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NENA Recommended Standards For Local Service Provider Interconnection Information Sharing

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Prepared by:

National Emergency Number Association (NENA) ALEC Sub-Committee of the
NENA ALEC/PS Standards Committee

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INTRODUCTION

1.1 Purpose

This document sets forth recommended NENA standards for all Local Service Providers involved in providing dial tone to end users.

1.2 Copyright and Responsibility

This practice was produced by the NENA ALEC/PS Standards Committee in conjunction with the ALEC Information Sharing Subcommittee. The NENA Executive Board has recommended this practice for industry acceptance and use. For more information about this practice, contact:

NENA National Office
800-332-3911

1.3 Disclaimer

This document has been prepared solely for the voluntary use of 9-1-1 service providers, 9-1-1 equipment vendors, and participating Local Service Providers.

By using this practice, the user agrees that the National Emergency Number Association (NENA) will have no liability for any consequential, incidental, special, or punitive damages that may result.

1.4 Reason for Reissue

1.5 Acronyms/Terms

NENA reserves the right to modify this technical reference. When ever it is reissued, the reason(s) will be provided in this paragraph.

NENA-06-001 March 1997 (Original)

Acronym/Term	Definition
ALEC	Alternative Local Exchange Carrier, also known as CLEC
Automatic Location Information (ALI)	The automatic display of the street address and/or location associated with the telephone number (ANI) which is displayed on a screen at the telecommunicators position.
Automatic Number Identification (ANI)	The automatic display of the telephone number of the calling party at the telecommunicators position.
BellCore Standard	Bell Communications Research Entity.
CLEC	Competitive Local Exchange Carrier, also known as ALEC
End User	The 9-1-1 caller.
ESCO	Emergency Service Central Office number. When ANI is not available and a 9-1-1 call is default routed, the ANI display at the PSAP will be "911-XNNN with NNN identifying the incoming trunk that delivered the 9-1-1 call.

ESN	Emergency Service Number / Emergency Service Zone (ESN/ESZ) An ESN is a three to five digit number representing a unique combination of emergency service agencies (Law, Fire, and Emergency Medical Service) designated to serve a specific range of address within a particular geographical area, or ESZ. The ESN facilitates the selective routing if required of a call to the appropriate PSAP and the dispatching of the proper service agency (ies).
E9-1-1	Enhanced 9-1-1 (name, address, and telephone number displayed).
ILEC	Incumbent Local Exchange Carrier
LEC	Local Exchange Carrier
LERG	Local Exchange Routing Guide is maintained by BellCore and is associated with the North American numbering plan. It tracks NPA/NXX assignments with appropriate switching routing.
LSP	Local Service Provider, a term intended to encompass all companies providing dial tone to end users, including but not limited to Incumbent Local Exchange Carriers, Alternative Local Exchange Carriers and PBX providers.
Master Street Address Guide (MSAG)	A listing of all streets and number ranges within a 9-1-1 service area. The streets and address ranges are assigned routing codes, or emergency service numbers (ESNs), to enable proper routing of 9-1-1 calls.
NENA	National Emergency Number Association
North American Numbering Standard	Uses NPA standard of 10 digit number assignment and is administered by BellCore.
NPA-NXX	Number plan area (area code) and prefix.
PBX	A private telephone system that is connected to the public switched telephone network.

Public Safety Answering Point (PSAP)	An answering location for 9-1-1 calls originating in a given area. A PSAP may be designated as primary or secondary, which refers to the order in which calls are directed for answering. Secondary PSAPs receive calls on a transfer basis and generally serve as an answering location for a particular type of emergency call (i.e., Fire or EMS). PSAPs can be located at police, fire or emergency medical service communications centers, or may be located in a specialized centralized communications center which handles all emergency communications for an area. PSAPs may be represented by an agent or agency for data base administration.
Rate Center	A geographically specified area used for determining mileage and/or usage dependent rates in the Public Switched Telephone Network.
Selective Routing (SR)	This is the routing of a 9-1-1 call by the telephone network to the proper PSAP. Selective routing is accomplished by the ESN which is derived from the customer location information, upon MSAG validation.
Service Provider	The entity(ies) responsible for the ALI system data management and/or retrieval. i.e., a Telephone Company, Data base or CPE vendor, PSAP or County.

