

# TCS SMS9-1-1 Update

## September 2014

# Current Regulatory Situation

- Current status of the Regulatory Review:
  - **Carrier-NENA-APCO** agreement
    - Voluntary agreement presented to FCC 12/12/2012
  - **FCC FNPRM** – Notice of Proposed Rule Making
    - Builds on Carrier-NENA-APCO Agreement
    - Bounce back messages required as of Sept 2013
    - General Availability per Carrier Agreement by **mid-2014**
    - Intent is to accelerate national availability
  - **Followed by a 2nd FNPRM**
  - **New Second Report and Order**



# Second Report and Order

Released: August 13, 2014

- Technical feasibility has been illustrated
- Public benefits far outweigh the costs
- Text messaging increasing while minutes of use decreasing
- All covered text providers to be capable by 12/31/2014
- Service delivery within 6 months of PSAP request

# ATIS/TIA J-STD-110 Standard

- Three message delivery methods
  - Routing on coarse location
  - Automatic bounce back and Inactivity timeout
  - TCC to TCC interface
  - What the Standard does *not* provide:
    - Centralized reporting for emergency SMS messages across jurisdictions
    - Centralized logging & recording service across jurisdictions
    - Any detailed training required by jurisdictions, provided by wireless carriers
    - Specific User Interface selection by the carriers – It's the PSAP's choice
    - MMS support
    - Multi-targeted SMS text communication, Prioritization, Roaming
- **TCS a primary author of J-STD-110**

# ATIS/TIA J-STD-110.2

## Work Items under consideration

Work Item Area	Work Item Description
OTT Text	Over-the-top text messaging support
MMS	Pictures and Videos, Multiple recipients on text-only messages
Roaming	into US-based VPLMN, from a US-based HPLMN, and from an international-based HPLMN
Error Handling	extend bounce back message, include specialize wording, error scenarios between the originating and terminating TCC, and error conditions to log
Updated Location	Enhanced location capability (similar to Phase 2)
Operational	examine SMPP timers, and automated Suspend/Resume functionality between PSAP and TCC (e.g., off-line, alternate routing)
Messaging	review impacts of delayed messages, and of out-of-order messages
Testing	standardization of minimum testing procedures, use of short codes for testing, identifying messages as test messages

# 2014 SMS9-1-1 Attempts Statistics



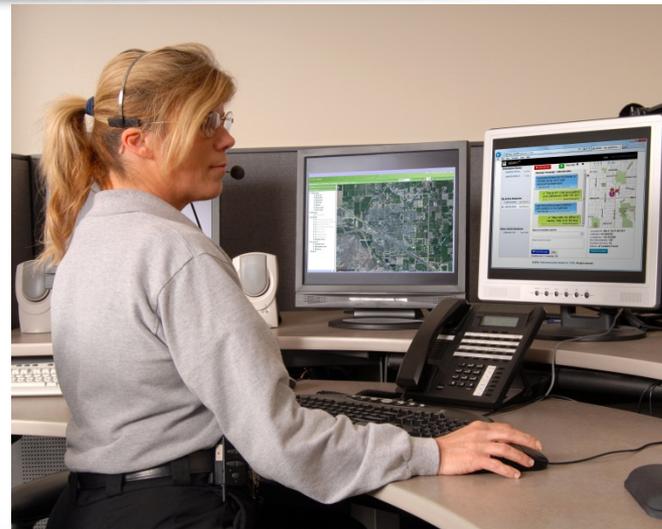
65,806 public attempts to text 911 from 1/01/2014 to 8/31/2014

5,670 attempts in VA

Public demand is there

# TCS Deployment

- **Currently Live:**
  - GEM –69 PSAPs
  - TTY – 18 PSAPs
  - SIP MSRP – 59 PSAPs\*
  - Steering to Intrado – 16
  - In Progress - 333



- **162 PSAPs in 22 states**
- **TCS services provided at no cost to GEM and TTY PSAPs**

