PRIVATE SWITCH (PS) E-9-1-1 DATABASE TECHNICAL REFERENCE

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Prepared by:
National Emergency Number Association (NENA) Technical Committee Chairs

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NENA
TECHNICAL REFERENCE

NOTICE

This Technical Reference is published by National Emergency Number Association (**NENA)** as a guide and recommendation for the designers and manufacturers of customer-premise systems that are used for the purpose of processing emergency calls at a PSAP. It is not intended to provide complete design specifications or parameters nor to assure the quality of performance of such equipment.

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It is possible that certain advances in technology will precede these revisions. Therefore, this Technical Reference should not be the only source of information used to purchase the Customer Premise Equipment (CPE). **NENA** members are advised to contact their Telephone Company representative to ensure CPE compatibility with the Telco network.

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This document has been developed by the **NENA** Database Technical Committee. The **NENA** executive board has NOT recommended this document for industry acceptance. This revision is still a draft. Recommendations for change to this document may be submitted to:

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1 Executive Overview

1.1 Purpose and Scope of Document

Recent technical developments make it possible for Private Branch Exchange Telephone Systems (PBX) to provide Telephone Station level Automatic Number Identification (ANI). This NENA Technical Reference defines the requirements and methods to accomplish the provisioning of Private Switch 9-1-1 (PS/911) data in conjunction with the use of a Multi Line Telephone System (MLTS) or Private Branch Exchange (PBX) telephone system. For the purpose of this document and to be consistent with other NENA documents, a Private Branch Exchange telephone system or PBX will be referred to as a Multi-Line Telephone System or MLTS.

Enabling MLTS Owner/Operator Station or Caller Identification functions make true 9-1-1 for each MLTS Telephone Station possible. Where MLTS Station Level ANI has not been provisioned, the 9-1-1 caller's location is unknown. This document identifies the responsibility that each MLTS Owner/Operator accepts when providing Private Switch 9-1-1 (PS/911). This document discusses provisioning PS/911 Data for MLTS systems that use digital trunks, Primary Rate Interface Integrated Services Digital Network (PRI ISDN) trunks and MLTS systems that use dedicated analog trunks that operate with the Centralized Automated Message Accounting (CAMA) signaling protocol. While technical issues, tariff issues, or local conditions may determine the method of delivering a 9-1-1 call and its ANI, this document discusses the responsibility involved with the provision of PS/911 ALI and data requirements for each method.

This document supports the NENA PS/911 model legislation by describing three alternative means of implementing PS/911 that are currently available.

- Station Level Method
- Centrex Method
- Consolidated Method

1.2 Reason to Implement

Adopting the NENA established standards would:

- Aid employers in providing a safe and secure environment for employees.
- Minimize costs incurred in obtaining PS/911 data base services.
- Ensure timely activation of a PS/911 database entry or change.
- Ensure consistent provision of PS/911 ALI data.
- Enable data compatibility between providers of PS/911 products and services.
- Minimize PS/911 implementation time.
- Aid MLTS Owner/Operators in future planning.
- Physical location of the MLTS Station may be different then the displayed location.

1.3 Benefits

This Technical Reference is a guide for MLTS Owner/Operators, local Service Providers, 9-1-1 network providers, and 9-1-1 agencies to use in determining how to implement PS/911 database elements in the most efficient and reliable way. This document presents 3 possible methods that may be used to implement PS/911. The PBX Owner/Operator must determine the most effective method to use for each particular environment. For descriptions of PS/911 network configurations and methods refer to the NENA Technical Information Document Private Switch 911 (PS/911) Network.

Every telephone capable of dialing 9-1-1 and identifying its telephone number, its ANI or Emergency Location Identification Number (ELIN) must have a location or ALI record in the 9-1-1 database to identify the caller's location. If no record is present, a "No Record Found" (NRF) event will occur and the caller's location may be unknown. Further, when a NRF event occurs, an inquiry is typically sent to the owner of the telephone number who, in turn, will forward that inquiry to the MLTS Owner/Operator. It is, therefore, required that each MLTS Owner/Operator provide accurate location information or Emergency Response Location (ERL), for every telephone capable of dialing 9-1-1 and identifying its number or ELIN to the 9-1-1 network. If PS/911 ALI records are properly entered and maintained in the 9-1-1 database and the MLTS system and network are configured properly, the MLTS caller's location or ERL will display on the PSAP display, reducing response time for Emergency Services.

