



**Innovation in
Secure, Highly Reliable
Communications**

Connections that Matter®

Text 9-1-1 Update

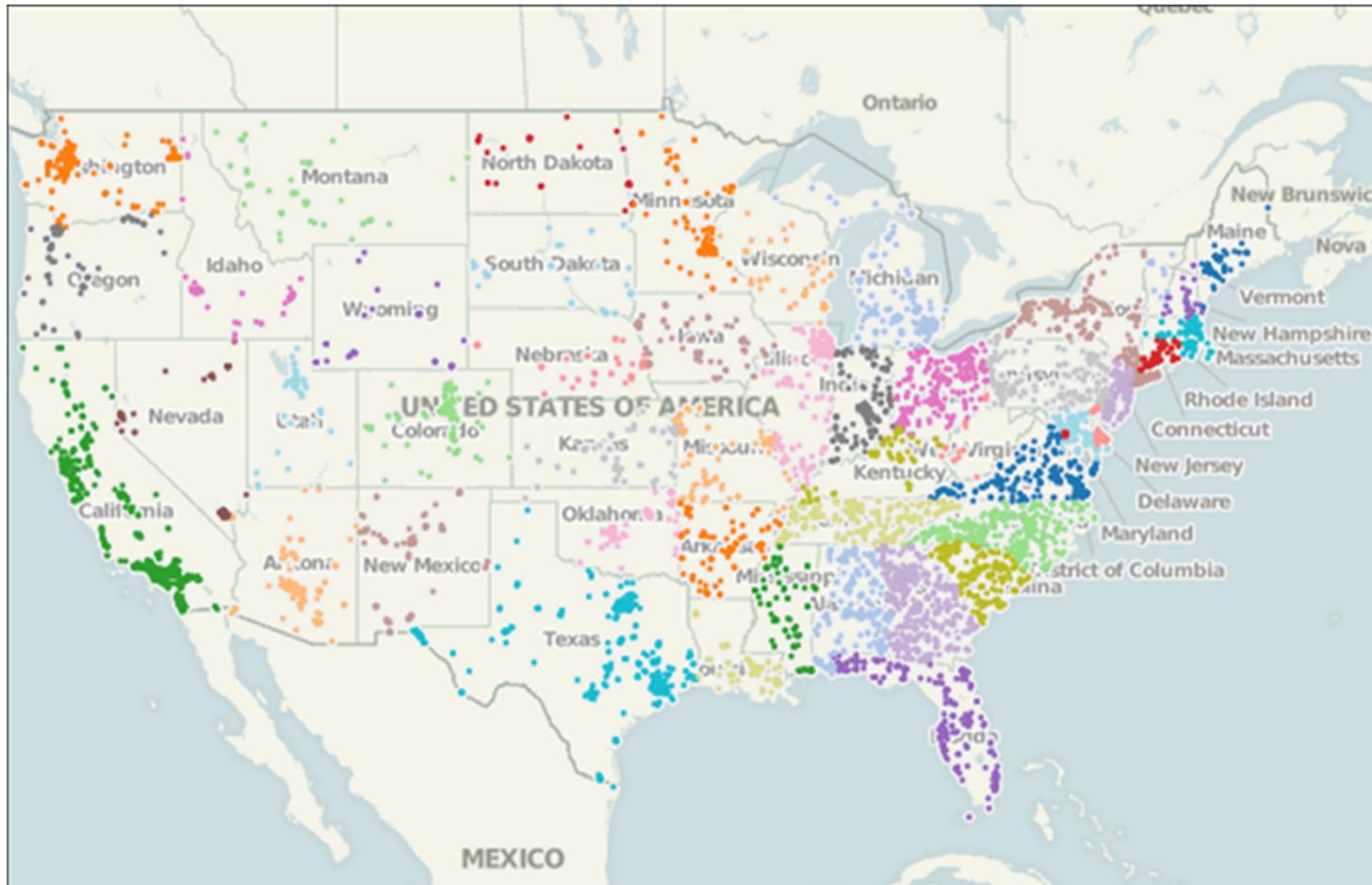
April 30, 2013



Agenda

- » SMS Statistical Analysis
- » Local Text Aggregation Solutions
- » TTY Implementation Complexity
- » OTT Messaging Providers
- » Location for Text 9-1-1
- » Future Topics

