Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)
	)
Next Generation 911; Text-to-911; Next Generation	) PS Docket No. 11-153
911 Applications	) PS Docket No. 10-255
	) FCC 12-149
	)

COMMENTS OF MOBILETREC CORPORATION

Text-to-911 is within reach today. Precise location and personal safety information can be delivered to the nearest Public Service Answering Point through the Voice Positioning Center, made possible by solutions developed in a handset-server-web-browser architecture. This powerful alternative to network-based solutions addresses and resolves a number of complexities, including:

- Prioritization of the emergency data session. Text-to-911 incidents are singularly routed via the E911 network to the PSAP, which is consistent with its current operations;

- Authentication of the data user identification or device. This is accomplished by a “Safety Profile,” which ensures that deaf and hearing impaired 911 texters can be differentiated from the other 911 callers, and then subsequently be handled in a manner appropriate for any particular PSAPs protocols.

- Acquisition of precise location information quickly that is automatically delivered to the PSAP. Accurate routing is critical for any emergency call, and it is obtained primarily through the handset device. It is also supplemented with “call/text takers” that have the skill to acquire location information manually when precise GPS coordinates are not available.

- PSAP integration with minimal disruption to the operation.

- Validation of location to reduce spoofs.

- Proactive monitoring of harassing or potentially repetitive spam;

- Assignment of a unique identification key for tracking;

- Capability for PSAP’s to obtain a data log of each session.

By taking these steps toward deploying text-to-911, an operation can take giant strides toward the implementation of NG911.

Following are MobileTREC's comments on specific sections of the NPRM where the FCC paragraph is fully referenced prior to its associated MobileTREC comment.

17. Under the terms of the Carrier-NENA–APCO Agreement, the major carriers have also agreed to implement a bounce-back message capability by June 30, 2013. The bounce back message will ''alert subscribers attempting to text an emergency message to instead dial 911 when text-to-911 is unavailable in that area.''

Comment: The acknowledgment of a request for help during an emergency could substantially aid a citizen in need. We suggest that the scope of the bounce-back be expanded to include an *acknowledgment of receipt*: a message indicating that the text has arrived and is being routed to a 911 dispatcher for handling.

19. Finally, the Carrier-NENA–APCO Agreement limits the proposed voluntary text-to-911 solution ''to the capabilities of the existing SMS service offered by a participating wireless service provider on the home wireless network to which a wireless subscriber originates an SMS message.'' Thus, the carriers state that under the terms of their voluntary commitment to deploy text-to-911 capability by May 15, 2014, ''SMS-to-911 will not be available to wireless subscribers roaming outside of their home wireless network,'' and ''[e]ach implementation of SMS-to-911 will be unique to the capabilities of each signatory service provider or its Gateway Service Provider.''

Comment: The concept of roaming has never been considered to be a barrier to reaching a 911 operator. Citizens are used to a 911 system that simply works everywhere and without consideration or exception.

Lack of roaming support in text-to-911 introduces an unacceptable level of uncertainty. It could substantially increase the risk of a failed implementation, since very few citizens know when and where or if they are roaming. For example, my son goes to school ten miles from our home here in Los Angeles. Would he be “roaming” at school? Should I even introduce text-to-911 to him, since I don't know if it will actually work at the time he needs it most?

37. Aside from educating the public about the availability or unavailability of text-to-911, education is also imperative to inform the public about the capabilities and limitations of text-to-911 where it is available, and the circumstances under which texting 911 is or is not preferable to making a 911 voice call. The public needs to be aware that text may not provide all of the features and functionalities associated with voice 911 service, such as

automatic location. Similarly, the public needs to be aware that, while sending an emergency text may be preferred in instances where the sender is unable to communicate by voice (e.g., due to a speech or hearing disability, or in a hostage or abuse situation where voice calling could be dangerous to the caller), in most other instances, placing a voice call to 911 will continue to be the most effective means of communicating with emergency responders, and therefore will remain the strongly preferable option even where text is available.

Comment: Without location accuracy and subsequent PSAP routing, the text-to-911 service runs the risk of confusing consumers and slowing the adoption of NG911.

With a handset-server-web-browser architecture, the automatic transmittal of a precise location can be acquired from devices that have a GPS chip (or other location mechanisms) during an emergency situation. A handset-server-web-browser architecture approach could shift a public education campaign from the "limitations, considerations, and exceptions of text-to-911" to "appropriate use of their handset's GPS location settings in the context of safety."

