

SMS9-1-1

Michigan 911 Tech Forum

4/14/2014

Current Regulatory Stance

- **December 2012: Tier 1-NENA-APCO Voluntary Agreement**
 - Tier 1 General Availability per Carrier Agreement out by **May 15, 2014**
 - Springboard to FCC Proposed Rulemaking
- **FCC NPRM – Notice of Proposed Rule Making**
 - Builds on Tier 1-NENA-APCO Voluntary Agreement
 - All Carriers to Support Bounce Back Messages as of **September 2013**
 - Intent is to Accelerate National Availability
 - Comments and Reply to Comments are in, Expect FCC to Rule Shortly
 - Visit <http://www.fcc.gov/text-to-911> for Additional Information
- There is now a 2nd FNPRM.....



SECOND FURTHER NOTICE OF PROPOSED RULEMAKING

Released: January 31, 2014

- 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
 3. Supporting text-to-911 for consumers while **roaming** on CMRS networks.
- 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.

<https://www.fcc.gov/document/text-911-policy-statement-and-second-fnprm>

TCS

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 ESInet 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

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 ESInet delivery via **MSRP***

FCC Deployment Tracker

State	County	Jurisdiction	PSAPs Accepting Texts	Serving Carriers	Text-to-911 Platform Deployed	Deployment Date
California	Los Angeles	Los Angeles County	CSU Long Beach Police Department	Verizon	TCS - Web Browser/GEM911	11/20/2013
Colorado	Pitkin	City of Aspen and Pitkin County	Pitkin County Emergency Dispatch (Pitkin County and Roaring Fork Valley portion of Eagle County)	Verizon	TCS - Web Browser/GEM911	10/28/2013
Iowa	All	All	All	i-Wireless	Intrado - TXT-2-911	8/1/2009
Maine	All	All	Gray & Orono DPS (for entire state)	Verizon	TCS - SMS to TTY	6/1/2013
Maryland	Frederick	Frederick County	Frederick County Emergency Communications Center	Verizon	TCS - Web Browser/GEM911	3/21/2013
Montana	Missoula	Missoula County	Missoula County 911 Center	Verizon	TCS - Web Browser/GEM911	10/31/2013
New York	Chemung	Chemung County	Chemung County Communication Center	Verizon	TCS - Web Browser/GEM911	8/1/2013
	Monroe	Rochester	Monroe County 911 Center	Verizon	TCS - Web Browser/GEM911	5/24/2013
	Montgomery	Montgomery County	Montgomery County Sheriff's Office	Verizon	TCS - Web Browser/GEM911	7/15/2013
	Montgomery	Montgomery County	Montgomery County Sheriff's Office	T-Mobile	Not Reported	11/20/2013
	Oneida	Oriskany	Oneida County Sheriff's Office	Verizon	TCS - Web Browser/GEM911	6/6/2013
	Onondaga	Onondaga County	Onondaga Police Department	Verizon	TCS - Web Browser/GEM911	9/27/2013
	Steuben	Bath	Steuben County E911	Verizon	TCS - SMS to TTY	3/12/2013
North Carolina	Durham	City of Durham	Durham Emergency Communications Center	Verizon	Intrado TXT2911	8/1/2011
Ohio	Geauga	Geauga County	Geauga County Department of Emergency Services	Verizon	TCS - Web Browser/GEM911	8/20/2013
	Hamilton	Hamilton County	Hamilton County Communications Center	Verizon	Intrado TXT2911	11/21/2013
Pennsylvania	Dauphin	Dauphin County	Dauphin County EMA	Verizon	TTY	7/15/2013
	Lancaster	Lancaster County	Lancaster County-wide Communications	Verizon	TCS - Web Browser/GEM911	7/10/2013
	Luzerne	Luzerne County	Luzerne County	Verizon	TTY	8/14/2013
South Carolina	Greenville	Greenville County	Fountain Inn Police Greenville County Sheriff's Office Greenville Police Department Greer Police Simpsonville Police Department Mauldin Police Department Travelers Rest Police	Verizon	TCS - Web Browser/GEM911	10/28/2013

