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March 8, 2012

VIA ELECTRONIC MAIL

Marlene Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Notice of *Ex Parte* Meeting – Facilitating the Deployment of Text-to-911 and Other Next Generation Applications, PS Docket No. 11-153 and Framework for Next Generation 911 Deployment, PS Docket No. 10-255

Dear Ms. Dortch:

This filing is being made pursuant to Section 1.1206 of the Commission's Rules. At the request of Commission staff, Tim Lorello, Thomas Ginter, Mark Titus, Firdaus Aryana, and Kim Robert Scovill attending in person, and Don Mitchell, Skip Hines, Victor Burton, and Robert Ehrlich attending via conference call on behalf of TeleCommunication Systems, Inc. (TCS) met with: David Furth, Erika Olsen, Patrick Donovan, David Siehl, Timothy May, and Tom Beers of the Public Safety and Homeland Security Bureau; Karen Peltz Strauss and Cheryl King of the Consumer and Governmental Bureau; Henning Schulzrinne, CTO; and Sean Lev of the Office of the General Counsel on March 6, 2012 to discuss the SMS-to-9-1-1 proposal that TCS previously demonstrated to the FCC on May 10, 2011.[1]

TCS's comments and the discussion followed the attached slides. Mr. Lorello explained TCS's history and unique expertise in this arena, in particular leadership in texting, location services, and 9-1-1 / public safety data services. Mr. Aryana detailed the operation, features, and benefits of TCS's text to 9-1-1 solution, and the assumptions and challenges of the TCS solution. Mr. Ginter reviewed how the Commission is involved in the SMS to 9-1-1 process, and considerations in moving the introduction of SMS to 9-1-1 forward.

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[1] 1 *See Letter to Marlene Dortch, Secretary, Federal Communications Commission, from H. Russell Frisby, Jr., Stinson Morris Hecker LLP, Counsel for TeleCommunication Systems, Inc., Re: Notice of Ex Parte* – Framework for Next Generation 9-1-1 Deployment, PS Docket 10□255, September 16, 2011.

In general, TCS's representatives described a proposed end-to-end SMS to 9-1-1 communications systems that would permit any cell phone user with texting capabilities to send a text message to emergency services personnel. The system would use the same location technologies and strategies used today for 9-1-1 voice calls to both route the text message to the appropriate PSAP, and for delivering a more precise location of the sender to PSAP personnel. PSAPs would have a choice of interface with the system for receiving and processing text messages: a web-based user interface (a mockup is included in the attached slides) for PSAPs that have public Internet access to the desktop; an application that can be integrated with the PSAPs internal call processing equipment; or delivery of the information to existing PSAP TTY equipment. TCS's proposed solution does not rely on the use of a call relay center; however, if available, a call relay center can easily be integrated with this proposal. TCS's single primary vendor design has the advantage of managing roaming message senders more effectively than other solution designs that share network responsibilities.

Summary, TCS noted that its solution had several unique and desirable features including;

1) Lack of dependence on a particular carrier technology or network,
2) Use of existing technologies,
3) Use of a single national short code to facilitate national deployment,
4) Automatically including the location of the mobile device with the message,
5) Coarse location routing to the appropriate PSAP,
6) Precise location delivery to the PSAP,
7) Enhanced two-way message session control,
8) Multiple PSAP integration options,
    a. Web-based user interface for IP enabled PSAPs
    b. Application integration with existing PSAP call equipment
9) Support for open standards and NG9-1-1,
10) Ease of use by members of the hearing impaired community, and
11) TTY support to PSAPs, if needed.

Lastly, as explained in detail in its previous filings in these dockets and reiterated in the attached slides, TCS reminded the Commission that introduction of such a service would be hindered if the Commission did not exercise its Intellectual Property policy in advance to prevent vendors and carriers from being targets of unwarranted litigation from third-party patent aggregators who are not public safety vendors, and acquire patents only for the purpose of licensing through litigation.

TCS appreciates the opportunity to meet with Commission staff and looks forward to continuing to work with the Commission, industry and the public safety community as we strive to resolve these important issues.

Please do not hesitate to contact me if you have any questions regarding this submission.

