Interim SMS Text-to-9-1-1 Information and Planning Guide

Version 1 February 2014

Produced by the Ad Hoc National SMS Text-to-9-1-1 Service Coordination Group (SCG)

(see Appendix A for SCG purpose and list of stakeholder organizations)

Target audience: Public Safety management (9-1-1 Authorities and PSAP managers)

Introduction

The interim text-to-9-1-1 solution will utilize the most commonly available texting technology, carrier native Short Message Service (SMS) texting. Carrier native SMS is that feature provided by the carrier, and not a third party texting or messaging application (app) that may be installed on the mobile device. The SMS interim text-to-9-1-1 service provides support for wireless subscribers to send 9-1-1 SMS text messages to PSAPs and for subscribers to receive text replies from PSAPs. Wireless customers with SMS service are able to send emergency SMS messages to a PSAP by using the single code "911" as the destination address of the SMS message.

According to the National Organization on Disability (2007), there are an estimated 54 million individuals with a disability in the United States, which has a total population of more than 300 million. Over 37 million individuals are deaf, hard of hearing, or have a speech disability.

In December 2012, an agreement was reached among the largest four wireless carriers (AT&T, Sprint, T-Mobile, and Verizon), NENA, and APCO to provide a nationwide, interim SMS text-to-9-1-1 solution by May 15, 2014. Since the time of the agreement, work to bring SMS text-to-9-1-1 service into reality has progressed in various stakeholder groups.[1]

Topics:

[1] These include the ad hoc national SMS Text to 9-1-1 Service Coordination Group (which produced this document), AT&T, ATIS, APCO, CTIA, DOJ, DOT – 9-1-1 Office, FCC, Intrado, LRKimball, NENA, Sprint, TIA, T-Mobile, TCS, Verizon Wireless

SMS Text-to-9-1-1 – what it is and isn't

The interim solution will only process text-to-9-1-1 messages via carrier native SMS. This means that photos, videos, or multiple recipients for a text message are not supported, as those cause the message to be sent as a Multimedia Messaging Service (MMS) message.[2]

SMS text-to-9-1-1 service is national in scope and is independent of any vendor applications implemented in individual PSAPs.

While the interim SMS text-to-9-1-1 solution may provide the most overall benefit to the deaf, hard of hearing, and speech disability communities, it can be used by the general public, especially of the latter include incidents of domestic violence where a voice 9-1-1 call could endanger the victim further and passengers in vehicles where someone is doing drugs or drinking. Public advocacy will include the concept of "call when you can, text if you can't." Indiscriminant texting to 9-1-1 will be highly discouraged.

Why is SMS text being used for interim text-to-9-1-1

- To assist Public Safety in responding to the carrier/NENA/APCO commitment of December 2012

- 2012 activities leading to SMS solution

  Established by the FCC pursuant to The Twenty-First Century Communication and Video Accessibility Act of 2010 ("CVAA"), the Emergency Access Advisory Committee (EAAC) recommended that an achievable interim method for text-based messaging to 9-1-1 would be necessary until Next Generation 9-1-1 (NG9-1-1) is fully developed, deployed and adopted by industry, public safety and consumers. In furtherance of this recommendation, the EAAC requested that all stakeholders, including industry, consumers, public safety, the FCC, and the Department of Justice, work together to find an interim solution that could be rapidly deployed to provide nationwide access to 9-1-1 services through an industry standards-based mobile text communications solution(s) to provide critical coverage for people who are deaf, hard of hearing and or have speech disability during the transition to NG9-1-1. In January 2012, the EAAC designated a subcommittee to make recommendations to encourage the availability of pre-NG9-1-1 interim text-to-9-1-1. In March 2012, the EAAC adopted a resolution to support "as an interim solution for text-to-9-1-1, at a minimum, SMS, and other technologies as appropriate, with a three digit short code 9-1-1." More information about the EAAC and its reports and recommendations, can be found at: http://www.fcc.gov/encyclopedia/emergency-access-advisory-committee-eaac.