<http://transition.fcc.gov/cgb/text-to-911-deployments.pdf>

Current SMS 9-1-1 Statistics



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

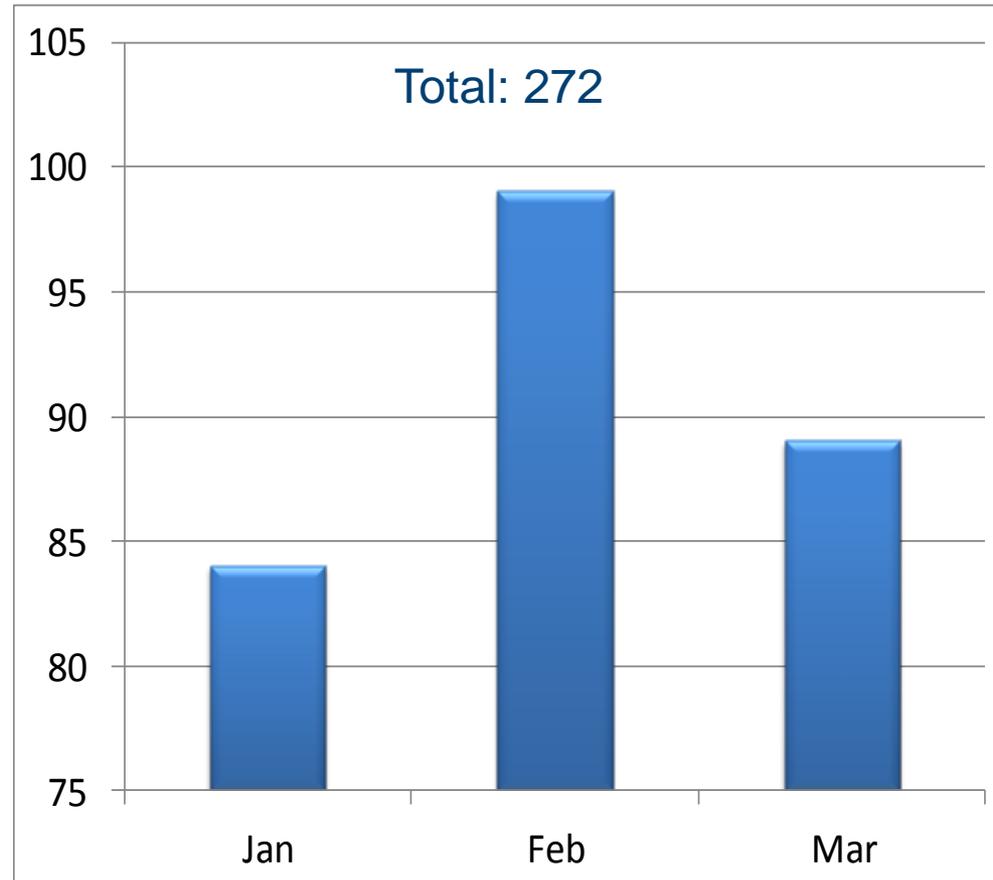
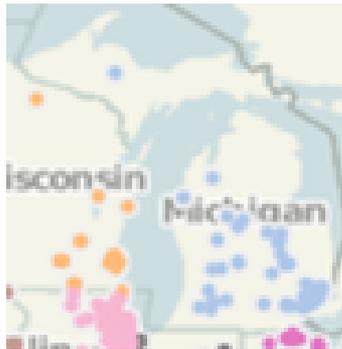
Public demand is there

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."

