine is a separate offer from the LERG Routing Guide. It provides web access to view LERG data and download guery results.

This is an easy-to-use web-based GUI application available only to LERG Routing Guide Enterprise Licensees at a small increment above the LERG license fee. LERG OnLine is provided on an enterprise basis for the benefit of everyone at the subscribing company.

LERG OnLine is a means to access up-to-date LERG Routing Guide data and isolate specific information that a user may be interested in obtaining for online review and/or downstream processing. LERG OnLine provides these capabilities to LERG Routing Guide Enterprise Licensees without the need to expend time, effort and expense to develop and maintain local processes; purchase and/or use third party software; or expend unnecessary manual efforts to obtain data from the LERG.

LERG OnLine data is updated daily, it is not just a monthly snapshot of the data. It provides the ability to access updated LERG Routing Guide data without needing to develop processes to incorporate LERG One-Day Change Process data with the monthly LERG.

Data in LERG Online is essentially the LERG Routing Guide, although specific terminology may vary. Depicted below is the LERG OnLine welcome screen. The next page displays a basic query (Figure 8) and results (Figure 9).

The LERG Routing Guide is a valuable resource for:

- Engineers who manage how calls are routed and directed
- Network planners/architects who need to set up the right network paths to keep calls connected and efficient
- Those involved with preparing, supporting and maintaining interconnection agreements and changes
- Companies expanding into the telecommunications industry or a new market that need reliable insights into existing network infrastructure

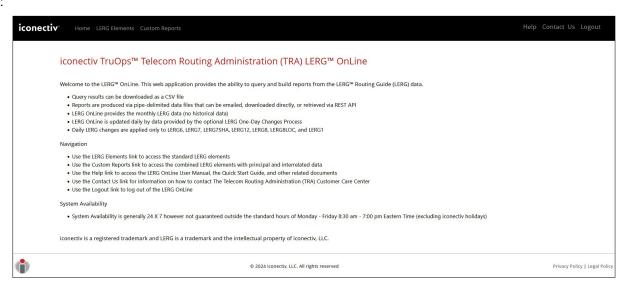
Benefits of LERG OnLine:

- Properly Route and Complete all calls.
- Get Rate Center information used in rating and billing.
- View daily updates of numbering and routing changes.

LERG OnLine:

<u>Produced</u>: updated every night Distribution frequency: daily access Distribution format(s): web access

Figure 7:



LERG Online Example

LERG OnLine – Example of Query

The following LERG OnLine query screen is used to obtain NPA NXX Block data information. Enter selection criteria into one or more of the data entry boxes. Use of wildcards, listing of values, etc. can also be used as selection criteria. The results screen below shows all records that pertain to NPA NXX 732 699.

Figure 8:

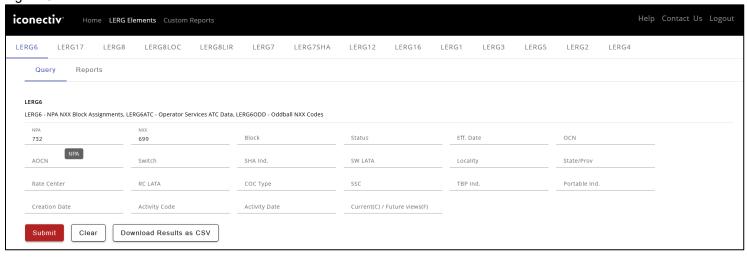
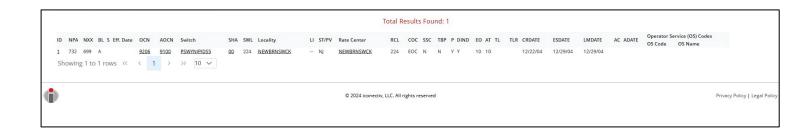


Figure 9:



RouteSelect

RouteSelect is a comprehensive routing guide containing current information about the local Public Switched Telephone Network (PSTN) as well as additional information about IP Networks. It includes current routing details and outlines planned updates to the network. RouteSelect provides multiple routing options per Central Office (CO) Code and/or Location Routing Number (LRN). This allows communications service providers (CSPs) to identify more than one routing option available via one or more providers in a given service area (i.e., CO Code, LRN, Rate Center), providing information to negotiate agreements for least cost routing, disaster recovery, network redundancy, etc.