- SMS text standards and service capability are already in place in national carrier networks

[2] MMS is a way to send messages that include multimedia content to and from mobile phones. It extends the core SMS capability that allows exchange of text messages. The most popular use of MMES is to send photographs from carrier-equipped handsets. However, MMS messages are delivered in a completely different way from SMS.

SMS has been available for some time in carrier networks for general texting support. As such, the necessary standards and capabilities already exist and are in use, and SMS was viewed as the most easily and quickly adaptable method to support a national text-to-9-1-1 service.

- Intent to provide text capability to PSAPs without equipment/software costs

  The original plan for interim text involved two fundamental ideas: SMS system architectures would not be modified and interface options to the PSAPs would include at least one service choice that would not require additional PSAP equipment or software costs. It was recognized that PSAP training would be required on the use of SMS text-to-9-1-1 service.

Why SMS to 9-1-1 text service is interim (compared to MMES and NG9-1-1 in the future)

Other national text services are not viable in the near term. A number of other capabilities in both the carrier and Public Safety networks are required to support multiple forms of text messaging in conjunction with NG9-1-1 designed text capabilities.

These include Multimedia Emergency Services (MMES), which must be implemented in carrier systems, and which require IP interfaces between carriers and NG9-1-1 systems. When these standards are completed, testing and implementation must follow. Of course, NG9-1-1 systems must be in place to take the text messages provided through these carrier capabilities.

MMES standards tailored for North America are currently being developed in ATIS, a US-based standards development organization. These standards will be based on existing international (3GPP) standards for MMES; MMES will allow for simultaneous use of pictures, videos, text, and voice between an emergency caller and a PSAP. However, ATIS MMES standards are not yet completed and therefore an MMES solution is not likely to be available to the public for several years. NG9-1-1 systems are required to take the text messages provided through these future carrier network capabilities. In the interim, text to 9-1-1 using existing SMS technology will provide a solution (beyond the existing voice calling to 9-1-1) for emergency callers to be able to communicate with PSAPs.

PSAP training and Public education

The agreement on interim SMS text involved NENA and APCO taking responsibility for developing PSAP training and support aspects. That development work is under way in preparation for trial and availability by May 2014. PSAP training and standard operating procedures for handling text are basically consistent with call processing for TTY calls.

PSAP training and SOP information and resources or links can be found at:

http://www.nena.org/?page=textresources

Public education is being coordinated by the FCC, and resources for that purpose are being developed by several organizations, such as NENA, the National 9-1-1 Office, and the FCC. Additionally, PSAPs are encouraged to consult with their local deaf, hard of hearing, and speech disability communities to identify and address local concerns, and to ensure effective consumer outreach regarding Interim SMS text-to-911.

Public education resources and links can be found at the following web sites:

http://www.fcc.gov/text-to-911

Why Public Safety should quickly embrace Interim SMS Text-to-9-1-1

- Instead of having to rely on third party access to 9-1-1 call centers that could delay the emergency response process, the interim solution allows direct access to 9-1-1 telecommunicators for individuals who are deaf, hard of hearing, or have speech disabilities, and possibly save lives in other dangerous situations where voice calls are not possible.

- Support federal objectives and expectations.

- The Department of Justice (DOJ) filed comments in the FCC text-to-9-1-1 rulemaking stating that "in fulfillment of PSAPs' existing obligation to provide effective communication under Title II of the [American with Disabilities Act], PSAPs must accept a call from a person with a hearing or speech disability that originates as an SMS call, but reaches the PSAP as a TTY call."[3] DOJ has an open rulemaking on NG9-1-1 obligations for PSAPs, which may result in additional guidance in the near future. For more information, go to: www.ada.gov.

- The Federal Communications Commission continues to consider obligations for wireless carriers to provide text-to-9-1-1, as an interim text solution for when a voice call to a PSAP is not possible (or appropriate).[4] The FCC also is considering improved indoor location accuracy for wireless callers. For more information on the FCC's text-to-9-1-1 efforts, the Commission has a web page that is kept updated to cover text-to-9-1-1: http://www.fcc.gov/text-to-911.

