

Martinsville–Henry County

Text to 911 Deployment

(Text to TTY Conversion)

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

- Information gathered from the 2013 Virginia NENA/APCO Spring Conference.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

- **Started internal review of our 911 equipment and Text to 911 options.**
 - IP/i3 network availability?
 - Internet Access to the 911 workstations?
 - CPE capabilities.
 - Number of computer monitors at each workstation and available space.
 - Integration of technology with existing systems and equipment .vs the addition of new system and equipment.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

Text to 911 deployment options

1. Direct IP Connection

- For PSAP's with i3 type IP networks and equipment.
 - PSAP is responsible for installing dedicated, redundant IP circuits to the Text Positioning Center or have an ESInet in place.
- For PSAPs that have IP-capable CPE equipment.
- CPE must have integrated text handling software.

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Text to 911 deployment options

2. Gem 911 (TCS Client)

- A web browser based client accessed from any computer having public internet access.
- PSAP must have public internet connectivity into workstations designated to receive Text to 911 calls with web browser (IE 8, Chrome or Firefox.)
- Provides login credentials for all PSAP users.
- Consider addition of computer monitor for system display.

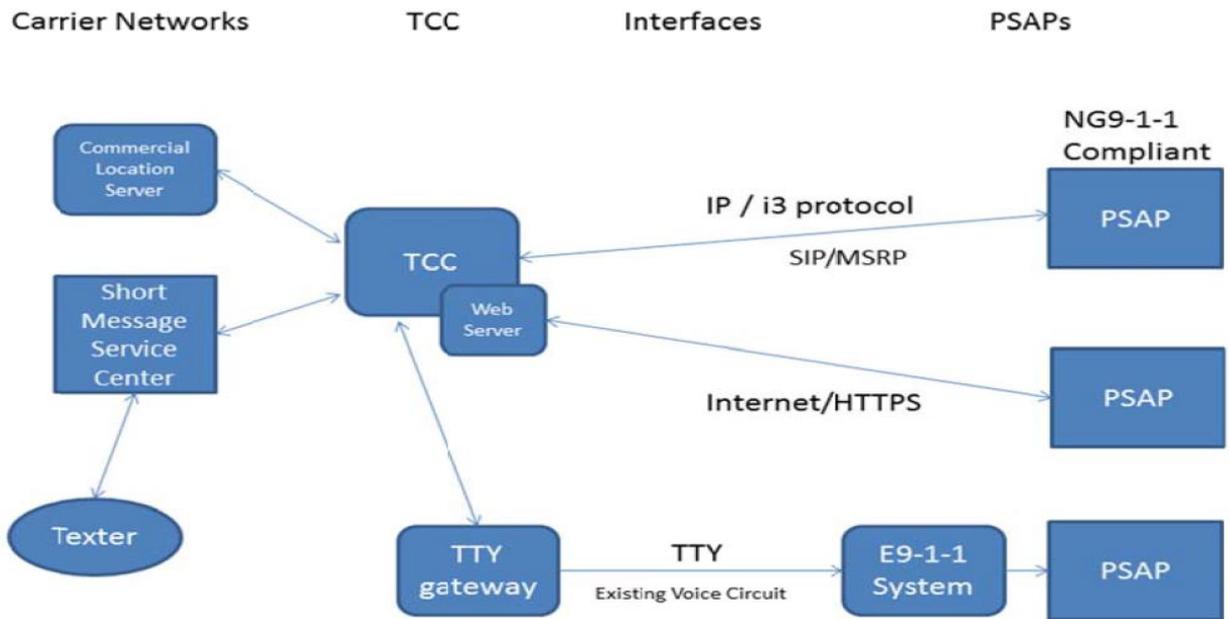
Deployment of Text to 911 at the Martinsville–Henry County 911 Center

Text to 911 deployment options

3. Text to TTY Conversion

- Uses existing 911 Selective Router and can send Text to any CPE capable of receiving TTY calls.
- SMS is converted to TTY before being sent to the selective router and onto the PSAP TTY capable workstation for delivery.
- PSAP can use legacy CPE equipment as long as it is capable of receiving TTY calls
- Text/TTY calls are delivered to the PSAP over wireless 911 circuits.
- More options to interface with existing systems (CAD, Recorders)

Deployment of Text to 911 at the Martinsville–Henry County 911 Center



High Level SMS Text-to-9-1-1 Diagram

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

Factors behind our decision.