RouteSelect helps CSPs identify routing options, making it easier for them to establish interconnection and commercial agreements to move traffic and manage costs. By providing clear routing information, it saves time, cuts costs and helps avoid loss of revenue. It also helps ensure that calls go through correctly, which helps maintain customer satisfaction.

It's updated daily, providing users with the most current routing information, helping them make more informed decisions.

With customizable search filters, users can quickly find what they need, view results online or download the data through an API, streamlining their workflow and saving time.

RouteSelect is a valuable resource for:

- Engineers who manage how calls are routed and directed
- Network planners/architects who need to prepare for future changes
- Those involved with establishing, supporting and maintaining interconnection and commercial agreements
- Companies entering the telecommunications industry or a new market area who need a trusted source of information on the existing circuit switched network elements in the area and the various routing options available

Benefits of RouteSelect:

- Properly route and complete all calls via various routing options
- Support Least-cost routing options
- Avoid lost revenue and maintain customer satisfaction.
- Get physical routing details to support your interconnection and commercial agreements and save your company time and money
- Prepare for the 2-3% per month network changes that occur by obtaining planned network change data in advance
- View daily updates of changes
- Customize data content for online viewing and scheduled downloads

Depicted below is the RouteSelect welcome screen (Figure 10) and screenshots of a basic query and results (Figure 11).

Figure 10 (Welcome Screen):

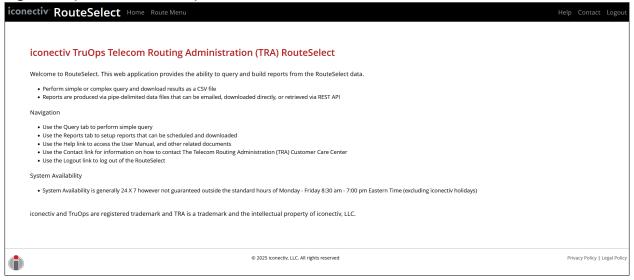
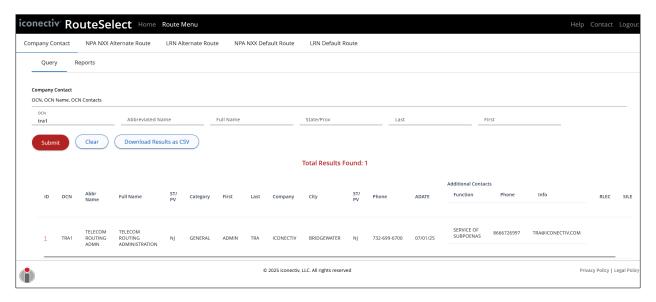


Figure 11 (Basic Query/Results):



RouteSelect:

Produced: updated every night

Distribution frequency: daily access

Distribution format(s): web access

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TPM Data Source

The TPM Data Source supports various systems used in rating and billing telephone calls and can be used as a source for certain data related to NPA NXXs.

TPM Data Source is a valuable resource for:

- Those who need to manage NPA NXX related data.
- Call rating and billing operations staff who need to associate the appropriate Revenue Accounting Office (RAO) to NPA NXXs.
- Those who specifically have a need for V&H and Rate Center information associated with NPA NXXs.
- Users needing to verify billing and call detail records

Benefits of TPM Data Source:

- Data to support accurate billing and avoidance of revenue loss
- Associate appropriate revenue accounting office (RAO) to NPA NXXs

The TPM Data Source contains data for the entire NANP and Mexico.

Data elements include:

Numbering Plan Area (Area Code) Revenue Accounting Office (RAO) (Bill to/Send to)

NXX Code (exchange, prefix - with block)

Portability Indicator

Operating Company Number Thousands-Block Pooling Indicator

IDDD Capability Indicator NXX Type (wireline, paging, cellular, etc.)

Vertical (V) Coordinate Time Zone

Horizontal (H) Coordinate Daylight Savings Time Indicator

Rate Center Company Type

Place Name Special Calling Cards (RAO based)

State, Province, Country International data - Mexico

A free downloadable sample of the TPM Data Source, the same you will receive in a standard issuance but containing slightly older data and a relatively small percentage of the full volume of data, is available for your review at https://trainfo.iconectiv.com/TPM-data-source.

Each issuance of the TPM Data Source is a complete replacement of the previous issuance. Indicators exist on a month-to-month basis that flag those records that have been added, changed or are scheduled for deletion. You may obtain a copy of TPM Data Source data file layouts and specifications at no charge by contacting the TRA Customer Care Center to receive them by email.