**\* *First fully ATIS/NENA/i3 compliant TCC to ESInet delivery***

# FCC Deployment Tracker (as of 5/16/2014)

State	County	Jurisdiction	PSAPs Accepting Texts	Serving Carriers	Text-to-911 Platform Deployed	Deployment Date
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
Georgia	Paulding	Paulding	Paulding County 911	Verizon	TCS - Web Browser/GEM911	2/7/2014
Illinois	Cook	Cook	Northwest Central Dispatch Systems	Verizon	TCS - Web Browser/GEM911	12/3/2013
Indiana	Elkhart	Elkhart	Elkhart County Public Safety Communications Center	Verizon	TCS - Direct IP	3/5/2014
	Kosciusko	Kosciusko	Kosciusko Communication Center	Verizon	TCS - Direct IP	2/13/2014
Iowa	Black Hawk	Black Hawk Co.	Black Hawk Co.	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
	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
New York	Steuben	Bath	Steuben County E911	Verizon	TCS - SMS to TTY	3/12/2013
	Durham	City of Durham	Durham Emergency Communications Center	Verizon	Intrado TXT2911	8/1/2011
	Durham	City of Durham	Durham Emergency Communications Center	AT&T	Intrado TXT2911	3/13/2014
North Carolina	Durham	City of Durham	Durham Emergency Communications Center	Sprint	Intrado TXT2911	5/12/2014
	Geauga	Geauga County	Geauga County Department of Emergency Services	Verizon	TCS - Web Browser/GEM911	8/20/2013
Ohio	Hamilton	Hamilton County	Hamilton County Communications Center	Verizon	Intrado TXT2911	11/21/2013
	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
	Lehigh	Lehigh	Allentown Police Department	Verizon	TCS - Web Browser/GEM911	2/11/2014
Pennsylvania	Luzerne	Luzerne County	Luzerne County	Verizon	TTY	8/14/2013

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

# 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
- Limited character set
- TTY Syntax

## 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 MSRP (session mode)
- Direct ESInet Integration
- Future scalability
- CPE considerations
- EMInet/ESInet upgrade path

# "Legacy" Interface – TTY

The screenshot displays a legacy TTY interface with a central transcript window and several side panels. The transcript window shows a conversation between a customer and a calltaker. The customer's message (RX) is: "Help, I think someone is in my house." The calltaker's response (TX) is: "VERMONT 911 EMERGENCY Q WHERE Q GA". Below the transcript, there are sections for "Calltaker:" and "Preset Messages". The preset messages list includes: "WHAT IS YOUR PHONE NUMBER Q GA", "WHAT IS YOUR NAME Q GA", "WHAT ADDRESS TO SEND HELP Q GA", "VERMONT 911 EMERGENCY Q WHERE Q GA", "STAY NEXT TO YOUR TTY HD", and "STAY CALM HELP IS ON THE WAY GA".

The background interface includes a top navigation bar with "Home" and "Customer Info" tabs. The "Customer Info" tab is active, showing the customer's name "VERMONT INFORMATION PROCESSING" and address "500 WATERTOWER CIR". A status bar at the bottom indicates "ACD: Logged In", "Stations: connected", "TTY: Off", "ALARMS", "Mute: Off", "Consult: Off", "Agent: Calltaker User 4 (PSAP 102)", and "Station ID: QALABWS04\_W7".

**Customer Info:**  
Customer Name: VERMONT INFORMATION PROCESSING  
Address: 500 WATERTOWER CIR  
Priority: HIGHEST

**Call Log:**

Call State	Duration	Participants	Direction	Received	Call ID
connected	00:01:37	2	incoming	16:20:43	(802) 846-1288
abandoned	00:00:24	0	incoming	16:11:44	(802) 846-1288

**Active Calls:** 1 Active Calls Listed, 1 Abandoned Calls Listed

**Ring All Calls:** Customer Name

**Call Manager:** Mute, Hold, Consult, Park, Release

**Lines:** (802) 846-1288 connected 00:01:37

**Call Participants:** (802) 846-1288 Connected VERMONT INFORMATION PROCESSING COLCHESTER

# 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
- ✔ **IT'S FREE!**

## 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
- ✔ **ALSO FREE!**

# "Interim" Interface: TCS GEM911

The screenshot displays the TCS GEM911 web interface. At the top, there is a browser window with the address bar showing 'TCS\_GEM\_911'. The interface includes a navigation menu with 'File', 'Edit', 'View', 'History', 'Bookmarks', 'Tools', and 'Help'. Below the browser window, there is a header with 'TCS GEM911™' and user information 'Help Sign Out (Rod Robinson)'. The main content area is divided into several sections: 'Unassigned Queue' with a list of messages, 'My Active Sessions' with a list of active sessions, and 'Other Active Sessions' with a list of other active sessions. The central part of the interface shows a 'Message Transcript' for a call with MDN 1-949-555-6381. The transcript includes a caller's message, a call taker's response, and a caller's confirmation. To the right of the transcript is a map showing the location of the call, with a red pin and a blue circle indicating the HUNC value. The map is labeled with 'bing' and '© 2012 Microsoft Corporation © 2010 NAVTEQ'. At the bottom of the interface, there is a 'Select an immediate response' dropdown menu, a text input field for 'Enter text to be sent.', and buttons for 'Message', 'Clear', and 'Transfer'. The bottom right corner of the interface shows 'PSAP: XYZ County' and a copyright notice: '© 2012, TeleCommunication Systems, Inc. (TCS). All rights reserved.'