43. The record in response to the Notice indicates that NG911 will eventually be capable of supporting the full range of possible multimedia-to-911 communications, including transmission of text, photos, video, and data. However, due to the complexity and cost of deploying NG911 infrastructure on a national scale, full deployment of NG911 will not be uniform and will likely take years. At the same time, the record indicates that it is technically feasible for CMRS providers to implement text-to-911 using existing technologies prior to full deployment of NG911, as evidenced by the successful trials and demonstrations noted above, the University of Colorado and Intrado technical studies, and the fact that the four largest nationwide wireless carriers committed to deploy text-to-911 capability throughout their networks by May 15, 2014. Thus, text-to-911 could be made available to virtually all wireless customers in the near term and delivered to both ''NG-capable'' and ''pre-NG'' PSAPs at a reasonable cost to wireless carriers.

Comment: Multimedia-to-911—including text, photos, video and data—is already made available to PSAPs with internet connectivity nationwide. We are currently delivering these Next Gen features to both NG-capable and Pre-NG PSAPS by utilizing handset-server-web-browser architecture.

The handset-server-web-browser architecture delivery of advanced NG911 features began in late 2010 in California and Texas, and continued to expand nationwide in 2011. This approach did not burden wireless carriers with any additional cost or effort; furthermore, it was not mandated to the PSAPs. It was simply made available to internet-connected PSAPs at no cost to the PSAP and can be utilized by the PSAP as necessary.

44. As discussed below, we believe that enabling consumers to send a text message to 911 in the near term will substantially improve accessibility to emergency services, particularly for people with hearing and speech disabilities. While we recognize that text-to-911 based on pre-NG technologies does not provide the full functionality of NG911-based text, and that it has certain limitations in comparison to voice-based 911, we believe that these limitations are outweighed by the substantial public safety benefits that near-term implementation of text-to-911 would yield. In addition, implementing text-to-911 in the near term will provide valuable real-world operational experience that will help consumers, PSAPs and service providers plan for full NG911 deployment. Moreover, the availability of text-to-911 will provide incentives for PSAPs to acquire Internet Protocol (IP) connectivity and NG911-capable customer premise equipment (CPE), which are both critical steps towards the full deployment of NG–911. We seek comment on these observations.

Comment: We've found that internet connectivity is pivotal when it comes to PSAP effectiveness. Once this is in place, consumers can share life-saving incident information with a PSAP that would not be otherwise available.

With internet connectivity, the line between a Pre-NG and NG911 starts to blur. We did not experience the need for customer premise equipment (CPE) with an internet connected PSAP when employing the handset-server-web-browser architecture, although we noticed that several PSAPs did prefer to have some computers dedicated and reserved solely for internet access.

58. Balanced against the above-described benefits of text-to-911, we believe that the record indicates that text-to-911 is technically feasible and can be achieved in the near term at a reasonable cost to PSAPs, CMRS providers, and providers of interconnected text. We disagree with commenters who argue that the Commission should not act until NG911 is fully deployed. As we note above, it will likely take a number of years to deploy NG911 on a national scale. The record also indicates that it is technically feasible for CMRS providers to implement a text-to-911 solution using existing technologies prior to the full deployment of NG911, and we believe the same should be true for interconnected text providers. Thus, text-to-911 could be made available to virtually all wireless customers in the near-term and delivered to both ‘‘NG-capable’’ and ‘‘pre-NG’’ PSAPs at a reasonable cost to wireless carriers. In this respect, we also believe that investments made now by PSAPs and carriers to support text-to-911 can be leveraged to support NG911 deployments, and accordingly constitute building blocks towards an IP-based emergency network. For example, while some PSAPs may choose to implement text-to-911 through existing equipment, such as TTY terminals, other PSAPs may choose to upgrade their equipment to receive text messages in a manner that will also support additional data in an NG911 environment.

Comment: MobileTREC's experience since 2010 in utilizing the handset-server-web-browser architecture demonstrates that:

- NG911 does not need to be deployed to support a successful, nationwide text-to-911 implementation;
- Internet connectivity is the primary distinction between "NG-capable" and "pre-NG" PSAPs;
- Investments in deploying text-to-911 can be leveraged to support NG911 deployment, so long as the primary investment is in reliable internet connectivity;
- Equipment upgrades to PSAPs are less burdensome for the receipt of text messages in a handset-server-web-browser architecture. However, the PSAP must have internet connectivity.