TPM Data Source:

<u>Produced</u>: mid-month (product issuances are dated the 15th of the month following creation) Distribution

frequency: monthly

Distribution format(s): web download

The TPM Data Source has data provided in fixed-record ASCII format. CSV file format will be provided in the near future.

TPM Data Source Example

Figure 12, the following screen shot from the TPM, is provided for illustrative purposes only. This example represents some of the data files in the TPM Data Source.

Since NPA NXX data is a primary data element in the TPM Data Source, Figure 12 below provides information relative to NPA NXX 732 699.

Figure 12:

NPA NXX BlockID	Range	NXXTYPE	Effdate_LastChg	Chg Code	OCN	AOCN	Co Code	Co Type	Bill to Rao	Send to Rao	Major V	Major H	LATA	LATA Sub
732 699 A	00009999	00	12/29/2004	K	9206	9100	00	0	094	000	05085	01434	224	00

RC Name	RC Type	Place Name	State	TZONE	D SAVE	IND	PORT IND	TBP IND	IDDD	DIND	Oth Line R	Point ID	Eff Date Assign
NEWBRNSWCK		NEWBRNSWCK	NJ	7	1		1	0	1	1	00	0	12/29/2004

Emergency Notifications (ENs)

Emergency Notifications report lastminute changes that are not included in the current month's LERG Routing Guide and/or TPM Data Source products. Emergency Notifications are published at least once a week.

Emergency Notifications is a valuable resource for

- Engineers who manage how calls are routed and directed
- Network planners/architects to prepare for coming changes
- Call rating and billing operations staff
- Recipients of the LERG Routing Guide and/or TPM Data Source that need to be aware of last-minute NXX announcements (new code openings)

Benefits of Emergency Notifications:

- Stay ahead of disruptions with timely updates on area code additions and network changes, even when announcements come late
- Supports LERG Routing Guide, RouteSelect, and TPM Data Source products

Emergency Notifications report new NXXs that are effective in less than 45 days from the date they are entered into the underlying TRA database by the service provider or its agent. Industry lead time for an NXX opening is a minimum of 45 days from the data entry date. However, for various reasons, exceptions may sometimes be necessary. Emergency Notifications may also provide information of general interest such as reported blocked calls, short notice homing changes and Rate Center changes. High level information regarding Area Code Splits (dates and test numbers) are provided and summarized once a month.

Immediate Emergency Notifications are the same as Emergency Notifications. These are immediately issued anytime a new NXX is in effect less than 15 days from the effective date. Emergency Notification subscribers receive the Immediate Emergency Notification service at no extra charge. Emergency Notifications are available by email only. Note that the EN/IEN service does not provide indication of late code openings relative to NPA NXX block assignments.

Emergency Notifications:

<u>Produced</u>: Each Tuesday and as may be needed otherwise

Distribution frequency: Each Tuesday and as may be needed otherwise

Distribution format(s): email

Telemarketing Data Source (TDS)

Efficient and compliant telephone outreach is vital for businesses, but challenges arise from changing contact data, evolving regulations and potential fines. Without a reliable source of telephone number information, companies risk operational inefficiency and violating the Telephone Consumer Protection Act (TCPA).

TRA Telemarketing Data Source (TDS) is valuable data for call center operations teams looking to be more efficient and maintain compliance with the TCPA by verifying valid telephone numbers, processing customer contact information or suppressing wireless or pager numbers from a database application.

Using a web-based GUI with the flexibility to extract the data provided relative to NPA NXX (area code, exchange) and Thousands-Block assignments, companies can access data that fits their specific business needs. TDS data enables companies to determine valid area code exchange combinations, Time Zone and Daylight Savings Indicators are also provided by NPA NXX to reduce errors of calling during TCPA prohibited hours of 9PM to 8AM.

TRA TDS also provides insights into whether a telephone number has recently been ported from wireline to wireless or vice-versa and associated line type changes at both the NPA NXX and individual ten-digit telephone number levels. TDS data comes directly from the Number Portability Administration Center (NPAC), the country's only authoritative source of this information.

The telephone number data within TRA TDS includes those that are active within the NANP area (US, US Territories, Canada and parts of the Caribbean). The recently ported ten-digit telephone numbers are those that are active and assigned for use within the United States.

The intuitive web-based GUI enables seamless telephone number data management as well as custom and automated reports that can be extracted via API integration. Its ability to ensure compliant, cost-effective and efficient operations makes TRA TDS the premier trusted solution for call center needs.