New Incoming Messages

Active Sessions

Other Call Takers' Sessions

Drop-down With Canned Responses, or Free Type

HUNC is Graphically Represented by the Size of the Circle

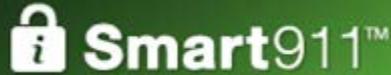
The MDN and the Call Taker's Username Are Shown in Each Message Next to the Timestamp

LAT/LON and HUNC Values

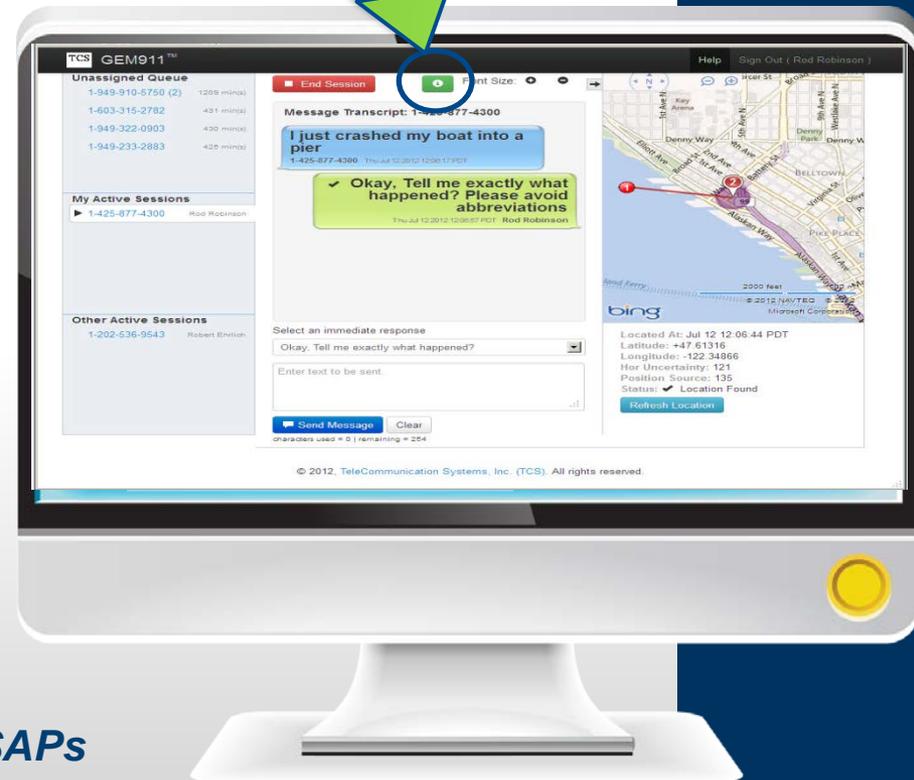
Rebid Functionality



# Smart911: The Integrated Strategy



- Smart911 Fully Integrated into GEM911 Portal
- Partner With Rave to Provide Complimentary Smart911 Exposure via GEM911
- Offer Standard Smart911 as well
- Delivery of Rich Session Media to PSAP Call Takers
  - Medical Conditions
  - 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)



Included with GEM 9-1-1 – *At no cost for text messages.*

# "i3" Interface – i3 ESI net/CPE

The screenshot displays the i3 ESI net/CPE interface. A central dialog box titled '\*\*\*Text Call\*\*\* : (802) 748-1234' is open, showing a large blue envelope icon and the text 'SMS Call from Queue: Texting Queue'. The dialog has 'Refuse' and 'Answer' buttons.

The background interface includes a top navigation bar with 'Home' and 'Customer Info' tabs. Below this are various control buttons: Logout, Busy, Release, Dial, Consult, Park, Hold, TTY/TDD, IRR, Support, Volume, and Microphone. A 'NO CALLS' status indicator is present, along with call statistics: Available Agents: 5, Hour Call Count: 0, Previous Call Count: 4, and Available Call Servers: 3.

The main workspace is divided into several panels:
 

- ALI Display:** A panel on the left with a search criteria dropdown and a list of calls.
- Call History:** A panel with a search criteria dropdown and a list of calls, including PSAP, BEXAR\_T1, BEXAR\_T5, and BEVAD\_T5.
- Active Calls:** A panel showing 0 Active Calls Listed.
- Ring All Calls:** A panel with a 'Customer Name' field.
- Call Manager:** A panel at the bottom with a large empty area.