MLTS Owner/Operators may send PS/911 ALI records directly to their Telephone Service Provider, Database Management System (DBMS) or Third-Party DBMS Provider. The term DBMS refers to both Primary and Third-Party DBMS Providers. Third-Party DBMS Providers perform data pre-processing, validation, and management services. The Third-Party DBMS Provider serves as an interface to the Primary DBMS Provider. It is the responsibility of the MLTS Owner/Operator to establish relationships and any agreements required for the provision of PS/911 data. The MLTS Owner/Operators must coordinate PS/911 database and network requirements with their local Telephone Service Provider and the DBMS Provider to ensure the proper operation.

As more states adopt legislation that mandates implementation of modifications to MLTS telephone systems to improve their ability to identify the location where 9-1-1 calls are made, the need for proven methods of meeting such mandates becomes more critical. This Technical Reference is to aid in implementing PS/911 systems and services.

In summary, following the guidelines in this Technical Reference when first implementing PS/911 will aid in the selection and implementation of a PS/911 solution and ensure compatibility with DBMS Providers who have embraced the NENA Recommended Standards.

1.4 Acronyms/Abbreviations

This is not a glossary! See NENA 01-002 - NENA Master Glossary of 9-1-1 Terminology located on the NENA web site for a complete listing of terms used in NENA documents.

ASCII – Stands for American Standard Code for Information Interchange. Specifies coding of space and a set of 94 characters (letters, digits and punctuation or mathematical symbols) suitable for the interchange of Basic English language documents. ASCII forms the basis for most computer code sets. Used as the basic US code set for personal and workstation computers.

CAMA - A MF signaling protocol originally designed for billing purposes, capable of transmitting a single telephone number.

Centrex - A business telephone service offered by some Local Telephone Service Providers that offers MLTS type features over access lines.

Company ID 1 - NENA registered Company Identification code for Service Provider providing facilities for dial tone to the customer.

Company ID 2 - NENA registered Company Identification code for Service Provider/Reseller/Private Switch supplying ALI record source information.

(ELIN) Emergency Location Identification Number - A valid North American Numbering Plan format telephone number, assigned to the MLTS Owner/Operator by the appropriate authority, that is used to route the call to a PSAP and is used to retrieve the ALI for the PSAP. The ELIN may be the same number as the ANI. The ELIN must be a dialable number.

(ERL) Emergency Response Location - A location to which a 9-1-1 emergency response team may be dispatched. The 'location' should be specific enough for the emergency response team to quickly locate a 9-1-1 caller anywhere within the location provided.

ISDN - Integrated Services Digital Network trunks

PRI - Primary Rate Interface. PRI is a transmission and signaling protocol that provides digital transmission capacity in each direction.

PS/911- Private Switch 911. A private telephone system which includes network, switching and database elements capable of providing ANI (ELIN) and ALI (ERL). Designed for use in emergency situations to notify Public Safety personnel of the specific location of a 9-1-1 caller utilizing a Telephone Station connected to a private telephone network.

PSTN – Public Switched Telephone Network. This is the national public telephone network used for placing telephone calls within and outside of the continental United States.

XML – The Extensible Markup Language (XML) is the universal format for structured documents and data on the Internet and Web Based documents. XML is a set of rules, guidelines or conventions for designing text formats that let you structure data. XML is not a programming language. XML makes it easy for a computer to generate data, read data, and ensure that the data structure is unambiguous. XML is extensible, platform-independent, and it supports internationalization and localization.

1.5 Effective Date

This document is effective as of October 1, 2002.

1.6 Document Terminology

The terms "shall ", "must " and "required" are used throughout this document to indicate required parameters and to differentiate from those parameters that are recommendations. Recommendations are identified by the words "desirable" or "preferably".

