COMPETITIVE LOCAL EXCHANGE CARRIERS

INTERCONNECTION

TO

MTSALLSTREAM INC.

PROVINCE-WIDE ENHANCED 9-1-1 SERVICE

Implementation Support Document

(Provided in pursuit of activities pursuant to Telecom Order CRTC 97-8)

June 17, 2014

NOTICE OF PROPRIETARY INFORMATION

Trademark Information:

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1.0 Introduction

The purpose of this document is to assist a competitive Local Exchange Carrier ("CLEC") with the interconnection of its facilities to the Province-Wide Enhanced 9-1-1 Service (the "E9-1-1 service") offered by MTSAllstream Inc. ("MTS") in the province of Manitoba.

The basic interface requirements are specified in a disclosure document (ID-0038: Provincial-Wide Enhanced 9-1-1 Service Network to Network Interfaces between CLEC and MTS).

E9-1-1 service provides for the transport of 9-1-1 dialed calls located in 9-1-1 subscribing administrative districts to the appropriate Primary Public Safety Answer Point (PPSAP). For the purposes of this document an administrative district is a self governing body that has Enhanced 9-1-1 service offered by MTSAllstream Inc. An administrative district may be a municipality, village, town, city, First Nations Community, provincial park etc.

The administrative district and its contracted emergency responders are responsible for answering and responding to emergency calls.

E9-1-1 service is an optional service and an administrative district may elect not to have the service.

A list of administrative districts subscribing to or in the process of implementing the service is available from the MTS Carrier Services Group (CSG) upon request.

Requirements for interconnection to MTS unbundled E9-1-1 service include:

a) Appropriate trunk-side connections between the CLEC end office switch and the MTS ECS-1000™ .Selective Router/Controller (ANI/ALI Controller). The connections must be dedicated, employ default routing for contingency purposes and conform to MTS specific P.01 grade of service to maintain the integrity of the universal E9-1-1 service. The transport facility may be provided by MTS subject to applicable tariffs.

b) A browser capable of Secure Socket Layer (SSL) encryption is required to enable data transfer between the CLEC and the secure 9-1-1 web site. This access will be used by the CLEC to deliver customer data records and to receive error files. An email address may be provided to MTS to allow for customer notification on file completion and file format issues.

c) Subscription to the MTS established 9-1-1 service offering

d) Multi-Frequency signaling (MF) on 9-1-1 trunks to enable the operation of 9-1-1 features.

e) Signing of the MTS E9-1-1 Interconnection Agreement.

f) Execution of appropriate agreements with the administrative districts.

This document and its processes are required for CLEC interconnection to E9-1-1 service. The CLEC should contact the MTS Carrier Services Group (CSG) coordinator to notify that they will provide 9-1-1 service to their respective customers. See Appendix 3 for contact information.

This document is subject to change without notice. Please contact the MTS CSG coordinator for the most recent version.

2.0 MTS Province-Wide Enhanced 9-1-1 Service Description

2.1 MTS PROVINCE-WIDE SERVICE OVERVIEW

When a CLEC end customer dials 9-1-1, the call will be transported on dedicated 9-1-1 trunks to the MTS E9-1-1 ANI/ALI Controller. MTS relies on a Plant*CML ECS1000 ANI/ALI Controller to provide selective routing and 9-1-1 call handling. The 9-1-1 call is then routed from the 9-1-1 ANI/ALI Controller to the appropriate PPSAP on dedicated facilities. E9-1-1 service provides the customer's name, address, telephone number, Emergency Service Zone Number (ESN) and specific Emergency Response Agency information to the emergency call taker's display equipment. The call taker will determine what public service is required (police, fire or ambulance) and transfer the call to a Secondary Public Safety Answer Point (SPSAP) or contact the appropriate emergency responder directly.

In order to operate and maintain the enhanced 9-1-1 features, MTS will require that the CLEC populate the 9-1-1 ALI Database with the necessary Automatic Number Identification (ANI) and ALI information. The MTS 9-1-1 ALI Database personnel receive addressing and emergency service zone information from the administrative districts to create and maintain each administrative district's 9-1-1 Master Street Address Guide (MSAG). This MSAG contains the address ranges of streets within the administrative district as well as the associated street range's assigned emergency service zone number. A Master Street Address Guide is created for each administrative district subscribing to E9-1-1 service.

Note: The respective territories of the police, fire departments and ambulance services are sectionalized based on information received by the administrative districts. Each combination of emergency response agencies for a given area within an administrative district will be assigned an Emergency Service Zone. An Emergency Service Zone number (ESN) will be assigned to each Emergency Service Zone. The administrative district is responsible for assignment of the emergency service zones within their jurisdiction and the MTS Allstream Inc. 9-1-1 Database Group is responsible for assigning an Emergency Service Zone Number to each Emergency Service Zone. Phone numbers populated into the 9-1-1 Database will be assigned an Emergency Service Zone on the PlantCML Selective Router based on their associated address.

2.1.1 Network Overview

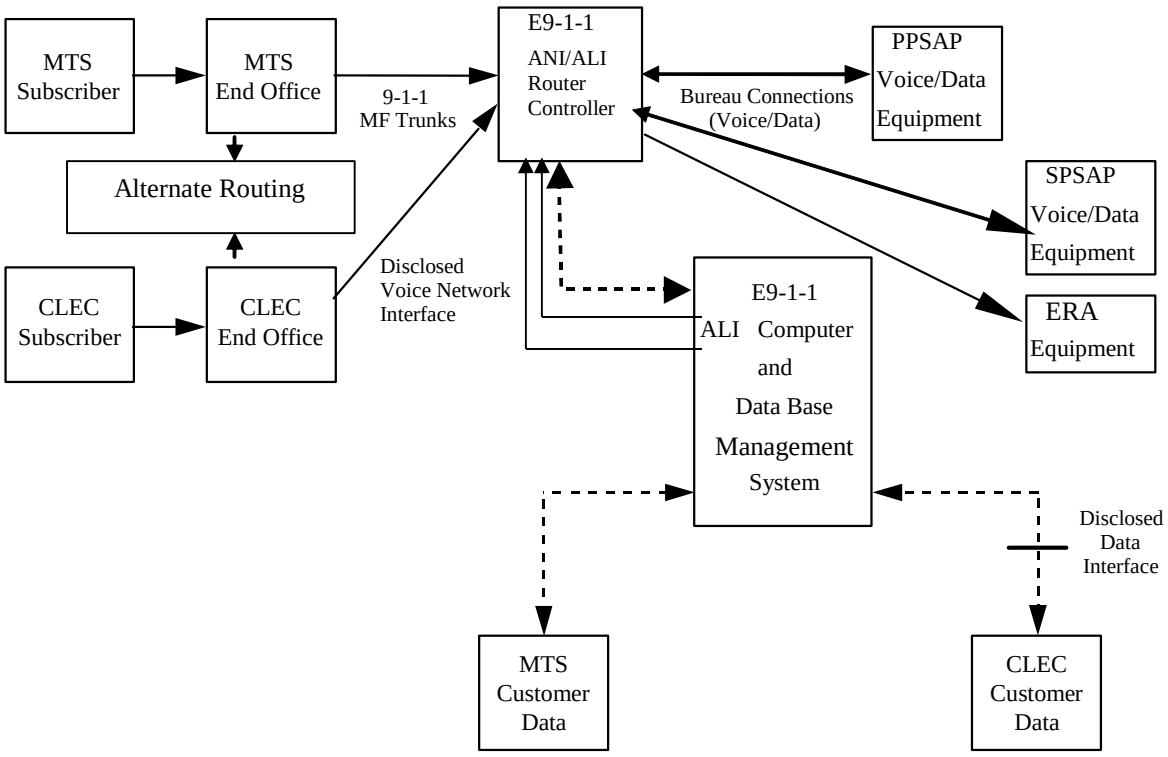
MTS Provincial-Wide E9-1-1 service utilizes an integrated voice and data network. The network is comprised of dedicated 9-1-1 trunks to the ECS 1000 ANI/ALI Controller. The ANI/ALI Controller delivers the voice and data to the PPSAP on dedicated facilities and provides the PPSAP with the ability to transfer calls to an SPSAP or to an Emergency Response Agency (ERA).

The proper operation of E9-1-1 service is dependent on a number of activities that must occur prior to the 9-1-1 call taking place. These activities include:

- Assignment of emergency service zone numbers to each Emergency Service Zone (ESZ).
- Assignment of a Primary PSAP for each Emergency Service Zone (ESN).
- Establishment of the 9-1-1 trunks to the ANI/ALI Controller.
- Collection of customer data from service order systems to create and maintain a centralized 9-1-1 ALI Database.
- Update of the 9-1-1 Selective Router/Controller call routing tables from the E9-1-1 ALI Database to ensure correct routing of 9-1-1 calls
- Programming of the 9-1-1 controller to provide the PSAP with the capabilities to handle 9-1-1 calls in an efficient manner.

Figure 1 - Trunk-Side Interconnection to MTS E9-1-1 Network

The following diagram depicts E9-1-1 service arrangements with the various network components:



Note: The Manitoba E9-1-1 Network has two ANI/ALI Controllers, two ALI platforms, and two Primary PSAPS. One primary PSAP is dedicated to the City of Winnipeg and one primary PSAP is dedicated to the Province of Manitoba. One ANI/ALI Controller is dedicated to the City of Winnipeg and the other ANI/ALI Controller is dedicated to the remainder of the province of Manitoba.