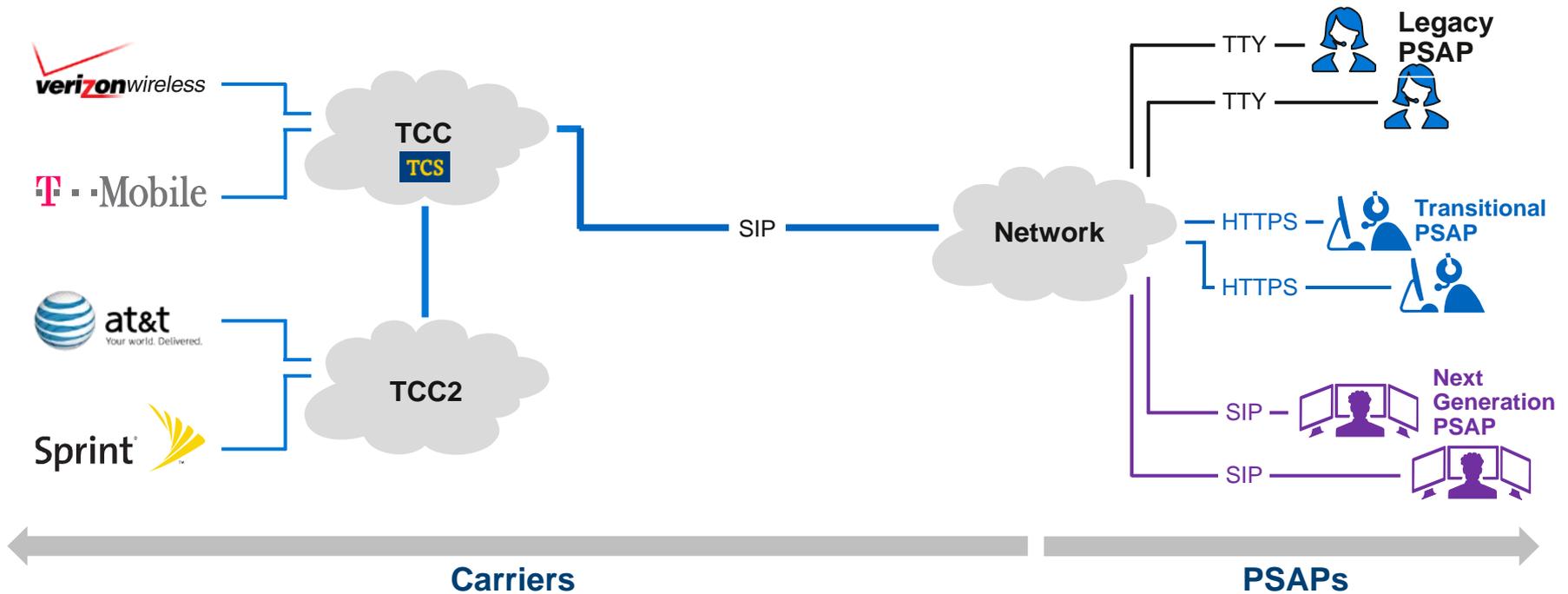
At the bottom of the interface, there is a status bar with the following information: ACD: Logged In, Station: Ready, TTY: Off, **ALARMS** (highlighted in red), Mute: Off, Consult: Off, Agent: Calltaker User 4 (PSAP 102), Station ID: QALABWS04\_W7.

