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(Issue 6)

**9-1-1 Public Emergency Reporting Service
(9-1-1 PERS)**

**Network-to-Network Interface
Between Local Service Providers (LSPs)
and Bell Canada's Network**

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DOCUMENT HISTORY

1	September, 1997	Initial issue
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2	May, 2000	Section 5.4 and 5.8 were modified to add a new field "Pilot NPA" to handle the introduction of 416 NPA overlay in Ontario. This modification will take place on December 1 st 2000.
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3	March, 2001	Section 5.4 and 5.8 were modified to add 2 new fields and expand one field. This modification is required for the introduction of a new 9-1-1 system.
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4	November, 2003	The description of Called Party Disconnect Signal functionality as described in Section 3.2.2 was corrected. Sections 4.2, 5.1, 6.1 and 6.3 were modified to reflect the introduction of a web based access arrangement for Electronic File Transfer.
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5	September, 2004	Sections 3.1.2 and 3.2.2 were added to reflect support for the CCS7 ISUP trunk interface to the 9-1-1 Selective Router switch
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6 June, 2006

Section 3.2.2 was modified with the addition of the Calling Party Category IAM parameter. Sections 4.2.1, 4.2.2, 5.1, 6.1 and 6.3 were revised to remove references to the e-mail method for file transfers.

DISCLAIMER

Bell Canada reserves the right to modify the interface described in this document for any reason including, but not limited to, ensuring that it conforms with standards promulgated by various agencies from time to time, utilization of advances in the state of the technical arts, or the reflection of changes in the design of any equipment, techniques or procedures described or referred to herein.

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Readers are specially advised that the technical requirements contained herein may change.

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1.0 INTRODUCTION

1.1 PURPOSE

This document describes the interfaces between Local Service Providers (LSPs) and the Bell Canada Network for the purpose of providing **9-1-1 Public Emergency Reporting Service (9-1-1 PERS)**. These interfaces allow 9-1-1 calls originating from LSP customers to be passed through the Bell Canada network to the appropriate 9-1-1 service bureau. These interfaces also allow the LSPs to update Bell Canada's 9-1-1 PERS Data System with the pertinent calling number and location information of their customers.

This document covers only LSP interconnection with Bell Canada's 9-1-1 PERS. Interconnection to Basic 9-1-1 Emergency Service, where provided, is outside of the scope of this document.

The Terminal-to-Network interfaces between Bell Canada's network and a 9-1-1 Service Bureau are outside of the scope of this document.

Operational issues that deal with interconnection between LSPs and Bell Canada are also outside of the scope of this document. Those issues are dealt with in Bell Canada's Implementation Support documentation and in special agreements with a particular LSP.

1.2 GENERAL

9-1-1 PERS provides the transport of all 9-1-1 calls between callers' locations and primary Public Safety Answering Points (P-PSAPs), and between the primary PSAP and associated police, fire and ambulance dispatch centres (referred to as secondary PSAPs). The municipalities and the various agencies are responsible for answering and responding to the emergency calls.

When an LSP end customer dials 9-1-1, the call is switched and transported to Bell Canada's designated 9-1-1 Selective Router switch. The 9-1-1 call is then routed from the 9-1-1 Selective Router switch to the appropriate PSAP, where the subscriber's telephone number, name and address are delivered to the 9-1-1 call-taker terminal.

To enable appropriate response to 9-1-1 calls from LSP end customers, each LSP must transmit the Customer Record Information (ANI and ALI) of its end customers to the Bell Canada 9-1-1 PERS Data System.

Interconnection facilities and functions include the following:

- Appropriate dedicated trunk-side connections between the LSP's end-office switch and Bell Canada's receiving 9-1-1 Selective Router switch;
- Multi-Frequency (MF) or CCS7 ISDN Services User Part (ISUP) signalling on 9-1-1 trunks, to enable the operation of call control features; and
- An appropriate data entry facility to enable data transfer between the LSP Customer Record Information System (CRIS) and Bell Canada's 9-1-1 PERS Data System.

2.0 SERVICE DESCRIPTION

2.1 SERVICE OVERVIEW

Following is a brief description of the activities performed by the 9-1-1 PERS network:

The **9-1-1 PERS Data System** receives data from the LSP Customer Record Information System, to create and maintain the 9-1-1 centralized databases. A matching procedure is performed between the Customer Record Information (CRI) data and the 9-1-1 Street Address Guide (9-1-1 SAG) to create a database containing subscribers' name, address, telephone number and Emergency Service Number (ESN). This database is used to provide the Automatic Location Identifier (ALI) and the Selective Routing features.