How Interim SMS text-to-9-1-1 works

The interim solution will have three interface options, two of which allow Public Safety entities that have not begun deploying NG9-1-1 services the capability to receive text messages. The location-based routing of SMS text-to-9-1-1 sessions parallels that of wireless Phase I,[5] that is, based on cell site and

[3] For the full Department of Justice letter, see: http://apps.fcc.gov/ecfs/document/view?id=7022129201.
[4] FCC rulemaking docket # 11-153.
[5] Wireless E9-1-1 Phase I is the delivery of a wireless 9-1-1 call with callback number and identification of the cell-tower and sector from which the call originated. Call routing is usually determined by cell-sector.

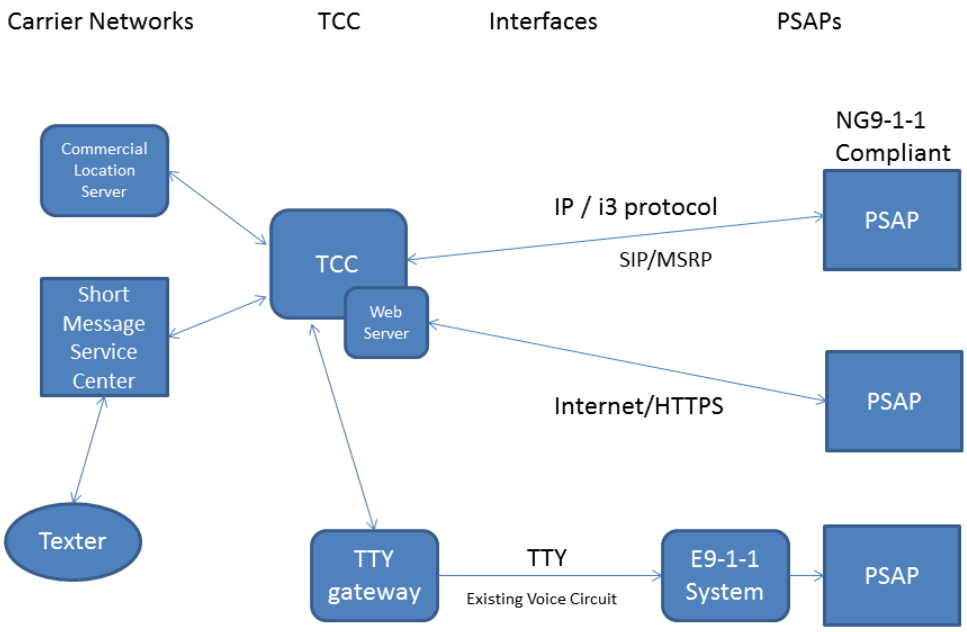
sector. As we know, cell sector coverage does not generally follow community, PSAP jurisdictional, or county boundaries, so SMS text-to-9-1-1 cannot be limited to these geographic oriented boundaries. Yet, the consumers who wish to use SMS text to 9-1-1 must have some clear, understandable idea of where they can and cannot utilize the service. For various reasons, it is believed that county-oriented service is preferable, whether temporarily to a single PSAP in multiple PSAP counties, or to all PSAPs in a county at the onset. PSAP by PSAP implementation can be confusing to the consumer, due to lack of service area clarity.

A `bounce back' message has already been implemented by the `big four' carriers, as of June 30, 2013, for anyone who attempts to use SMS Text for 9-1-1 prior to local service availability or when the service may be otherwise unavailable. The remaining carriers were required by the FCC to implement bounce back messages by September 30, 2013.

The Interim SMS text-to-9-1-1 solution will not be supported when a subscriber is roaming, due to SMS service limitations. Instead the subscriber will receive a bounce back message explaining that SMS text-to-9-1-1 service is not available and to contact 9-1-1 by another method, such as a voice call or relay service. In the context of SMS text-to-9-1-1, roaming means the subscriber is receiving wireless service from any carrier other than his/her home carrier, regardless of the subscriber's current location.