# SMS-911 Feature Enhancements

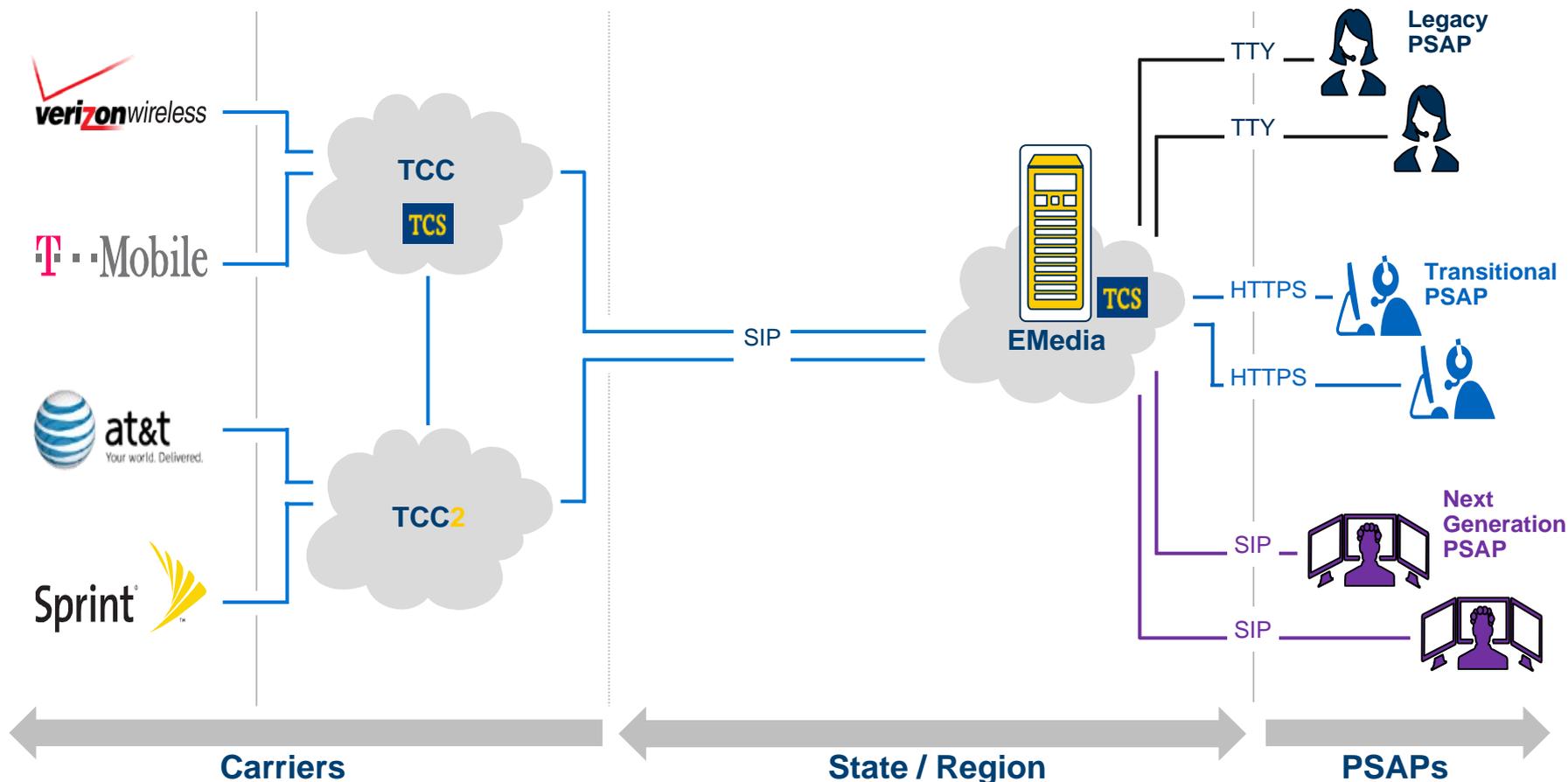
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- **Language Translation**
- **Transfers to Secondary PSAPs (non-routable)**
- **Local Conversation Logging**
- **End Session Confirmation**
- **Visual notification on all incoming messages**
- **Transfer without caller being in polygon**
- **MSRP based transfers**
- **Additional browser support – ongoing**
- **Carrier and Location method Identification per session**
  
- **What about location?**
  - Dependent on the carrier
  - CSRIC Working Group 4 making recommendations to the FCC about precise location for SMS 9-1-1

