SMS9-1-1

Michigan 911 Tech Forum

4/14/2014
Current Regulatory Stance

• **December 2012:** Tier 1-NENA-APCO Voluntary Agreement
  o Tier 1 General Availability per Carrier Agreement out by **May 15, 2014**
  o Springboard to FCC Proposed Rulemaking

• **FCC NPRM – Notice of Proposed Rule Making**
  o Builds on Tier 1-NENA-APCO Voluntary Agreement
  o All Carriers to Support Bounce Back Messages as of **September 2013**
  o Intent is to Accelerate National Availability
  o Comments and Reply to Comments are in, Expect FCC to Rule Shortly
  o Visit [http://www.fcc.gov/text-to-911](http://www.fcc.gov/text-to-911) for Additional Information

• There is now a 2nd FNPRM.....
• Several aspects of implementation relating to the technical ability of interconnected text providers to comply with a text-to-911 mandate

• Anticipated issues will be part of the long-term evolution of text-to-911, though we do not propose to require their implementation by a certain date. These include:
  1. Developing the capability to provide Phase II-comparable location information in conjunction with emergency texts;
  2. Delivering text-to-911 over non-cellular data channels; and

• That text-to-911 capability should be made available by ALL text providers no later than December 31, 2014, and should be provided within a reasonable time after a PSAP has made a valid request for service, not to exceed six months.

ATIS/TIA J-STD-110 Standard

• What the Standard Addresses:
  • Three Message Delivery Methods to the PSAP
  • Automatic Bounce Back and Inactivity Timeout

• What the Standard Does Not Address:
  • Centralized Reporting for Emergency SMS Messages Across Jurisdictions
  • Centralized Logging & Recording Service Across Jurisdictions
  • MMS Support
  • Multi-Targeted SMS Text Communication, Prioritization, Roaming
  • Language Translation
TCS Support of Text to 9-1-1

- Joint Creator of the ATIS JSTD-110 Text-to-911 Standard
- Solution Based on NENA i3 Standard Interfaces
- Actively Progressing through Vendor Interoperability Testing for Carrier Message Exchange
- 2 ESIinet Deployed, More Pending
- Providing Carrier Aggregation (VzW & T-Mobile) today via the GEM delivery (Montgomery County NY)
- Driving Innovation into FCC-CSRIC IV Work Group 1 Subtask 1 - Investigation into Improvements for Text to 9-1-1 Location Information
  
  http://transition.fcc.gov/pshs/advisory/csric/

TCS is at the Forefront of SMS911 Technology and Deployment
TCS Deployment Update

• Currently Live:
  • GEM (Web Portal) – 46 PSAPs
  • TTY – 12 PSAPs
  • Direct IP (i3 MSRP) – 2*

• Population served as of today: 9,122,000
• Expected Population served by….
  - 6/1/14: 12,000,100
  - 9/1/14: 18,000,000

* First fully compliant (ATIS/NENA/i3)TCC to ESI-net delivery via MSRP
# FCC Deployment Tracker