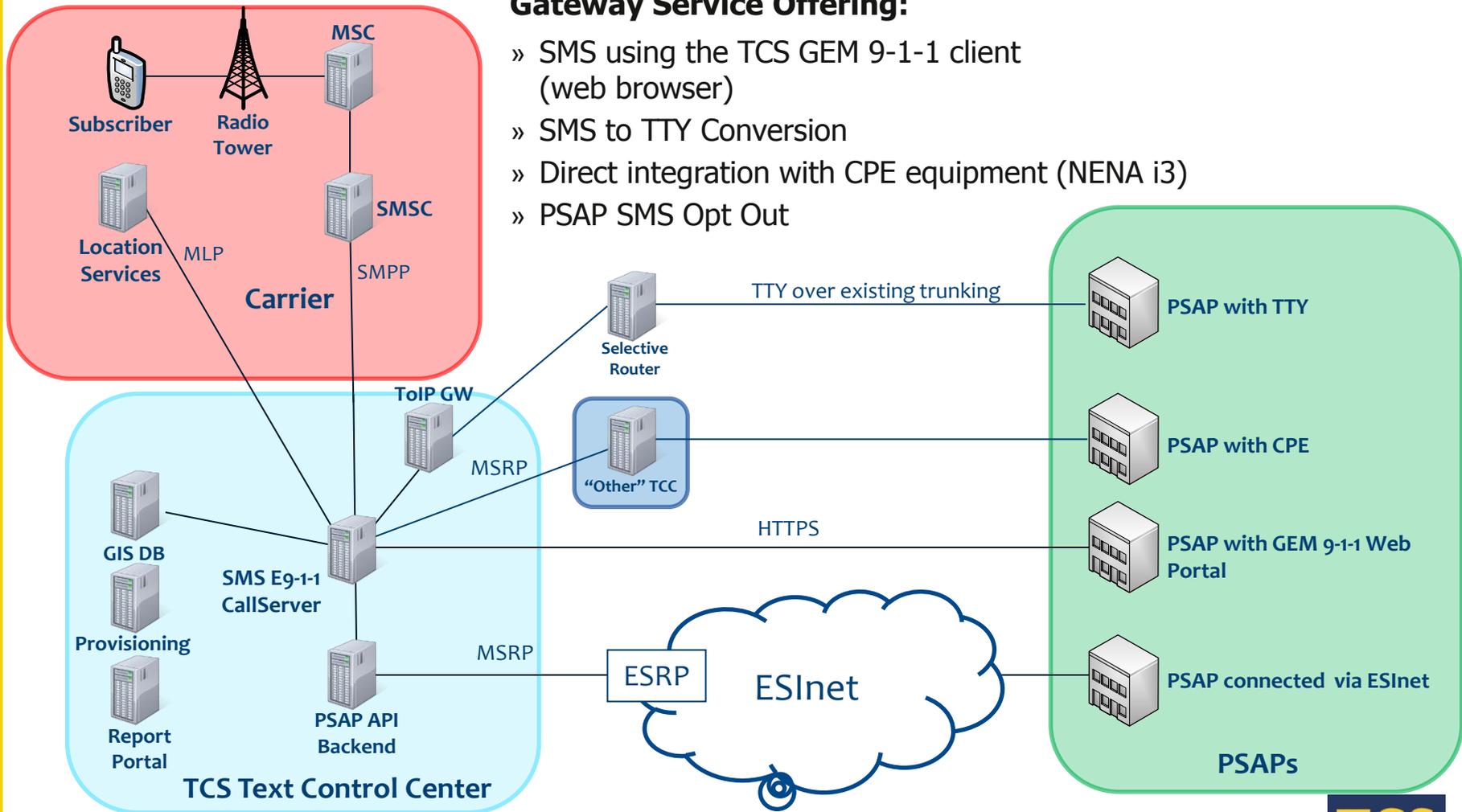
Michigan's SMS 9-1-1 Attempts



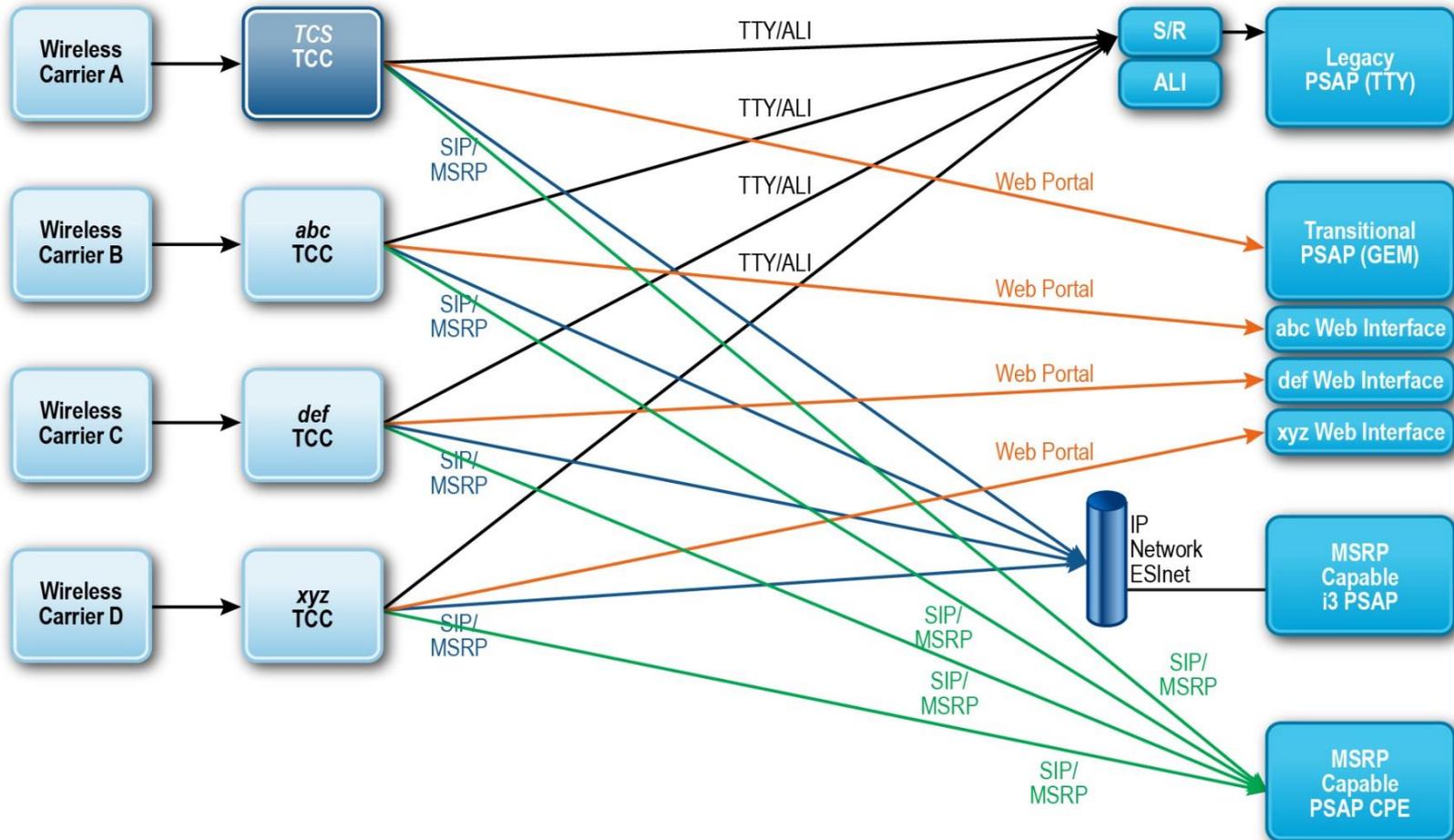