1.7 Reason for Issue

Recent technical developments make it possible for Private Branch Exchange Telephone Systems (PBX) to provide Telephone Station level Automatic Number Identification (ANI). This NENA Technical Reference defines the requirements and methods to accomplish the provisioning of Private Switch 9-1-1 (PS/911) data in conjunction with the use of a Multi Line Telephone System (MLTS) or Private Branch Exchange (PBX) telephone system. For the purpose of this document and to be consistent with other NENA documents, a Private Branch Exchange telephone system or PBX will be referred to as a Multi-Line Telephone System or MLTS.

Enabling MLTS Owner/Operator Station or Caller Identification functions make true 9-1-1 for each MLTS Telephone Station possible. Where MLTS Station Level ANI has not been provisioned, the 9-1-1 caller's location is unknown. This document identifies the responsibility that each MLTS Owner/Operator accepts when providing Private Switch 9-1-1 (PS/911). This document discusses provisioning PS/911 Data for MLTS systems that use digital trunks, Primary Rate Interface Integrated Services Digital Network (PRI ISDN) trunks and MLTS systems that use dedicated analog trunks that operate with the Centralized Automated Message Accounting (CAMA) signaling protocol. While technical issues, tariff issues, or local

conditions may determine the method of delivering a 9-1-1 call and its ANI, this document discusses the responsibility involved with the provision of PS/911 ALI and data requirements for each method.

This document supports the NENA PS/911 model legislation by describing three alternative means of implementing PS/911 that are currently available.

- Station Level Method
- Centrex Method
- Consolidated Method

1.8 Reason for Reissue

NENA reserves the right to modify this document. Whenever it is reissued, the reason(s) will be provided in this paragraph.

1.9 Date Compliance

All systems that are associated with the 9-1-1 process shall be designed and engineered to ensure that no detrimental, or other noticeable impact of any kind, will occur as a result of a date/time change up to 30 years subsequent to the manufacture of the system. This shall include embedded application, computer based or any other type application.

To ensure true compliance the manufacturer shall upon request provide verifiable test results to an industry acceptable test plan such as Telcordia GR-2945 or equivalent.

2 Technical Description

2.1.1 Requirements for the PS/911 Database

PS/911 user systems must comply with one of the established data exchange formats in order to successfully interface with to their Local Telephone Service or DBMS Provider.
This document will identify the minimum requirements for PS/911 data and recommend a particular NENA approved data format for PS/911. For a detailed description of NENA data exchange formats refer to: **NENA 02-010 – "** Standards For Recommended Formats & Protocols For Data Exchange**"** available on the NENA web site www.nena9-1-1.org

~~1.1.2~~2.1.2 Data Exchange Format

The NENA Data Technical Committee has established 4 standard data exchange formats for use by Service Providers and Data Base Management System Providers when exchanging E9-1-1 data base information. All 9-1-1 data exchange formats utilize ASCII characters.
The NENA Data Technical Committee recommends the use of the most current format for data exchange, NENA Version 4 for PS/911 data exchange since this version provides identification of the Telephone Service Provider (Dialtone) and the source of the Automatic Location Identification or ALI record.
Version 4 format is intended to bring the data exchange process in line with current technology, processing tools and methods utilizing XML, a "Tag Data" approach to information exchange. XML will allow for growth, flexibility, and use of industry standard programming techniques.
It is the responsibility of the MLTS Owner/Operator to coordinate specific data exchange requirements with to their Local Telephone Service or DBMS Provider.
Telephone Service Providers are required to maintain consistency in 9-1-1 data exchange by utilizing one of the previously mentioned versions. It is, therefore, necessary that Private Switch Owners meet these same requirements when implementing PS/911 service.

~~1.1.3~~2.1.3 Implementation Methods

The 9-1-1 database must contain current ANI and ALI records for every telephone capable of dialing 9-1-1 and displaying its telephone number or ELIN when 9-1-1 is dialed.
Refer to NENA document NENA-02-11 Section 5 for recommended processing intervals.