- Direct IP Connection
 - Currently our PSAP does not have direct IP/i3 network to receive incoming emergency calls.
 - Note: When IP/i3 networks are in place along with NG911 CPE systems, this is ultimately how PSAP's will want to process Text to 911 calls for service.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

Factors behind our decision.

- GEM911
 - Wanted to avoid the need to add an additional computer monitor at each 911 console or integrate onto existing monitors.
 - Preferred not to add an additional software application with login credentials for the Emergency Dispatchers to log into and be responsible for monitoring.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

We went with the Text to TTY Conversion Option

Why?

- Existing CPE system has the ability to accept TTY messages.
- Text to 911 calls would come in over existing wireless 911 circuits.
- Text to 911 calls are displayed on the existing CPE monitor.
- Text to 911 calls are processed exactly like a TTY call. No training or learning curve.
- No need for internet access at the 911 workstations.
- No need for additional software applications or login credentials.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

We went with the Text to TTY Conversion Option

Why? (Continued)

- Had more internal control of the system.
- CAD system captures Text to 911 conversation and stores it.
(Southern Software CAD)
- Recording system captures and decodes TTY tones and stores with 911 recordings for retrieval. (Higher Ground Recording System)
- CPE stats system captures TTY conversation and data.
- *There were no expenses for deployment. It was free!*

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

We went with the Text to TTY Conversion Option

Note: We understood from the beginning the Text to TTY Conversion option is not our long term solution.

However, it is an immediate and free solution to begin receiving and processing Text to 911 calls until i3/NG911 is in place.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

Deployment Process

- Submitted letter to Verizon requesting Text to 911 services.
- Completed and submitted Verizon SMS to 911 questionnaire.
- Approximately 90 days later Verizon held a kick off conference call between our PSAP, TCS, and Verizon representatives to review the process.
 - Have your LEC on this kick off call. They will be needed to coordinate with TCS on settings for the selective router.
- Approximately 45 days after the kick off call Verizon and TCS informed us they completed their work with our LEC and the selective routers are ready to handle SMS to 911 for our PSAP. We then scheduled a date for testing.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

Deployment Process (Continued)

- Testing was conducted by conference call with TCS, Verizon, and CenturyLink. We also had our local CPE service technician on hand to assist with any possible CPE adjustments needed.
- We provided personnel to drive our jurisdiction and perform Text to 911 test calls while TCS and Verizon monitored the routing of the calls over their network.
 - We were pleased with the accuracy of the system identifying when our caller went outside our PSAP's boundary and received the bounce back message.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

Deployment Process (Continued)

- Following the testing, Verizon trained our management staff on utilizing their online GEM911 system for controlling key features of the Text to 911 system.
- Verizon assisted in preparing a press release and coordinating that effort.
- Once we were satisfied and comfortable with the entire process, we determined the kick off date.
 - We first tested internally for 30 days.
 - Sent out press release and went live publicly on February 10, 2014.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

Things we learned and for your consideration.

- Delay in initial transmission
 - Short Message Services (SMS) was designed as a store-and-forward mechanism of communication and was not initially intended to be used for time sensitive communications.
- Lack of Automatic Location Information (ALI)
 - SMS Text-to-911 calls provide cell tower or cell sector coordinates similar to wireless phase 1 calls (WPH1).
 - Some carriers are looking at using location agent apps as an alternative.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

Things we learned and for your consideration. (Continued)

- Must have a text-capable cell phone with an active wireless service subscription.
 - Deactivated cell phones will not work with Text to 911.
- PSAP has complete control over the SMS to 911 system.
 - TCS GEM911 Admin Utility (online)
 - Turn SMS to 911 on/off.
 - Control of Deny List to block abusive callers.
 - Ability to route SMS to 911 calls to alternate PSAP.
 - Can setup Time of Day Rules to have specific days of week or time of day to start or stop SMS to 911.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