Current TCS Architecture Overview

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

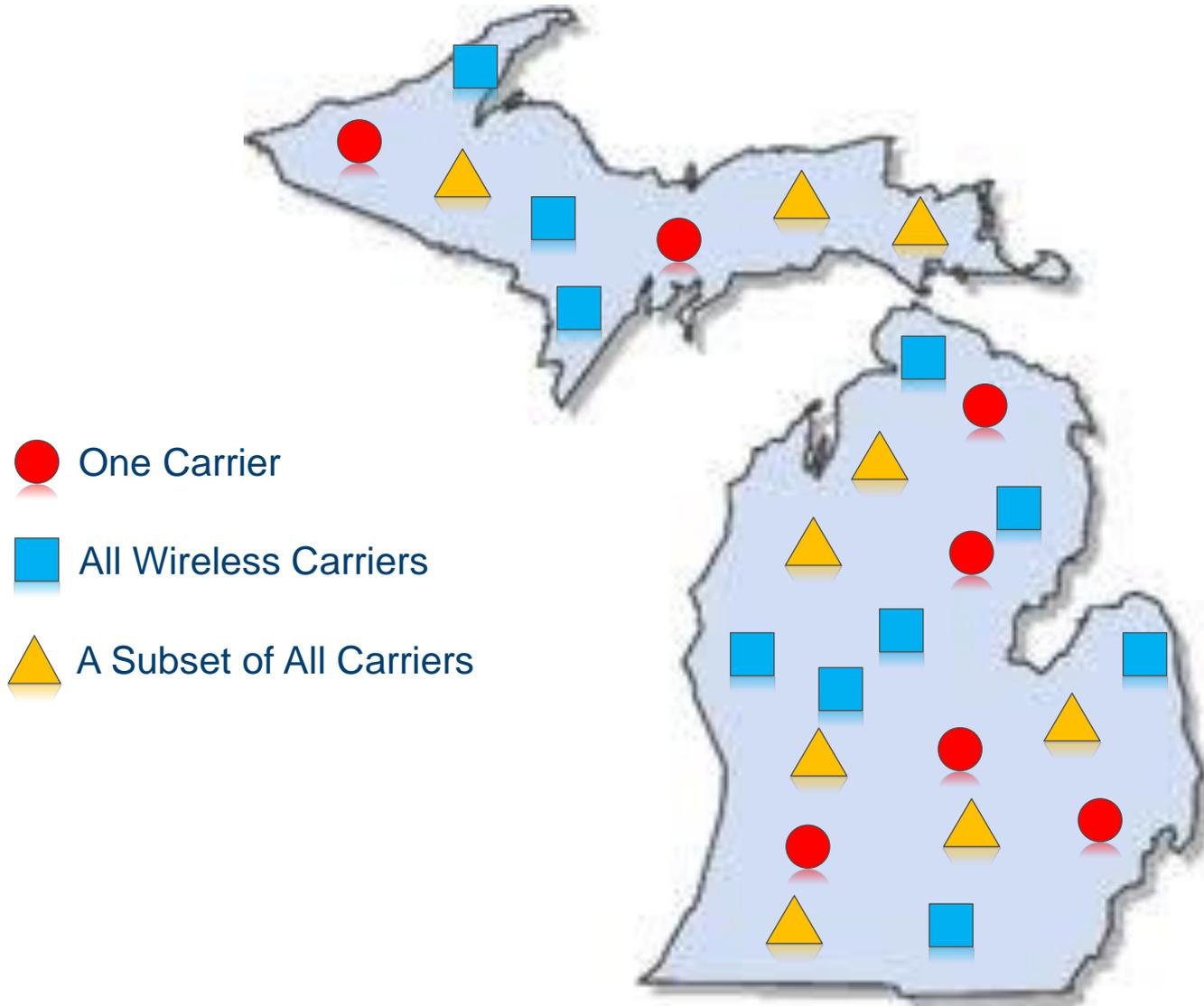


The PSAP Challenge