Figure 13 below depicts Single Query (one record) and Figure 14 shows Bulk Query (many records) selection screens. The output, based upon selection criteria, can be downloaded in CSV file formats for Single Queries, or in pipe- delimited flat files for Bulk Queries. The standard files available for web download are in ASCII text data file formats that can then be directly viewed or integrated into local databases as business needs may dictate.

Telemarketing Data Source is a valuable resource for:

- Call center operations and database engineers
- Financial institutions, telemarketers and others seeking to maintain compliance with the TCPA when performing outbound calls
- Anyone needing to distinguish wireless numbers from pager or landline numbers

Benefits of Telemarketing Data Source:

- Easy-to-use GUI that allows you to perform individual or bulk queries of number ranges segmented by Line Type, Time Zone, State and Region among other variables
- Identify ported telephone numbers and their associated line type with data sourced from the Number Portability Administration Center's (NPAC's) PortData Comply data
- Standard data files that can be integrated with other databases you may use in assessing calls
- API capabilities to automate call log verification to confirm the line type of all phone numbers on your customer list

Telemarketing Data Source:

Produced: daily

Distribution frequency: daily

Distribution format(s): web access



Figure 13:

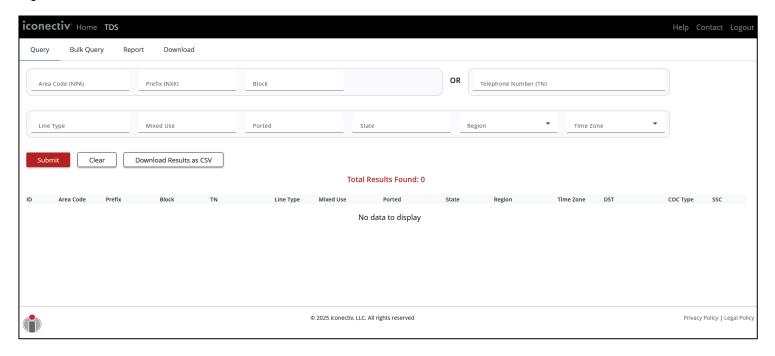


Figure 14:



NPA NXX Active Code List (NNACL) / NPA NXX Activity Guide (NNAG)

The NPA NXX Active Code List (NNACL) is composed of data files that help maintain internal operations, processes and databases at peak efficiency with a complete listing of all active NPA NXX codes within the North American Numbering Plan area. Keep track of the everchanging world of these assignments through the NNACL.

The NPA NXX Activity Guide (NNAG) helps prepare for all future NPA NXX adds, changes and disconnects, as well as last-minute changes to active records. The NNAG is considered as a complement to the NPA NXX Active Code List (NNACL) and cannot be subscribed to independently from the NNACL.

The NPA NXX Active Code List lists all NPA NXX assignments that are active (in service) as of the product date. Data provided includes the assigned service provider (OCN) of the NPA NXX, the type of service that is provided (e.g. wireless) by the assigned service provider, the associated Rate Center and State/Province/Country and a Portability Indicator. Also included is a file that can be used to translate the Operating Company Number (OCN) to a company name, a user-friendly and dynamic "search" program to facilitate data selection and extraction, and a general information section that explains the data in greater detail.

NPA-NXX codes are often assigned in Thousands-Blocks (line numbers 0000–0999, 1000–1999, etc.). When this type of assignment occurs, the data includes the assigned service provider (identified by the OCN) for each block, along with all the relevant information typically provided at the full NPA-NXX level. As of this writing, approximately 205,000 NPA NXX records and over 850,000 blocks have been assigned and are included in the NNACL. Figure 15 is a depiction of results from the user interface f the NNACL. Results from queries generated through this interface can be downloaded to your local environment using various user-controlled options. Fixed-width ASCII data files are included with each product, allowing users to work offline with the raw data rather than the user interface. These files can be easily imported into Excel, loaded into custom-built databases or opened with standard text editors such as Notepad or Microsoft® Word. Users can read and process the data depending on their specific needs, systems and processing environment.

Note that companies regulated in the United States by the Federal Communications Commission (FCC) and/or individual state regulatory commissions, and in Canada by the Canadian Radio-television Telecommunications Commission (CRTC), participate in telephone number portability (i.e. a subscriber assigned a phone number, under most circumstances, can have that number managed by any service provider that serves that area). However, the company assigned a numbering resource is the only company that can assign line numbers to new subscribers, but once subscribers are assigned a telephone number, they can "port' their numbers to another provider. At times, this may cross over type of service as well (e.g. wireline to wireless and the reverse) however; the NNACL does not contain individual line level data. The NNACL does contain the primary company for the numbering resource (the assigned OCN). Also, from a type of service standpoint (disregarding the service provider), a high percentage of line-level data is within the type of service defined by the assigned service provider.