Sincerely,

STINSON MORRISON HECKER LLP

H. Russell Frisby, Jr.

cc: Henning Schulzrinne; CTO
David Furth, PSHSB
Thomas Beers, PSHSB
Erika Olsen; PSHSB
David Siehl, PSHSB
Timothy May, PSHSB
Cheryl King, CGB
Karen Peltz Strauss, CGB
Sean Lev, OGC
Patrick Donovan, PSHSB

Attachments

HF

Text to 9-1-1 Meeting with the FCC

March 6, 2012

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Agenda

- TCS Background/Expertise
- TCS' Text 9-1-1 Solution
  - Features
  - Assumptions
  - Challenges
  - Advantages
- How the FCC Can Help
- Conclusion

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TCS Background / Expertise

A World Leader in Highly Reliable and Secure Mobile Communication Technology

Established in 1987

- Headquarters: Annapolis, Maryland, USA
- Offices: USA and around the globe
- 1,500+ employees
- $425M 2011 revenue
- NASDAQ: TSYS

TL 9000
The Telecom Quality Measurement System

PERRY JOHNSON REGISTRARS, INC.

Strategic Offers

- Wireless & VoIP E9-1-1
- NG9-1-1
- Messaging
- Location Infrastructure
- Navigation & LBS Applications
- Telematics
- End-to-End Satellite Solutions
- Cybersecurity

Operator – Public Safety – Government

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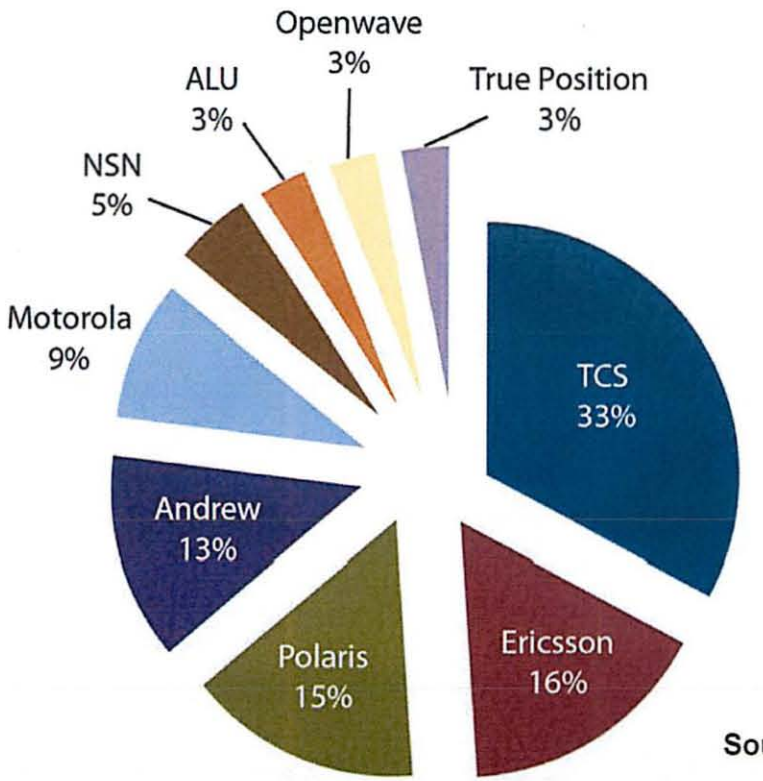
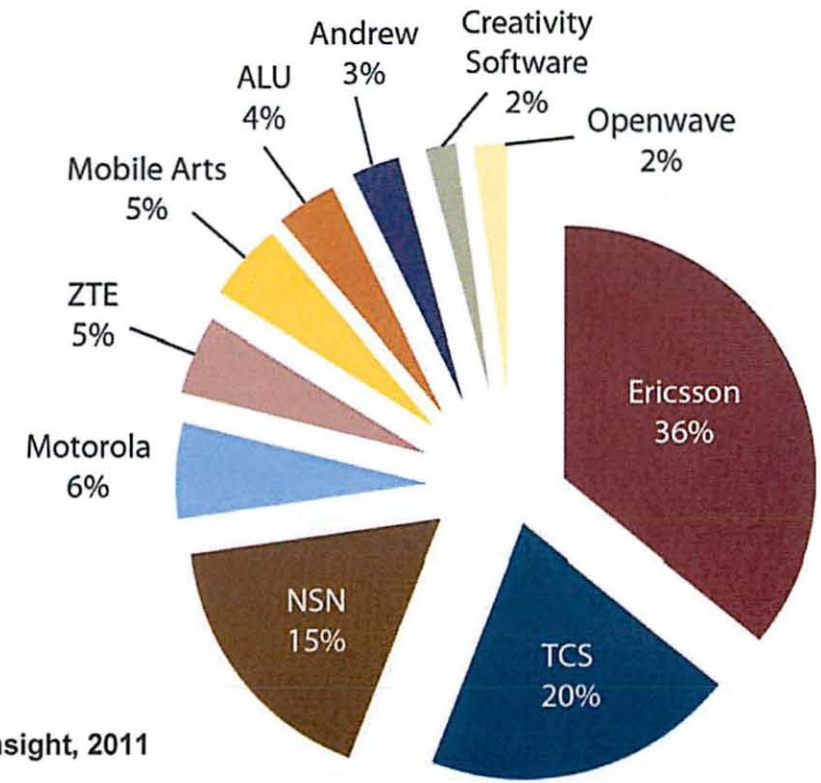
Expertise in Location Technology