<table>
<thead>
<tr>
<th>State</th>
<th>County</th>
<th>Jurisdiction</th>
<th>PSAPs Accepting Texts</th>
<th>Serving Carriers</th>
<th>Text-to-911 Platform Deployed</th>
<th>Deployment Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>Los Angeles</td>
<td>Los Angeles County</td>
<td>CSU Long Beach Police Department</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>11/20/2013</td>
</tr>
<tr>
<td>Colorado</td>
<td>Pitkin</td>
<td>City of Aspen and Pitkin County</td>
<td>Fitkin County Emergency Dispatch (Fitkin County and Roaring Fork Valley portion of Eagle County)</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>10/28/2013</td>
</tr>
<tr>
<td>Iowa</td>
<td>All</td>
<td>All</td>
<td>All</td>
<td>i-Wireless</td>
<td>Intrado - TXT-2-911</td>
<td>8/1/2009</td>
</tr>
<tr>
<td>Maine</td>
<td>All</td>
<td>All</td>
<td>Gray &amp; Orono DPS (for entire state)</td>
<td>Verizon</td>
<td>TCS - SMS to TTY</td>
<td>6/1/2013</td>
</tr>
<tr>
<td>Maryland</td>
<td>Frederick</td>
<td>Frederick County</td>
<td>Frederick County Emergency Communications Center</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>3/21/2013</td>
</tr>
<tr>
<td>Montana</td>
<td>Missoula</td>
<td>Missoula County</td>
<td>Missoula County 911 Center</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>10/31/2013</td>
</tr>
<tr>
<td>New York</td>
<td>Chemung</td>
<td>Chemung County</td>
<td>Chemung County Communication Center</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>8/1/2013</td>
</tr>
<tr>
<td></td>
<td>Monroe</td>
<td>Rochester</td>
<td>Monroe County 911 Center</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>5/24/2013</td>
</tr>
<tr>
<td></td>
<td>Montgomery</td>
<td>Montgomery County</td>
<td>Montgomery County Sheriff's Office</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>7/15/2013</td>
</tr>
<tr>
<td></td>
<td>Oneida</td>
<td>Oriskany</td>
<td>Oneida County Sheriff's Office</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>11/20/2013</td>
</tr>
<tr>
<td></td>
<td>Onondaga</td>
<td>Onondaga County</td>
<td>Onondaga Police Department</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>6/6/2013</td>
</tr>
<tr>
<td></td>
<td>Steuben</td>
<td>Bath</td>
<td>Steuben County 911</td>
<td>Verizon</td>
<td>TCS - SMS to TTY</td>
<td>9/27/2013</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3/12/2013</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Durham</td>
<td>City of Durham</td>
<td>Durham Emergency Communications Center</td>
<td>Verizon</td>
<td>Intrado TXT2911</td>
<td>8/1/2011</td>
</tr>
<tr>
<td>Ohio</td>
<td>Geauga</td>
<td>Geauga County</td>
<td>Geauga County Department of Emergency Services</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>8/20/2013</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Hamilton</td>
<td>Hamilton County</td>
<td>Hamilton County Communications Center</td>
<td>Verizon</td>
<td>Intrado TXT2911</td>
<td>11/21/2013</td>
</tr>
<tr>
<td></td>
<td>Dauphin</td>
<td>Dauphin County</td>
<td>Dauphin County EMA</td>
<td>Verizon</td>
<td>TTY</td>
<td>7/15/2013</td>
</tr>
<tr>
<td></td>
<td>Lancaster</td>
<td>Lancaster County</td>
<td>Lancaster County-wide Communications</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>7/10/2013</td>
</tr>
<tr>
<td></td>
<td>Luzerne</td>
<td>Luzerne County</td>
<td>Luzerne County</td>
<td>Verizon</td>
<td>TTY</td>
<td>8/14/2013</td>
</tr>
<tr>
<td>South Carolina</td>
<td>Greenville</td>
<td>Greenville County</td>
<td>Fountain Inn Police</td>
<td>Verizon</td>
<td>TCS - Web Browser/GEM911</td>
<td>10/28/2013</td>
</tr>
</tbody>
</table>

21,683 public attempts to text 911 from 1/01/2014 to 3/30/2014

Public demand is there

Reference: TCS national 911 report, 2/17/2014

Chairman Genachowski (10/10/11) stated

“It’s hard to imagine that airlines can send text messages if your flight is delayed, but you can’t send a text message to 9-1-1 in an emergency. The unfortunate truth is that the capability of our emergency response communications has not kept pace with commercial innovation – has not kept pace with what ordinary people now do every day with communications devices. The shift to NG9-1-1 can’t be about if, but about when and how.”
Michigan’s SMS 9-1-1 Attempts

Total: 272

Jan | Feb | Mar
---|-----|-----
75 | 100 | 90

©2014, TeleCommunication Systems, Inc. (TCS). Proprietary Level 2
Current TCS Architecture Overview