Text Control Centers - Nationally, the wireless carriers and their vendors are establishing a small network of Text Control Centers (TCC) to interface between carrier-originated wireless 9-1-1 text users and the PSAP environment. The TCCs use some of the functions of core NG9-1-1 system design, with specialized functionality to fit the SMS text needs. When TCCs from different vendors are able to interoperate with each other, PSAPs can connect to multiple carriers through a single TCC.

Interconnection between TCCs and PSAPS – very recent information about vendors offering integration of transport linkages for multiple PSAPs and multiple TCCs came to light too late for inclusion in version 1 of this Information and Planning Guide. Further information on these aspects will be included in version 2, likely in the early April 2014 timeframe.



High Level SMS Text-to-9-1-1 Diagram

All of the following interface options involve establishing routing plans and overflow/alternate routing for text messages between Public Safety and wireless carriers/TCC operators.

As standards are approved, the Class of Service may display as "TXT" or similar. Further discussion is needed on whether there will be different class(es) of service to identify a SMS to 911 text message.

ESInet/IP Network Service Interface[6] – this option would require the PSAP to have IP capable equipment and IP connectivity to the carrier or the carrier's TCC provider. The text message will be delivered into the 9-1-1 PSAP CPE interface[7]. This solution should be compatible with a full NG9-1-1 (i3 compliant) solution. The ALI display will contain information similar to a wireless caller today, including the x/y coordinates of the cell site or the sector centroid.

Web Service – this option would require a PSAP to have IP-based access, either through a private IP network or over the public Internet. A separate web portal would be opened at the beginning of the shift and would need to be monitored for incoming text messages. This solution currently requires a separate monitor for the web portal; however, some equipment manufacturers are working to incorporate the portal into the 9-1-1 display. The ALI will display the number associated with the device

[6] A potential vendor option for PSAPs that are on an IP network but do not yet have NG9-1-1 capable PSAP applications is a text supporting software application at the PSAP. Such an approach is considered negotiable on a case-by-case basis by some carriers, and would require the same standards based IP interface, and must be designed by the vendor to interact with the TCC functional features.

[7] As of January 2014, the NG9-1-1 interface is not yet fully available, which may delay its utilization by May 2014. This interface is to be used as both a TCC/ PSAP interface and an interface between TCCs.

used for texting and x/y coordinates of the cell site or the sector centroid associated with the texting device.

Text to TTY/TDD – this option would allow the PSAP to receive incoming text messages via E9-1-1 and their current TTY/TDD system. The text would display on the 9-1-1 equipment similar to a TTY call. The ALI display will show the caller's text number in the location where the wireless caller's Call Back Number is displayed on voice calls, and the x/y coordinates of the cell site or the sector centroid associated with the texting device. The text messages would be delivered via the existing 9-1-1 trunks, which would mean that once a text came in via this method the 9-1-1 trunk over which it arrived would be tied up and unable to accept another voice call or text session.

Call volume impacts, based on current trials and deployments of SMS text-to-9-1-1, have shown that concerns about PSAPs being overwhelmed by texts to 9-1-1 have not been substantiated. As of January 2014, there is no indication that text-to-9-1-1 causes significant numbers of text messaging for emergencies. In fact, the opposite is true. Reports from the state of Vermont, and North Carolina communities around Raleigh-Durham, demonstrate that text-to-9-1-1 is not a burden to the PSAP operations. Reports about these trials and deployments of text-to-9-1-1 are available at:

North Carolina - http://apps.fcc.gov/ecfs/document/view?id=7021985670.

Vermont - http://apps.fcc.gov/ecfs/document/view?id=7520957727.