"TCS is unique in that it provides a complete end-to-end LBS solution for mobile operators"
-Frost & Sullivan, 2/2010

PDE/SMLC Global Market Share



GMLC/MPC Global Market Share



Source: Berg Insight, 2011

#1 in Precise LBS Infrastructure Deployed Market Share
-Berg Insight, 2011

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Expertise in Text Messaging

- U.S. text messaging leadership
  - TCS technology delivered nearly 900 billion text messages in 2011
  - TCS platforms are averaging 2.5 billion texts per day
  - Text messaging market leader*
  - Web-based portal and anti-spam SMS solutions

#1 U.S.-based Text Messaging Provider

**October 2011 Frost and Sullivan report*

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TCS Public Safety Services

TCS Market Leadership:

- Nearly 50 operator networks worldwide
- Proven, carrier-grade, high availability solutions
- Demonstrated first wireless E9-1-1 call
- Pioneered solution for VoIP E9-1-1
- Processes ~50% of all wireless E9-1-1 calls in U.S.

Location & Public Safety

- E9-1-1, VoIP 9-1-1, 9-1-1
- Location-based routing platform
- Reference network
- Assisted GPS
- Network & handset-based location
- Telematics
- Authenticated, secure services

Messaging

- Text to 9-1-1
- SMS voting
- SMS platform
- Wireless gateway
- Web portal
- Mobile anti-spam
- Location-based messaging
- Emergency alerting/CMAS

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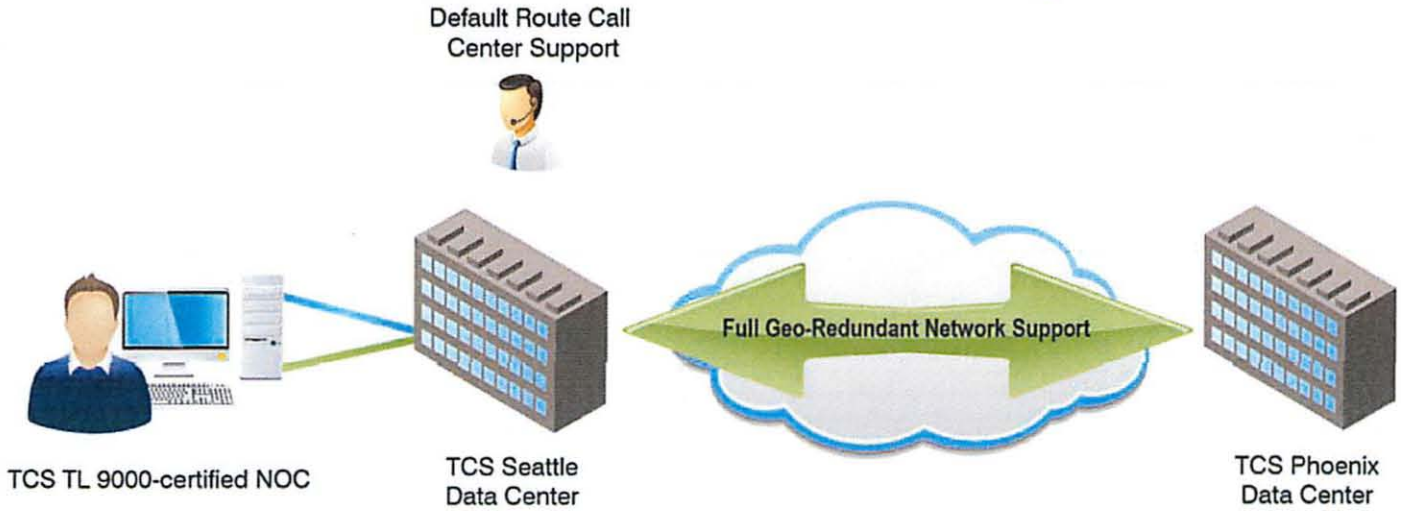
TCS Nationwide Public Safety Network