2.2 FEATURES OFFERED BY MTS PROVINCE-WIDE E9-1-1 SERVICE

Table 1 - E9-1-1 Features

E9-1-1 Feature	Description
Selective Routing of Incoming 9-1-1 Calls	This feature allows calls to be routed to a specific PPSAP based on the telephone number (ANI) of the 9-1-1 caller. The 9-1-1 caller's telephone number is associated with an ESN. Based on this TN/ESN association, the Selective Routing feature of the ANI/ALI Controller routes the caller to the appropriate PPSAP.
Call Hold (called party control)	The 9-1-1 call taker has full control of the call. The end to end connection is maintained until a valid on-hook signal is sent from the ANI/ALI Controller. This prevents the 9-1-1 caller from terminating the call.
Bureau Forced Disconnect	This feature allows the 9-1-1 call taker to force the disconnection of a 9-1-1 call and release the 9-1-1 trunk.
Calling Party Switch Hook Status	This feature provides the PPSAP call taker with a tone to indicate when the calling party has gone on-hook.
Emergency Ring Back	This feature allows the PPSAP to generate ringing to a caller's set that is on-hook or apply Receiver Off-Hook (ROH) tone to an off-hook set.
Call Conference	This provides the 9-1-1 call taker with the ability to conference a secondary PPSAP, emergency agency or public works by activating a Direct Access (DA) soft key associated with that specific agency.
Call Transfer	This provides the 9-1-1 Call taker with the ability to transfer a 9-1-1 caller to a secondary PSAP or to an emergency responder. All 9-1-1 features are transferred with the call if the agency is a secondary PPSAP connected to the ANI/ALI Controller.
Trunk Default Routing	The Trunk Default Routing feature allows default routing of a 9-1-1 caller to a Primary PSAP on calls that have invalid or missing ANI. Trunk Default Routing is to be negotiated between the CLEC and the Primary PSAP.
Automatic Number Identification (ANI) Delivery	The ANI/ALI Controller receives the ANI data from the CLEC end office and it queries the MTS E9-1-1 ALI Database for the ALI record. The ALI data is displayed at the call taker's Sentinel position.
Selective Transfer Agency	The Sentinel Call Taker position is capable of displaying an internal selective transfer database for emergency response agencies associated with emergency service zones. A call taker can easily create a conference or quick transfer to an agency.
Automatic Location Identification (ALI) Delivery	The information that the MTS E9-1-1 ALI Database displays at the call taker PPSAP position identifies the caller's name, address (including community name and administrative district), telephone number, ESN, associated emergency responders and LEC ID.

2.3 NETWORK DESIGN

In order to ensure that the subscribers served by an end office have access to all of the features of E9-1-1 service, it is imperative that the correct requirements are followed for connecting the end office to the 9-1-1 service network. The 9-1-1 network should be designed with diversity to prevent a single point of failure that could cause a total loss of service. Alternate Trunk Routing plans are recommended for contingency purposes. Alternate Routing Plans are to be negotiated with the Primary PSAPs.

2.3.1 E9-1-1 service (end office) Trunk Requirements

The primary responsibility of the trunks that connect an end office to the E9-1-1 Selective Router/Controller is to provide the signaling requirements for the service. These signaling requirements can be grouped into two main areas:

- MTS E9-1-1 protocols between the end office and the E9-1-1 Selective Router/Controller for call set-up, and
- MTS E9-1-1 feature set support.

Any wink-start trunk, which is outgoing from the CLEC end office, capable of spilling ANI, and conforming to "Feature Group C" signaling, can be used to interface with the ECS 1000 ANI/ALI Controller. Features such as Originator Hold, 9-1-1 Ringback and ROH tone will be dependent on the capabilities of the CLEC end office.

2.3.2 Facility Considerations - Number of Trunks

The initial number of trunks for E9-1-1 service needs to be determined in consultation with the MTS CSG Department (see appendix 3).

In all cases, the 9-1-1 trunks must:

- Be applied on diverse routing for contingency purposes
- Conform to P.01 grade of service to maintain the integrity of the MTS E9-1-1 service. P.01 Grade of Service refers to the grade of service that will ensure a probability of less than one (1) call out of one hundred incoming calls will encounter a busy signal on the first dialing attempt during the busy hour of the average busy day. The norm is to be based on the MTS specific E9-1-1 service tariff.
- Be provisioned as an absolute minimum of 2 trunks from each end office switch to the ANI/ALI Controller.

Table 2 - Facility Guidelines

Lines			Quantity
1	to	1,600	2
1,601	to	6,900	3
6,901	to	15,400	4
15,401	to	26,600	5
26,601	to	40,000	6
40,001	to	54,700	7
54,701	to	70,900	8
70,901	to	88,200	9
88,201	to	107,000	10

Note: Network Diversity is recommended to prevent a single point of failure from causing a total loss of service.

Consideration for the number of 9-1-1 trunks required should also be based on the following factors:

- Actual traffic being carried
- Number of answering positions in the Primary PSAP
- Agreement between the WSP, the Primary PSAP and MTS Allstream Inc.

2.3.3 Network Requirement Checklist

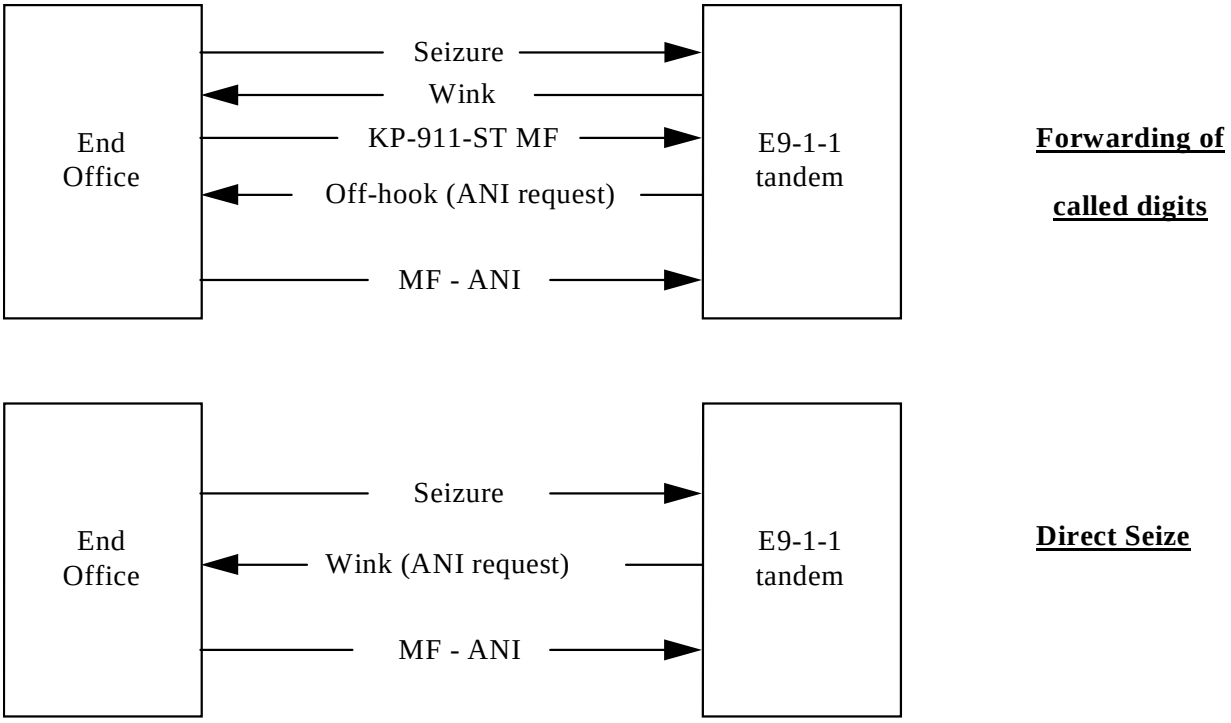
Correct operation of 9-1-1 trunk circuits in some end office electronic switches is dependent upon the software package. It is recommended that the CLEC provide an assessment of the following to facilitate E9-1-1 network provisioning:

- end office modifications
- 9-1-1 trunk quantities

- 9-1-1 trunk facility availability
- diversity
- boundary conflicts
- intercept arrangements
- operator access, where required
- free calling from public telephones
- overflow routing
- alternate routing

2.3.4 MTS E9-1-1 Signaling Protocol

Figure 2 - MTS E9-1-1 Signaling Protocol



Dedicated 9-1-1 trunk
- MF-ANI
- "Wink" start
- Feature Group C (FGC) signalling

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

e.g. KP **+ I** (single information digit) **+ 7D** (seven-digit DN) **+ ST** (start) where
I = 0, indicates a valid ANI;

I = 1, indicates an “ONI” (Operator Number Identification) call;
I = 2, indicates an ANI failure.

2.3.5 ANI/ALI Controller Signaling

The ANI/ALI Controller uses specific signaling on the E9-1-1 trunk to the end office, in support of the features developed for E9-1-1 service, such as Ringback, Forced Disconnect, Switch Hook Status and Call Hold.

3.0 E9-1-1 ALI Database Management System Overview

3.1 E9-1-1 ALI Database Management System Overview

Emergency service zone(s) are based on the police, fire and ambulance service boundaries. This information is provided by the governing body of the administrative district. The administrative district's addressing data with Emergency Service Zone assignment must be provided to the MTS 9-1-1 Database Group prior to customer record data being sent. The MTSAllstream Inc. 9-1-1 Database Group will assign an Emergency Service Zone Number (ESN) for each Emergency Service Zone (ESZ) required.

The E9-1-1 ALI Database Management System will populate or update the E9-1-1 Selective Router call routing tables with the ESN/TN (Telephone Number) data to enable routing to the appropriate primary PSAP. Emergency Response Agency contact information needs to be provided to the MTS 9-1-1 Database Group for entry into the ANI/ALI controller and the E9-1-1 ALI Database Management System. This information will be provided by the administrative district. The E9-1-1 ALI Database Management System provides the 9-1-1 call taker with the customer's name, address, telephone number, ESN and applicable fire, police and EMS emergency responders on 9-1-1 calls.

3.2 Data Communication with the E9-1-1 ALI Database Management System

3.2.1 Access Arrangement

Contact the MTSAllstream Inc. Carrier Services Group (CSG) representative to create a LEC ID company name in the 9-1-1 database and to arrange access to the secure MTS/CLEC 9-1-1 web site.

3.2.2 Communications Process

Customer Record files from the CLEC to the E9-1-1 ALI Database Management System will be transferred to a secure 9-1-1 web site for processing. Acknowledgement (error) files from the E9-1-1 ALI Database Management System will be accessible on the secure 9-1-1 web site. A CLEC email address may be provided for notification purposes when file processing has completed or if file format errors have been encountered.

4.0 CLEC Customer Record Information to E9-1-1 ALI Database Management System

The E9-1-1 ALI Database Management System receives CLEC customer data in a specific 9-1-1 file format; processes the data, updates the E9-1-1 systems, and provides the pertinent customer data to the PSAP.