~~1.1.1.1~~2.1.3.1 Station Level Method

MLTS systems that utilize an ISDN PRI interface to the telephone network (See NENA Private Switch Network TID) and are configured to provide Station level ANI/ALI is recommended as the best approach to Private Switch (PS/911) service. When Station Level ANI is provided to the 9-1-1 network, Station level ALI records must be provided to the appropriate DBMS database. The location of each telephone station must be identified and an ALI record must be created and sent to the Database Management System to be included in the 9-1-1 database. As MLTS telephone stations are added, moved or changed, an ALI record for each MLTS Telephone Station affected must be sent to the Database Management System that reflects the new information or location. When a MLTS telephone number is disconnected and no longer in service, a delete record must be sent to the 9-1-1 Database Management System to remove the record.

When Station Level ANI is used, the 9-1-1 ALI database must contain a record for each telephone number capable of calling 9-1-1 and sending its number as ANI. Each record should include the specific location of the telephone station (i.e. 3rd Floor, Cubicle 200, Accounting Manager's Office, etc.) Location designations chosen should be standardized throughout the MLTS Owner/Operators ALI records and recognizable by others within the MLTS Owner/Operators premises to aid in identifying locations quickly.

~~1.1.1.2~~2.1.3.2 Centrex Line Method

While Centrex is not a typical MLTS telephone system, from a 9-1-1 data perspective, Centrex presents similar issues and will be briefly addressed. Centrex is a service, that when available, is provided by the Local Telephone Service Provider. Centrex gives the appearance of a fully functional MLTS system. The Centrex customer purchases a block, or range, of telephone numbers from the Local Telephone Service Provider. Each telephone is connected directly to the Local Telephone Service Provider's Central Office switch instead of an on-site MLTS. Centrex service can include 3 or 4 digit station to station dialing, Voice Mail and other customized calling features. The Local Telephone Service Provider can generate and process the initial 9-1-1 ALI records.

After the initial installation of Centrex telephone service, the telephone station can be moved to new locations within the Centrex customer's premises without the awareness or involvement of the Local Telephone Service Provider. Therefore, communicating these changes to the provider of the Centrex 9-1-1 ALI is the responsibility of the Centrex customer.

~~1.1.1.3~~2.1.3.3 Consolidated Method

Consolidated ANI may be used where multiple locations exist and the telephone station can be easily located. Current acceptable limits suggest that areas of no more than 40,000 sq. ft with no more then 49 telephone stations on a single floor in a single building may be assigned an Emergency Response Location (ERL). One telephone number within this area will be established as the Emergency Location Identification Number (ELIN). The MLTS Telephone System must be programmed to cause each telephone station located within this given area to send the ELIN as the ANI when a 9-1-1 call is made.

When the Consolidated ANI method is chosen, care must be taken to maintain the relationship between the Emergency Location Identification Number (ELIN) and the Emergency Response Location (ERL). Numbers chosen for use as the ELIN cannot be moved or changed without impacting the MLTS Telephone Stations whose locations are identified by that ELIN. When a MLTS Telephone Station is added, moved or changed, care must be given to associate that MLTS Telephone Station number with the appropriate ELIN for its new location. The telephone number chosen as the ELIN must be dialable and capable of receiving a call back from the PSAP.

It is the responsibility of the MLTS Owner/Operator to ensure the ELIN/ERL relationship is maintained during all telephone station Add, Move and Change activities.

~~1.1.4~~2.1.4 Other Considerations

PS/911 ALI records may be sent directly to a Database Management System or via the Local Telephone Service Provider. MLTS Owner/Operators must work with their Local Telephone Service Provider or the Database Management System to determine how PS/911 ALI records will be exchanged and processed into the Data Base Management System for their respective areas.

With the introduction of Local Number Portability, where telephone numbers may be moved or ported from one Telephone Service Provider to another, the ownership and responsibility for 9-1-1 ALI record data belongs to the Telephone Service Provider that supplies dialtone. (See NENA-02-011 for details)

Where PS/911 is being implemented, the ownership and responsibility for 9-1-1 ALI record data belongs to the MLTS Owner/Operator.

When PS/911 is being implemented or the MLTS Owner/Operator is changing Telephone Service Providers, the MLTS Owner/Operator must coordinate with their Local Telephone Service Provider to release or unlock the ALI records if required. Once the records are unlocked, the MLTS Owner/Operator will then submit their ALI records to the Database Management System transferring the ownership and responsibility.