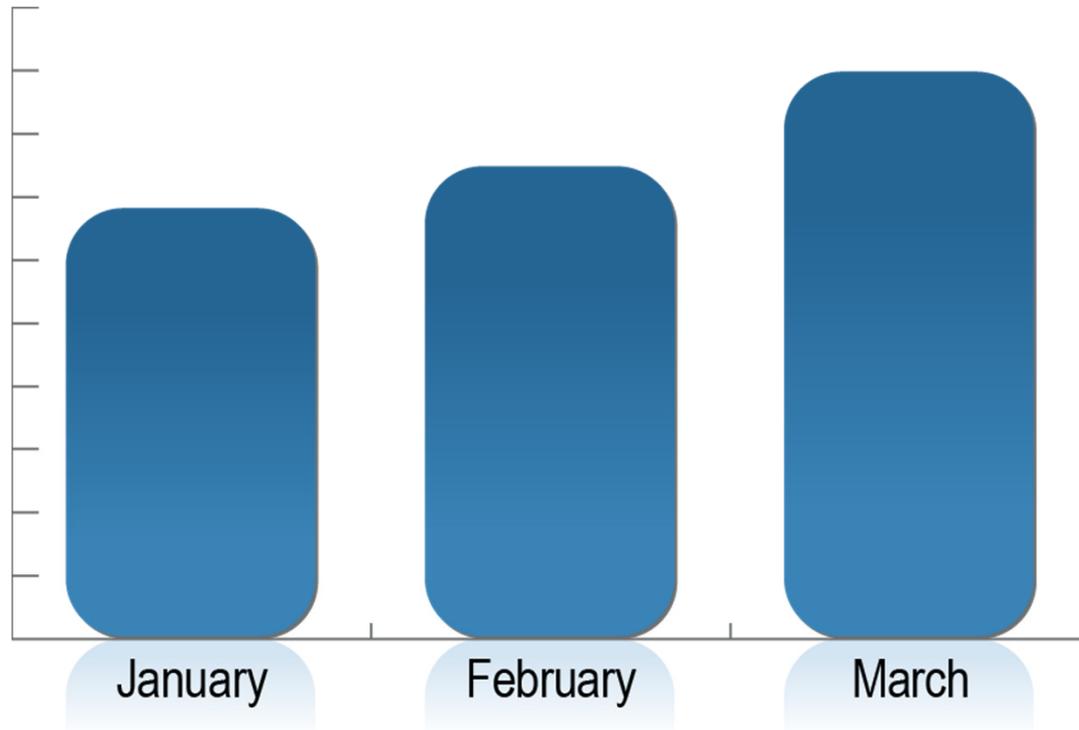
Distribution of SMS 9-1-1 Attempts 10/1/2012 through 3/31/2013