The CLEC is responsible to build and maintain their Customer Record Information database for the MTS designated 9-1-1 service subscribing area. The CLEC will contact the MTS CSG to coordinate activities relating to implementation of Enhanced 9-1-1 service in a new subscribing area. The CLEC must subsequently send update files containing new transactions and error corrections as required.

The E9-1-1 ALI Database Management System returns customer records that error out in an error file. The error file is placed on the 9-1-1 web site and an email will be sent to the CLEC identifying the presence of a new error file. It is a CLEC responsibility to make corrections and resend the corrected records in the next sequential file.

Section 5 provides details of the file and record formats and the file transfer procedures.

The CLEC must advise the CSG of any new NXX it plans to use at least one month prior to transmitting it to the E9-1-1 ALI Database Management System.

Once the CLEC customer identification and service location information have been loaded in the MTS E9-1-1 Database, it is essential that all CLEC updates (Installs, Disconnects and Changes) be transmitted to the E9-1-1 ALI Database Management System on a regular basis in order to avoid any potential problems. The intent is that the MTS E9-1-1 ALI Database represents the CLEC customer record information as closely as possible, at any point in time.

Each CLEC is responsible to maintain an up-to-date soft copy of their entire customer data file as well as the files transmitted to the E9-1-1 ALI Database Management System. MTS may request this information at any time in the event of a communication failure, a problem with the E9-1-1 ALI Database Management System or under other special circumstances.

4.1 OVERVIEW OF THE CLEC FILE PROCESS

The following depicts the MTS process flow for CLEC customer record data files:

The CLEC creates a file which contains their customer service record changes in the format defined in this document.

The CLEC uploads this file to the MTS 9-1-1 Secure Web Site where an automated staging system parses the file for proper format and if the file format is correct, the staging system submits the file to the 9-1-1 database for processing. If the file format is incorrect, the file will be rejected and an email notification will be sent to the CLEC.

The CLEC file is loaded into the E9-1-1 Database Management system.

The E9-1-1 ALI Database Management System processes the CLEC individual customer transaction records, identifies errors and places them in an error file in the 9-1-1 secure web site. If there are no customer transaction records in error, the ALI Database management system will generate an error file with no transaction records.

The MTS 9-1-1 Web Site emails the CLEC advising them an error file has been placed in their directory.

The CLEC accesses the secure 9-1-1 web site, retrieves the error file, identifies error records if any and retransmits the corrections to the E9-1-1 ALI Database Management System with the next sequential transaction file.

5.0 Customer Data Required

This section defines the type of data required, the file formats and the file naming conventions to be used by the CLEC when transmitting customer record information to the E9-1-1 ALI Database Management System.

Customer Record Information records must only contain standard ASCII characters in the range 32 through 90, inclusive. Records containing characters outside that range will cause the customer data file to be rejected.

MTS will accept no more than ten file transfers from each interconnected CLEC on each business day. If the CLEC wishes to send more than ten files per day, approval by the MTS Allstream Inc. 9-1-1 System Administrator is required.

Maximum file size is one megabyte. This equates to approximately two thousand transaction records. Files larger than one megabyte will be rejected.

5.1 FILE NAMING CONVENTION

Customer record data files shall be named according to the following convention:

The filename shall be 11 characters with a 3 character file extension in the format **COMPA000001.XXX** where:

COMPA The 5-digit LEC ID code of the CLEC as defined by MTS;

000001 Cycle Counter sequence number range from **000001** to **999999**. When **999999** is reached, the number rolls over to **000001**. Cycle Counter shall be right justified with leading zeroes.

XXX File extension indicating the type of files content;

DAT Data files from the CLEC to the E9-1-1 ALI Database Management System Interface.

STA Status Report files from the E9-1-1 ALI Database Management System Interface to the CLEC. This report will show summary of the number of customer records which were processed correctly or rejected.

ERR Error files from the E9-1-1 ALI Database Management System Interface to the CLEC. Any customer records which have failed processing will be listed in this file. In the event that there are no records rejected, the content of the ERR file will be identical to the content of the STA file above.

Example: **ATTCA000001.DAT**
The first file sent by CLEC **ATTCA** to MTS for processing. The associated error file produced by the E9-1-1 ALI Database Management System is named **ATTCA000001.ERR** and the associated status report is named **ATTCA000001.STA**

5.2 RECORD TYPES

There are three record types in the DAT file used in the E9-1-1 ALI Database Management System. The transaction data record is for the actual customer information and the other two types are header and trailer records used for administrative purposes

All CLEC DAT files shall contain a header record, followed by one or more customer transaction data record(s), followed by a trailer record.

Acknowledgement will consist of two file types, an ERR file and a STA file. The ERR error file will contain records which are in error. Should all records be successfully processed, the ERR file will then have the same content as the STA Status Report file.

5.3 HEADER RECORD

Table 3 - Header Record

Field Name	Positions	Length (Bytes)	Type	Required	Value
Header Indicator	1 – 5	5	AN	Y	"UHL" (the quotes are part of the data)
Extract Date	6 - 11	6	N	N	Extract Date in MMDDYY format.
Company Name	12 - 61	50	AN	Y	Literal Company Name, Contact and Telephone Number.
Cycle Counter	62 - 67	6	N	Y	Begins with 000001 for the first file sent and increments by 1 each time.
Reserved	68 - 71	4	AN	N	Not used.
Reserved	72 - 73	2	AN	N	Not used.
Reserved	74 - 93	20	AN	N	Not used.
Reserved	94 - 96	3	N	N	Not used
Reserved	97	1	N	N	Not used
8 Digit Extract Date	98 - 105	8	N	Y	8 Digit Extract Date in MMDDYYYY format.
Comments	106 - 135	30	AN	N	File structure error explanation (see Appendix 2)
Reserved	136 - 511	376	AN	N	Not used.
End of Record	512	1	AN	Y	* (ASCII 42)

Notes:

1 The **Required** column contains Y for Yes (required) and N for No (not required—space fill).

2 All fields are left justified with trailing spaces except for the **Cycle Counter**, which is right justified with leading zeros.

5.4 TRANSACTION DATA RECORD

Table 4 - Transaction Data Record

Field Name	Positions	Length (Bytes)	Type	Required	Value
Function Code	1	1	A	Y	The code indicating the transaction type of this record. Valid entries are: C = Change D = Disconnect I = Install
NPA	2 - 4	3	N	Y	The three digit area code of the Calling Number.
Calling Number	5 - 11	7	N	Y	The seven digit telephone number of the Calling party.
House Number	12 - 21	10	N	N	The house number. (See Note 1)
House Suffix Number	22 - 25	4	AN	N	The house number extension (e.g., ½)** (See Note 1)
Prefix Directional	26 - 27	2	A	N	The leading street direction prefix. Valid entries are N, S, E, W, NE, NW, SE, and SW.
Street Name	28 - 87	60	AN	Y	For normal urban addresses, insert the street name. For unique rural addresses, see sections 5.4.1, 5.4.2 for details. (See Note 1)
Street Suffix	88 - 91	4	A	N	The street suffix abbreviation (e.g., ST, AVE). Refer to the 9-1-1 Interface Street Suffix List in Appendix 1
Post Directional	92 - 93	2	A	N	The trailing street direction suffix. Valid entries are N, S, E, W, NE, NW, SE, and SW.
Community Name	94 - 125	32	AN	Y	For normal urban addresses, insert the community name of the street/house number. For unique rural addresses, see section 5.4.3 for details. (See Note 1)
Province	126 - 127	2	A	Y	The province abbreviation (i.e. MB).
Location	128 - 187	60	AN	N	The additional address information for the Calling Number (e.g., SUITE 202). Unit Type (5) AN Unit Number (5) AN Floor (5) AN Building ID (25) AN ***See LOCATION DETAILS BELOW**
Customer Name	188 - 219	32	AN	Y	The subscriber name associated with the Calling Number.
Class of Service (See Note 3)	220	1	AN	Y	Valid entries are: 0 = Customer Control Centrex 1 = Residence 2 = Business 3 = Business Multi-line PABX

Field Name	Positions	Length (Bytes)	Type	Required	Value
					4 = Residential Multi-line PABX 5 = Centrex 6 = Semi Public Pay Phone 7 = Public Pay Phone 8 = Cellular 9 = Community Centrex A = WATS B = deaf person C = handicapped person D = outgoing only E = Residential OPX F = Business OPX G = Wireless Phase I H = Wireless Phase II
Type of Service	221	1	N	Y	Valid entries are: 0 = Not Foreign Exchange (FX) and Not Non Pub 1 = FX in 911 serving area 2 = (Not Applicable) 3 = Non Pub 4 = Non Pub FX in 911 serving area 5 = (Not Applicable) 6 = Cellular
Exchange ID	222 - 225	4	AN	N	Not used
ESN	226 - 230	5	AN	N	Not used.
Main NPA	231 - 233	3	N	Y	The three-digit area code of the Main Number associated with the Calling Number.
Main Number	234 - 240	7	N	Y	The seven-digit telephone number of the Main Number associated with the Calling Number.
Order Number	241 - 250	10	AN	N	The service order number for the activity establishing this record.
Extract Date	251 - 256	6	N	Y	The date on which the record was created in MMDDYY format. (See Note 1)
Municipality ID	257 - 260	4	AN	N	Not used. See Administrative District Field.
Company ID	261 - 265	5	AN	Y	The 5-digit LEC ID code of the CLEC as defined by MTS.
Source ID	266	1	AN	N	A code that indicates whether the data is part of an initial data load/re-load or part of a daily update process. Valid entries are: <space> = Daily update C = Load
Postal Zone	267 - 275	9	AN	N	Postal Code subscriber associated with the Calling Number. (not required)
Reserved	276 - 286	11	AN	N	Not used.
Reserved	287 - 289	3	AN	N	Not used.
Comments	290 - 319	30	AN	N	Not used.
X Coordinate	320 - 328	9	N	N	CLEC may input for future use.
Y Coordinate	329 - 337	9	N	N	CLEC may input for future use
Z Coordinate	338 - 342	5	N	N	CLEC may input for future use.