The **9-1-1 SAG** is a database, which contains addresses in a given area, listed as street names and corresponding civic number ranges.

The **ALI** feature is the capability to display the caller's service address at the 9-1-1 call-taker position.

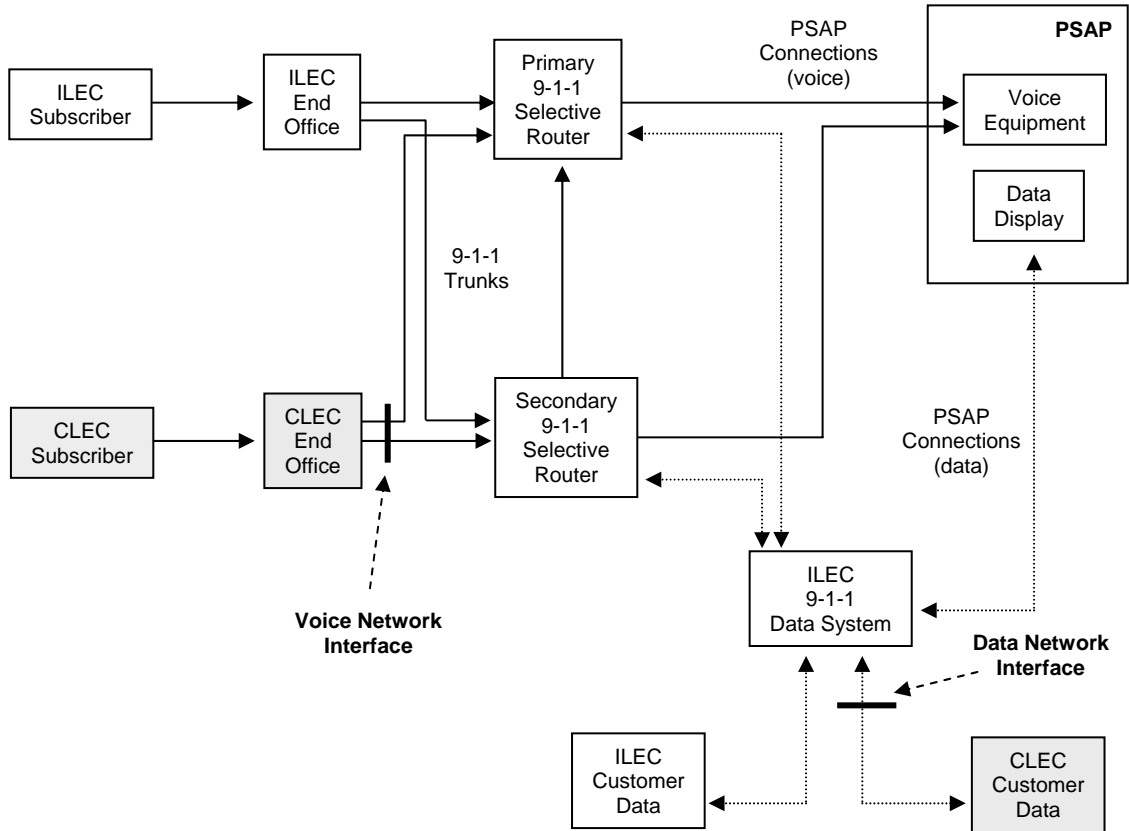
Selective Routing is the capability of routing 9-1-1 calls to the correct PSAP based on the caller's location.

An **ESN** corresponds to a geographical area where all residents are served by the same set of primary and secondary PSAPs.

When a subscriber located in a 9-1-1 PERS served area dials 9-1-1, the call is answered at the primary PSAP associated with that location. The caller's address and phone number are automatically displayed to the 9-1-1 call-taker screen, when available. The call-taker determines which public service is required (fire, police or ambulance) and transfers the call to the appropriate secondary PSAP.

2.2 VOICE NETWORK OVERVIEW

The voice network is based on the Nortel E9-1-1 DMS-100 Selective Router switches. The 9-1-1 Selective Router switches are paired for redundancy purposes; end-offices connect to the primary and secondary Selective Router switches with dedicated 9-1-1 trunks (i.e. 9-1-1 interconnection service arrangement trunks).