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1.6 Reasons to Implement and Benefits

Industry adoption of the standard will:

- Improve communication conformity
- Remove barriers across entities
- Ensure reliable 9-1-1 call delivery

1.7 Implementation

How: Use of the standards will provide the basis for agreements between the Local Service Provider and the 9-1-1 Service Provider.

When: Should be used at the time that arrangements are being made between the Local Service Provider and the 9-1-1 Service Provider.

See also related NENA Data Standards documents concerning LSP, such as NENA 02-005, NENA Recommended Standards for Local Service Providers

1.8 Examples of Information Sharing Documents

Examples of Service Questionnaires, Service Documentation Spreadsheets, and other information sharing techniques in use can be obtained from the NENA National Resource Center, either via the NENA WEB site, or by contacting the NENA national office at 800-332-3911.

1.9 Acknowledgments

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Southwestern Bell

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Jeff Bolton GTE Tel. Ops.
Carmen Bryant ALLTEL Services Corp.
Judy Cortiana Pacific Bell

Charleen Cosatt Southwestern Bell
Stan Czolowski NYNEX
Joan Dalton Pacific Bell
Steve Fitzgerald MFS Communications
Judy Graham Time Warner Communications
Marilyn Haroutunian MCImetro
Roger Hixson Ameritech
Kirt Jorgenson SCC
Norine Kettler-Lewis Pacific Bell
Rebecca Leikheim Trace, Inc.
Gail Pazan CML Technologies
Nancy Pollock The Metropolitan 9-1-1 Board for Minneapolis/St. Paul
Russ Russell GTE Tel. Ops.
Farida Saeed NYNEX
Greg Schiller NYNEX
Thom Selleck TCG
Stephen Wisely NYNEX

Roger Hixson
NENA ALEC/PS Standards Committee Chair
614-223-7687

Farida Saeed
NENA ALEC Information Sharing Subcommittee Chair (1996)
212-395-0868

Information sharing between ILECs and ALECs is both an **initial and ongoing requirement** for the provisioning and upgrading of the 9-1-1 system.

Standards

1.0 Information to be shared between ILECs and ALECs

The ILEC controlling the 9-1-1 service system should provide each ALEC with a detailed description of, but not limited to, the following information:

1. 1.0.1 Description of 9-1-1 Selective Router service area in a graphical/map format and/or text/list format
2. 1.0.2 Exchange or NPA-NXX to PSAP trunking arrangements where Selective Routing does not apply
3. 1.0.3 Geographic boundaries of LEC's rate centers/exchanges, where available

Use of Rate Center Information in ALEC 9-1-1 Service

ALEC assignments of telephone numbers do not depend on the fixed central office boundaries of the past. This breaks some of the assumptions under which E-9-1-1 service was originally designed. As a result, some relationships between the ALEC NXX service area and the E 9-1-1 Selective Routing switch service area must be established. This allows determination of ALEC call delivery to the proper Selective Router that can then deliver the call to the correct PSAP.

The assignment of NXXs for all domestic telephone service providers is done by Bell Core using the Local Exchange Routing Guide (LERG), and in relationship to Rate Center where the NXX number set will be used. Since most 9-1-1 Selective Routers cover a set of Rate Centers, the Rate Center relationship becomes a way to define how an ALEC NXX, the corresponding Rate Center, and the related Selective Router need to work together for 9-1-1 service.

In essence, the Rate Center becomes the "physical boundary" of the ALEC NXX in regard to geographic and Selective Router switch interconnection considerations for 9-1-1 service. See also Attachment A, '9-1-1 and the Local Service Provider - The Call Routing Puzzle', for examples of these relationships.

1.0.4 The ALEC exchanges associated with each Selective Routing 9-1-1 tandem

1.0.5 Common Language Location Identification (CLLI) codes (11 character standard) with their associated addresses for the switching and meetpoints in the network

1. 1.0.6 The PSAPs associated with each Selective Router 9-1-1 tandem
2. 1.0.7 The MSAG or similar equivalent
3. 1.0.8 Technical specifications for network interface
4. 1.0.9 Technical specifications for database loading and maintenance

1.0.10 Identification of local procedures and responsibility for assigning default call routing

1.1 Recommended Standard for Contact Lists

It is recommended that all local service providers staff a 24 hour / 7 days a week problem resolution center with personnel knowledgeable of 9-1-1. The contact number will be provided to the 9-1-1 Service Provider and PSAPs for their use in requesting assistance for 9-1-1 call problems. Escalation names and numbers for emergency situations for both ALECs and ILECs should be provided.