Session Traffic

1/1/2013 through 3/31/2013

- » Traffic appears to be growing
- » Some seasonality may be expected



13_FCCEX_F-06

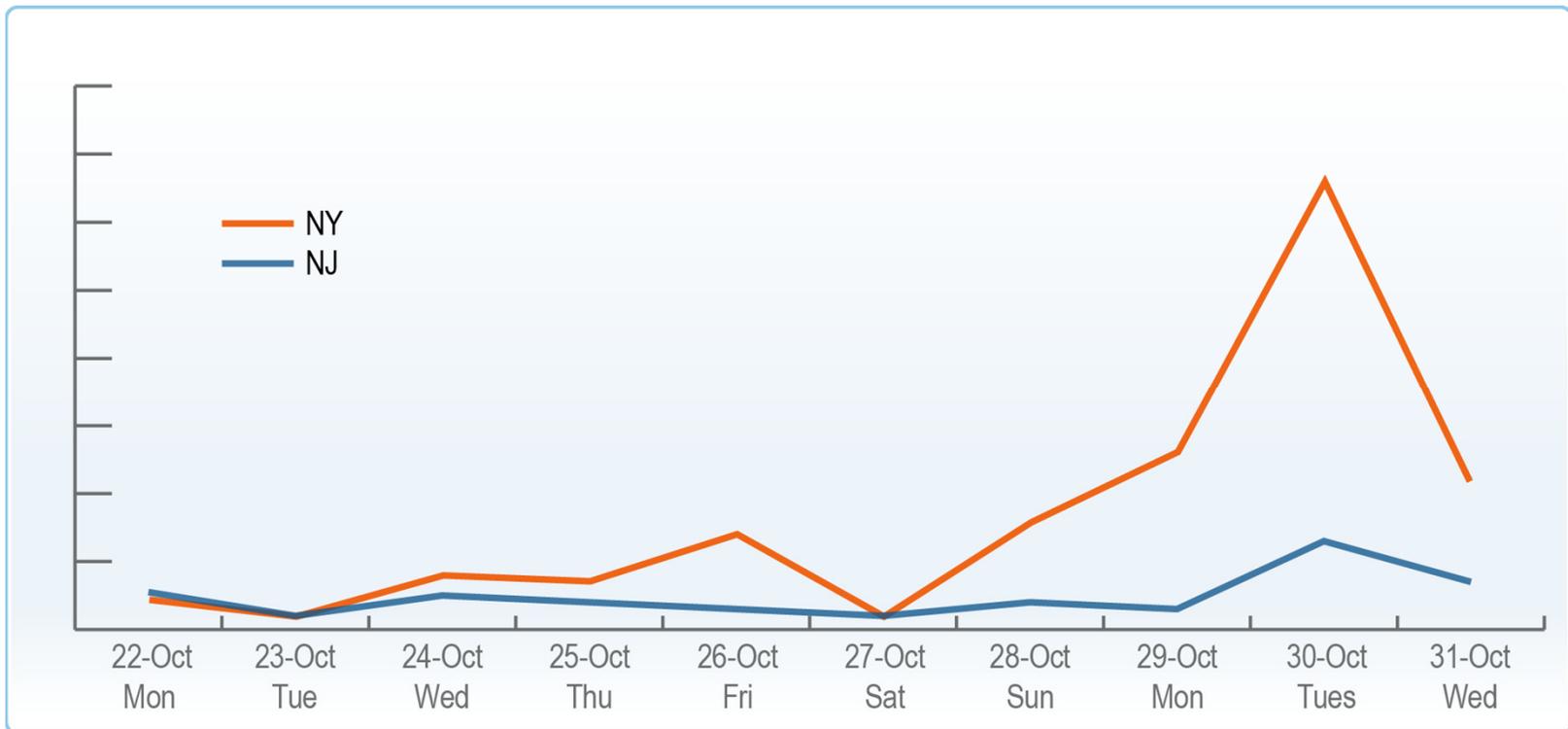
Super Storm Sandy