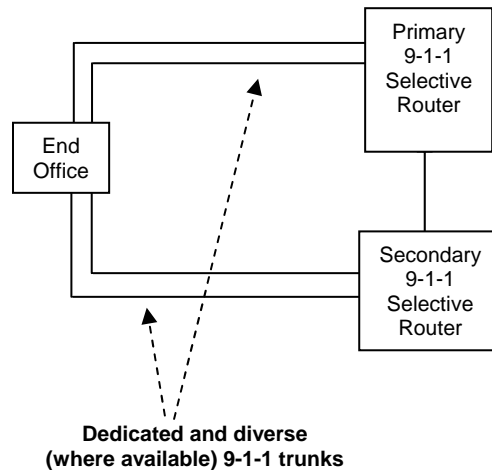


Trunk Side Interconnection to Bell Canada 9-1-1 PERS Network

3.0 Voice Network Interface

This section provides details of the interface requirements to interconnect with Bell Canada's 9-1-1 PERS voice sub-network.

Each Selective Router switch is paired with a backup unit; they are designated as primary and secondary Selective Router switch, based on a Bell Canada assignment. Dedicated 9-1-1 interconnection service arrangement trunks link all end-offices in the served area to both Selective Router switches. 9-1-1 calls are routed using the trunks that connect the end-office to the primary Selective Router switch. In the event of a primary trunk failure or a primary Selective Router switch failure, 9-1-1 calls will be re-directed to the secondary Selective Router switch.



3.1 PHYSICAL TRUNK INTERFACE

The primary function of the trunks connecting the end-offices to the 9-1-1 Selective Router switches is to provide the signalling capabilities. These can be grouped into two main areas:

- protocol between the end-office and the 9-1-1 Selective Router switches for call set-up; and
- 9-1-1 features set support.

3.1.1 MF SIGNALLING

Any wink-start trunk outgoing from an LSP end-office conforming to "Feature Group C" signalling and capable of spilling ANI can be used to interface with an incoming 9-1-1 trunk at a 9-1-1 Selective Router switch.

The ANI information is always received as MF signals, and uses Bellcore Standard Format with a single information digit.

The signalling is described in Section 6 of Bellcore Technical Reference TR-TSY-000540, Issue 2, July 1987, (Tandem Supplement to LSSGR), and in Revision 2, June 1990.

The trunks that are required to interconnect an LSP end-office to Bell Canada's Selective Router switches are available per Stentor's National Services Tariff CRTC 7400, Item 635 as filed on July 30, 1997.

3.1.2 ISUP SIGNALLING

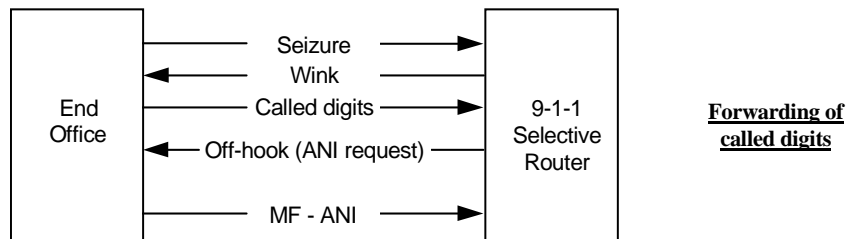
The interface specifications for the ISUP (CCS7) signalling trunks are the same as those defined in Schedule 1 Part 5, Inter-carrier Interface Specification, "Feature Group D" Access Using Common Channel Signalling System Number Seven (CCS7), dated April 6, 1993, as filed by Bell Canada under Tariff Notice 4774.

The trunks that are required to interconnect an LSP end-office to Bell Canada's Selective Router switches are available per Bell Canada's National Services Tariff CRTC 7400, Item 302.

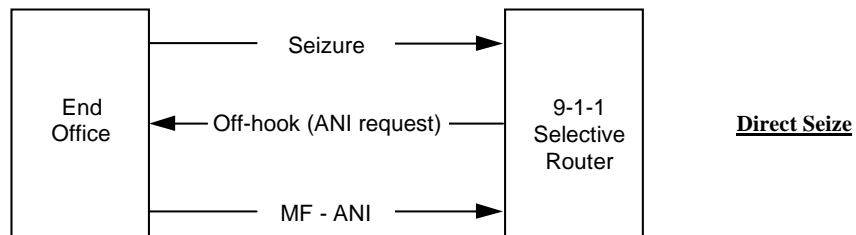
3.2 SIGNALLING REQUIREMENTS

3.2.1 MF 9-1-1 SIGNALLING PROTOCOL

LSP sends 9-1-1 digits:



LSP send ANI only:



3.2.2 ISUP 9-1-1 SIGNALLING PROTOCOL

The ISUP (CCS7) signalling requirements are further described in the following Telcordia documents:

- GR-2956-CORE, *CCS/SS7 Generic Requirements in Support of E9-1-1 Service*, describes the Signalling System No. 7 signalling between the originating switch and the E9-1-1 tandem, and between E9-1-1 tandems. Interworking with this SS7 signalling is also described in this document;
- GR-905-CORE, *Common Channel Signalling (CCS) Network Interface Specification (CCSNIS) Supporting Network Interconnection, Message Transfer Part (MTP), and Integrated Services Digital Network User Part (ISDNUP)*; and
- GR-1432-CORE, *CCS Network Interface Specification (CCSNIS) Supporting SCCP and TCAP*.