Administrative level contacts in the ILEC, ALEC and/or database custodian (if different than the ILEC) should be exchanged for 9-1-1 operational purposes. A single point of contact is preferable.

Names, titles, phone numbers, etc. should be provided for government entities responsible for 9-1-1 systems.

1. 1.2 Recommended Standard for Service Restoration
2. 2.0 Relationship between ALEC service areas and Selective Routing 9-1-1 tandem serving area

Pre-arranged contingency plans are required with each ILEC/ALEC prior to service being activated.

The Local Service Provider must relate their NPA-NXXs , rate centers and/or service areas to the appropriate Selective Routers utilizing the information described in Section 1.0.

.3.0 Verification of ALEC subscribers information in the ALI database

.Database verification between the LSP and the 9-1-1 Service Provider must be accommodated. The method and medium must be negotiated, but will be subject to the recommendations of the NENA Recommended Measurements for Data Quality document, NENA-02-004.

.4.0 ALI database error correction

.It is recommended that ALI database error correction be done by the Local Service Provider (LSP) for their own customer records, unless alternate arrangements have been negotiated with the 9-1-1 Service Provider.

2. 5.0 Notification to PSAPs of new Local Service Provider NXXs

The PSAP must unblock new LSP NXXs in situations where the PSAP uses a PBX or other private switch that would restrict “call-backs” to new NXXs until they are added to the “allowed call” list.

It is recommended that this notification be handled with existing methods by which PBX users are alerted of new NXXs as they are being activated.

New NXXs should be added to contingency plans and reference tools for identification of the appropriate telephone service provider for tracing calls, etc.

6.0 MSAG Ownership and Responsibilities

The MSAG or similar equivalent is the basis for managing the accuracy of selective routing, selective transfer, and the identification of “first responders” (law enforcement, fire, EMS) in the data display provided by E9-1-1 service.

Ownership and responsibilities may be established in tariffs and/or contracts between government entities and service providers. In the absence of any defined ownership, the committee has the following recommendations:

6.0.1 The government entity should be responsible for

- Establishment of the MSAG or similar equivalent content, including defining ESNs

- Updates to MSAG or similar equivalent (changes, additions, deletions)

6.0.2 The MSAG or similar equivalent custodian (usually, but not always, the 9-1-1 Service Provider) should be responsible for

- Operation of the Database Management System

- Processing of information submitted by the government entity

- Storage of the MSAG or similar equivalent data and distribution of copies to authorized users in a mutually agreeable medium and frequency

(Users should be considered authorized when the state regulatory body certifies them as a Local Service Provider, and any required contractual agreements exist.)

7.0 PSAP Contact with Local Service Providers

If the PSAP needs to contact the originating Local Service Provider for emergency purposes (line seizure, line interrupt, a hostage situation, address verification, etc), a 24 hour by 7 day contact point must be determined for the Local Service Provider that controls switching of the originating call.

1. 7.0.1 If the ANI fails, an ESCO code is generated by the Selective Router and is conveyed to the PSAP. The PSAP would need to contact the 9-1-1 Service Provider to determine ownership of the trunk identified by the ESCO code.
2. 7.0.2 If ALI is displayed without Company ID, then two choices are possible:

The LSP is encouraged to provide PSAPs a list of the NXXs assigned to them and the 24 x 7 contact number (see 1.1).

If the carrier's NXXs are not identified to the PSAP, the PSAP should contact the 9-1-1 Service Provider to determine the proper carrier.

7.0.3 If the ALI is incomplete, but the Company ID field is available, the PSAP can use the Company ID to determine the proper contact number.

8.0 Local Service Provider Operator Handling of Emergency Calls

Local Service Providers need 10-digit emergency service telephone numbers for operator handling of emergency calls.

This information should be provided by the Governmental entity responsible for public safety agency administration. They may delegate the distribution to:

the State entity;
the County or service system coordinator;
the 9-1-1 Service Provider; or
an independent agency.

The information can be shared electronically (Internet) or by some other timely means.