Field Name	Positions	Length (Bytes)	Type	Required	Value
Cell ID	343 - 348	6	AN	N	Future use
Sector ID	349	1	AN	N	Future use
Reserved	350 - 355	6	AN		Not used.
Alternate Number	356 - 365	10	N	N	The Alternate Number or Remote Call Forwarded Number associated with this Calling Number.
8 Digit Extract Date	366 - 373	8	N	Y	8 Digit Extract Date in MMDDYYYY format.
Administrative District	374 - 401	28	AN	Y	Administrative District (County Name) for the Community.
Reserved	402 - 511	110	AN	N	
End of Record	512	1	AN	Y	* (ASCII 42)

**** The ½ is entered as 3 bytes. E.g. 1/2**

The **Required** column contains Y for Yes (required) and N for No (not required—space fill). Data information is mandatory for all required fields.

All fields are left justified with trailing spaces unless identified.

Note 1:

House Number Field - Right justified and left padded with zeros. If House Number is longer than 6 characters, truncate the most significant digits to reduce the length to 6 digits.

House Suffix Field - The fourth character is truncated. Right pad with spaces.

Street Name - left justified. The last 20 characters will be truncated.

Community Name - left justified. The last 4 characters will be truncated.

Extract Date - There is no date validation on transaction records. Transaction records are updated upon submission to the E9-1-1 Database.

Location Details

The location field is filled as follows:

> Unit Indicator mnemonic + <space> + unit_nbr + <space> + BLDG + <space> + bldg_id + <space> + FLR + <space> + floor + <space>

The NENA Conversion program shall look for the following strings in the Location field.
"BOX", "RU", "SLIP", "PIER NO", "PIER", "APT", "SUITE", "SUIT", "ROOM", "RM", "UNIT", "LOT", "WING", "BOOTH", "FLR" and "BLDG".

If the NENA Conversion program finds one of those strings it shall skip spaces immediately following the keyword and parse the data according to the specifications that follow.

For “BOX”, if the indicator field is blank, it shall set the indicator to ‘2’. It shall extract the data following the keyword up to the first space, comma, semicolon, open parenthesis, close parenthesis, line feed character, or a total length of five characters. It shall copy the data into the unit number field.

For “RU”, if the indicator field is blank, it shall set the indicator to ‘3’. It shall extract the data following the keyword up to the first space, comma, semicolon, open parenthesis, close parenthesis, line feed character, or a total length of five characters. It shall copy the data into the unit number field. (Internally the MTS ALI will convert “RU” to “RR”.)

For “SLIP”, “PIER NO”, and “PIER”, if the indicator field is blank, , it shall set the indicator to ‘4’. It shall extract the data following the keyword up to the first space, comma, semicolon, open parenthesis, close parenthesis, line feed character, or a total length of five characters. (Internally the MTS ALI will convert “SLIP” and “PIER NO” to “PIER”.)

For “APT”, if the indicator field is blank, it shall set the indicator to ‘5’. It shall extract the data following the keyword up to the first space, comma, semicolon, open parenthesis, close parenthesis, line feed character, or a total length of five characters. It shall copy the data into the unit number field.

For “SUITE” and “SUIT”, if the indicator field is blank, it shall set the indicator to ‘6’. It shall extract the data following the keyword up to the first space, comma, semicolon, open parenthesis, close parenthesis, line feed character, or a total length of five characters. It shall copy the data into the unit number field.

For “ROOM” and “RM”, if the indicator field is blank, it shall set the indicator to ‘7’. It shall extract the data following the keyword up to the first space, comma, semicolon, open parenthesis, close parenthesis, line feed character, or a total length of five characters. It shall copy the data into the unit number field.

For “UNIT”, if the indicator field is blank, it shall set the indicator to ‘8’. It shall extract the data following the keyword up to the first space, comma, semicolon, open parenthesis, close parenthesis, line feed character, or a total length of five characters. It shall copy the data into the unit number field.

For “LOT”, If the indicator field is blank, it shall set the indicator to ‘9’. It shall extract the data following the keyword up to the first space, comma, semicolon, open parenthesis, close parenthesis, line feed character, or a total length of five characters. It shall copy the data into the unit number field.

Location Details (cont’d)

For “WING”, if the indicator field is blank, it shall set the indicator to ‘A’. It shall extract the data following the keyword up to the first space, comma, semicolon, open parenthesis, close parenthesis, line feed character, or a total length of five characters. It shall copy the data into the unit number field.

For “FLR”, If the floor field in the ALI record contains only spaces, it shall skip the first spaces before the keyword and extract the data preceding those spaces up to the first space, comma, semicolon, open parenthesis, close parenthesis, line feed character, or beginning of the line.

If all but the last two characters of this data are digits and the last two characters of this data are “ST”, “ND”, “RD”, or “TH”, the NENA Conversion program shall copy all but the last two characters into the floor field for a maximum length of five characters. If the data is longer than five characters, the NENA Conversion program shall truncate the data.

If one of the conditions in the previous paragraph is not met, the NENA Conversion program shall copy all of the data extracted after “FLR” into the floor field for a maximum length of five characters. If the data is longer than five characters, the NENA Conversion program shall truncate the data.

For “BLDG”, if the building field in the ALI record contains only spaces, it shall extract the data following the keyword up to the first comma, semicolon, open parenthesis, close parenthesis, line feed character, or a total length of twenty characters. It shall copy the string “BLDG<space>” and the extracted data into the building field.

After parsing, if the building field (bldg_id) in the ALI record contains only spaces, the NENA Conversion program shall copy “BLDG<space>” to the building field and then append the first 20 characters of the Location field.

After parsing, if the building field (bldg_id) in the ALI record does not contain only spaces, the NENA Conversion program shall append a space and then as many characters of the Location field as possible.

5.4.1 Lot/Block Address Format

Use only where a rural address uses the Lot/Block addressing format in place of a normal House Number and Street Name.

Table 5 - Lot/Block Address Format

Field Name	Positions	Length (Bytes)	Type	Required	Value
House Number	12 - 21	10	AN	N	Example: **12** (two digit lot number)
Street Name	28 - 87	60	AN	Y	Format: **#P BLK 24 STREETNAME** where '**#**' identifies the address as a Lot/Block address, **P =** Lot type, where : **P** = Parish Lot type **R** = River Lot type **W** = Wood Lot type **L** = generic Lot type **BLK 24** = Block Number **STREETNAME** = Street Name (if applicable)

5.4.2 Section/Township/Range Address Format

Use only where a rural address uses the Section/Township/Range addressing format in place of a normal Street Name and Community Name.

Table 6 - Section/Township/Range Address Format

Field Name	Positions	Length (Bytes)	Type	Required	Value
House Number	12 - 21	10	AN	N	No entry required . (default is 000000)
Prefix Directional	26-27	2	A	Y	Quarter Section Directional i.e. NE, NW, SE, SW
Street Name	28 - 87	60	AN	Y	Section Number
Community Name	94 - 125	32	AN	Y	Township-Range with Directional
Administrative District	374-401	28	AN	Y	Municipality Name

Note: Example: **SE 36 9-20W**
SE = Quarter Section identifier
36 = Section Number
9-20W = Township-Range Directional

5.4.3 Transaction Types

The **Function Code** field defines the three possible transaction types.

C = Change

The Change transaction type is used to modify the customer data for a telephone number that already exists in the E9-1-1 ALI Database Management System. Because the 10 digit Calling NPA + Calling Number is considered the database key, a Change transaction cannot be used to change the telephone number. To change a telephone number first send a Disconnect record for the old telephone number and an Install record for the new telephone number. A new Change transaction record must be sent to modify or cancel a Change transaction that has been previously accepted and processed by the E9-1-1 ALI Database Management System.

D = Disconnect

The Disconnect transaction type is used to change the status of an active record to a disconnected record. A Disconnect transaction will only be processed if the LEC ID and the telephone number match the existing data. To cancel or undo a Disconnect which has been previously accepted and processed by the E9-1-1 ALI Database Management System, an Install transaction record for the respective telephone number must be sent. The existing 9-1-1 database ALI information is sent to the call taker if the call taker was to receive a 9-1-1 call from a disconnected record.

I = Install

The Install transaction type is used to create an entire new customer record for a given telephone number that does not exist in the E9-1-1 ALI Database Management System. To cancel or undo an Install transaction which has been previously accepted and processed by the E9-1-1 ALI Database Management System, a Disconnect transaction record for the respective telephone number must be sent.

5.4.4 Telephone Number Migration between LECs

During the customer service migration, the customer data information for that telephone number record remains in the E9-1-1 ALI Database and the status changes from active to disconnected to active until all transactions have been processed.

5.4.5 Duplicate Service

The **Class of Service** field should be used to indicate Duplicate Service and should be coded as follows:

E = Residence Duplicate Service - coded the same as Residence OPX
F = Business Duplicate Service - coded the same as Business OPX

To initiate duplicate service, send a Change transaction record with the Class of Service E or F, as appropriate. To terminate duplicate service, send a Change transaction record with the normal Class of Service.

Identifying Duplicate Service to the 9-1-1 Call Taker provides the call taker with a visual notification that more than one address exists. Only one address per record will display to the 9-1-1 call taker.

5.5 TRAILER RECORD

Table 7 - Trailer Record

Field Name	Positions	Length (Bytes)	Type	Required	Value
Trailer Indicator	1-5	5	AN	Y	"UTL" (the quotes are part of the data)
Extract Date	6-11	6	N	N	Extract date in MMDDYY format.
Company Name	12-61	50	AN	Y	Literal Company Name.
Record Count	62-70	9	N	Y	Total count of CLEC Data Records (not including header and trailer) included in this file.
8 Digit Extract Date	71-78	8	N	Y	8 Digit Extract Date in MMDDYYYY format.
Reserved	79-511	433	AN	N	Not used.
End of Record	512	1	AN	Y	* (ASCII 42)

Notes:

1 The **Required** column contains Y for Yes (required) and N for No (not required—space fill).

2 All fields are left justified with trailing spaces except for the **Record Count**, which is right justified with leading zeros.

6.0 Error and Status Files

This section defines the CLEC ERR file and transaction data errors for the CLEC customer record information. Also included is an explanation of the CLEC STA file.