Planning for SMS text-to-9-1-1 service by 9-1-1 Authorities

Public safety should plan for SMS text-to-9-1-1 on a county or multi-county basis. As noted above, cell sector coverage does not follow community, PSAP jurisdictional, or county boundaries, so SMS text-to-9-1-1 cannot be limited to these geographic oriented boundaries. Yet, the consumers who wish to use SMS text to 9-1-1 must have some clear, understandable idea of where they can and cannot utilize the service. For various reasons, it is believed that a county-oriented service approach is preferable, whether temporarily to a single PSAP in multiple PSAP counties, or to all PSAPs in a county at the onset. PSAP by PSAP implementation can be confusing to the consumer, due to lack of service area clarity.

If a PSAP CPE upgrade includes support for SMS text, it should be scheduled in advance of SMS text implementation. In concert with the planned SMS text interface method, the 9-1-1 Authority or PSAP manager will need to discuss, arrange, and schedule any equipment upgrades with their 9-1-1 System Service Provider or their equipment vendor. (See interface descriptions above under `How Interim SMS text-to-9-1-1 works' and in applicable carrier or TCC provider documentation.)

In areas where there is no PSAP text coverage, the 9-1-1 texter receives the default message similar to, "*Please make a voice or relay call to 9-1-1. There is no text service to 9-1-1 available at this time.*"

A PSAP may be authorized to take text messaging for other affiliated PSAPs on a temporary basis, through an agreement between PSAPs within or between Public Safety organizations. (See first page of Questionnaire in Appendix C.)

SMS text transfer capabilities between PSAPs are dependent on specific vendor implementations.

Planning Background and Considerations

The wireless carrier and their Text Control Center provider route text messages to the appropriate PSAP over the selected interface based on the cell sector, and provide PSAP with a latitude/longitude location of the calculated centroid for the center of the cell sector RF coverage (e.g. coarse location) using commercial location positioning service.

More precise texter location may be available, but is carrier/vendor implementation specific.

Interim SMS text-to-9-1-1 service is only available to valid wireless subscribers with a text-capable phone and service plan that includes text messaging.

The interim SMS text-to-9-1-1 solution is not limited to people who are deaf, hard of hearing, or have speech disabilities. The public is advised to utilize SMS text only when a voice call is not possible or advisable.

To better set expectations, the PSAP must understand the role and responsibilities associated with each of the options for Interim text-to-9-1-1 service interconnectivity.

1. **SMS to PSAP via IP connectivity (ESInet/IP Network Service Interface)**
    - PSAPs install dedicated, redundant IP circuits to the Text Control Center at their own expense or has an ESInet in place
    - PSAP customer premise equipment (CPE) must be capable of receiving IP messages on standard (NENA i3 and ATIS J-STD-110 defined) IP interfaces (SIP/MSRP)
    - Call taker workstations must have integrated text handling software
    - PSAP is responsible for CPE equipment (upgrades/maintenance/technical support), firewall configurations and text call taker training
    - PSAP must provide point of contact for CPE and IP/ESInet customer support
    - SMS text is delivered to the PSAP and MIS/RMS and logging/recording capability is included

2. **SMS using Web Service method**
    - PSAP must have public Internet or private IP network connectivity into workstations readily available
    - PSAP workstations must have web browser capability (IE8 or higher, Chrome or Firefox)
    - PSAP is responsible for CPE equipment (upgrades/maintenance/technical support) and firewall configuration (if applicable)
    - Text is not delivered to the PSAP literally, must be managed at the web server via the Internet or a private IP network
    - MIS/RMS and PSAP logging/recording functions are not active during the text session, and data is obtained from the web server separately
    - PSAP must provide point of contact for CPE customer support
    - The PSAP needs to be logged in at the beginning of each shift in order to be aware of text message alerts.