The ALI records data integrity and accuracy is the responsibility of the MLTS Owner/Operator. Errors that occur during processing at the Database Management System are returned to the MLTS Owner/Operator. These ALI records must be corrected and resubmitted by the MLTS Owner/Operator.

Where the MLTS Owner/Operator has obtained a block of telephone numbers to accommodate future growth, an ALI record will be submitted to the DBMS provider for each reserved telephone number. The address and location used should be a manned location such as a security guard of main entrance where possible. When a reserved number is assigned to a location, an ALI record reflecting that location will be sent to their Local Telephone Service or DBMS Provider.

~~1.1.5~~2.1.5 Security

Security is an inherent component of data transfer and is necessary to provide assurance of the confidentiality and integrity of the PS/911 ALI records. It could be considered a legal requirement, not only for privacy considerations, but in addition, for accuracy of the information transferred. Collection, creation, manipulation, storage, retrieval, display, and transmission of PS/911 ALI records expose that information to modification or destruction.

The reliability of hardware, software, communications, application and human factors are considerations in the selection, design, and implementation of any system for data preparation and transfer. Security controls such as encryption, redundancy, and password levels are some features that should be considered in the selection of any system or method used for PS/911 ALI data preparation and transfer. Realistic methods of minimizing or eliminating risks are the responsibility of the MLTS Owner/Operator, the Local Telephone Service or DBMS Provider. In support of the foregoing responsibilities, it is recommended that mutually agreeable security procedures be implemented for data transfer and that all such procedures be documented.

~~1.1.6~~2.1.6 PS/911 Database Requirements

PS/911 service requires the creation and maintenance of database records in the appropriate 9-1-1 Database Management System. Each and every telephone number that may be transmitted as ANI from a MLTS site must have a complete ALI record uploaded to the 9-1-1 Database Management System in accordance with the NENA Recommended Standard 02-010. Though NENA Recommended Standards for ALI Data exchange have been available for many years and all Database Management Systems Providers are encouraged to adhere to these standards, there may be some instances where PS/911 Data Providers may be required to go beyond the NENA standard to meet specific Database Management System requirements. The MLTS Owner/Operator must work with their Local Telephone Service or DBMS Provider to identify and comply with any specific requirements, such as a unique identification of the PS/911 Data Provider.

~~1.1.7~~2.1.7 Station Level and Centrex Data Requirements

Each individual Station Level or Centrex Station ALI record that is provided to the ALI database must include the following data fields:

- **Function of Change** – to identify the action being performed.
- **NPA** – Area Code of the Calling Telephone Number
- **TN** – The Calling Telephone Number
- **Name** – The Name of the MLTS Owner/Operator or Company that answers this telephone.
- **Address** – The complete MSAG valid address where this telephone station is located
- **MSAG Community** – The MSAG valid community name where the telephone station is located.
- **State** – A 2-character abbreviation for the state where this telephone station is located.
- **Location** – The location field is a description of the physical location of the telephone station. When entering information in the location field, use names and terms standard and familiar to others within the company supplying the PS/911 ALI records. This will aid in caller location once Emergency Services personnel are on site. Location information should be specific and include details such as Floor, Room, Building Number, Cubical, Office Name, etc. i.e. “Office, 3rd Floor, SW Corner” or “Equipment Room, Basement, Building D”.
- **Class of Service** – A single character code that describes the class of telephone service placing the call to 9-1-1. (Residential, Business, Coin, etc.)

? **Type of Service** – Indicates the type of service placing the 9-1-1 call (Published, Non-published, Foreign Exchange, PS/911,etc)
? **Company ID1** – This identifies the Telephone Service provider that is providing dialtone.
? **Company ID2** – This identifies the Telephone Service provider that is providing the ALI record for this telephone number (NENA 3 or 4 only).

There may be other data fields required by your Local Telephone Service or DBMS Provider. For a complete list and description see NENA document NENA-02-010.