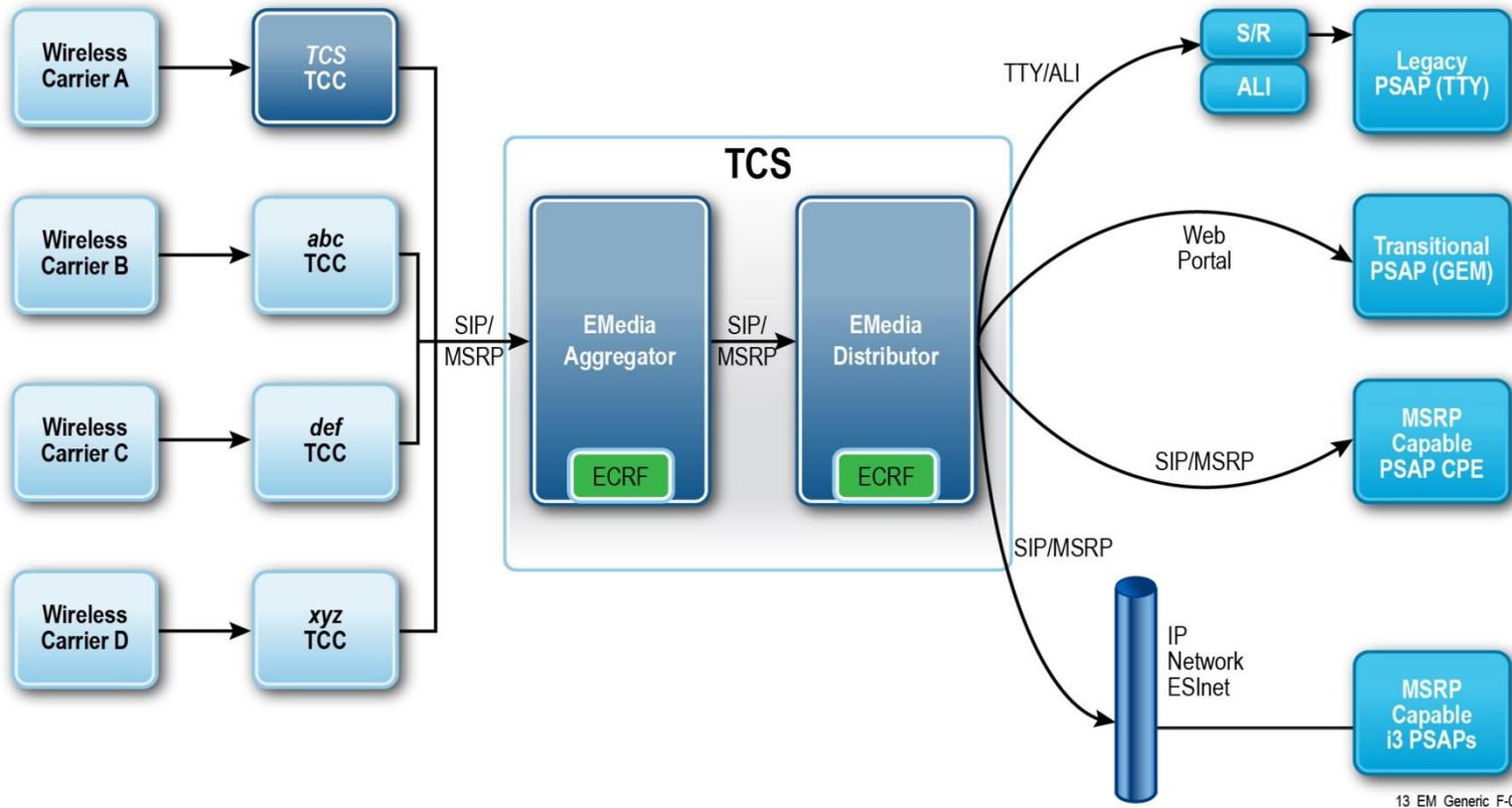
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The Long Term Challenge