It is expected that the A-link arrangement described in Section 2 of GR-905-CORE will be utilized for CCS-based interconnection in support of E9-1-1 Service.

Common Channel Signalling No. 7 (CCS7) is the layered CCS protocol used by national and international telecommunications networks to provide highly reliable information transfer with low delay and without loss or duplication of messages.

GR-905-CORE and GR-1432-CORE describe the interface protocol and messages expected to cross the network interface. Specifically, Section 3.1 of GR-905-CORE describes the Message Transfer Part (MTP), Section 3.2 of GR-905-CORE describes the Integrated Services Digital Network (ISDN) User Part (ISDNUP) for non-call related messages, and Section 3.3 of GR-905-CORE describes the ISDNUP for call-related messages.

In addition, Section 2 of GR-1432-CORE describes the Signalling Connection Control Part (SCCP), and Section 3 of GR-1432-CORE describes the Transaction Capabilities Application Part (TCAP) portion of the SS7 protocol, which play a role in non-circuit related message exchanges.

The following ISUP Signalling Initial Address Message (IAM) parameters are used for wireline trunk-side 9-1-1 interconnection:

IAM Parameter Description	IAM Parameter Use
Calling Party Category	11100000
Calling Party Number	Caller's 10-digit Number (ANI)
Called Party Number	911 or 11

Bell Canada DMS-100 switch emergency services software supports dedicated E911 trunking that uses ISUP signaling protocol on InterToll (IT) trunks between an End Office (EO) and the E911 Selective Router switch.

The Calling Party Category (CPC) parameter is required for ISUP IT trunks used for E911 calls. The CPC identifies an emergency service call as 11100000.

ISUP IT trunks used for E911 calls support the following functionality, where technically feasible:

- Calling Party Hold; and
- Ringback.

If the End Office is a DMS-100 switch, activation for the Calling Party Hold and Ringback features in a DMS-100 E911 Selective Router switch requires the Operator Services Network Capability (OSNC) option assignment to the EO outgoing IT ISUP trunk.

If the EO is not a DMS-100 switch, activation for the above features requires EO GR-1277 outgoing IT ISUP trunk compliance.

As with E911 MF trunks, IT ISUP trunks with the E911 option must handle only 9-1-1 emergency traffic.

3.2.3 9-1-1 SELECTIVE ROUTER SWITCH SIGNALLING

The 9-1-1 Selective Router switches use specific signalling on the trunk from the end-offices, to support the following 9-1-1 PERS features:

Ringback

This feature enables the PSAP call-taker, via the end-office, to:

- ring the phone of the 9-1-1 caller, if it is "on-hook"; or
- apply Receiver Off-Hook (ROH) treatment to the line if the phone is "off-hook".

Called Party Forced Disconnect

Allows the PSAP call-taker to force the disconnection of a 9-1-1 call, and thus release the 9-1-1 trunk (in the case the originator fails to return the phone to the “on-hook” state).

When the PSAP attendant goes “on-hook”, the 9-1-1 Selective Router switch sends a disconnect signal to the end-office.

Called Party Disconnect Signal

This feature provides the PSAP call-taker with a distinctive tone to indicate that the 9-1-1 caller has returned the phone to the “on-hook” position.

When the caller goes “on-hook”, the end-office provides an on-hook indication to the 9-1-1 Selective Router switch. The Selective Router switch then provides a distinctive tone to the PSAP attendant.

Called Party Control

Gives the PSAP attendant sole control over the disconnection of a 9-1-1 call. The end-to-end connection is maintained until a valid on-hook signal is sent by the call-taker. This prevents the 9-1-1 caller from terminating the call.

The Selective Router switch requires an “on-hook” signal from the PSAP to initiate disconnection of the call.

If the caller goes “on-hook”, then “off-hook”, and the PSAP attendant has remained “off-hook”, the call must remain connected. The end-office cannot release the call.

The end-office must indicate to the 9-1-1 Selective Router switch that the caller has gone “on-hook”, and waits for a disconnect signal from the Selective Router switch before dropping the call. The Selective Router switch will provide the disconnect signal when the PSAP attendant goes “on-hook”, or when the Selective Router switch’s PSAP-disconnect timer expires, whichever comes first.