- Geo-redundant E9-1-1 networks (Seattle and Phoenix) – NG9-1-1 compatible and expandable
- The only non-carrier TL 9000-certified NOC in the U.S.
- TCS' S/R connectivity covers 95% of the U.S. population
- TCS is a qualified CLEC in 42 states, backup PSAP for VoIP
- i1, i2, and i3 routing support

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Features of TCS' Text 9-1-1 Solution

- Is carrier and network agnostic
- Allows for a single short code
  - Enables consistent national rollout
- Provides automatic location of mobile devices
- Routes SMS from the subscriber to appropriate PSAP
- Implements enhanced two-way messaging control
- Offers PSAP integration options
  - Web-based UI for IP enabled PSAPs
  - API integration for existing CPE
  - Migration to NG9-1-1
- Supports delivery to existing TTY equipment

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Geo-spatial Emergency Messaging for 911

GEM911™ TCS

206-555-3444

Active Sessions

- 206-555-3444 CT-1
- 206-555-9834 CT-3
- 206-555-8754 CT-4
- 206-555-2214 CT-5

Message Transcript

17:32:12 Someone just broke into my house and I think he's still inside.

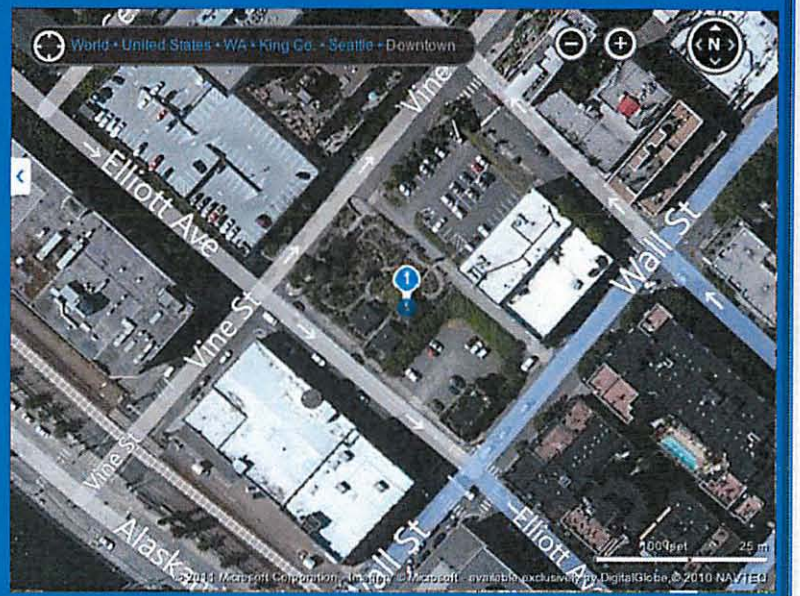
17:33:06 I see you are near 2500 Elliott Ave, can you confirm your location (any other identifier)?

17:33:42 2506 Elliott. Back house. I'm in the back room under the bed.