Proven Architecture Solution

TCS EMedia Solutions



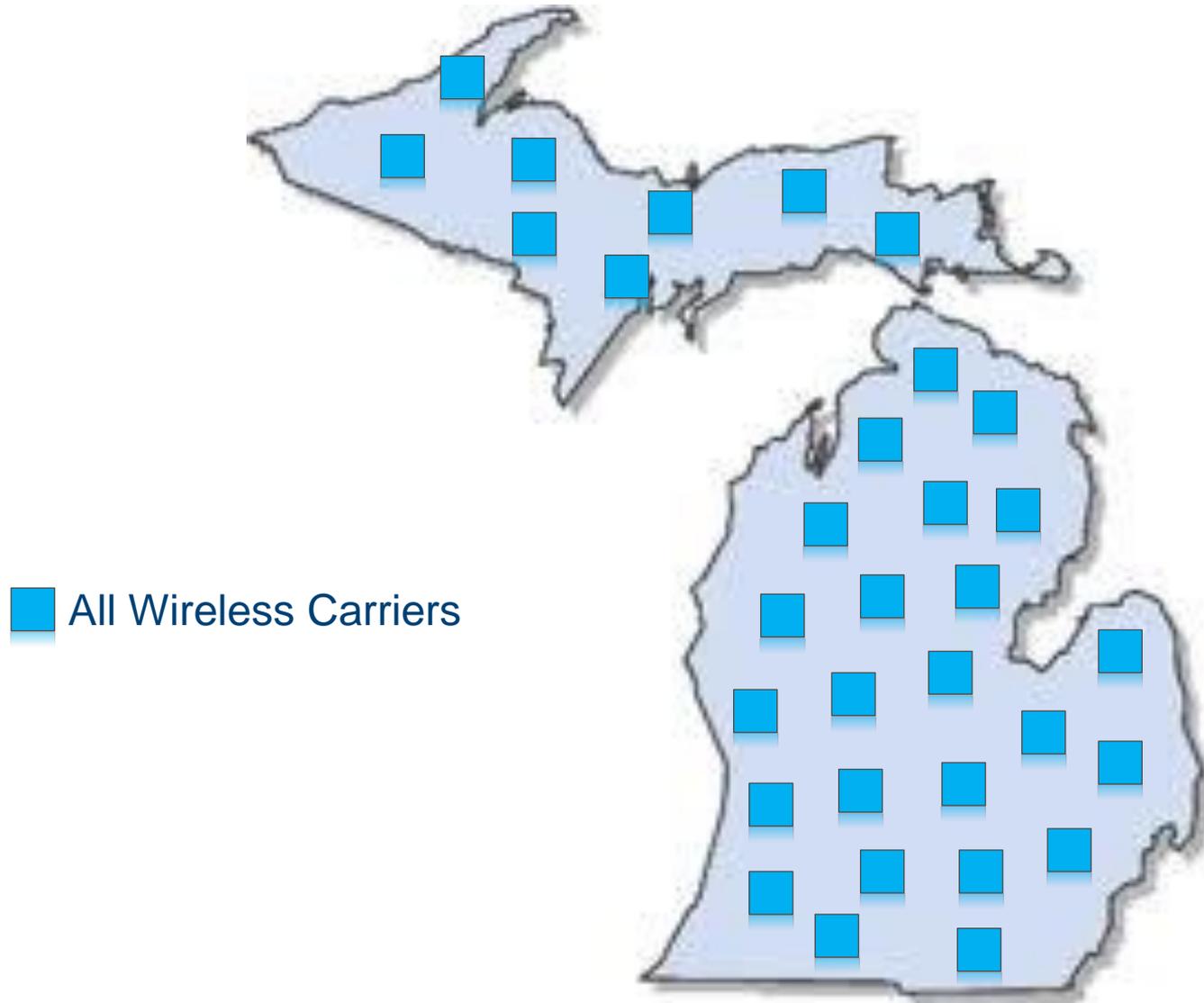
Standards based Aggregation is easy – **Intelligent Distribution** is the key

Benefits of Emedia™

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



A Controlled SMS 9-1-1 Deployment



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 ESInet Integration
- Future scalability
- CPE considerations
- EMIInet/ESInet upgrade path

TCS GEM911 User Interface



TCS GEM911™ Help Sign Out (Seth Sonenthal)

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)

My Active Sessions

No active sessions assigned to Seth Sonenthal.