Options for interconnectivity with SMS911 Gateway Service Offering:

- SMS using the TCS GEM 9-1-1 client (web browser)
- SMS to TTY Conversion
- Direct integration with CPE equipment (NENA i3)
- PSAP SMS Opt Out

©2014, TeleCommunication Systems, Inc. (TCS). Proprietary Level 2
The PSAP Challenge
The Long Term Challenge

- **One Carrier**
- **All Wireless Carriers**
- **A Subset of All Carriers**
Proven Architecture Solution

Standards based Aggregation is easy – *Intelligent Distribution* is the key
## Benefits of Emedia™

<table>
<thead>
<tr>
<th></th>
<th>With EMedia™</th>
<th>Without EMedia™</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Carrier and TCC Aggregation</strong></td>
<td>YES</td>
<td>Requires ALL TCCs to Integrate and Interoperate</td>
</tr>
<tr>
<td><strong>Uniform PSAP GUI</strong></td>
<td>YES. One GUI for all Carriers/TCCs</td>
<td>NO. Different GUIs from Different Carriers/TCCs</td>
</tr>
<tr>
<td><strong>Built on NENA i3 Components</strong></td>
<td>YES</td>
<td>Dependent on TCC Provider</td>
</tr>
<tr>
<td><strong>J-STD-110 Compliant</strong></td>
<td>YES</td>
<td>Dependent on TCC Provider</td>
</tr>
<tr>
<td><strong>Easy Addition of New Carriers</strong></td>
<td>YES. Transparent to the PSAP</td>
<td>NO. Requires Integration and Support from the PSAP</td>
</tr>
<tr>
<td><strong>Enhanced Features</strong></td>
<td>YES. Logging and CAD Integration, Transfers, Language Translations</td>
<td>NO</td>
</tr>
<tr>
<td><strong>Easy Migration to NG9-1-1</strong></td>
<td>YES. Support of Voice and Multi-Media</td>
<td>NO</td>
</tr>
</tbody>
</table>
A Controlled SMS 9-1-1 Deployment

All Wireless Carriers
SMS9-1-1 Delivery Methods

**Legacy – TTY**
- Uses the PSAP’s existing voice call paths
- Handled on existing CPE
- Session control consideration
- TTY is half duplex

**HTTPs - GEM**
- Web based service
- Easy to deploy
- Easy to train
- Single intuitive screen
- IP connectivity requirements
- Additional Screen for PSAP personnel

**SIP – i3**
- Follows NENA i3 recommendation of SIP SIMPLE MSRP (session mode)
- Direct ESI.net Integration
- Future scalability
- CPE considerations
- EMInet/ESInet upgrade path
TCS GEM911 User Interface

Unassigned Queue
- 1-206-402-2485 (1) 4207 min(s)
- 1-949-910-5750 5588 min(s)
- 1-949-233-2883 5547 min(s)
- 1-410-279-1467 4383 min(s)
- 1-206-300-4275 4200 min(s)

Message Transcript: 1-949-233-2883

Im locked in a room hekp
1-949-233-2883 Tue Aug 21 2012 12:52:33 PDT

✔ whatis your exact location

✔ Please try to limit your use of abbreviations.
Wed Aug 29 2012 12:47:45 PDT

My Active Sessions
No active sessions assigned to Seth Sonenthal.

Other Active Sessions
No other active sessions.
TCS GEM911 User Interface

GEM911 Main Screen

- Unassigned Queue
  - 1-206-402-2485 (1)
  - 1-949-910-5750
  - 1-949-233-2883
  - 1-410-279-1467
  - 1-206-300-4275
  - New Incoming Messages

- My Active Sessions
  - No active sessions assigned to Seth Sonenthal.

- Active Sessions

- Other Active Sessions
  - No other active sessions.