A sample copy of the NNACL, containing abridged, slightly older data, is available for download free of charge, at https://trainfo.iconectiv.com/NPA-NXX-active-code-list.

The NNAG consists of NPA NXX records associated with future activity reported by service providers (generally covering several months ahead), as well as last-minute changes made in the prior month. Data provided includes the assigned service provider (OCN) of the NPA NXX, the type of service that is provided (e.g. wireless) by the assigned service provider, the associated Rate Center and State/Province/Country, and a Portability Indicator.

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Also included is a file that can be used to translate the Operating Company Number (OCN) to a company name, a user-friendly and dynamic "search" program to facilitate data selection and extraction and is also provided with each issue of the product. A general information section that explains the data in greater detail. The primary NNAG file includes an activity code associated with the NPA NXX and its data (E=establish, M=modify, D=disconnect), as well as the date that the activity is currently targeted to occur.

The NNAG does not list active NPA NXX information unless it is associated with a future modification or deletion. The separately available NPA NXX Active Code List (NNACL) contains a complete list of active codes. iconectiv does not provide integration processes between the two lists.

Figure 16 is a depiction of results from the NNAG user interface. Results from queries generated through this interface can be downloaded using various user-controlled options. Fixed-width ASCII data files are included with each product, allowing you to work directly with the raw data instead of using the user interface. These files can be easily imported into Excel, loaded into custom-built databases or opened with standard text editors such as Notepad or Microsoft® Word. Users can read and process the data depending on their specific needs, systems and processing environment.

A sample copy of the NNAG, containing abridged, slightly older data, is available for download, at no charge, at https://trainfo.iconectiv.com/NPA-NXX-activity-guide.

The NNAG is only available to NNACL subscribers.

NPA NXX Active Code List (NNACL) / NPA NXX Activity Guide (NNAG) is a valuable resource for:

- Telemarketers, credit card companies, customer service groups and others maintaining customer lists/databases
- Private Branch Exchange (PBX) maintenance staff
- Database administrators
- Any party needing to confirm if a given NPA NXX has been assigned

Benefits of NPA NXX Active Code List (NNACL) / NPA NXX Activity Guide (NNAG):

- Maintain your internal operations and processes at peak efficiency with a complete listing of all ACTIVE NPA NXX codes (NNACL) within the NANP provided quarterly
- Stay ready for all upcoming area code and prefix changes with a complete monthly update covering additions, changes and disconnects across the NANP
- Includes Thousands-Block level details

NPA NXX Active Code List:

Produced: first workday quarterly (January, April, July, October)

Distribution frequency: quarterly (January, April, July, October)

Distribution format(s): web download

NPA NXX Activity Guide:

<u>Produced</u>: first workday monthly Distribution frequency: monthly Distribution format(s): web download

Figure 15: File Database View Data Source Date: 10/01/2013 NPA-NXX Active Code List (NNACL) OCN Search Help NPA NXX Block Search Select Output Fields and Enter Search Criteria: (Use ? to match any one number or letter, or * for more than one) NPA 🔽 Portable (PI) V All NXX V Block (B) COC Type (COC) V Special Service Code (SSC) ▼ OCN V OCN Name V Switch (SW) Switch LATA (LATA) Rate Center (RC) RC State/Province (ST) (Check/uncheck boxes to include/exclude the fields in the output) Select Output Mode: Select a Field Separator and Headers for File Output: © Display C File C Tab Comma © Excel © Other Add Headers To File Run Query View Output File Reset Quit Results (Record count 24270): View Results in a Separate Window NPA NXX COC SSC OCN OCN Name Switch LATA Rate Center ST JRCYNJBRDS5 201 200 FOC N VERIZON NEW JERSEY 224 JERSEY CITY NJ 9206 201 201 UFA MULT MULTIPLE OCN LISTING --VARIOUS--99999 RATE CENTER NOT APPLICABLE NJ Ν 201 202 PMC BX 6630 USA MOBILITY WRLS WAYNNJ08CM0 224 HACKENSACK NJ ٨ Y 201 203 EOC YMAX COMMS CORP. NJ NWRKN3MDDS3 HACKENSACK NJ. N 325E 224 JERSEY CITY 201 204 EOC 389C EUREKA NETWORKS - NJ NWRKNJMD7MD 224 NJ 201 205 SP2 5 6664 SPRINT SPECTRUM LP TTBONJ12CM5 224 JERSEY CITY NJ Υ SPRINT SPECTRUM LP Υ 201 206 SP2 S 6664 TTBONJ12CM2 224 HACKENSACK N1 201 207 PMC C 6391 VERIZON WIRELESS-NJ JRCYNJ10CM3 224 NEWARK NJ NEW CINGULAR WRL DC C Υ 201 PMC 224 208 4036 RCPKNJ02GT1 JERSEY CITY NJ 201 209 EOC N 9206 VERIZON NEW JERSEY JRCYNJBRDS5 224 JERSEY CITY N1 Y 201 210 EOC N 7421 AT&T LOC - NY MRTWNJMRNMD 224 UNION CITY RATE CENTER NOT APPLICABLE NJ 201 N11 MULT MULTIPLE OCN LISTING --VARIOUS--99999 211 N Ν 201 212 SP2 S 6664 SPRINT SPECTRUM LP TTBONJ12CM2 224 HACKENSACK NJ