Things we learned and for your consideration. (Continued)

- With Text to TTY, when the Telecommunicator ends the TTY call, that ends that text session.
 - Any additional texts from the caller will be delivered as a new incoming TTY call.
- Keep in mind how many Wireless 911 trunks/circuits you have in your PSAP
 - In our Center we have 8 Wireless 911 Circuits.
 - To eliminate the possibility of Text to TTY calls tying up all our wireless 911 circuits, possibly blocking wireless 911 calls, we decided to setup our system to accept four simultaneous Text to TTY calls. (Setup by TCS & Verizon)
 - The fifth Text to TTY caller will get the bounce back message.

Deployment of Text to 911 at the Martinsville–Henry County 911 Center

Things we learned and for your consideration. (Continued)

- Policy and Procedures to consider for your PSAP.
 - How long to stay on Text to 911 call before ending call?
 - What justifies the need for staff to request a cell phone location from the wireless carrier?
 - How will you handle prank Text 911 calls?
 - How to EMD a Text to 911 call?
- Dispatcher cannot be typing a return message while CPE is accepting TTY tones or it will cut the incoming message.

Console Edit View Tools Actions Help

P-ANI Trunk Status Circuit
 (276) 511-0213 On Line CELL-4

CPN ESN Call State
 (276) 732-9543 00000 Connected

Request ALI Refresh ALI Release Answer Refuse Call History

Position Calls Ringing 9-1-1 Admin
 0 0

ACD Calls Pending 0 0

Calls on Hold / Parked 0 0

CELL-1	CELL-5	911-1	911-5
CELL-2	CELL-6	911-2	911-6
		911-3	911-7
		911-4	911-8

276-732-9543 09:29:52 02262014

WPH2
 WIRELESS 911 CALLER
 LEC VZW
 MARTINSVILLE VA
 ESN 6099
 P#276-732-9543 ALT#276-511-0213
 X-079.881484 Y+036.731897 CF75
 UNC05923 Z ZUNC
 HENRY CO WIRELESS
 HENRY CO WIRELESS
 HENRY CO WIRELESS

TTY interface

Conversation log

CALLER > JANE DUK GA
 Pos1 > are you injured, and if so where?
 CALLER > NO GA
 Pos1 > is it safe for you to call 911 or i call you instead of texting?
 CALLER > NO SHE WILL HEAR. CA
 Pos1 > are any weapons involved, if so explain?
 CALLER > NO WEAPONS. CA
 Pos1 > remain calm, help is on the way.
 CALLER > K GA
 Pos1 > no additional msgsg? disconnecting now.

Type text here:

Message

Text 911 Call Police Fire EMS American Sign

WHAT IS YOUR NAME?
 WHAT IS THE SUSPECTS NAME?
 ARE YOU INJURED, AND IF SO WHERE?
 IS IT SAFE FOR YOU TO CALL 911 OR I CALL YOU INSTEAD OF TEXTING?
 PLEASE USE PLAIN LANGUAGE IN YOUR TEXTS SO I CAN UNDERSTAND.
 CAN YOU CONFIRM YOUR CELL PHONE # FOR ME PLEASE?
 ARE ANY WEAPONS INVOLVED, IF SO EXPLAIN?
 REMAIN CALM, HELP IS ON THE WAY.
 DO YOU HAVE A MEDICAL EMERGENCY? IF SO EXPLAIN.
 NO ADDITIONAL MSGSG? DISCONNECTING NOW.

Send NO ADDITIONAL MSGSG? DISCONNECTING NOW.

Silent

Mode Characters Pending: 0
 Answer Baudot Answer

Hearing Carry Over
 Voice Carry Over

ASCII Voice Close

This is a TTY call. Case no. N/A

Conference Window

CELL-4

M 911

Hold Window

AUTO1 AUTO2 AUTO3

Pos8B Pos9B

MAIN 911 XFER OTHER HOSP/MED EVAC WORKSTATIONS Messenger

DND Answer Release Non Ex Hold Held calls... Flash Mute Ringback Barge In Prev Calls Speed Dial Keypad TTY Volume