4.0 Data Network Interface

4.1 GENERAL

This interface is intended to transport the LSP customers' ANI and ALI information for the purpose of updating the 9-1-1 PERS Data System.

4.2 DATA COMMUNICATION WITH THE 9-1-1 PERS DATA SYSTEM

4.2.1 ACCESS

A web based interface is used to communicate with the Bell Canada 9-1-1 PERS Data System.

The web based access arrangement requires the following:

- access to the Internet, either direct or via an internet access provider (ISP);
- Internet Explorer 5.5 or Netscape 4.7 or later with 128 bit encryption;
- an e-mail address; and
- for an optional system-to-system mode of operation, a server that supports HyperText Transfer Protocol Secure (HTTPS) posts.

4.2.2 COMMUNICATIONS PROCESS

Customer Record files from the LSP to the 9-1-1 Data System are uploaded to the web site. Error Return files from the 9-1-1 Data System to the LSP are downloaded from the web site.

This file transfer process may be user driven (i.e. a user accesses the web site for the purposes of uploading Customer Record files or retrieving Error Return files). Additionally, an automated, system-to-system arrangement can also be implemented.

5.0 Customer Record Information Files and Records

This section defines the LSP end customers' identification and service location information to be transmitted by the LSP to Bell Canada 9-1-1 PERS Data System.

After processing the received data, the 9-1-1 PERS Data System will generate an Error Return file (serving as a processing acknowledgement as well as for returning any file or record error to the LSP). Details of Error Return files are discussed in Section 6.

5.1 FILE EXCHANGE PROTOCOL

The Customer Record Information files and Error Return files will be exchanged, between the LSP and Bell Canada, using the web based arrangement as described in Section 4.2 of this document.

5.2 FILE NAMING CONVENTION

The Customer Record Information files must be named according to the file naming convention described below.

The filename must be 8 characters long and conform to this format:

CO99999T

where:

“CO” is the Company Code (uniquely assigned to each sender company by Bell Canada's 9-1-1 CLEC Administrator).

“99999” is the File Sequence Number (FSN). It is right justified and zero filled.

“T” is the file type. The only valid value for incoming LSP files is “I” (Incoming file).

The **Company Code** is provided by the Bell Canada's CLEC Administrator, and is used to determine and validate the origin of the file. It is different from the LSP ID.

The **File Sequence Number** (FSN) is used to determine if files have been lost in transit. It starts at “00001” (first file transferred) and must be incremented by 1 for each subsequent file transfer, unless the previous file was rejected. When “99999” is reached, the File Sequence Number must be reset to “00001”.

The 9-1-1 PERS Data System maintains and keeps track of a separate File Sequence Number for each company. Each time the 9-1-1 PERS Data System successfully processes an LSP file, it increments the next expected FSN by one, except in the case where the file was rejected, in which case the FSN remains the same.

If the File Sequence Number sent by a specific LSP and the File Sequence Number expected by the 9-1-1 PERS Data System do not match, the system will generate an “Out of Sequence” error return file, which will contain the missing File Sequence Number. The 9-1-1 PERS Data System will not process nor keep any other file received from that company until the problem is resolved.

The **File Type** is used by the PERS Data System and the LSP to distinguish between incoming Customer Location “I”nformation files and outgoing “E”rror Return files.

5.3 INITIAL LOAD AND UPDATE FILES

An Initial Load file is the first file generated by an LSP, and contains the information necessary to update the 9-1-1 PERS Data System with the LSP data. The Initial Load file contains only “Add” records.

Update files should contain all subsequent changes, additions and deletions that occur on the LSP's served TNs; they contain "Add", "Delete" and "Unlock" records. Changes are sent as "Add" records, and TN migrations to other LSPs as "Unlock" records.

The two types of files (Initial Load and Update) have exactly the same file and record formats.

5.4 *FILE FORMAT*

Customer Record Information files must always contain at least three records: a Header record, one or more Transaction records, and a Trailer record. Files that do not conform to this format will be rejected.

Each record is 363 characters long; they are separated by one Carriage Return (CR) character.

IMPORTANT:

Customer Record Information records must only contain standard ASCII upper case characters, digits and symbolic characters (i.e. ASCII codes between 32 and 101 inclusively). No other character will be accepted. Any record containing one or more invalid characters (e.g., control character, lower case character, accented character, etc.) will result in rejection of the entire file.

5.5 *TYPES OF RECORDS*

The first record of a file must always be a valid Header record; it must be followed by one or more valid Transaction records. The last record of the file must always be a valid Trailer record.

The Header record contains information about the LSP, along with a time stamp.

The Transaction record contains the actual Customer Record Information.