6.1 TRANSACTION FILE STRUCTURE ERRORS

Prior to processing the transaction records in a received data file, the E9-1-1 ALI Database Management System validates the following elements:

- Valid header, transaction and trailer formats
- File name to comply with the format given in section 5.1;
- The 512th character must be an asterisk character in every file line of the header, transaction and trailer files.
- LEC ID in the transaction data record(s) matching the LEC ID in the file name;
- Cycle Counter in header record matching the file name sequence number as expected by the E9-1-1 ALI Database Management System;
- Record Count in trailer record matching the record count of the transaction file as counted by the E9-1-1 ALI Database Management System.
- Transaction file does not exceed the one megabyte file size (2000 records)
- ASCII characters are within decimal code 32 to 90.
- Valid function code on all transaction records

If one or more elements fail the validation process, the E9-1-1 ALI Database Management System will not process the file. An email notification will be sent to the email address provided by the CLEC.

Typical messages include the following:

- file name error
- end of record error
- LEC ID mismatch
- cycle counter mismatch
- record count mismatch
- ASCII character out of bounds
- invalid function code

The CLEC is expected to correct the errors and to resubmit the file using the same file name.

6.2 ERROR FILE FORMAT

The E9-1-1 Database supplies an error (ERR) file for all transaction customer records which are rejected. If all customer records from the input DAT file are accepted, this file is returned as a duplicate of the STA status file.

Only a subset of the fields in the ERR file correspond to fields from the CLEC supplied DAT file. The last column of the table below shows this mapping. Many of the ERR file fields are either spaces or simply not applicable, and are thus identified. The "Comments" column describes many fields as "parsed". Parsed fields are simply redundant information from another field and are not applicable.

The "error code" field is explained in section 6.3. Should the "error code" be either "796" or "797", the "error field" may be populated with a mnemonic code. Only a subset of the fields in this file have a mnemonic code. Fields that do have a mnemonic code have this mnemonic listed in the first column of this table, directly after the "Field Name". By using the mnemonic code listed in the "error field", the specific field of this ERR file can be identified, along with the mapping to the input DAT file.

Table 8 - Error File Format

Field Name	Starting position	Length	Justification	Comments	Mapping to DAT file
error code	1	3	right	See Section 6.3 for error code explanations.	Error code returned in "comments" field in pos 290-319 (30 bytes)
Space	4	1			n/a
error field	5	10	left	For 796 & 797 errors indicate first field with error, **points to field in question via MNEMONIC code as listed in first column.**	Does not map to DAT file, provides mnemonic to co-relate to field in first column.
Space	15	1			n/a
Foc **(mnemonic: FOC)**	16	1		Function of change (I,C,D)	Function code in pos 1 (1 byte)
Space	17	1			n/a
(npa) nnx-tn **(mnemonics: NPA, NNX, and TN)**	18	14		TN number in format of (777) 333-4444	Combination of NPA in pos 2-4 and Calling Number pos 5-11 (total 10 bytes)
Space	32	5		Not Applicable	n/a
House number **(mnemonic: ST. NUM)**	37	10	right	Leading spaces right justified	House Number in pos 12-21 with leading zeroes (10 bytes)

Field Name	Starting position	Length	Justifi-cation	Comments	Mapping to DAT file
Space	47	1			n/a
House number suffix	48	4	left	Does NOT have a mnemonic code.	House Suffix Number in pos 22-25 (4 bytes)
Space	52	1			n/a
Prefix directional	53	2	left		Prefix Directional in pos 26-27 (2 bytes)
Space	55	1			n/a
street name **(mnemonic: ST.NAME)**	56	48	left	un-parsed street name as stored in the database	Street Name in pos 28-87 (60 bytes)
Space	104	1			n/a
Suffix directional	105	2	left		Post Directional in pos 92-93 (2 bytes)
Space	107	1			n/a
Community **(mnemonic: COMMUNITY)**	108	32	left	un-parsed community name as stored in the database	Community Name in pos 94-125 (32 bytes)
Space	140	6		Not Applicable	n/a
Province **(mnemonic: PROVINCE)**	146	2	left	i.e. MB	Province in pos 126-127 (2 bytes)
Space	148	34		Not Applicable	n/a
class of service **(mnemonic: COS)**	182	1			Class of Service in pos 220 (1 byte)
Space	183	1			n/a
type of service **(mnemonic: TOS)**	184	1			Type of Service in pos 221 (1 byte)
Space	185	1			n/a
Exchange	186	4	left	Not Applicable	n/a, Not Used
Space	190	1			n/a
Esn	191	6	right	Not Applicable	n/a, Not Used
Space	197	1			n/a
Essid	198	2	left	Not Applicable	n/a
Space	200	3		Not Applicable	n/a

Field Name	Starting position	Length	Justifi-cation	Comments	Mapping to DAT file
(main npa) main nnx- main tn **(mnemonics: MAIN NPA, MAIN NNX, MAIN TN)**	203	14		Main number associated with TN in form of (777) 333-4444	Main NPA in pos 231-233 and Main Number in pos 234-240 for a total of 10 bytes.
Space	217	22		Not Applicable	n/a
Telco	239	35	left	Not Applicable	n/a
Space	274	1			n/a
	275	40		Not Applicable	n/a
Space	315	1			n/a
	316	10		Not Applicable	n/a
Space	326	1			n/a
modification date	327	19		Format: YYYY-MM-DD hh:mm:ss	n/a, Date when DAT file was actually processed into E911.
Space	348	1			n/a
sd_flag	347	1		Internal flag always set to “Y”	n/a
Space	346	1			n/a
Loccom	349	1		Internal flag always set to “N”	n/a
change type	350	1		Existing Database Record Function code	n/a
Space	351	1			n/a
service order code	352	1		Not Applicable	n/a
Space	353	1			n/a
Record type	354	1		Master (M) or Additional (A)	n/a
Space	355	1			n/a
secondary address flag	356	1			n/a
Space	357	3			n/a
USOC code	360	5		Not Applicable	n/a
service order number	365	14		Service order number	n/a
Space	379	1			n/a
Map coordinates	380	20			n/a
Space	400	1			n/a

Field Name	Starting position	Length	Justifi-cation	Comments	Mapping to DAT file
Due date **(mnemonics: EXT. DATE EFF. DATE)**	401	19		EFFDATE: YYYY-MM-DD hh:mm:ss	Extract date in pos 251-256 (6 bytes) and also 8-digit Extract date in pos 366-373 (8 bytes)
Space	420	22			n/a
Community	442	28	left	Parsed Community Name	See the first instance of "Community" instead.
Space	470	5			n/a
Street name	475	40	left	Parsed Street Name	Usually blank, see first instance of Street Name instead.
Space	515	15			n/a
Location	530	60	left	Location Data corresponds to input file character positions 128-187	Location in pos 128-187 (60 bytes)
Space	590	1			n/a
Indicator	591	1		Parsed from location field	n/a
Space	592	1			n/a
Indicator string	593	4	left	String description of indicator	n/a
Space	597	2			n/a
unit number	599	5	left	Parsed from location field	n/a
Space	604	2			n/a
Floor	606	5	left	Parsed from location field	n/a
Space	611	2			n/a
Lot	613	6	left	Parsed value	n/a
Space	619	2			n/a
Block	621	10	left	Parsed value	n/a
Space	631	2			n/a
Quarter Section	633	2	left	Parsed value	n/a
Space	635	2			n/a
Section	637	2	left	Parsed value	n/a
Space	639	2			n/a
Township	641	2	left	Parsed value	n/a
Space	643	2			n/a
Range	645	2	left	Parsed value	n/a

Field Name	Starting position	Length	Justifi-cation	Comments	Mapping to DAT file
Space	647	2			n/a
Range Direction	649	1		Parsed value	n/a
Space	650	5			n/a
Building	655	25	left	Parsed from location field	n/a
Space	680	9			n/a
Street name suffix **(mnemonic: ST.NAM.SUF)**	689	11	left		Street Suffix in pos 88-91 (4 bytes)
Space	700	5			n/a
Prefix directional **(mnemonic: PRE.DIR.)**	705	2	left		Prefix Directional in pos 26-27 (2 bytes)
Space	707	8			n/a
Customer Name **(mnemonic: CUSTOMER)**	715	40	left		Customer Name in pos 188-219 (32 bytes)
Space	755	10			n/a
Trailer Directional **(mnemonic: SUF. DIR)**	765	2	left		Post Directional in pos 92-93 (2 bytes)
Space	767	11			n/a
County **(mnemonic: COUNTY)**	778	28	left	Administrative District	Administrative District in post 374-401 (28 bytes)
Space	806	25		Last position is 829	n/a

6.3 TRANSACTION DATA RECORD ERRORS

This list is an explanation of the error codes as found in the "ERR" file described in Section 6.2 above.

002 Non-numeric character in telephone number.
This includes any spaces or alpha characters in the NPA, NNX, or TN fields of the telephone number. This is considered a data error and will be trapped by pre-parsing from the CLEC Web interface, thus the CLEC will get an email notification of this error instead of seeing this in the ERR file.

003 Non-numeric character in main telephone number .
This includes any space or alpha characters in the NPA, NNX, or TN fields of the main number. This is considered a data error and will be trapped by pre-parsing from the CLEC Web interface, thus the CLEC will get an email notification of this error instead of seeing this in the ERR file.

009 Illegal class of service.
The Class of Service must be a digit from 0 to 9 or an alpha A through F.

010 Illegal type of service.
The Type of Service must be one of the following digits: 0,1,3,4, or 6.

701 No MSAG record found.
No MSAG record was found for this address. This includes cases where the street name does not exist in the MSAG and where the street exists, but the ranges do not cover the current address.

702 Record already exists on insert.
An attempt was made to insert a telephone number that already exists. Note: '702' error not applicable with auto-correction. MTS Allstream uses auto-correction.

703 Main record not found.
An attempt was made to insert, change, or delete a subsidiary whose main telephone number does not exist in the database.

704 Record does not exist.
Telephone number record doesn't exist. An attempt was made to disconnect a telephone number record which does not exist in the database.

712 Record does not exist on change.
An attempt was made to change a telephone number record which does not exist in the database.

714 Cannot disconnect a non-existent additional address record.
An attempt was made to disconnect an additional address record that does not exist.

716 No master TN exists for additional address record.
An attempt was made to insert an additional address record but there was no corresponding master TN record.