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Phone: 732-699-6700 or toll free 866-NPA-NXXs (866-672-6997) Email: tra@iconectiv.com Web: www.trainfo.com Page 33

LIDB Access Routing Guide (LARG)

LIDB Access Routing Guide (LARG) serves as a centralized resource for routing information related to the Line Information Database (LIDB). The LIDB stores subscriber data used to support services like calling cards, collect calls and bill-to-third-party calls, also known as Alternate Billing Services.

The LARG provides the necessary data to administer and maintain Global Title Translation (GTT) tables within a Signal Transfer Point (STP): the telecom "traffic controller" that routes signaling messages across the network. These GTT tables help ensure accurate routing of queries to the correct data sources.

The guide also identifies the responsible Signaling Network Control Center (SNCC), the group managing signaling operations and network reliability, the appropriate LIDB provider the inter-network route effective date and the necessary capability code or pseudo point code for routing setup.

The LARG follows a format similar to the Calling Name Access Routing Guide (CNARG), which supports routing of queries to database systems that return Caller ID name information (Calling Name). A text file that defines data fields, provides contact information, etc., is provided with each issue.

The LARG is a valuable resource for:

- Alternate billing service providers
- Database maintenance staff
- Users needing to route Signaling System No. 7 (SS7) queries to Line Information Databases (LIDBs)

Benefits of the LARG:

- Increasing accuracy of queries
- Improving GTT performance
- Critical source of data to populate Global Title Translation Tables within the Signal Transfer Point (STP) of the network that saves time, increases accuracy and improves performance Reduces misrouted or failed calls for third-party billing, collect calls and calling card calls
- Recovers revenues and reduces customer complaints

LIDB Access Routing Guide:

<u>Produced</u>: first workday monthly

Distribution frequency: monthly

Distribution format(s): web download

Calling Name Access Routing Guide (CNARG)

The Calling Name Access Routing Guide (CNARG) is a single source of information for accessing information relative to databases containing subscriber Calling Name information. CNARG data is used to help administer and maintain Global Title Translation (GTT) tables within Signal Transfer Points (STPs). These tables direct signaling traffic to the correct network locations that store Calling Name data, used to display the caller's name during incoming calls. The CNARG's format and content are similar to the LIDB Access Routing Guide (LARG) which is used to manage access for database queries relative to alternate billing services information.

A text file that defines data fields, provides contact information, etc., is provided with each issue.

The CNARG is a valuable resource for:

- Calling Name service providers
- Database maintenance staff
- Service providers and database maintenance staff who need access to calling name information in order to provide calling party's name to end users

Benefits of the CNARG:

- Increasing the accuracy of queries
- Improving GTT performance
- A complete source of data to populate global title translation tables within the STP that will save staff time and money
- Increase accuracy of data

Calling Name Access Routing Guide

Produced: first workday monthly

Distribution frequency: monthly

Distribution format(s): web download

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Submit an Order - After reviewing the price quote, if you wish to proceed to order a product(s), please complete a TRA Order Request Form. Also, include the required shipping and billing address information and indicate the billing method along with Purchase Order Numbers, if applicable, and sign the order form. Submit the completed Order Form as described on the form.

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