The Trailer Records contains a record count (number of Transaction records in the file) and a time stamp.

5.6 *TYPES OF TRANSACTION RECORDS*

There are only three types of valid Transaction records:

- "Add" records will add the CRI record in the 9-1-1 PERS Data System, unless a matching TN record already exists in the database; in that case, the new CRI record will completely overwrite the existing one.
- "Delete" records will delete the corresponding TN record from the 9-1-1 PERS Data System. The CRI record must exactly match the TN record kept in the 9-1-1 PERS Data System, i.e. the exact same information that was previously sent and /or updated).
- "Unlock" records are used in place of "Delete" records when and only when a TN migrates from one LSP to another LSP. They must contain the same information as normal Delete records. This type of record will trigger the unlocking of the matching TN record in the 9-1-1 PERS Data System, so that it can be updated by the new LSP.

The LSP ID of the Transaction record always need to match that of the existing CRI record, unless the record is in an unlock state. If there is no match, the Transaction record will be posted to a waiting file until such time that the existing TN record is unlocked.

Any change or update to an existing Customer Record Information must be sent as an Add record, which will completely overwrite the existing record. It must thus contain all the information an Add record would contain, and not only the information that has changed.

Examples:

▪ *Situation 1:*

A customer moves to a new location, keeping the same LSP and telephone number.

Transaction records 1:

The LSP sends an “Add” record, containing the complete customer information. This record will overwrite the existing record (provided there is an LSP ID match).

▪ *Situation 2:*

A customer changes telephone number only, without changing location nor migrating to another LSP.

Transaction records 2:

The LSP first sends a “Delete” record for the old TN, followed by an “Add” record for the new TN; the records must be sent in the right sequential order, and in the same file (to avoid any service interruption).

▪ *Situation 3:*

A customer migrates to another LSP while retaining the same telephone number.

Transaction records 3:

The donor LSP sends an “U”nlock record, and the recipient LSP sends an “A”dd record. If the “U” arrives before the “A”, the existing TN record will be unlocked, so that the “A” will be applied as soon as it arrives. But if the “A” arrives before the “U”, it will be posted to a waiting file until the “U” has been applied.

5.7 SORTING OF TRANSACTION RECORDS

The LSP must sort the Transaction records in each Customer Record Information file, first by TN , then in chronological order. The Transaction records will be processed sequentially, in the order in which they are received. For example, an “Add” followed by a “Delete” on the same TN will result in the TN no longer existing in the 9-1-1 PERS Data System.

5.8 RECORD FORMATS

5.8.1 HEADER RECORD

The Header record is used for administrative and file validation purposes.

The following layout is to be used for the Header record (i.e. the first record of every Customer Record Information and Error Return file).

Field Name	Starting Position	Length	Type	Value
Record Type	01	1	Alphabetic	"H" for Header
Company Code	02	2	Alphabetic	Assigned by the CLEC Administrator
Contact Name	04	15	Alphabetic	Name of the person to contact for file related problem resolution
Contact Telephone Number	19	12	Numeric (see Note 1)	Contact's telephone number, for file related problem resolution
Date and time	31	14	Numeric (see Note 2)	Date and time of the beginning of the file preparation
Return Status (to be used by the 9-1-1 PERS Data System in Error Return files only)	45	21	Alphanumeric	"I" files: Blank. "E" files: Blank if no file transmission or validation error. Otherwise, "Record Count Mismatch", "File Out of Sequence", "Invalid Format" or "Invalid character(s)" depending on the problem.
Error Feedback (to be used by the 9-1-1 PERS Data System in Error Return files only)	66	13	Alphanumeric	For Incoming file: spaces For Error Return file: Additional error information
Filler	79	285	Blank	Spaces

Note 1: Format: NPA-NXX-LINE

Note 2: Format: YY:MM:DD:HH:MM using a 24 hour clock,

5.8.2 TRANSACTION RECORD

The following layout is to be used for the Transaction records (i.e. for all records between the Header and the Trailer of every Customer Record Information and Error Return file).

The Transaction records contains customer identification and related location information. It is used to populate and update the 9-1-1 databases.