63. While public safety entities generally regard near-term text-to-911 as feasible, some express concern about the potential cost of implementation and the impact on PSAP resources if text-to-911 results in a heavy influx of text messages. The State of California states that ''[s]hort-term implementation of text-to-911 will likely increase the time and resources required for PSAPs to process information as compared to handling voice calls.'' APCO states that ''[w]hile SMS may be appropriate as a near-term solution for limited circumstances, it is not a long-term solution for the general public.'' NASNA opposes encouraging wide-spread deployment of short-term SMS-based solutions ''[u]ntil such time as text-delivery standards are developed, adopted and compliance is assured.'' Finally, BRETSA and the Colorado 911 Task Force argue that ''devoting funds to an interim solution for text messaging may mean that less funds will be available in the future for a more effective solution, once NG9–1–1 has been deployed and PSAP systems updated to take advantage of NG9–1–1.''

Comment: It would be very difficult to argue that the introduction of something new to any system—much less a PSAP—would not require time and effort. However, the risks to PSAPs can be mitigated by "authentication and verification of text-to-911," "automatic, precise location acquisition," and "accurate PSAP routing."

Generally speaking, anything that comes over the 10 digit line will carry an increased risk to successful implementation, as well has heightening the chance of negative impact on the PSAP. Additionally, since 10 digit calls do get lower priority, consumer expectations and positive sentiment is at increased risk.

With handset-server-web-browser architecture and getting the call into the E911 network, risk and exposure can be mitigated. Additionally, allowing only authenticated calls into the E911 network could reduce risk and exposure to spoofing and spamming.

65. In response to the Notice, CMRS commenters initially opposed a near-term text-to-911 mandate and argued that the Commission should instead

focus its efforts on long-term NG911 solutions. These commenters cited a variety of concerns with implementing text-to-911 prior to the full development of next-generation solutions, including technical limitations, limited monetary resources, reliability and security, issues with consumer education, and liability protection. Notwithstanding some of these concerns, however, the four major wireless carriers voluntarily committed to deploy text-to-911 capability throughout their nationwide networks by May 15, 2014.

Comment: Handset-server-web-browser architecture is a lower-risk, non-invasive solution that exists *today,* providing a text-to-911 solution and solid footing for Next Gen without wasted time, effort, and money. Monetary resource requirements are kept to a minimum for all stakeholders since use of legacy assets and existing protocols are maximized. Reliability and security are assured since calls are routed over the proven E911 network.

71. Based on the Cardiac Study, we calculate that for the voice-based 911 system as a whole, improved response time resulting from delivery of precise location information saves approximately 4,142 lives annually nationwide. To determine the proportionate benefit for people with disabilities that would result from availability of text-to-911, we consider only the 0.7 percent of the population with the most severe hearing and speech impairments (0.5 percent for extreme hearing difficulty and 0.2 percent for extreme speech difficulty). Assuming a proportional number of 911 calls in cardiac emergencies from this population, and limiting our calculation to intentional wireless calls in which the hearing- or speech-disabled person cannot rely on a speaking person to make the 911 call, we calculate that text-to-911 would save approximately 7 lives annually in cardiac emergencies. Using an accepted statistical value-of-life model developed by the U.S. Department of Transportation, we estimate the value of each life saved to be $6.2 million. This yields a total benefit of $43.4 million annually for cardiac victims alone, or more than ten times the highest estimated cost of the rules proposed herein.

Comment: This argument is predicated on "precise location information." However, Paragraph 37 says, "The public needs to be aware that text may not provide all of the features and functionalities associated with voice 911 service, such as automatic location."

It seems imperative to the success of this implementation of text-to-911 that the location problem be solved to the fullest extent possible.

"Precise location information" and "automatic location" are inseparable. "Precise location information" should be acquired "automatically" and with high precision from the GPS receiver (or other technology).

The total benefit of the text-to-911 implementation will increase, and risk can be mitigated, if location is provided contemporaneously with the call—in the ALI record—to accurately route and improve the response time.