Other Active Sessions

No other active sessions.

Message Transcript: 1-949-233-2883

End Session Font Size: [-] [+]

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

✓ **whatis your exact location**
Tue Aug 21 2012 13:27:28 PDT Test User 2

Hi
1-949-233-2883 Tue Aug 21 2012 13:28:36 PDT

✓ **Please try to limit your use of abbreviations.**
Wed Aug 29 2012 12:47:45 PDT Seth Sonenthal

Select an immediate response

Enter text to be sent.

Send Message Clear

characters used = 0 | remaining = 254

Map: LORING PARK, Convention Center, STEVENS SQUARE, W Franklin Ave, W 24th St, WHITTIER, 2000 feet, 500 feet, © 2012 Nokia © 2012 Microsoft Corporation

Location Data:

- Located At: Aug 21 12:52:50 PDT
- Latitude: +44.96550
- Longitude: -93.27917
- Hor Uncertainty: 103
- Position Source: 132
- Status: ✓ Location Found

Refresh Location

TCS GEM911 User Interface



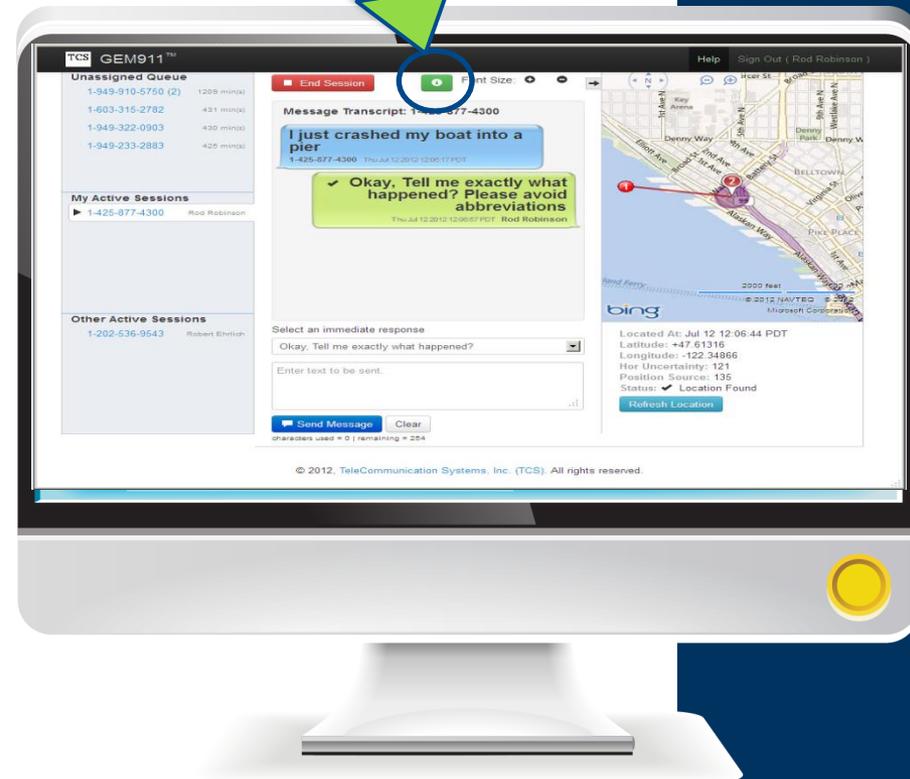
The screenshot shows the TCS GEM911 user interface with several key components highlighted by red boxes and text annotations:

- Unassigned Queue:** A list of phone numbers and their respective wait times. A red box highlights this section with the annotation "New Incoming Messages".
- My Active Sessions:** A section showing "No active sessions assigned to Seth Sonenthal". A red box highlights this section with the annotation "Active Sessions".
- Other Active Sessions:** A section showing "No other active sessions". A red box highlights this section with the annotation "Other Call Takers' Sessions".
- Message Transcript:** A central area showing a conversation history. Red boxes highlight individual messages with annotations: "Im locked in a room hekp" (MDN and Call Taker User Name with Time Stamp on Each Message), "whatis your exact location" (MDN and Call Taker User Name with Time Stamp on Each Message), and "Hi" (MDN and Call Taker User Name with Time Stamp on Each Message). A red box highlights the entire transcript area with the annotation "Horizontal Uncertainty Represented by Circle Size".
- Response Selection:** A section for sending messages, featuring a dropdown menu for canned responses and a text input field. A red box highlights this section with the annotation "Drop-down w/ Canned Responses or Free Text".
- Location Information:** A section displaying location data, including "Located At: Aug 21 12:52:50 PDT", "Latitude: +44.96550", "Longitude: -93.27917", "Hor Uncertainty: 103", "Position Source: 132", and "Status: Location Found". A red box highlights this section with the annotation "LAT/LON and Horizontal Uncertainty Values".
- Map:** A map showing the current location with a red circle indicating the uncertainty. A red box highlights the map area with the annotation "Horizontal Uncertainty Represented by Circle Size".

Smart911: The Integrated Strategy

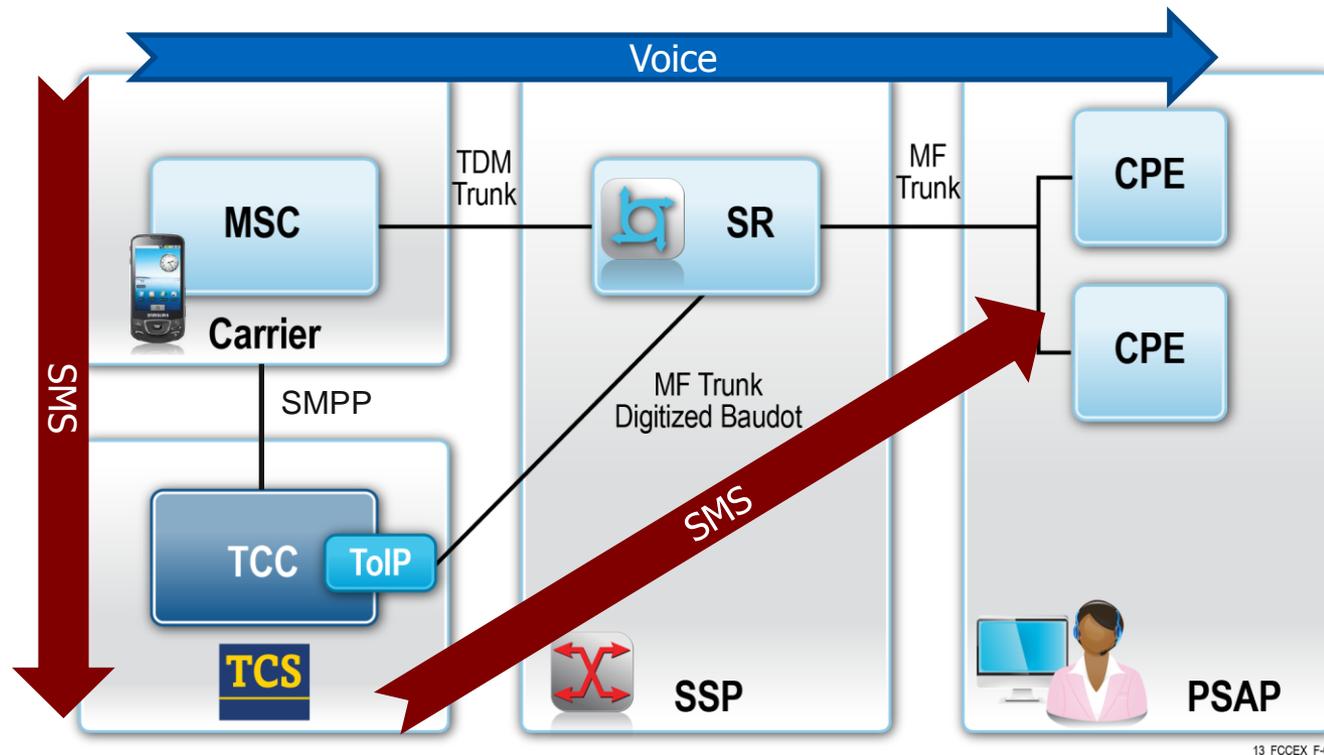


- » **Smart911 Fully Integrated into GEM911 Portal**
- » **Partner With Rave to Provide Complimentary Smart911 Exposure via GEM911**
- » **Offer Standard Smart911 as Upsell**
- » **Delivery of Rich Session Media to PSAP Call Takers**
 - ❑ Medical Conditions
 - ❑ Allergies
 - ❑ Disabilities
 - ❑ Number 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!