721 Type of service is a foreign exchange.
The number belongs to a foreign exchange, i.e. the type of service is a 2 or 5.

723 Invalid NPA or NNX.

738 Attempted to change a main number to a subsidiary line.
The record in error is currently a main number with subsidiaries in the database. The attempted change would make this number into a subsidiary of another line. This would leave the original subsidiaries without a valid main number.

739 Street names do not match on disconnect.
The street name in the "disconnect" record does not match the street name in the database. If a disconnect record has a street name present, it must match the street name of the record in the database.

740 Delete attempted on a number with subsidiaries.
Delete attempted on a number with subsidiaries. A function of change "D" was attempted on a phone number which has subsidiaries. The subsidiaries must be disconnected before attempting to disconnect the main.

741 Main number is already a subsidiary line.
An attempt was made to insert a subsidiary whose main number is already a subsidiary to another line. This would leave this number without a valid main number.

767 Company IDs do not match on a change.
The TN record that you are trying to change is assigned to a different Company ID. This record needs to be disconnected by the original company. Only after the disconnect order has been successfully processed can an insert order be applied.

768 Company IDs do not match on a disconnect.
The TN record that you are trying to disconnect is assigned to a different Company ID.

781 Duplicate TN; Record owned by another company.
Record already exists. An attempt was made to insert a telephone number that already exists and is owned by another company.

782 Buffer size exceeded for TN data.
One or more fields have exceeded their buffer size resulting in a truncation of data.

789 Improper format for location field.
The location field has an improper format - the location field does not have the exact keyword.

795 Invalid FOC for an additional or duplicate record.
The FOC that was used is invalid for an additional address or duplicate record.

796 Required field not provided in service order record.

797 Invalid value contained in field.

798 TN exists, but bad record type for additional address record.
TN exists, does not have record type of "M" for additional address record. When trying to insert an additional address record, the master TN matches the TN in the additional address record, but the record type is not "M".

800 English Language Translation not Found.
The Emergency Response Agency data associated with this TN's applicable ESN was not found. This is an informational error, therefore the operation was performed despite this error occurring.

6.4 STATUS REPORT

The E9-1-1 Database also supplies a Status Report. The use of the Status Report by the CLEC is optional, but made available as a confirmation of Customer records having been processed. The Status Report is supplied along with the ERR file, following the same file naming convention, save for the ".STA" file name extension.

Below is an example of such a Status Report.

```
CLEC PROCESSING RESULTS:


COMPANY ID: LECID


Finish Time:      Wed Oct 28 10:43:01 2009 300

Header Records Read:                    1
Trailer Records Read:                   1
Records Read:                           15
Total Records Processed:                15

Total Errors:                           0
    Hard Errors:                        0
    Informative Errors:                 0

Records Successfully Processed:         15
    Inserts:                            9
    Changes:                            4
    Deletes:                            2
    Pilot Deletes:                      0
    To's:                               0
    From's:                             0
    Unlocks:                            0
    Migrates:                           0
```

Notes regarding the Status Report:

1) The report title "CLEC PROCESSING RESULTS" may on occasion be preceded by informational warning messages.

2) The CLEC is identified by "COMPANY ID:".

3) Finish Time is the time at which the CLEC DAT file processing was completed.

4) The number of DAT file customer records read into the system and processed. Processing will result in either the customer records being successfully entered into the E9-1-1 database, as listed under the section "Records Successfully Processed", or rejected.

5) Customer Records which are rejected by the E9-1-1 Database will be listed as "Hard Errors" under the "Total Errors:" section of the Status Report.

7.0 CLEC and MTS Respective Responsibilities

7.1 MTSALLSTREAM INC. CARRIER SERVICES GROUP (CSG)

The MTSAllstream Inc. Carrier Services Group (CSG) is the CLEC single point of contact for enquiries regarding the enhanced 9-1-1 service provided in Manitoba.

A CLEC wishing to provide its customers with MTSAllstream Inc. E9-1-1 Service must contact the Carrier Services Group a minimum of 3 months in advance. This is required in order to arrange the details of interconnection to the 9-1-1 Network along with conditions and details of Customer Record Information transfer.

The CSG will assume prime responsibility for Ordering, Billing, Guidelines, and Agreements of the MTSAllstream Inc. E9-1-1 service.

- The CSG receives Network interface request from the CLEC
- The CSG coordinates service agreement sign-off with the CLEC
- The CSG coordinates orders and negotiates related order due dates with the CLEC

7.2 MAPPING INFORMATION

The administrative district is responsible for validating and signing off on any new addressing information and emergency service zone boundary changes within its jurisdiction. The administrative district must forward this information to MTS for inclusion in the E91-1 Database Management System. The CLEC must use this information to validate its Customer Record Information prior to sending it to the E9-1-1 ALI Database Management System. In addition, the CLEC is responsible to collect and provide its NPA-NXX coverage and its customer service location information, and to forward them to the MTS CSG.

7.3 CUSTOMER RECORD INFORMATION

Each CLEC is responsible to provide MTS with updated Customer Record Information files as described in Section 5 of this document.

Ensure customer records transferred to another carrier are disconnected (unlocked) as soon as possible to allow the new record owner the ability to repopulate the records with their information.

7.4 ERROR CORRECTION ROUTINES

The most recent acknowledgement files (ERR and STA files) will be kept on the MTS 9-1-1 Web Site for CLEC access.

The CLEC is responsible to process errors and send the corrections to the secure web site with the next sequential transaction file number.

It is imperative that error records received in the error file are corrected as quickly as possible. Error records not corrected may result in the wrong address displaying to the 9-1-1 call takers or the call may be routed to the wrong PSAP.

7.5 TROUBLE HANDLING

The CLEC will provide MTSAllstream Inc. with a telephone number and email address to be used for contact purposes during trouble resolution. A CLEC contact will be readily available 7 days a week, 24 hours a day.

8.0 Operational Specifications

This section provides guidelines and pertinent information for the CLEC regarding event management and trouble reporting procedures.

8.1 EVENT MANAGEMENT AND TROUBLE HANDLING OBJECTIVES

- Ensure access to the MTSAllstream Inc. E9-1-1 service network for all subscribers.
- Ensure 9-1-1 call routing performs as designed.
- Ensure accurate address information is provided to the Public Safety Answering Points.

8.2 DEFAULT ROUTING ASSIGNMENT

When a CLEC interconnects to the E9-1-1 Emergency Service, it must provide the CSG with a default PSAP for each member of its E9-1-1 trunk group. Trunk Default Routing will occur when the 9-1-1 Selective Router does not receive an ANI from the service provider or the ANI received is not present in the call routing tables.

The CLEC must always obtain an agreement from the default Public Safety Answering Point.

8.3 9-1-1 CALL ROUTING PROBLEM CORRECTION

When a PPSAP or a CLEC detects a 9-1-1 call routing problem, it reports the trouble to the MTS 611 Repair Service Bureau (RSB). MTS opens a trouble ticket and analyzes the problem.

If the trouble is on the MTS network, MTS sectionalizes the trouble and fixes the cause. MTS informs the reporting party of the trouble clearance or of its status, if the repair is delayed.

If the trouble proves outside the MTS network, MTS refers the trouble to the most appropriate LEC. The LEC sectionalizes the trouble and fixes the cause. The LEC informs MTS and the PPSAP, if appropriate, of the trouble clearance or of its status, if the repair is delayed.

8.4 VOICE RELATED TROUBLE

When a voice related trouble is detected, the PSAP contacts the appropriate LEC, using the LEC ID information displayed at the 9-1-1 call taker screen, as per the PSAP internal trouble reporting procedure.

Subscribers serviced by a LEC other then MTS must refer all troubles to their serving LEC's local repair bureau (611 or other, as defined by the LEC).

When advised of a voice trouble, the LEC's local repair bureau is responsible for the testing of the subscriber's local loop, the end-office equipment and its 9-1-1 trunk interconnection portion (where appropriate). If the trouble proves to be on the MTS E9-1-1 Network, the trouble will be referred to the MTS 611 Repair Service Bureau.

8.5 NAME AND ADDRESS INFORMATION AND/OR CALL TRACE

When the 9-1-1 caller's information is not available and the caller cannot provide that information, the authorized 9-1-1-agency representative must contact the CLEC to request a call trace based on the call display status.

If another LEC needs to be involved in the call trace, the LEC will contact the other LEC to continue the trace, and will advise the PPSAP. All 9-1-1 requests for address information or call traces must be treated as a priority.

8.6 SERVICE ADDRESS INFORMATION CORRECTION

When a PPSAP detects a service address information related problem, the PPSAP will email or fax an error report to the designated LEC, based on the ALI displayed LEC ID.

The LEC analyzes the error report.

If the error report involves a subscriber from that LEC, the LEC fixes the Customer Record Information record and submits the corrected record to the E9-1-1 ALI Database Management System. Address correction may require municipality assistance. The LEC notifies the PPSAP that the problem is resolved.

After initial analysis, if the subscriber is not served by the LEC, the LEC informs the PPSAP and closes their error report. The PPSAP resubmits the error report to the appropriate LEC.

8.7 DATABASE RECONCILIATION

A CLEC can request a database reconciliation file and MTS will prepare the requested reconciliation data file and e-mail the file to the appropriate CLEC. The CLEC is to contact the MTS Allstream Inc. Carrier Services Group for the request.

8.8 MTS 611 REPAIR SERVICE BUREAU

The MTS 611 Repair Service Bureau (RSB):

- acts as the MTS prime customer interface for repair service;
- conducts a basic analysis of trouble reports;
- is responsible for follow up, escalation and turn over to the PSAP and/or CLEC;
- co-ordinates call trace requests on behalf of an authorized 9-1-1 agency representative;

9.0 CLEC Information That Must Be Provided To MTS

Table 9 - CLEC Exchange Name, NPA-NXX, Switch Type and NAS

Company	Exchange	NPA	NXX	Equipment Type	NAS	Total NAS

APPENDIX 1 - SUFFIX ABBREVIATIONS

Note: Master Street Address Guide (MSAG) street suffixes may or may not be in abbreviated form. CLECs are to use the 9-1-1 Interface Street Suffix List abbreviations when sending their transaction records.