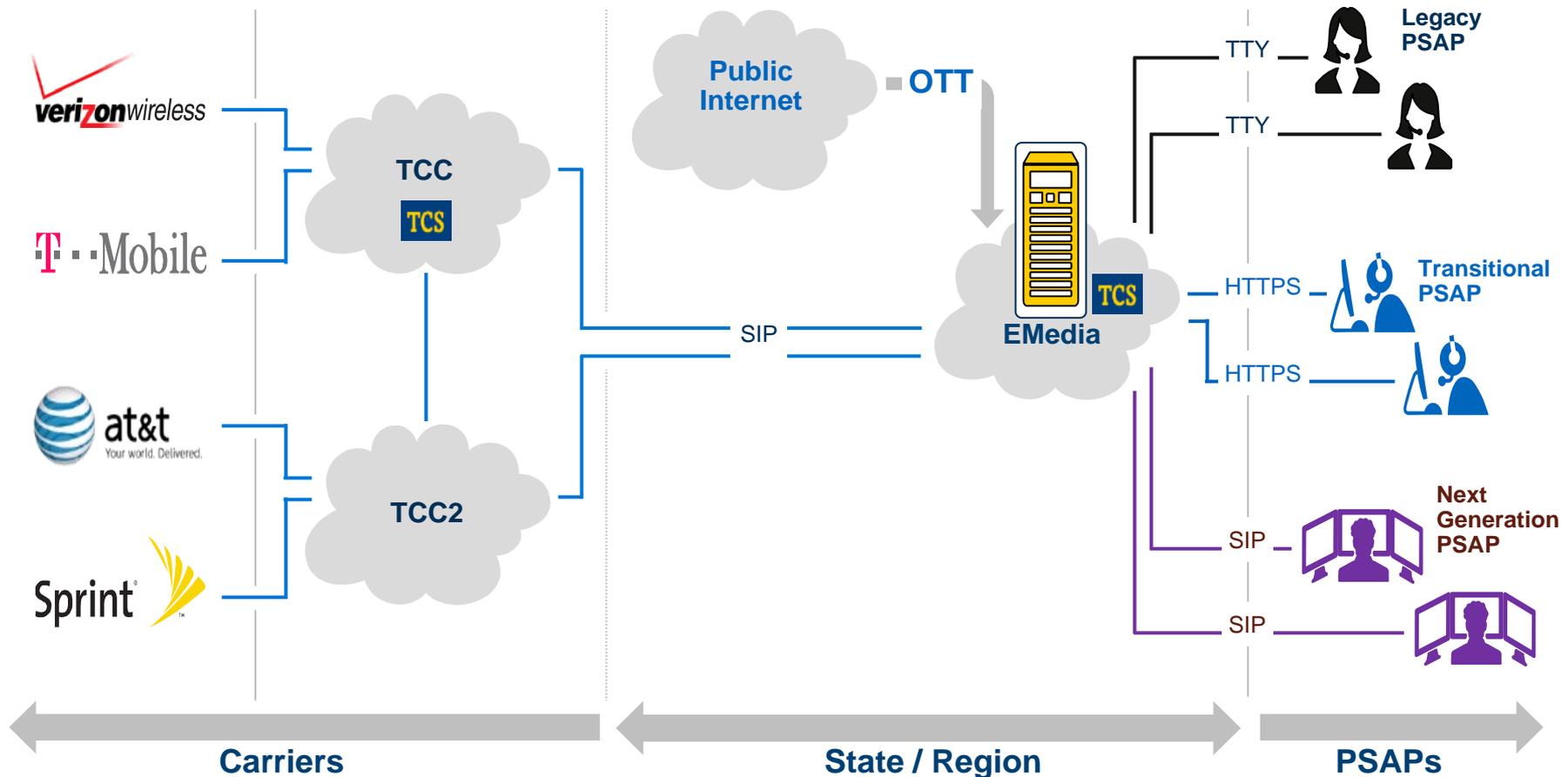
# Text Services Architecture



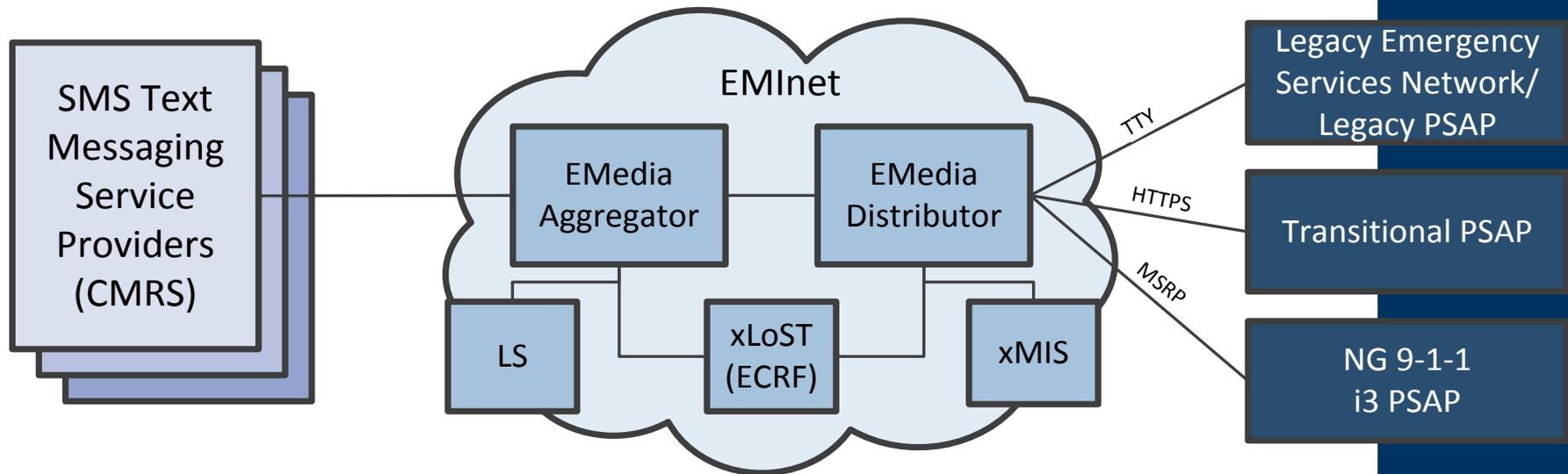
# Enhanced Text Services Architecture



# Enhanced Text Services