3. SMS to TTY Conversion

- SMS converted to TTY (Baudot code) before sent to Public Safety 9-1-1 network
- TTY messages sent to E9-1-1 Selective Router for delivery to the PSAP TTY call station
- PSAP should bid ALI with ESRK/pANI for coarse (e.g. cell site and sector) related to the subscriber's call
- PSAP is responsible for CPE equipment (upgrades/maintenance/technical support) and call taker training, if required
- PSAP must provide point of contact for CPE customer support
- SMS text as TTY messages is delivered literally to the PSAP, and MIS and recording capability are included if TTY functions are integrated with CPE
- 'Garbling' with SMS sent as TTY is expected to be no different than TTY at a PSAP today
- Proper setup, prior to deployment, is required in the interconnecting networks and elements and at the PSAP to minimize Bit Error Rate
- Observed PSAP considerations to date include: Local TTY terminal modem settings, volume settings, PBX configurations, CPE configurations, etc.

Request for Service process

After the planning process for each PSAP and its selected interface are underway, the 9-1-1 Authority should prepare the service questionnaire(s) and the Request for Service letter (Appendix C and D), and send to each involved carrier. Consider doing this via registered mail, in order to establish receipt date as a base for the implementation process.

See Appendix E for description of information to be supplied by Public Safety

Implementation process

Public Safety management should review the carrier implementation plan (Appendix F) and consider what Public Safety steps need to be taken in preparation for implementation. The carrier and their TCC provider will coordinate start date and work for the implementation steps.

PSAP by PSAP testing

The carriers have defined test plans (see Appendix F) for each interface type. Public Safety management should review these plans in advance and determine whether any other testing is needed, negotiating with carrier and/or TCC representatives as needed. Specific testing procedures and schedules for testing should be determined in advance.

Ongoing Operations

At minimum, management of alternate routing and out of service routing plans will be required. For this and other purposes, maintaining contacts at the carriers and TCC providers is necessary.

Appendix A

SCG purpose and list of contributing organizations

The National SMS Text-to-9-1-1 Service Coordination Group was established in mid-2013 to provide a means to coordinate the various preparation and implementation work of the SMS text stakeholder groups. Example objectives include a common set of information on what SMS text is about, how it works, and considerations for planning SMS Text for the benefit of Public Safety management across the nation. It was also presumed that this would benefit all other stakeholders by avoiding multiple versions and content, and possibly contradictions, being produced by individual parties. Coordination of PSAP training and public education development work is also an objective. The SCG was initiated by Roger Hixson (of NENA), who serves as the facilitator for the group. It is expected that the SCG will continue to evolve the above work through mid-2014.

Member stakeholder organizations include:

AT&T
ATIS
APCO
DoT – National 9-1-1 Office
FCC
Intrado
LRKimball
NENA
Sprint
T-Mobile
TCS
Verizon Wireless

Appendix B

Public education and PSAP training resources

The agreement on interim SMS text involved NENA and APCO taking responsibility for developing PSAP training and support aspects. That development work is under way in preparation for trial and availability before May 2014. PSAP training and standard operating procedures for handling text are basically consistent with call processing for TTY calls.

PSAP training and SOP information and resources or links can be found at:

http://www.nena.org/?page=textresources

Public education is being coordinated by the FCC, and resources for that purpose are being developed by several organizations, such as NENA, the national 9-1-1 Office, and the FCC.

Public education resources and links can be found at the following web site:

http://www.fcc.gov/text-to-911

Further information on education and training resources will be added here in future versions of this document, or at the links above, as information becomes available.

Appendix C

Carrier questionnaire

SMS to 9-1-1 PSAP Readiness Questionnaire Please fill out & return to: [Carrier Contact Name] _____ [Carrier Contact Address] _____	
Name of PSAP	
PSAP FCC ID	
Contact info:	
Street	
Street	
City	
State	
ZIP	
PSAP Primary Point of Contact:	
First Name	
Last Name	
Desk Phone	
Cellular Phone	
Email address	
PSAP Admin Line	