Field Name	Starting Position	Length	Type	Value
Transaction Code	01	1	Alphabetic	“A”, “D” or “U”
NPA	02	3	Numeric	
NXX	05	3	Numeric	
LINE	08	4	Numeric	
Client Account ID	12	3	Numeric	
Service Class	15	3	Alphanumeric	
Postal Code	18	6	Alphanumeric	(first letter must be alphabetic)
Municipality Code	24	3	Alphanumeric	
Pilot NPA	27	3	Numeric	
Pilot NXX	30	3	Numeric	
Pilot LINE	33	4	Numeric	
Class of Service	37	5	Alphanumeric	
System Source	42	1	Alphabetic	
Language Indicator	43	1	Alphabetic	“F” for French or Français, “A” for Anglais and “E” for English
Subscriber Name	44	75	Alphanumeric	
Civic Number	119	6	Numeric	
Civic Number Suffix	125	4	Alphanumeric (see Note)	
Street Name	129	75	Alphanumeric	
Street Direction	204	2	Alphabetic	“N”, “S”, “E”, “W”, “O”, “NE”, “NW”, “NO”, “SE”, “SW”, “SO” or blank
Street Suffix	206	2	Alphanumeric	
Location Type	208	15	Alphanumeric	
Location Number	223	6	Alphanumeric	
Additional Information	229	60	Alphanumeric	For Incoming file: additional location information (no validation) For Error Return file: one to three error codes (000 to 999)
Service Municipality	289	35	Alphanumeric	
Extended Municipality Name	324	28	Alphabetic	
Province	352	2	Alphabetic	
LSP Identifier	354	5	Alphanumeric	LSP ID assigned to the LSP providing local telephone service to the customer
Data LSP Identifier	359	5	Alphanumeric	DATA LSP ID assigned to the LSP responsible for the data

Note: Format: -XXX (ex.: -A, -1/2)

The dash (“-”) must be present only if the rest of the field is not blank.

5.8.3 TRAILER RECORD

The Trailer record is used for administrative and file validation purposes.

The following layout is to be used for the Trailer record (i.e. the last record of every Customer Record Information and Error Return file).

Field Name	Starting Position	Length	Type	Value
Record Type	01	1	Alphabetic	"T" for Trailer
Filler	02	29	Blank	Spaces
Date and time	31	14	Numeric (see Note 1)	Date and time of the end of the file preparation
Number of Transaction Records	45	6	Numeric	Number of records, excluding Header and Trailer records
Filler	51	313	Blank	Spaces

Note 1: Format: YY:MM:DD:HH:MM using a 24 hour clock,

6.0 Error Return Files

6.1 GENERAL

The Error Return file is intended to be used by the LSP to validate the complete and proper sequential transmission as well as error-free storing of customer records.

After receiving a Customer Record Information file, the 9-1-1 PERS Data System validates it and generates a corresponding Error Return file. That Error Return file must be retrieved and analyzed by the LSP in order to ensure proper file and record sequence.

The 9-1-1 PERS Data System first validates the file based on the following criteria:

- File name is valid;
- The File Sequence Number is the one expected;
- File contains only valid ASCII characters;
- Header and Trailer records are present and valid; and
- The record count is valid.

If the file does not completely validate, it will be rejected. The records in it will not be processed and the Error Return file will contain a message indicating the problem. The Error Return file will be deposited in the LSPs account on the web site. An e-mail will also be sent to the LSP to indicate that the Error Return file is available for viewing and downloading. If the LSP is using the optional system-to-system method, the Error Return file will be sent to the LSPs HTTPS server. In either case, the LSP must correct the file and re-submit it using the same File Sequence Number (since the records were never actually processed), before sending any other file.

If the file is valid, the 9-1-1 PERS Data System processes the records contained in the file, validating each one.

If a record does not completely validate, it will be written to the Error Return file, along with the appropriate Error Code(s) in the Additional Information field (up to three codes may be indicated). The Error Return file will be deposited in the LSPs account on the web site. An e-mail will also be sent to the LSP to indicate that the Error Return file is available for viewing and downloading. If the LSP is using the optional system-to-system method, the Error Return file will be sent to the LSPs HTTPS server. In either case, the LSP must submit a new file containing corrections for erroneous records along with updates, if any, using the next File Sequence Number (i.e. previous one + 1).

The Error Return file also contains information about the processing of each and every record sent by the LSP:

Condition	Indication in the Error Return file
Record valid and posted to the 9-1-1 PERS Database	None (normal processing, no error)
Invalid record	Same record as in the input file, except that the "Additional Information" value is replaced with up to three error codes specifying the problem(s) with the LSP Customer Record Information record.
Record cannot be processed immediately because TN is currently locked by another LSP; record is kept in a special waiting file for processing when the TN will be unlocked. The LSP need not re-send the record. (This processing ensures timely processing of records even when there is no synchronization between the reception of Customer Record Files from the donor and the recipient LSP).	Same record as in the input file, except that the "Additional Information" value is replaced with a special error code indicating that the record has been posted to or taken out of the special waiting file.