Manitoba Street Suffix List	9-1-1 Interface Street Suffix List	MSAG REPORT Street Suffix List
AIRPORT	AIRP	AIRPORT
ALLEY	ALY	ALY
ALLOWANCE	ALLW	ALLOWANCE
AVENUE	AV	AV
BAY	BAY	BAY
BEACH	BCH	BCH
BEND	BEND	BEND
BOULEVARD	BLVD	BLVD
BRIDGE	BRG	BRG
CAMPUS	CMPS	CAMPUS
CENTER	CTR	CTR
CIRCLE	CIR	CIR
CLOSE	CL	CLOSE
COVE	CV	CV
COLLEGE	COLL	COLLEGE
CORNER	COR	COR
CORNERS	CORS	CORS
COURT	CRT	CRT
CREEK	CRK	CRK
CRESCENT	CRES	CRES
CROSSING	XING	XING
CUTOFF	CUTF	CUTOFF
DALE	DALE	DALE
DELL	DELL	DELL
DRIVE	DR	DR
ESTATE	EST	EST
ESTATES	ESTS	ESTS
FREEWAY	FWY	FWY
FRONT	FRNT	FRNT
GARDEN	GDNS	GDNS
GARDENS	GDNS	GDNS
GATE	GATE	GATE
GREEN	GRN	GRN
GROVE	GRV	GRV
HALL	HALL	HALL
HARBOR	HBR	HBR

HAVEN	HVN	HVN
HEIGHTS	HTS	HTS
HIGHWAY	HWY	HWY
HILL	HILL	HILL
HOLLOW	HOLW	HOLW
ISLAND	IS	ISLAND
KEY	KEY	KEY
LAGACE	LGCE	LAGACE
LANDING	LNDG	LNDG
LANE	LANE	LANE
LINE	LINE	LINE
LOOP	LOOP	LOOP
MALL	MALL	MALL
MANOR	MNR	MANOR
MARIA	MARI	MARIA
MEADOW	MDW	MEADOW
MEADOWS	MDWS	MEADOWS
MEWS	MEWS	MEWS
MOUNT	MT	MOUNT
PARC	PARC	PARC
PARK	PARK	PARK
PARKWAY	PKY	PKY
PASS	PASS	PASS
PATH	PATH	PATH
PLACE	PL	PL
PLAZA	PLZ	PLZ
POINT	PT	PT
PORT	PORT	PORT
RIDGE	RDG	RDG
RIVER	RIV	RIVER
ROAD	RD	RD
ROUTE	RTE	RTE
ROW	ROW	ROW
RUN	RUN	RUN
SHOPS	SHPS	SHOPS
SHORE	SHR	SHORE
SQUARE	SQ	SQ
STREET	ST	ST
TERRACE	TERR	TERR
TRAIL	TRL	TRL
VIEW	VIEW	VIEW
VILLAGE	VLG	VLG
VISTA	VIS	VIS
WALK	WALK	WALK
WAY	WAY	WAY

Appendix 1 (*continued)*

Directional Abbreviations

Initial	Abbreviation
E	E
E.	E
EAST	E
N	N
N.	N
N.E.	NE
N.W.	NW
NE	NE
NE.	NE
NORTH	N
NORTH E	NE
NORTH W	NW
NORTHEAST	NE
NORTHWEST	NW
NW	NW
NW.	NW
S	S
S.	S
S.E.	SE
S.W.	SW
SE	SE
SE.	SE
SOUTH	S
SOUTH E.	SE
SOUTH W.	SW
SOUTHEAST	SE
SOUTHWEST	SW
SW	SW
SW.	SW
W	W
W.	W
WEST	W

Note: This list is subject to modifications. The list incorporates existing standards where possible using a two-digit code.

APPENDIX 2 – TERMS/DEFINITIONS

Abbreviation	Term	Definition
	9-1-1 Service Area	The geographic area that has been granted authority by a local governmental body to provide 9-1-1 service.
	9-1-1 System	The set of network, data base and CPE components required to provide 9-1-1 service.
	Access Line	The connection between a customer premises network interface and the Local Exchange Carrier that provides access to the Public Switched Telephone Network (PSTN).
	Administrative District	A governing body that has contracted for Enhanced 9-1-1 service. This may be a municipality, village, city, First Nations Community, provincial or federal park etc.
ALEC	**Alternative Local Exchange Carrier**	(See Local Exchange Carrier (LEC))
	Alternate PSAP	A PSAP designated to receive calls when the primary PSAP is unable to do so.
	Alternate Routing	The capability of routing 9-1-1 calls to a designated alternate location(s) if all 9-1-1 trunks are busy or out of service. May be activated upon request or automatically, if detectable, when 9-1-1 equipment fails or the PSAP itself is disabled.
ALI	**Automatic Location Identification**	The automatic display at the PSAP of the caller's telephone number, the address/location of the telephone and supplementary emergency services information of the location from which a call originates.
ALI DB	**ALI Data Base**	An organized collection of information, typically stored in computer systems, comprised of fields, records (data) and indexes. In 9-1-1, such data bases include MSAG, telephone number/ESN, and telephone customer records.
ANI	**Automatic Number Identification**	The telephone number of the calling party displayed at the answering point
	ANI/ALI Controller	The 9-1-1 switching equipment that provides the switching of 9-1-1calls. It controls delivery of the voice call with ANI to the PSAP and provides Selective Routing, Speed Calling, Selective Transfer, Fixed Transfer, and certain maintenance functions for each PSAP. Also known as the 9-1-1 Selective Router.
	Attendant Position	The Customer Premises Equipment (CPE) at which calls are answered and responded to by the 9-1-1 Call Taker.
	Calling Party Hold	The capability of the PSAP to maintain control of a 9-1-1 caller's access line, even if the caller hangs up.
CO	**Central Office**	The Local Exchange Carrier facility where access lines are connected to switching equipment for connection to the Public Switched Telephone Network.
	Centrex	A business telephone service offered by some Local Exchange Carriers that provides PBX type features over

		access lines.
	Civic Address	Any city-style address that includes a house number and a street name is considered a Civic Address. Civic Addresses may be used as MSAG addresses if they are an exact match to the MSAG address. A Section/Township/Range or Lot/Block address is not considered a Civic Address.
	Class of Service	A designation of the type of telephone service, e.g. residential, business, centrex, coin, PBX, wireless.
CLEC	**Competitive Local Exchange Carrier**	A telecommunications provider company (sometimes called a "carrier") that competes with other, already established carriers (generally the incumbent local exchange carrier (ILEC)).
CPE	**Customer Premises Equipment**	Communications or terminal equipment located in the customer's facilities – Terminal equipment at a PSAP.
DBMS	**Data Base Management System**	A system of manual procedures and computer programs used to create, store and update the data required to provide Selective Routing and/or Automatic Location Identification for E9-1-1 systems.
	Dedicated Trunk	A telephone circuit used for a single purpose; such as transmission of 9-1-1 calls.
	Default Routing	The capability to route a 9-1-1 call to a designated (default) PSAP when the incoming 9-1-1 call cannot be selectively routed due to an ANI/KEY failure or other cause.
	Disaster	Any event which can cause a significant disruption to emergency calling capability.
	Disaster Recovery	A specific set of procedures designed to reduce the damaging consequences of unexpected events resulting in the loss of 9-1-1 capabilities.
	Diverse Routing	The practice of routing circuits along different physical paths in order to prevent total loss of 9-1-1 service in the event of a facility failure.
	Emergency Call	A telephone request for public safety agency emergency services which requires immediate action to save a life, to report a fire or to stop a crime. May include other situations as determined locally.
EMS	**Emergency Medical Service**	Fire, hospital, poison control, etc. response centers.
ERA	**Emergency Response Agency**	The public safety agency having legal or consensual obligation to respond to a call for service.
	Emergency Ring Back	The capability of a PSAP attendant to ring the telephone on a held circuit. Requires Calling Party Hold.
ESN	**Emergency Service Zone Number**	An ESN is a three or four digit number representing a unique combination of emergency service agencies (Law Enforcement, Fire, and Emergency Medical Service) designated to serve a specific range of addresses within a particular geographical area, or Emergency Service Zone (ESZ). The ESN facilitates selective routing and selective transfer, if required, to the appropriate PSAP and the

		dispatching of the proper emergency response agency.
ESZ	**Emergency Service Zone**	A geographical area that represents a unique combination of emergency service agencies (e.g., Law Enforcement, Fire and Emergency Medical Service) that are within a specified 9-1-1 governing authority's jurisdiction. An ESZ can be represented by an Emergency Service Number (ESN) to identify the ESZ. (Refer to ESN)
	End Office	See Central Office.
E9-1-1	**Enhanced 9-1-1**	An emergency telephone system which includes network switching, data base and CPE elements capable of providing Selective Routing, Selective Transfer, Fixed Transfer, caller routing and location information, and ALI.
	Exchange	A defined area, served by one or more telephone central offices, within which a Local Exchange Carrier furnishes service.
	Grade of Service	The probability (P), expressed as a decimal fraction, of a telephone call being blocked. P.01 is the grade of service reflecting the probability that one call out of one hundred during the average busy hour will be blocked. P.01 is the minimum recommended Grade of Service for 9-1-1 trunk groups.
ILEC	**Incumbent Local Exchange Carrier**	A telephone company that provided the initial telephone company service in an area.
IP	**Internet Protocol**	The method by which data is sent from one computer to another on the Internet or other networks.
	Landline	Colloquial term for the Public Switched Telephone Network access via an actual copper or fiber optic transmission line. Used to differentiate the "wireless" connectivity of a cellular or PCS system.
LEC	**Local Exchange Carrier**	Local exchange carriers (LECs) are divided into incumbent (ILECs) and competitive (CLECs). The ILECs are usually the original, monopoly LEC in a given area.
LNP	**Local Number Portability**	A process by which a telephone number may be reassigned from one Local Exchange Carrier to another.
	Migrate	The term used to describe the inward transaction the Recipient Company submits to the 9-1-1 Data Base Management System Provider that signifies movement of telephone service from a Donor Service Provider. Enhanced 9-1-1 service in Manitoba does not require the Migrate or Unlock functions to repopulate 9-1-1 Database records.
MSAG	**Master Street Address Guide**	A data base of street names and house number ranges within their associated communities defining Emergency Service Zones (ESZs) and their associated Emergency Service Numbers (ESNs) to enable proper routing of 9-1-1 calls.
	Master Street Address Guide (MSAG)Address	Address recognized by Public Safety for the dispatch of emergency first responders. It is an absolute and unique address in that variants for directions, street spelling, street