~~1.1.8~~2.1.8 Consolidated ALI Data Requirements

Consolidated Data ALI records (Section 4.3) and their administration is the responsibility of the MLTS Owner/Operator. When Consolidated Data ANI is chosen, then it is critical to maintain the proper relationship between MLTS Telephone Station number(s) assigned to act as the ELIN(s) and the MLTS Telephone Stations within each designated ERL. When MLTS Telephone Stations are changed, the PS/911 ALI records must also change to reflect a new or different location.

Each ERL record that is provided to the ALI database must include the following data fields:

- **Function of Change** – to identify the action being performed.
- **NPA** – Area Code of the Calling Telephone Number
- **TN** – The Calling Telephone Number
- **Name** – The Name of the MLTS Owner/Operator or Company that answers this telephone.
- **Address** – The complete MSAG valid address where this telephone is located
- **MSAG Community** – The MSAG valid community name where the telephone is located.
- **State** – A 2-character abbreviation for the state where this telephone station is located.
- **Location** – The location field is a description of the physical location of the ERL. When entering information in the location field, use names and descriptive terms, standard and familiar to others, within the company supplying the PS/911 ALI records. This will aid in caller location once Emergency Services personnel are on site. Location information should be specific to the designated ERL and include details such as Floor, Room, Building Number, Cubical, Office Name, etc. i.e. “Office, 3rd Floor, SW Corner” or “Equipment Room, Basement, Building D”.
- **Class of Service** – A single character code that describes the class of telephone service placing the call to 9-1-1. (Residential, Business, Coin, etc.)
- **Type of Service** – Indicates the type of service placing the 9-1-1 call (Published, Non-published, Foreign Exchange, PS/911,etc)
- **Company ID1** – This identifies the Telephone Service provider that is providing dialtone.
- **Company ID2** – This identifies the Telephone Service provider that is providing the ALI record for this telephone number (NENA 3 or 4 only).

There may be other data fields required by your Local Telephone Service or DBMS Provider. For a complete list and description see NENA document NENA-02-010.

~~1.1.9~~2.1.9 PS/911 Database Update Responsibility

PS/911 Database ALI updates are the responsibility of the MLTS Owner/Operator. PS/911 records must reflect and keep pace with the addition, change and removal of all telephone number(s) or MLTS Telephone Stations assigned to physical locations within a specific physical address when these changes are under the control of the MLTS Owner/Operator.

PS/911 Database ALI updates or changes must be made to the 9-1-1 database as they occur. PS/911 updates and changes must be kept current with the changes made to the MLTS Telephone Stations or

inaccurate location information will be displayed to the 9-1-1 Call Taker and may delay the response of emergency services.

~~1.1.10~~2.1.10 Special Consideration for PS/911

Wherever MLTS services with the ability to send station level ANI are in use and the MLTS Owner/Operator has the ability to make changes to that telephone service, such as changing the location of the telephone sets, without the knowledge or involvement of the Local Telephone Service Provider. The MLTS Owner/Operator must provide station level ALI records to their Local Telephone Service or DBMS Provider.

Where the MLTS Owner/Operator does not provide true PS/911 functionality and the MLTS system is configured to send the main or billing telephone number as ANI when a 911 call is placed, then the main or billing address associated with that number will display on the PSAP screen. This may not be the caller's actual location; however, it will aid in locating the caller.
Should the MLTS Owner/Operator or Telephone Service Provider enable station level ANI without providing PS/911 ALI records, 911 calls placed from within the MLTS system will follow the established default call route and may not be answered by the correct county PSAP.

It is recommended that MLTS Owner/Operators provide true PS/911 functionality.

True PS/911 service may only be achieved by accurately maintaining MLTS Telephone Station records in the 9-1-1 database. PS/911 ALI records must include the specific telephone station location and MSAG-valid address.

Refer to the NENA PS/911 Network Technical Information Document for additional PS/911 network configuration information.