Architecture

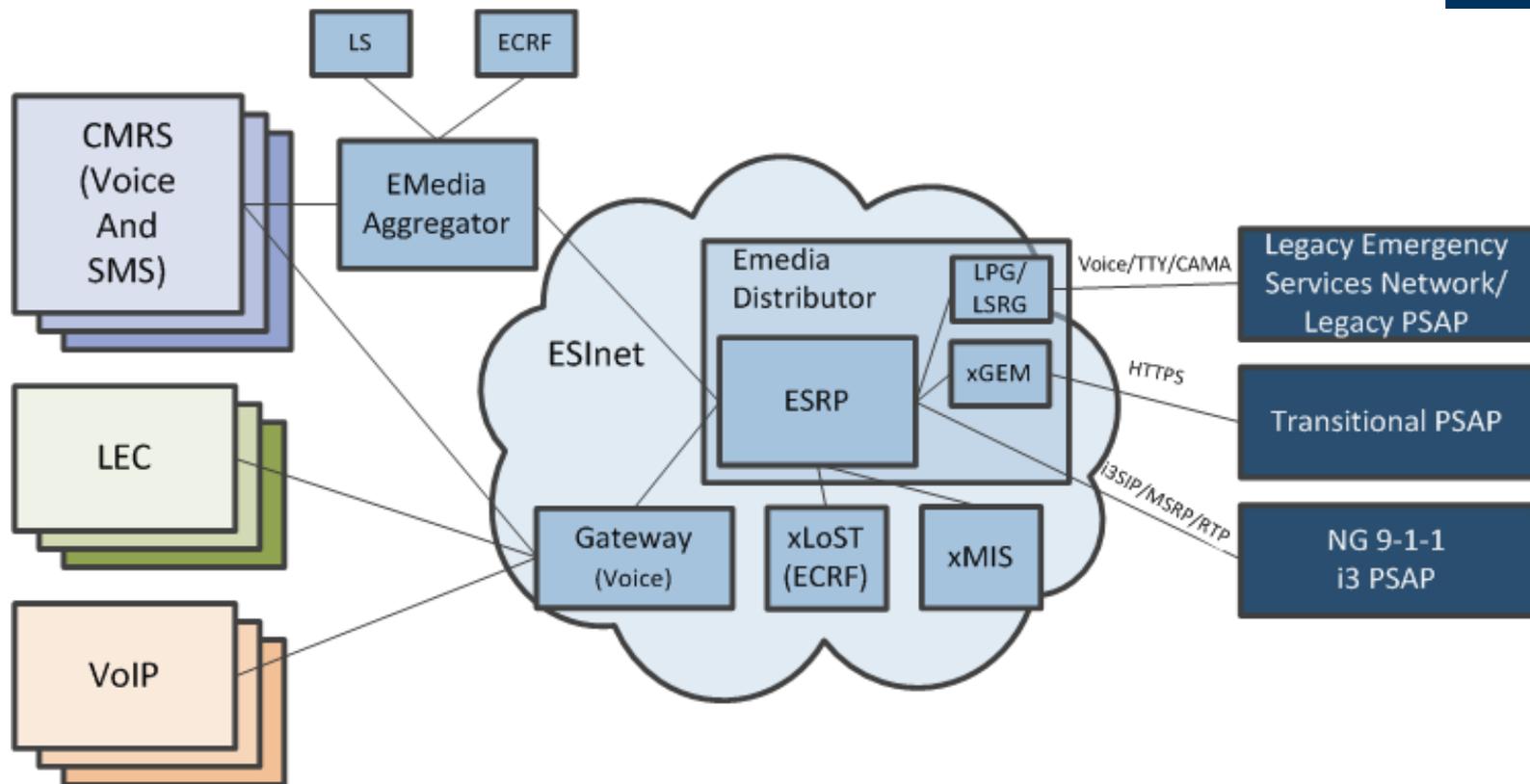


# Emergency Messaging IP Network (EMInet)



An EMInet is built on i3 (NG 9-1-1) components used for SMS Text Message processing