		suffixes, and community names are not allowed. It is preferred that MSAG Addresses be in Civic Address format. The community name associated with this address format is assigned by the Addressing Authority in cooperation with the 9-1-1 Administrator. MSAG addresses are used to route 9-1-1 calls and for ALI display. NOTE: MSAG Address data format is not standardized throughout the country. This is generally attributed to legacy system limitations that have been continued as operational practices on the part of 9-1-1 administrative entities.
NENA	**National Emergency Number Association**	NENA is a networking source and promotes research, planning and training. NENA strives to educate, set standards and provide certification programs, legislative representation and technical assistance for implementing and managing 9-1-1 systems.
NPA	**Number Plan Area**	An established three-digit area code for a particular calling area where the first position is any number 2 through 9 and the last two (2) positions are 0 through 9.
NXX		A three-digit code in which N is any digit 2 through 9 and X is any digit 0 through 9. Typically used in describing the "Exchange Code" fields of a North American Numbering Plan telephone number. The full numbering system is in the format of "Area Code" + "Exchange Code" + "Line Number" or NPA-NXXXXXX. A central office will have one or more area and exchange codes.
	Overflow	The telecommunications term for the condition when there are more calls than the primary network path is designated to handle. This condition invokes the need to perform some form of call treatment, such as busy signals or Alternate Routing (also see Alternate Routing).
	P.01 Grade of Service	(see Grade of Service.)
PPSAP	**Primary Public Safety Answering Point**	The answering location for 9-1-1 calls originating within a specified area.
PSAP	**Public Safety Answering Point**	A facility equipped and staffed to receive 9-1-1 calls. (see also Primary and Secondary Public Safety Answering Point (PSAP))
PSTN	**Public Switched Telephone Network**	The network of equipment, lines, and controls assembled to establish communication paths between calling and called parties in North America.
	Response Agency	The public safety agency having legal or consensual obligation to respond to a call for service.
	Secondary Public Safety Answering Point	A PSAP to which 9-1-1 calls are transferred from a Primary PSAP. (See Public Safety Answering Point)
SR	**Selective Routing**	The routing of a 9-1-1 call to the proper PSAP based upon the location of the caller. Selective routing is controlled by the

		ESN which is derived from the customer location.
SRDB	**Selective Routing Data Base**	The routing table that contains telephone number to ESN relationships which determines the routing of 9-1-1 calls.
	Selective Transfer	The capability to transfer a 9-1-1 call to a response agency by operation of one of several buttons typically designated as police, fire, and emergency medical; based on the ESN of the caller.
	Transfer	A feature which allows the 9-1-1 call taker to redirect a 9-1-1 call to another location.
	Trunk	Typically, a communication path between central office switches, or between the 9-1-1 Control Office and the PSAP.
	Unlock	The action required by a 9-1-1 Data Base Management System Provider, upon notification from a Donor Company, that makes the end user's telephone number record available for the Recipient Company to replace the customer details and Company ID. The Enhanced 9-1-1 service in Manitoba does not require the use of the Unlock and Migrate circuit functions to repopulate the 9-1-1 Database records.
VoIP	**Voice over Internet Protocol, Voice over IP**	Provides distinct packetized voice information in digital format using the Internet Protocol. The IP address assigned to the user's telephone number may be static or dynamic.

APPENDIX 3 - CONTACT LISTS

MTSAllstream Inc.

Carrier Services Group (CSG)

Sales Manager, Wholesale Accounts (Assigned to specific CLEC)
Debbie Schepens
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E9-1-1 Senior Product Manager
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MTS E9-1-1 Data Management
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Document History

November 12, 2003

Appendix 4
- changed CSG contact name from Cliff Macleod to Garth Lancaster (Appendix 4)

December 07, 2004

Section 5.4.3
- removed migrate and unlock transaction types from Section 5.4.3

Appendix 4
- changed MTS E9-1-1 Product Manager contact number
- changed MTS E9-1-1 Database Manager contact number
- changed MTS E9-1-1 Database Manager address

December 21, 2004

Section 2.3 Network Interface
- Recommended Alternate and Default Trunk Routing plans.

Section 2.3.5 Table 3 Ringback
- The CML ECS 1000 Selective Router/Controller uses a “flash” signal to initiate a Ringback condition.

April 14, 2005

Appendix 4
- modified Carrier Services Group contact information

- Change company name from MTS Communications Inc to MTS Allstream Inc in the entire document
- Minor editorial changes in wording in various paragraphs and sections

September 26, 2006

Section 1.0 Introduction
- defined administrative district
- advised readers that 9-1-1 service in Manitoba is optional.

Section 2.1 MTSAllstream Inc. Province wide Service Overview
- replaced CML with Plant CML
- replaced municipality references with administrative district

Section 2.2 Table 1
- removed STI information on the Call Transfer feature description. STI capability is not required to complete a Call Transfer.

Section 4.1
- revised document to identify that the CLEC files are processed via a web site automation process instead of the original manual processes.

Revisions (cont’d)

Section 5.4 Location Details
- added location details to document

Section 6.4 Transaction Data Record Errors
- added "Note: A location field format error will be returned as a 908 error with no function code."

Section 7.5 Trouble Handling
- wording changes

Section 8.2 Default Routing
- removed statements regarding NXX default routing.

Appendix 1 Street Suffix Abbreviations
- created a new table with different headings that identifies allowable interface street suffixes.

April 17, 2008

- changed description of the Plant CML ECS 1000 9-1-1 switch to be ANI/ALI Controller from Selective Router/Controller.

Introduction
- revised wording relating to the web site internet access.

Section 2.1.1 Network Overview
- added assignment of ESNs as a mandatory activity

Figure 1
- added Alternate Routing to the Network Diagram

Section 2.2 Table 1 E9-1-1 Features
- added Trunk Default Routing as an E9-1-1 feature

Section 2.3 Network Interconnection
- changed title to Network Interconnection from Network Interface
- identified that Alternate Routing plans should be negotiated with the Primary PSAPs.

Section 2.3.3 Network Requirement Checklist
- added Alternate Routing to the Network Requirement Checklist

Section 2.3.5 ANI/ALI Controller Signaling
- removed Table 3 (not required)

Section 2.3.6 E9-1-1 Trunk Hardware
- removed section (not applicable)

Section 4.1 Overview of the CLEC File Process
- revised Step 2 to identify the automatic file processing that is now available

Section 5 Customer Data Required
- identified maximum file size of 1 megabyte

Section 5.4 Transaction Data Record Table 4

- renamed function codes form Delete and Insert to Disconnect and Install
- in Note 1 Street Suffix Field states that the fourth character is truncated; this has been changed to the 5th character.

Section 5.4.2 Section/Township/Range Address Format Table 6
- removed use of ampersand character
- revised fields used to enter Section/Township/Range addresses

Section 6.1 File Structure Errors
- reworded the last point to identify that if a file structure error occurs it will not change the file name extension to .ERR from .DAT, it will not process the file.

Section 6.3.1 Acknowledgement File Format (Data Record)
- The 8 digit Extract date field requires a MMDDYYYY format.
- The admin district field requires the Admin District Name

Section 6.4 Transaction Data Record Errors
- removed wording related to error codes being inserted into the Comments field.

Table 8
- added 908 error code with no Function code to the Table.

Appendix 2 Terms/Definitions
- changed title to Terms/Definitions from Glossary
- added multiple new definitions

Appendix 3 Contact Lists
- changed contact information to identify new phone numbers

April 29, 2008
- replaced security warning on page ii with Notice of Proprietary Information text.

April 30, 2008

Section 7.3 Customer Record Information
- added comment requesting unlock records be processed as soon as possible

Section 7.4 Error Correction Routines
- added comment requesting error records be retransmitted as soon as possible to prevent incorrect routing and/or incorrect address information.

November 20, 2009

Section 2.1.1 Network Overview
- Updated the description of the network to reflect the changes made for the new 9-1-1 ALI Database.

Section 5.1 File Naming Convention
- Added a description of the new STA status report file.

Section 5.2 Record Types
- Specified that record types are for DAT CLEC input files. Added ERR and STA files and statement that with no errors the ERR file is empty.

Section 5.4 Transaction Data Records

- In the "Comments" field for the DAT file, remove reference to error codes which are no longer supplied in Nena-2 format.
- For the Community Name field, added 'N' to the Type.
- For the Type of Service field, indicated that the entries '2' and '5' are Not Applicable
- For the Extract Date, referred to Note 1 which now states there is no date validation on transaction records.
- Location Details – Removed references to Parsing Set to Y and the *mapcoord* field. Noted that "RU" is converted to "RR". Noted that "SLIP" and "PIER NO" are converted to "PIER".

Section 6.0 Error and Status Files
- Change section name from "Error Files"

Section 6.1 Transaction File Structure Errors
- Change ASCII range specification from "32-95" to "32-90"

Section 6.2 Acknowledgment File Format
- Noted that if no errors, the ERR file is a duplicate of the STA status file.
- Specified the file format for the "ERR" file.

Section 6.3 Transaction Data Record Errors
- Listed the new error codes.

Section 6.4 Status Report
- New section with brief overview of the Status Report

Appendix 3 - Contact List
- Update contact for MTS E9-1-1 System Administrator

November 27, 2009

Section 6.3 Transaction Data Record Errors
- Update the 703 code to include "delete".

January 27, 2010

Section 5.4 Transaction Data Records
- Table 4, Transaction Data Record, Class of Service, add classes G and H.

Appendix 3 – Contact List
- Remove "MTS E9-1-1 System Specialist" and "611 Repair Services Bureau"
- Update "MTS E9-1-1 Data Management"

January 11, 2012
- Updated contact information
- Updated section 2.3.2 Facility Considerations
- Corrected section 5 Customer Data – maximum number of files per day

June 17, 2014
Section 5.4 Transaction Data Records
- Table 4, Transaction Data Record, Street Suffix not a required field