Photo: NOAA/NASA, 10:00 a.m. Eastern on Tuesday, October 30, 2012

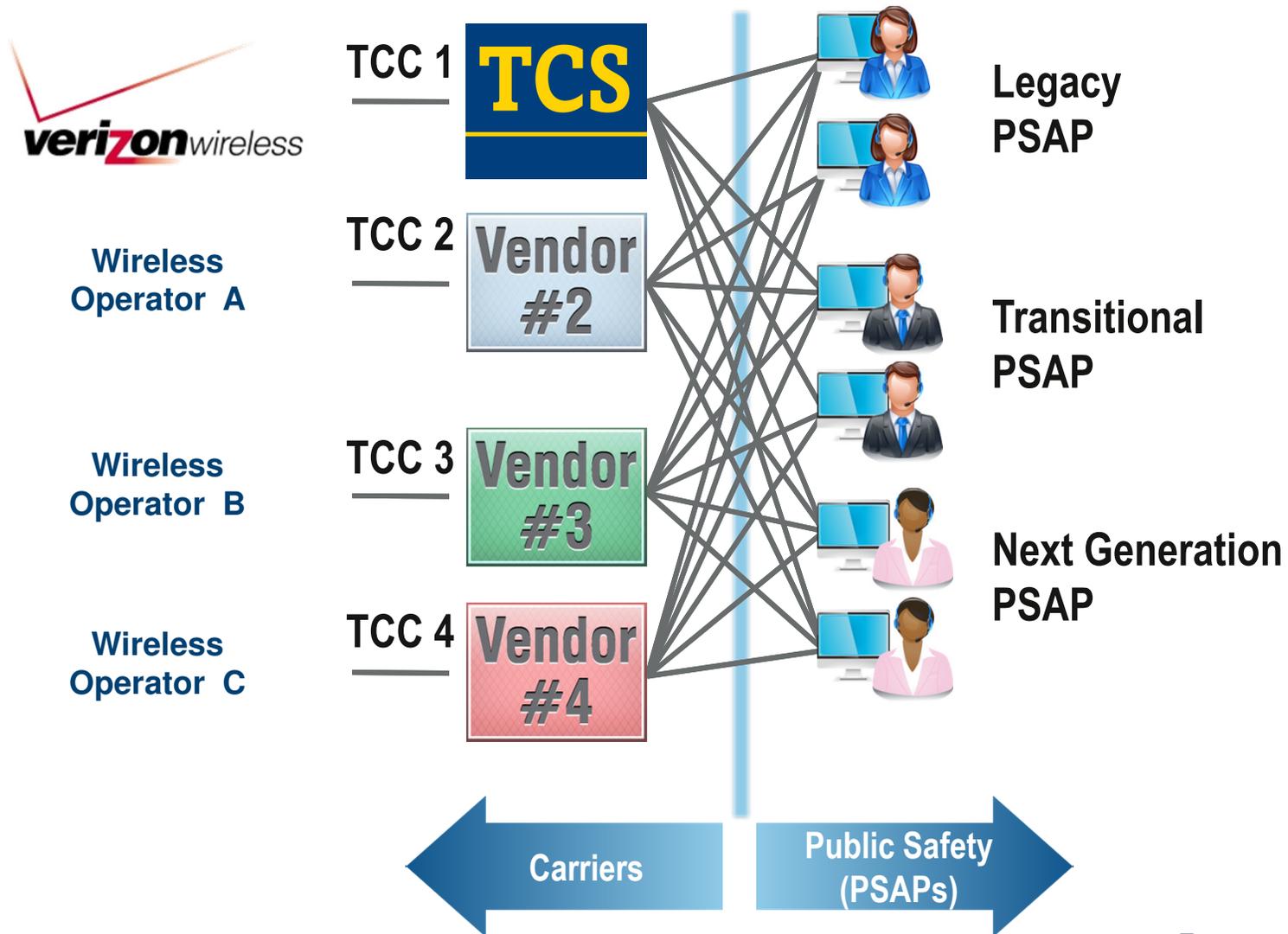
Super Storm Sandy

10/22/2012 through 10/31/2012



13_FCCEX_F-07

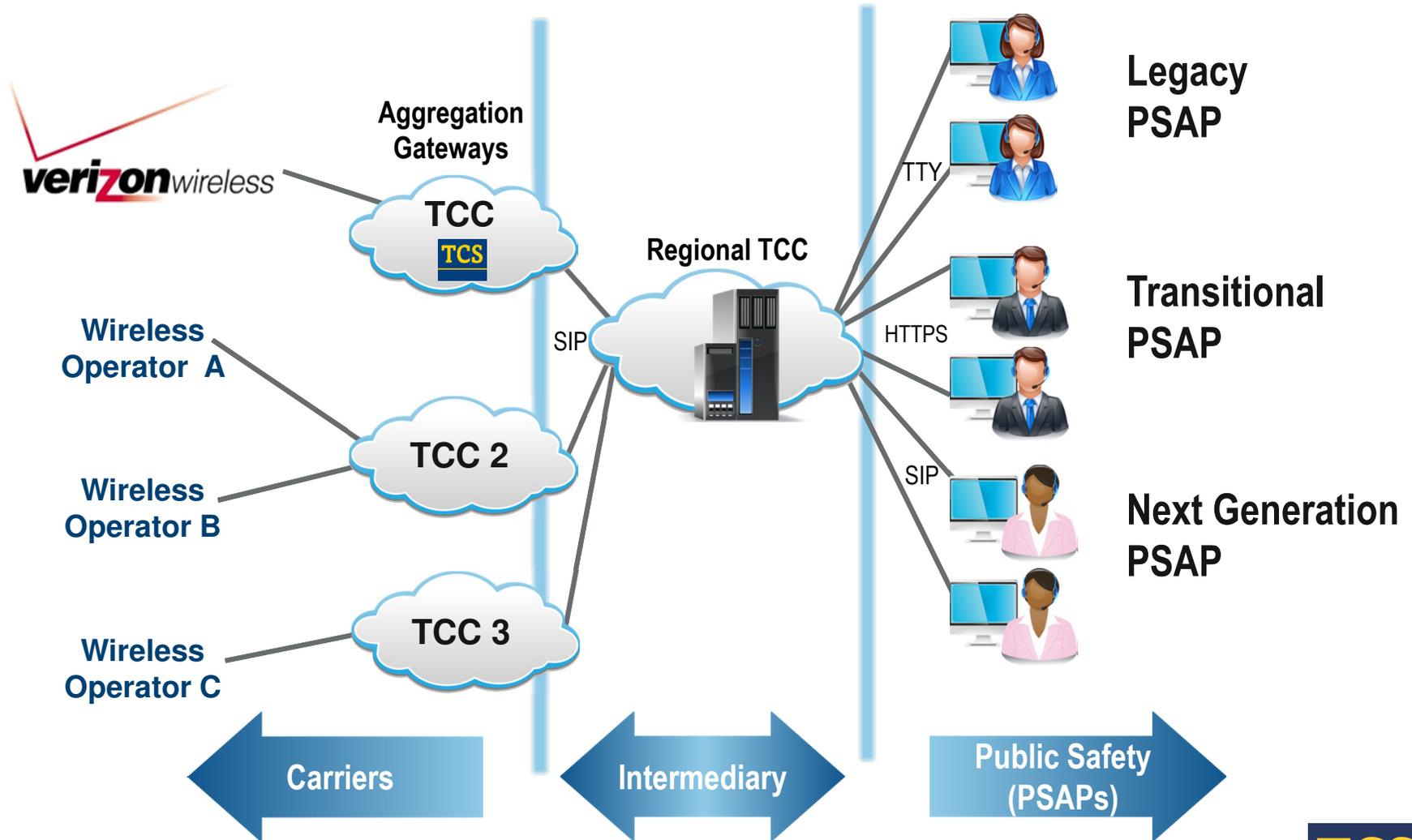
TCC Scalability Challenges



Local Text Aggregation Solutions

- » Simplifies deployment and support
- » Consistent message routing
- » One point of contact for all SMS 9-1-1 needs
- » Centralized control and management of message distribution