3 References

Standards for preparing PS/911 ALI records can be found in the following NENA documents. All Documents are available for download on the NENA Web site www.nena9-1-1.org

NENA-01-002	NENA Master Glossary of 9-1-1 Terminology
NENA-02-002	NENA Recommended Standards For E9-1-1 Data Base Maintenance
NENA-02-010	NENA Recommended Formats & Protocols For ALI Data Exchange, ALI Response & GIS Mapping
NENA-02-011	NENA Recommended Data Standards For Local Exchange Carriers, ALI Service Providers & 9-1-1 Jurisdictions
NENA-XX-XXX	NENA Technical Reference for PS/911 Network

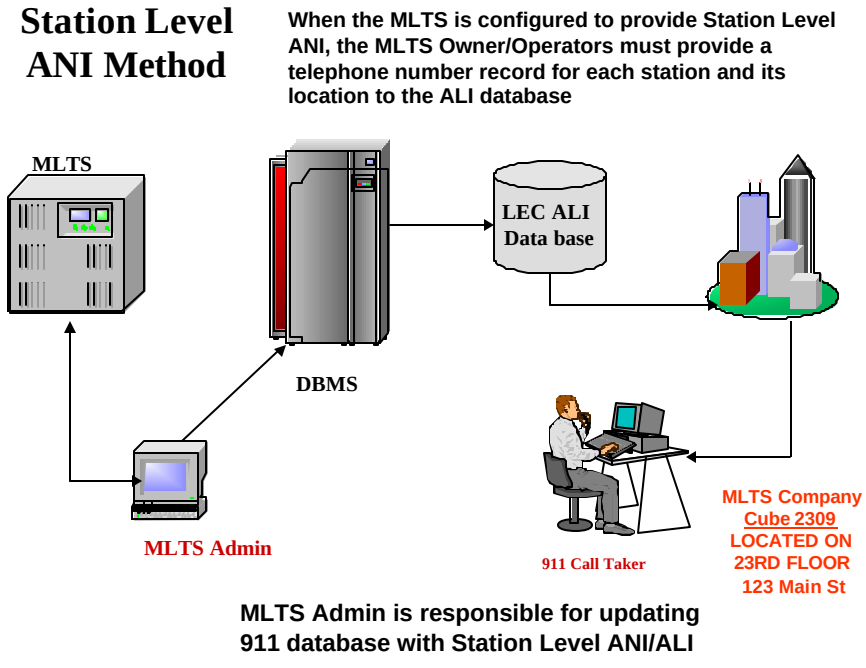
NENA 9-1-1 Tutorial	The NENA 9-1-1 Tutorial is presented by NENA's Technical Committees and is available in Adobe PDF format and Microsoft PowerPoint '97 format. Both formats contain notes that coincide with each slide.

4 Diagrams

4.1 Station Level ANI Diagram

PS/911 Data Flow Diagrams

This diagram shows the flow of 911 ALI records when using Station Level ANI method and does not represent the path of a 911 call. Refer to the NENA PS/911 Network Technical Reference for a discussion of PS/911 call flow.