17:34:15 Help is on the way. Do not say or do anything to attract attention.

Sending Received

Location of Sender



Message Queue

- 206-555-0323
- 206-555-4930

Message entry (140 characters remaining)

Clear Send

Immediate Response

- ○ You have reached 911, what is your emergency?
- ○ What is your location?
- ○ Please confirm your phone number.
- ○ Are you in immediate danger?

Sender Location Details

Phone Number: 206-555-3444

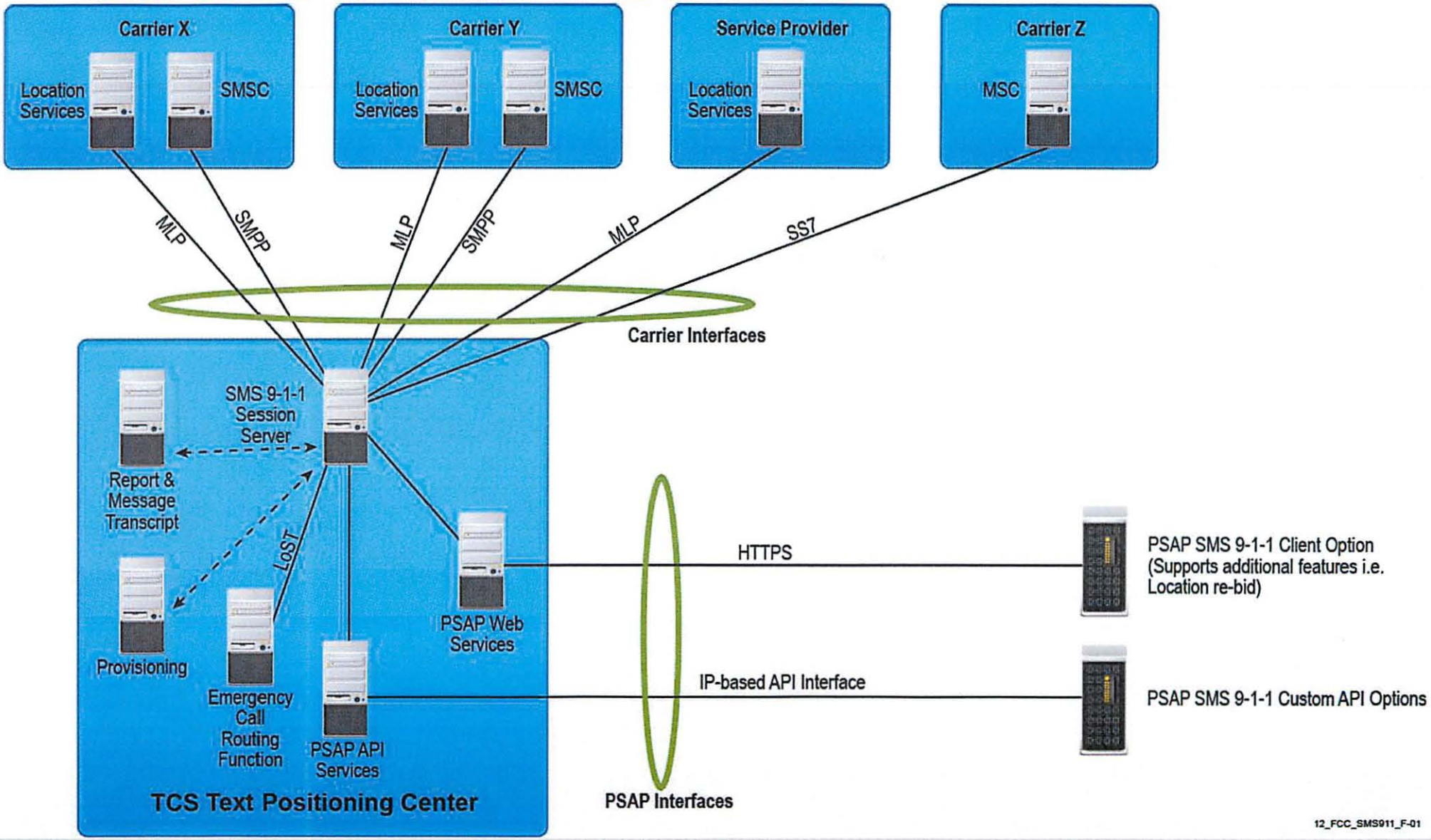
Latitude: 47.613900 Longitude: -122.352000
Elevation: 70 meters HUNC: 250 meters