Local Text Aggregation Diagram



TTY Implementation Complexity

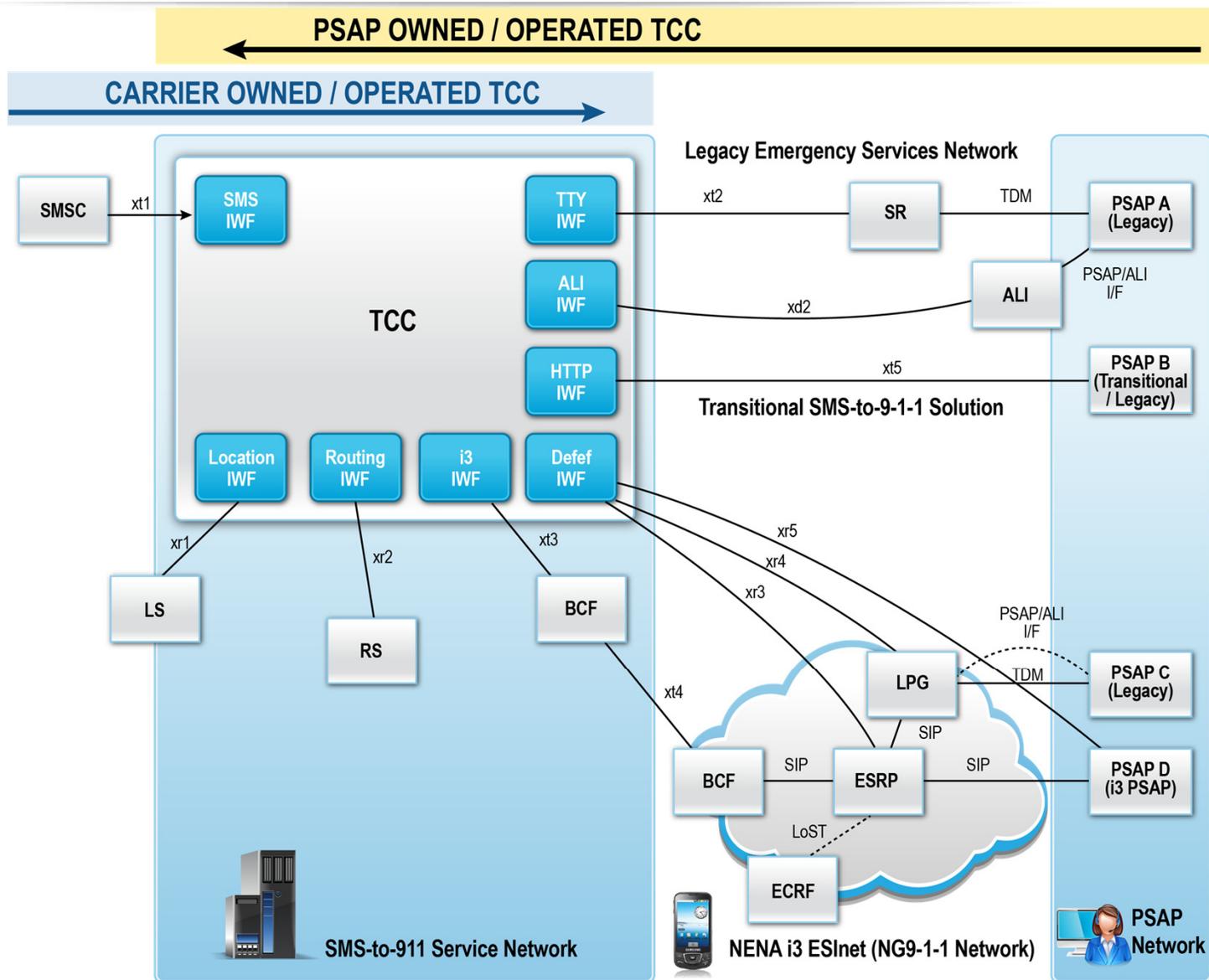
» Technical Complexity

- ❑ Text-to-TTY requires large amount of testing
- ❑ PSAPs impacted most by extensive network testing and adjustment
- ❑ TTY affected by echo cancelling components of telephone network
- ❑ Difficult to provide carrier-grade transmission level for every PSAP
- ❑ Higher error rates can result in garbled communications