Existing SMS to 9-1-1 service today?	Yes ☐ No ☐ If yes, please explain:
Will your PSAP be accepting SMS to 9-1-1 messages for other PSAP jurisdictions?	No ☐ If Yes, list name & FCC ID (authorization letter from these PSAPs or 9-1-1 Authorities may be required):
Are there call taker workstations that can install Microsoft® Internet Explorer® version 8, Firefox® latest version, or Chrome™ latest version?[8]	Yes ☐
	No ☐
If answered no above, can there be a special waiver to install one of the listed browsers?	Yes ☐ Preferred Browser:
	No ☐
Are there workstations with a browser already installed?	Yes ☐ No ☐ If yes, list browser and version:
Do the workstations have public internet access?	Yes ☐ No ☐
Does your PSAP have an ESInet or other IP network connectivity? ***Please note:*** *Support for IP networks that are not NENA i3 ESInet compliant are handled on a case-by-case basis*	Yes ☐ No ☐
If yes:	
Are the IP links redundant?	
Where are the Points of Interconnection (POIs) located?	
Who is the ESInet facility vendor?	
If no:	

[8] Internet Explorer is a trademark of Microsoft. Firefox is a trademark of Mozilla, and Chrome is a trademark of Google.

Who is the 9-1-1 Service Provider in your county?	
Do you have a point of contact for ordering and configuring circuits?	Yes ☐ No ☐ If yes, Name: Contact Number:
How long does it take to complete a circuit order?	
Is there a firewall or internet proxy in place?	Yes ☐ No ☐ If yes, firewall make & model:
Is there a firm that manages your workstations or firewall? If so please list firm and contact information.	Yes ☐ Contact Name: Contact Number:
	No ☐ (Please list primary in house IT department contact) Name: Contact Number:
Please list the number of workstations accessing the SMS to 9-1-1 service.	
How many dispatchers will be handling the service?	
Is the PSAP CPE equipped to handle TTY calls?	Yes ☐ List CPE make and model:
	No ☐ Can the CPE be upgraded?
Is the TTY workstation(s) connected via existing CAMA/SS7 trunk groups?	Yes ☐ No ☐
Is the TTY workstation(s) also connected to the ALI?	Yes ☐ No ☐

Appendix D

Request for Service letter

{9-1-1 Authority Letterhead}

Date:

[CMSP Contact Name]
[CMSP Contact Title]
[CMSP Name]
[CMSP Street Address]
[CMSP City, State & Zip]

Dear _____:

The ___[Requesting Entity]____hereby formally requests and authorizes [CMSP Name] to provide SMS to 9-1-1 based on other emergency communications service as defined in 47 USC 615.b. (9)(B). The Public Safety Answering Point(s) to be deployed is/are:

___[PSAP Name]	[FCC PSAP ID][9]	[PSAP Location]____
___[PSAP Name]	[FCC PSAP ID]	[PSAP Location]____
___[PSAP Name]	[FCC PSAP ID]	[PSAP Location]____

Please begin deployment activities upon receipt of this letter. Your point of contact will be:

Mr./Ms. _____

Title:_____

Address:_____

Email:_____

Phone:_____

Regards,

[9-1-1 Authority signature]

[9] FCC's PSAP ID registry: http://transition.fcc.gov/pshs/services/911-services/enhanced911/psapregistry.html

NOTE: This service request letter was developed based on Annex B from J-STD-110.01, *Joint ATIS/TIA Implementation Guideline for J-STD-110, Joint ATIS/TIA Native SMS to 9-1-1 Requirements and Architecture Specification*; more information is available from the Alliance for Telecommunications Industry Solutions (ATIS)
< http://www.atis.org >.

Appendix E

Information to be supplied by Public Safety, and Guidelines for PSAPs or 9-1-1 Authorities
(taken largely from ATIS material – see note below)

Beyond the information in the questionnaire (Appendix C), routing information is required:

When a PSAP or 9-1-1 Authority deploys SMS to 9-1-1, they must provide the wireless operator (and the TCC provider) with the coverage area that will be accepting SMS to 9-1-1 messages. That process can be similar to (or the same as) the method used to provide wireless Phase II information.

Background

PSAP boundaries, in the form of polygons, are provisioned in the (TCC) Routing Server (RS). Then, routing information (e.g., Route URI) is assigned to each polygon.