- Other Call Takers’ Sessions

- Message Transcript: 1-949-233-2883
  - Im locked in a room hekp
    - 1-949-233-2883
    - Tues Aug 21 2012 12:52:33 PDT
  - whatis your exact location
    - Hi
      - 1-949-233-2883
      - Tues Aug 21 2012 13:28:36 PDT
  - Please try to limit your use of abbreviations.
    - MDN and Call Taker User Name with Time Stamp on Each Message
    - Select an immediate response
      - Drop-down w/ Canned Responses or Free Text

- Horizontal Uncertainty Represented by Circle Size

- LAT/LON and Horizontal Uncertainty Values

©2014, TeleCommunication Systems, Inc. (TCS). Proprietary Level 2
Smart911: The Integrated Strategy

» Smart911 Fully Integrated into GEM911 Portal
» Partner With Rave to Provide Complimentary Smart911 Exposure via GEM911
» Offer Standard Smart911 as Upsell
» Delivery of Rich Session Media to PSAP Call Takers
  - Medical Conditions
  - Allergies
  - Disabilities
  - Number of Residents in Home
  - Bedroom Layouts in Home
  - Photos of Dependents, Pets, Residence
» Delivery of Rich Session Media to PSAPs
  - Via SMS 9-1-1 (GEM911) (Text Sessions Only)
  - Via CPE (All Sessions, Text and Calls)
SMS 9-1-1 - TTY Technology Choice

» Leverages Existing PSAP Equipment and Processes

» However, There are Challenges......
  - Interconnectivity
  - Quality
TTY Deployment Considerations

• **Potential SMS 9-1-1 Volume Impacts**
  - Additional Trunks
  - Number of Call Taker Positions
  - Additional Emergency Services Routing Key (ESRK) Pools

• **Trunking Challenges From Carrier to Selective Router (SR) to PSAP**
  - Distance of Circuit Switch Trunks
  - TTY Trunking Costs
  - Possible Demarcation Costs

• **Tuning/Configuration**
  - SR Interconnect
  - PSAP Customer Premise Equipment (CPE)
GEM911 versus TTY

GEM911
- Full Character Set
- Bi-Directional Session Management (Full-Duplex)
- Location Delivered with Session
- Multi-Session Management
- Short Deployment Timeline
- Additional Data Integration
- CPE Integration
- IP Network Accessibility Considerations
- Screen Real Estate Impact
- Seamless Migration to NG9-1-1

TTY
- Reduced Character Set
- Uni-Directional Session Management (Half-Duplex)
- Existing Automatic Location Identifier (ALI) Process for Location
- Single-Session Management
- Longer Deployment Timeline
- Possible Cost Impacts
- CPE Integration - Logging and Reporting
- Reuses Existing Overload Trunking Policy
- Operational Familiarity
Technology Choice - i3 CPE Interface to NG9-1-1

- **Session Initiation Protocol (SIP)/Message Session Relay Protocol (MSRP) Integration**
  - Seamless Integration to TCS/microDATA ESInet, InDigital, and soon to be Intrado
  - Interoperability Testing Requirements for Other i3 ESInets/TCCs
  - Supports NENA i3 08-003 Standard

- **Migration From TTY or GEM911**
  - TTY to NG9-1-1 Migration Requires Careful Planning
  - GEM911 to NG9-1-1 Transition Requires Little or No Change
SMS 9-1-1 Reporting Capabilities

» xMIS Reporting
» EMedia Gateway Can Support the Emergency Call Tracking System (ECaTS) SMS Reporting Module

- Blends EMedia Reporting into ECaTS Reporting
- Allows for Existing ECaTS Implementations to Remain the Primary Reporting Service

TCS Is an ECaTS Reporting Partner
Conclusion

» Now is the Time to Act
» FCC Mandate for ALL Carriers is Inevitable – Likely to Occur in the Next Few Months
» Pressure on PSAPs/Jurisdictions will only Continue
» TCS is the Market and Industry Leader and Continue Build Upon our Current Deployments
» We are Ready to Turn Up Your SMS911 Service!