Update

Transfer Session

Bellevue PD ▼ Transfer

Service Details – Direct IP



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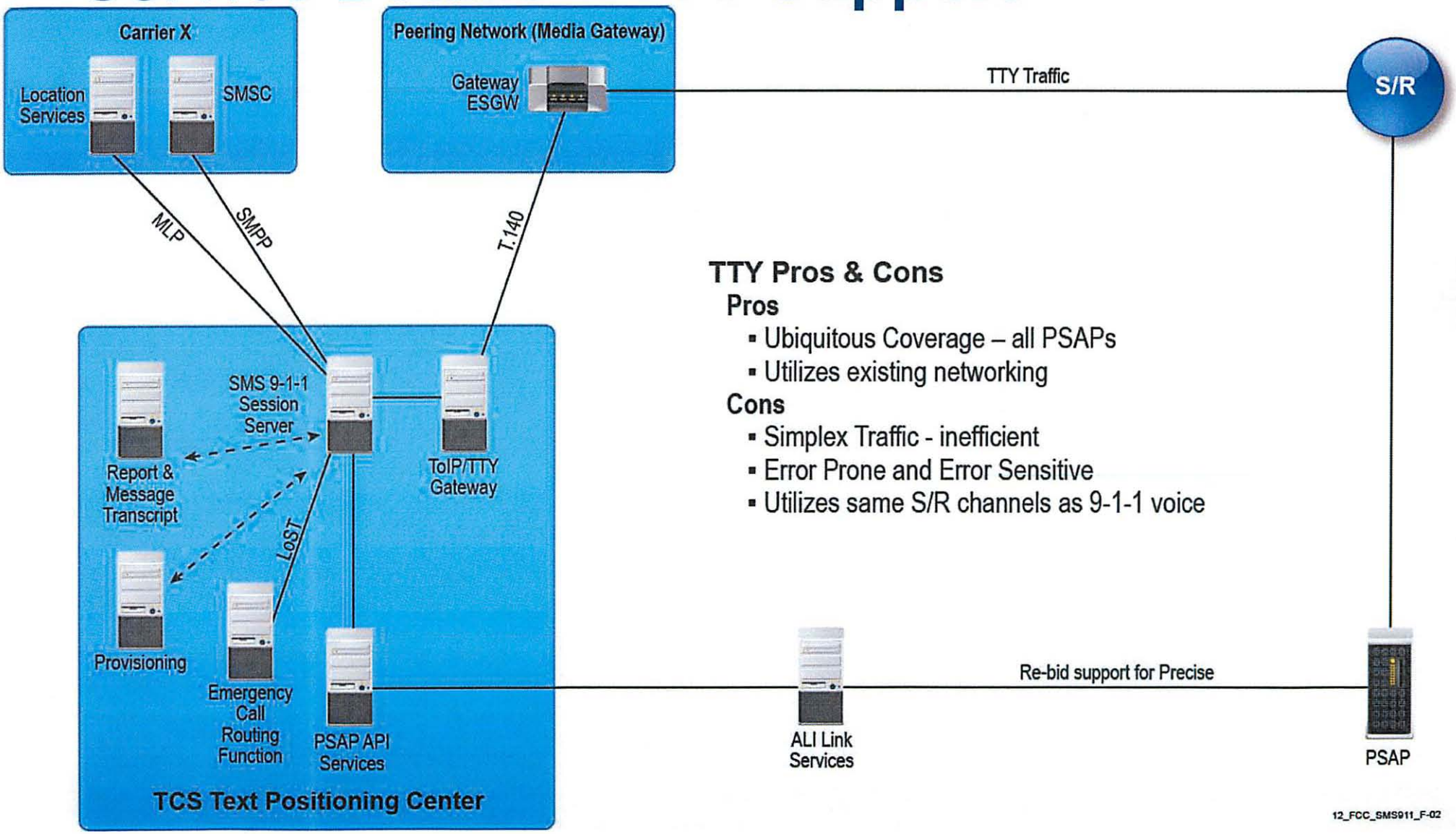
Service Details – TTY Support