Although J-STD-110 [Ref 1] and the associated Supplement A [Ref 2] enable the RS to be queried with either civic or geodetic location, only a geodetic location will be used in the query from the TCC for the interim SMS to 9-1-1 solution. When the RS receives a routable location (either coarse or a more refined location) and a services urn (urn:service:sos), it correlates the location with one of the provisioned polygons and returns the Route URI associated with that polygon. That URI allows the TCC to determine the type of PSAP and to set up a dialogue with that PSAP. If inter-TCC communication is invoked, the URI allows the originating TCC to determine the terminating TCC, and the URI retrieved in the terminating TCC will determine the type of PSAP.

If the RS cannot correlate the location with a provisioned polygon, it returns an error. This allows the TCC to generate a bounce-back message indicating service not available. If inter-TCC communication has been invoked, and the Terminating TCC receives an error indication from the RS it notifies the Originating TCC, which generates a bounce-back message.

Guidelines for PSAPs or 9-1-1 Authorities

It is primarily the responsibility of PSAPs, 9-1-1 Authorities, and NENA to develop implementation guidelines that impact PSAP operations. However, the following subset of implementation guidelines related to PSAP operations is based on CMSP (carrier) and TCC provider implementation guidelines that also relate to PSAP operations. These guidelines are being provided to assist PSAPs, 9-1-1 Authorities, and NENA in their development of implementation guidelines for SMS to 9-1-1 service.

These guidelines are important to ensure the successful implementation of the SMS-to-9-1-1 service. PSAPs, 9-1-1 Authorities, and NENA should consider including these guidelines in their PSAP training material.

It is the PSAP's or 9-1-1 Authority's responsibility to work with CMSPs (or delegated TCC

service providers) in requesting an SMS to 9-1-1 interface from the TCC to the emergency services network or directly to the PSAP. J-STD-110 [Ref 1] and the associated Supplement A [Ref 2] defines the common set of interfaces that are available to the PSAP or 9-1-1 Authority.

A Public Safety Telecommunicator (PST) has direct control over a given SMS to 9-1-1 dialogue session. The emergency caller will not be able to end an emergency dialogue session. Only the PST can manually end a session. A PST's judgment as to when an SMS to 9-1-1 session should be terminated is a key factor.

If a PST does not take action to manually end an SMS to 9-1-1 session, a provision at the TCC has been made for a dialogue inactivity timer to automatically end the session. The TCC supports a single configurable dialogue inactivity timer [five (5) minutes minimum to a maximum of one (1) hour; thirty (30) minutes default] that applies to all PSAPs. APCO and NENA are expected to work directly with the TCC providers if the default setting of the single configurable dialogue inactivity timer value needs to be modified.

Upon receipt of each new message from a mobile device or from the PSAP, the TCC restarts the single configurable dialogue inactivity timer. Upon expiry of the dialogue inactivity timer, the TCC ends the dialogue.

When a dialogue inactivity timer value is updated, the updated value is only enforced for new SMS to 9-1-1 dialogues afterwards. The dialogue inactivity timer value for all ongoing SMS to 9-1-1 dialogues is not modified.

The PSAPs or 9-1-1 Authorities are responsible for communicating temporary suspension and resumption of SMS to 9-1-1 messaging to the TCC service provider. This suspension triggers a bounce-back message.

Any informational messages back to the emergency caller other than the bounce-back message needs to be set up directly by the PSAP and originated from the emergency services network or PSAP. The TCC provides bounce-back messages in situations where SMS to 9-1-1 is not possible, as required by the FCC First Report and Order [Ref 3].

PSAPs or 9-1-1 Authorities determine if text or call back procedures to the emergency caller are needed and, if so, establish and initiate set up such procedures outside of the TCC procedures that have been established for SMS to 9-1-1 messaging.

Appendix F

Carrier implementation plan

Carrier testing plan

Due to the size of this material, it was not included in the Interim SMS Text-to-9-1-1 Information and Planning Guide document and can accessed at the following website address:

http://www.nena.org/?page=textresources