6.2 **CONDITIONS AND FREQUENCY**

Bell Canada's 9-1-1 PERS Data System produces one Error Return file for each Customer Record Information file processed.

6.3 **FILE NAMING STANDARDS**

The file naming convention for Error Return files is the same as the one for the Customer Record Information files, except that the file type is "E" (for Error) instead of I, and a 5 digit sequence number is appended.

The filename will be 14 characters long and conform to this format:

CO99999T.FFFFF

where:

- "CO" is the Company Code (uniquely assigned to each sender company by Bell Canada's 9-1-1 CLEC Administrator).
- "99999" is the File Sequence Number (FSN). It is right justified and zero filled.
- "T" is the file type. The only valid value for outgoing files is "E" (Error file).
- "FFFFF" is a second sequence number. It is right justified and zero filled.

6.4 **FILE FORMAT**

The format of the Error Return file is the same as the Customer Record Information file, described in Section 5.

If there were absolutely no errors on any of the Transaction records, the Error Return file would contain, in addition to the normal Header and Trailer records, only one special Transaction record containing the following message: "No errors found".

6.5 RECORD FORMAT

The formats of the Error Return file's records are the same as the Customer Record Information file, described in Section 5.

6.6 RECORD CONTENT

The content of each Error Return record is the same as the Customer Record Information file, as described in Section 5, except for the following fields (that are specific or different for Error Return files):

Header Record:

"Return Status"
"Error Code"

Transaction Record:

"Additional Information " Up to three error codes, each separated by a space.

Note: The complete list of Error Codes and their significance will be provided to the LSP at the time of interconnection.

6.7 FILE VALIDATION ERROR

6.7.1 RETURN STATUS

The "Return Status" field in the Header record will contain one of the following status and associated error feedback values:

Return Status	Error Feedback
“File OK”	Nil
“No Header record”	Nil
“No Trailer record”	Nil
“Invalid Character”	Nil
“File Out of Sequence”	<p>Format: 999999 999999</p> <p>First 6 digits: FSN of the file received</p> <p>Last 6 digits: FSN expected by 9-1-1 PERS</p> <p>The two numbers are separated by a space; they are right justified and zero filled.</p> <p><i>Example:</i></p> <p><i>FSN Received: 000020</i></p> <p><i>Expected FSN: 000019</i></p> <p><i>Error Feedback Field: “000020 000019”</i></p>
“Record Count Mismatch”	<p>Format: 999999 999999</p> <p>First 6 digits: Number of Transaction records actually received in the file.</p> <p>Last 6 digits: Record count, retrieved from the Trailer record.</p> <p>The two numbers are separated by a space; they are right justified and zero filled.</p> <p><i>Example:</i></p> <p><i>Trailer record: 75</i></p> <p><i>Records received: 74</i></p> <p><i>Error Feedback Field: “000074 000075”</i></p>

Appendix 1: Glossary

ALI	Automatic Location Identification Information regarding the location associated with the caller's telephone number.
ANI	Automatic Number Identification Caller's telephone number.
CCS7	Common Channel Signalling #7
CLEC	Competitive Local Exchange Carriers
CPC	Calling Party Category
CSG	Carrier Services Group
EO	End Office
ESN	Emergency Service Number Number of the emergency service zone defined by a unique set of one primary PSAP and three secondary PSAPs (police, fire and ambulance).
FSN	File Sequence Number Number assigned to Customer Record Information and Error Return files.
HTTPS	HyperText Transfer Protocol Secure
ILEC	Incumbent Local Exchange Carrier
IAM	Initial Address Message
ISUP	ISDN Services User Part
IT	InterToll trunks
LNI/NCU	Local Network Interconnection/ Network Component Unbundling
LNP	Local Number Portability
LSP	Local Service Provider Provider of local telephone service; includes ILECs, CLECs and Resellers.
MF	Multi-Frequency
MTP	Message Transfer Part
9-1-1 SAG	9-1-1 Street Address Guide A list of valid street names and address ranges, within a given area.
NPA	Number Plan Area The three-digit area code.
NXX	Network Exchange (prefix) The first 3 digits of the 7-digit TN.

PSAP	Public Safety Answering Point The answering location for 9-1-1 calls originating within a specified area.
9-1-1 PERS	9-1-1 Public Emergency Reporting Service Bell Canada's 9-1-1 system that provides Automatic Location Identification (ALI), Automatic Number Identification (ANI) and Selective Routing.
9-1-1 PERS Data System	Complete set of processes, databases and supportive hardware that form the data sub-network of the Bell Canada's 9-1-1 PERS.
SCCP	Signalling Connection Control Part
TCAP	Transaction Capabilities Application Part