TTY Pros & Cons

Pros

- Ubiquitous Coverage – all PSAPs
- Utilizes existing networking

Cons

- Simplex Traffic - inefficient
- Error Prone and Error Sensitive
- Utilizes same S/R channels as 9-1-1 voice

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TCS' Text 911 Solution Assumptions

- Carrier networks access requirements:
  - Ingress and egress to SMS gateways
  - Ingress and egress to carrier SS7 network (option)
  - Mobile device location for emergency use
    - Coarse
    - Precise
- PSAPs include:
  - IP-enabled workstations
  - API for integration with CPE vendor
  - TTY/TDD call answering equipment

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Carrier and PSAP Challenges

- Location requirements
  - The carrier's 9-1-1 location platform may not be able to provide location outside of a 9-1-1 voice call
  - Carriers must have a commercial location platform
  - Coarse may be the only available location for initial service launch
- Roaming use cases
  - Attaining location for subscribers outside of their home networks will require more involved location flow

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Carrier and PSAP Challenges (cont.)

- Funding
  - Carriers may request funding to support location services
  - Carriers may request funding to support SMS services
  - Funding for additional training may be needed
  - PSAPs may require funding for reliable IP connectivity
- PSAPs will need to be prepared for new influx of text traffic

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Advantages of the TCS Solution

- Ease of PSAP adoption
  - Non-CPE-dependent PSAP deployment with WebUI
- Subscribers can travel to other PSAP boundaries – the PSAP call takers easily can transfer the session
- Ability to present additional subscriber data to the PSAP
- No relay center required

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Advantages of the TCS Solution (cont.)

- Location at the core of TCS' Text 9-1-1 solution
  - Consistent and well-understood routing model similar to cellular 9-1-1 today
- Supports existing open standards
- Will adhere to the evolving NG9-1-1 standards

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How the FCC Can Help

- Move forward with existing carrier technologies
- Move forward without requiring a relay center for text to 9-1-1
- Require a predetermined SMS routable short code (i.e., "911")
- Require reasonable access to carrier's messaging infrastructure for Text 9-1-1 providers
- Conduct a study to identify a fair and equitable reimbursement of carrier's costs for supporting nationwide Text 9-1-1
- Manage IP license contention

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Conclusion

- TCS is best qualified to provided centralized Text to 9-1-1 services
- There are no technological barriers – the technology exists
- Key national regulatory issues – cost/funding do need to be resolved
- The FCC can elect to move costs from the PSAPs to a central broker
- Rollout can begin now

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Acronym List

ALI	Automatic Location Identification
API	Application Programming Interface
CLEC	Competitive Local Exchange Carrier
CMAS	Commercial Mobile Alert System
CPE	Customer Premise Equipment
E9-1-1	Enhanced 9-1-1
ESGW	Emergency Services Gateway
FCC	Federal Communications Commission
GEM	Geo-spatial Emergency Messaging
GMLC	Gateway Mobile Location Center
GPS	Global Positioning System
HQ	Headquarters
HTTPS	Hypertext Transfer Protocol Secure
IP	Internet Protocol
IP	Intellectual Property
ISUP	Integrated Services Digital Network User Part
LBS	Location-based Services
LoST	Location to Service Translation

MLP	Mobile Location Protocol
MPC	Mobile Positioning Center
MSC	Mobile Switching Center
NG9-1-1	Next Generation 9-1-1
NOC	Network Operations Center
PDE	Position Determining Entity
PSAP	Public Safety Answering Point
S/R	Selective Router
SMLC	Serving Mobile Location Center
SMPP	Short Message Peer-to-Peer Protocol
SMS	Short Message Service
SMSC	Short Message Service Center
TCS	TeleCommunication Systems, Inc.
TDD	Telecommunication Device for the Deaf
ToIP	Telephony over Internet Protocol
TTY	Teletype
VoIP	Voice over Internet Protocol
WebUI	Web User Interface

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