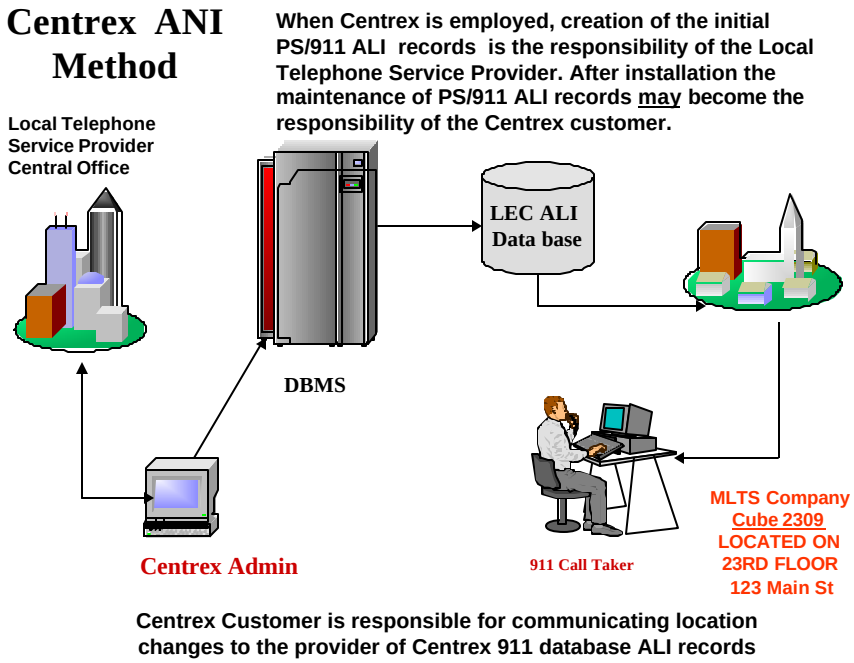


When Station Level ANI method is employed, the MLTS identifies the telephone number of the telephone station placing the 911 call. The MLTS Owner/Operator is responsible for maintaining the current and accurate records for each telephone station capable of identifying its ANI to the 911 network. Station Level ANI is the recommended method for MLTS 911.

~~1.2~~4.2 Centrex ANI Diagram

PS/911 Data Flow Diagrams

This diagram shows the flow of 911 ALI records in a Centrex telephone environment and does not represent the path of a 911 call. Refer to the NENA PS/911 Network Technical Reference for a discussion of PS/911 call flow.

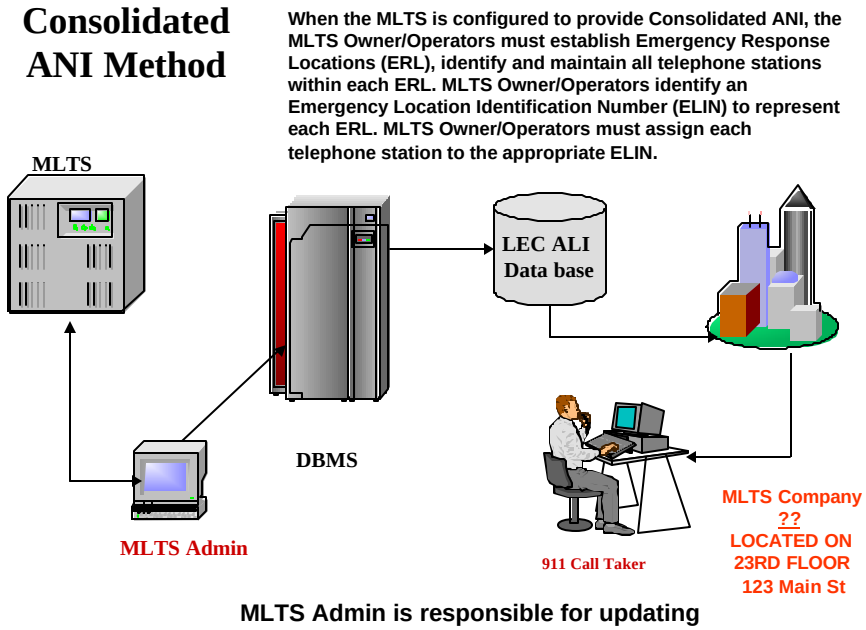


In the Centrex Model, the initial creation of 911 records for Centrex Stations is the responsibility of the Telephone Service Provider. Typically these records will use the primary address of the Centrex customer on all 911 records. After the initial installation, the Centrex customer may have the ability to move Centrex stations within their buildings, factories or campus environment without the involvement or knowledge of the Telephone Service Provider. When this is true, the Centrex customer is responsible for maintaining the current and accurate records for each telephone station capable of identifying its ANI to the 911 network.

~~1.~~34.3 Consolidated ANI Diagram

PS/911 Data Flow Diagrams

This diagram shows the flow of 911 ALI records using the consolidated ANI method and does not represent the path of a 911 call. Refer to the NENA PS/911 Network Technical Reference for a discussion of PS/911 call flow.



When the Consolidated ANI method is chosen, care must be taken in the assignment and maintenance of Emergency Location Identification Numbers (ELIN) and the Emergency Response Locations (ERL). Numbers chosen for use as the ELIN cannot be moved or changed without impacting the MLTS Telephone Stations whose locations are identified by that ELIN.

It is the responsibility of the MLTS Owner/Operator to ensure the ELIN/ERL relationship is maintained during all telephone station Add, Move and Change activities. It is also the responsibility of the MLTS Owner/Operator to ensure current and accurate ALI records are maintained for each assigned ELIN/ERL pair.