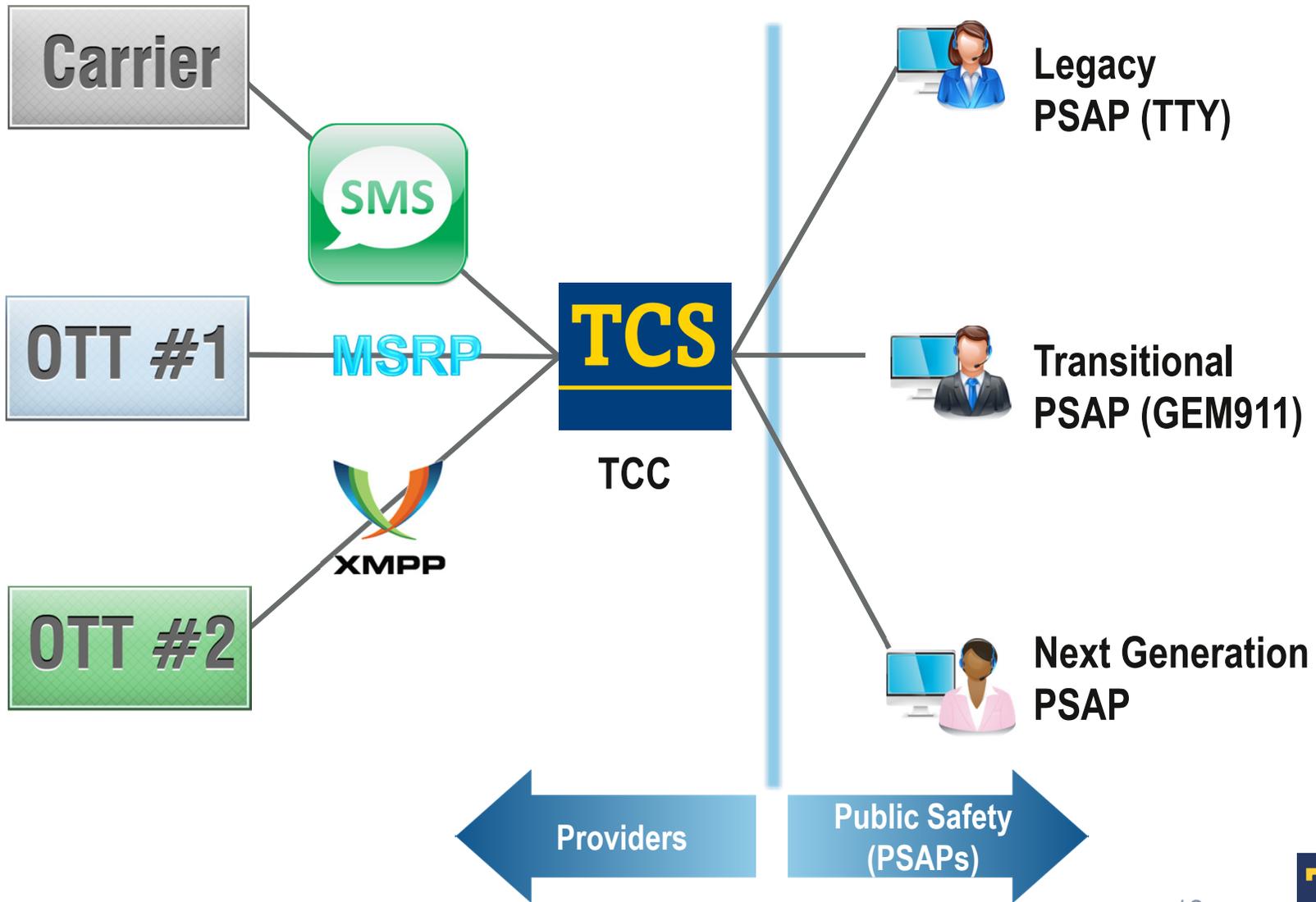
» Usage Complexity

- ❑ TTY has more limited character set than SMS
- ❑ TTY has unusual “end of message” cues that affect SMS use
- ❑ Telecommunicator may not be able to distinguish SMS vs. TTY session
- ❑ TTY communication latency