# Emergency Services IP Network (ESInet – i3 Architecture)



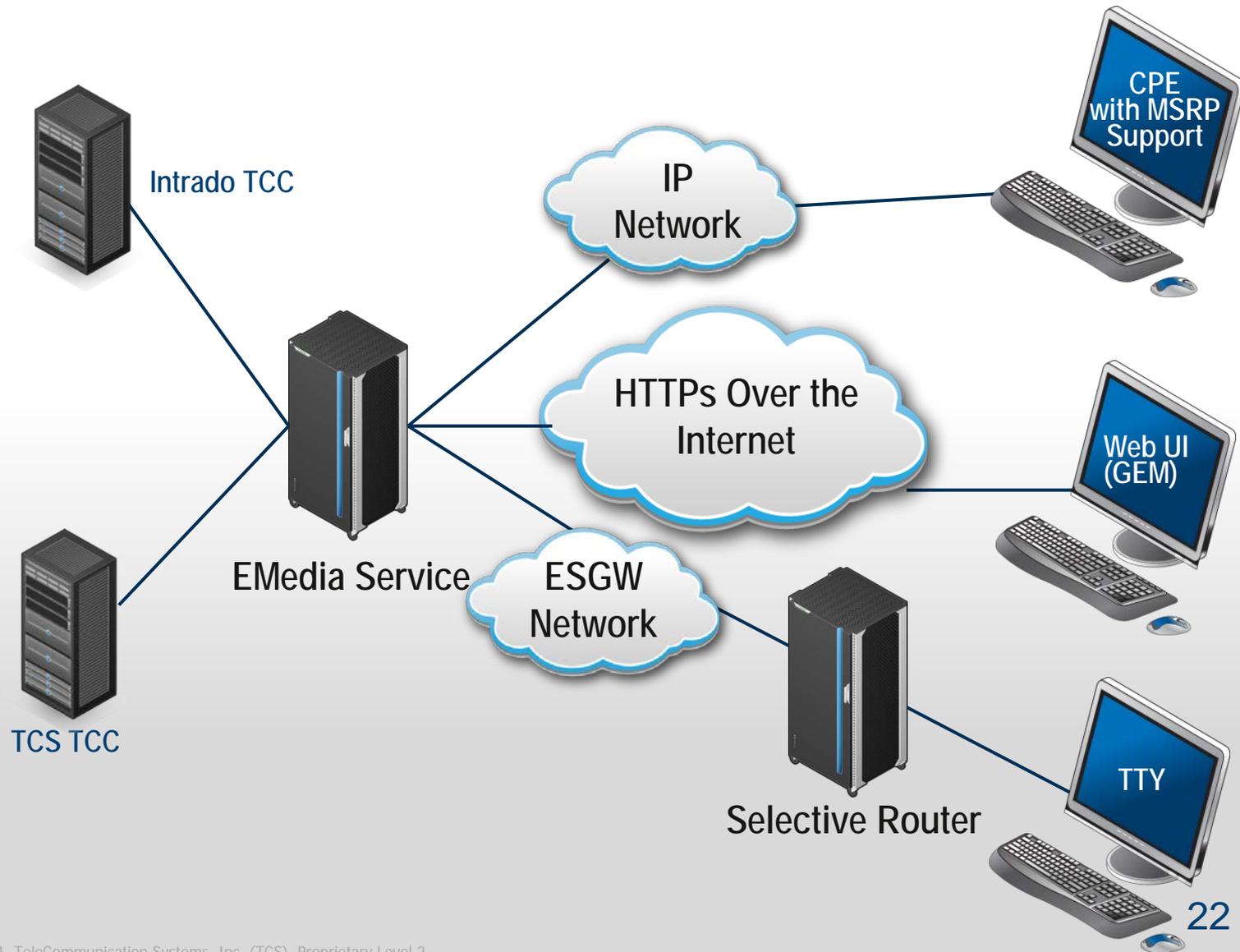
An EMIInet can be extended with additional i3 components to support Voice traffic, becoming an ESInet

# EMedia – Features / Benefits

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- **Supports any J-STD compliant, text-enabled CPE via the MSRP interface .**
- **Supports transfer of text sessions between different interfaces.**
- **Provides usage reporting.**
- **Integrates with CAD, recording and reporting systems.**
- **Compliant with the National Emergency Number Association (NENA) i3 standard.**
- **Simplifies PSAP training – message delivery and functions are the same for all carriers.**
- **Shortens test and turn-up time**

# EMedia Network Options



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# QUESTIONS?

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# THANK YOU!

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