TTY Demarcation/Ownership



Extending TCC to OTT Messaging Providers



OTT Messaging Providers

- » Over-The-Top messaging providers are prolific
- » 9-1-1 support expected when users rely on OTT
- » OTT can use similar technology for text 9-1-1
- » OTT CSP should be allowed to reach 9-1-1
- » External entity needed to verify minimum requirements met

- » TCS recommends:
 - ❑ OTT providers support text 9-1-1
 - ❑ Bounce-back messages be provided
 - ❑ Rules be similar for SMS and OTT messaging providers

Location for Text 9-1-1

- » Coarse location should always be available
 - ❑ Used for routing
 - ❑ Similar to how wireless 9-1-1 works for voice calls
 - ❑ Coarse location of callers uses different calculation method
- » Precise location not always available
 - ❑ Depends on network and devices
 - ❑ Uses commercial LBS platforms, not emergency LBS platforms
 - ❑ Provides location accuracy at parity with Phase II location
 - ❑ Generally requires manual precise location request
- » TCS recommends:
 - ❑ Location be required for routing
 - ❑ High-accuracy best-effort commercial location for dispatch
 - ❑ Location implementation should not be spoofable

GEM911™ Interface

The screenshot displays the GEM911™ interface with the following components:

- Header:** TCS GEM911™, Help, Sign Out
- Unassigned Queue:**
 - 1-206-402- (1) 5299 min(s)
 - 1-425-829- (1) 3999 min(s)
 - 1-949-422- 15850 min(s)
- My Active Sessions:**
 - ▶ 1-425-877-
- Other Active Sessions:**
 - No other active sessions.
- Message Transcript:**
 - End Session** (button)
 - Font Size: [adjust]
 - Message Transcript: 1-425-877-**
 - Need an ambulance** (blue bubble)
1-425-877- Sun Apr 28 2013 15:44:56 PDT
 - ✓ King Co. 9-1-1 what is the nature of your emergency?** (green bubble)
Sun Apr 28 2013 15:45:55 PDT
 - Bad accident at Alderwood mall** (blue bubble)
1-425-877- Sun Apr 28 2013 15:46:56 PDT
 - ✓ Can you voice dial 9-1-1?** (green bubble)
Sun Apr 28 2013 15:47:21 PDT
- Response Form:**
 - Select an immediate response [dropdown]
 - Enter text to be sent. [text area]
 - Send Message** (button) **Clear** (button)
 - characters used = 0 | remaining = 254
- Map:**
 - Aerial view with a purple polygon highlighting a location.
 - Location details:
 - Located At: Apr 28 15:46:18 PDT
 - Latitude: +47.83112
 - Longitude: -122.27553
 - Hor Uncertainty: 103
 - Position Source: 132
 - Status: ✓ Location Found
 - Refresh Location** (button)

Future Topics

- » TTY-ToIP implementation architectures
- » Security – Policy credentialing
- » Security – Veracity of end-user information
- » Small carrier compliance options
- » Location technology update

Summary of Recommendations

- » OTT providers support text 9-1-1
- » Bounce-back messages be provided
- » Rules be similar for SMS and OTT messaging providers
- » Location be required for routing
- » High-accuracy best-effort commercial location for dispatch
- » Location implementation should not be spoofable
- » Text 9-1-1 solutions should move beyond TTY

Thank you!

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