73. In response to the Notice, several commenters raise concerns about the reliability of text-to-911, and particularly SMS-based text. 4G Americas notes that ‘‘it found no short-term solution that did not exhibit limitations with respect to capability, performance, and impacts to users, network operators and/or PSAPs.’’ CTIA states that ‘‘SMS was not designed to be used as an emergency service’’ and urges the Commission to focus on the deployment of ‘‘advanced 9–1–1 emergency communications services in emerging wireless technologies.’’ Other commenters similarly assert that certain technical aspects of SMS limit its reliability for emergency communications. Among the factors cited are that SMS (1) is one-way rather than session-based; (2) lacks delivery or performance guarantees, and may not inform the sender when a text is not timely delivered; (3) does not prioritize emergency messages; (4) does not assure that multiple messages will arrive in the sequence they were sent; (5) does not support 911 location technologies that are used for 911 voice calls; and (6) lacks protections against transmission of spurious or fraudulent 911 messages.

Comment: It would be difficult to argue that SMS-based texting is reliable. However, it would be equally difficult to argue the SMS-based texting to 911 would not save lives. Both perspectives have truth; hence the difficulty in delivering a consumer-hardened solution that connects texting to 911 services in the United States.

However, in the handset-server-web-browser architecture:

- SMS-based text serves as the trigger mechanism to deploy help in an emergency situation;
- An authenticated SMS to 911 text can be delivered via a browser through the E911 network in a session-based, two-way communication manner;
- Text-to-911 messages can be prioritized and sequenced if they flow through the E911 network to the PSAP;
- 911 location technologies for text-to-911 can be supported in the same manner as voice calls, and this technology is available today.
- Spurious and fraudulent 911 messages can be thwarted by authentication employed prior to the call or text entering the E911 network.

79. Accordingly, as discussed below, we are seeking comment on a variety of issues associated with non-SMS messaging applications, including ‘‘over-the-top’’ texting applications provided by third-parties. In this regard, our focus is on those applications that are most like SMS and therefore most likely to be the subject of a consumer expectation that they may reach 911, namely those two-way texting applications that allow text messages to be sent to any U.S. phone number, irrespective of the hardware utilized to send that message.

Comment: Smartphones have become cheap, mobile and WiFi internet more common, and data bundles more affordable. And the trend is accelerating with competitive pressures in the space of service delivery.

Over-The-Top instant messaging services have replaced SMS for consumers in younger age groups who are using Whatsapp, Ping, Touch / PingChat, Kik, Cnectd, Skype, and many other Over-The-Top services. There are plenty of instant messaging choices that offer greater consumer benefit than SMS, which continues to fuel the trend.

Cheap flat-rate subscriptions and advance functionality are irresistible to younger consumers, who have been flocking in large numbers to SMS alternatives. Being able to reach all your friends and classmates and exchange virtually unlimited numbers of messages is an offer that is hard to resist.

If the text-to-911 initiative is to include supporting our children, adolescents and young adults, then it ought to include Over-The-Top texting applications.

84. On the other hand, several entities express concerns about the Commission extending text-to-911 obligations to ''over-the-top'' software applications. Sprint notes that ''[m]any * * * over-the-top messaging providers are relatively small and likely may not have the financial resources to achieve PSAP integration.'' Sprint also asserts that ''it would not be able to control * * * third-party commercial offerings nor influence how wireless consumers utilize such applications.'' Further, Sprint highlights the limitations associated with ''over-the-top'' software solutions, including the ability to ''obtain location information associated with a particular call.'' Similarly, U.S. Cellular states that it prefers text-to-911 to ''be considered in the context of native SMS,'' and that it does not favor covering over-the-top text applications. U.S. Cellular also notes that ''on some devices, SMS messages up-convert to MMS, and delivery of those converted messages to PSAP[s] would need to be further explored.'' Motorola Mobility maintains that ''any regulatory responsibility for over-the-top text-to-911 applications, including collection of precise location information, must rest only on the application developer.''

Comment: In the handset-server-web-browser architecture, Over-The-Top application PSAP integration can be simplified with low-cost, low-entry web service API calls that are affordable to any reasonably viable business model, regardless of whether the SMS message is up-converted to MMS or not.

In this architecture, the message (whether via SMS or IM) is simply a trigger mechanism that initiates the "session for emergency response." It sets forth the sequence of server-side events to deliver emergency response to the person that is requesting help.

This architecture thereby relegates the client-side device—in addition to being a trigger mechanism—to being a location acquisition method at minimum. At maximum, the client-side device would also support situational updates and response coordination and communication capabilities.

Educated and concerned citizens can take responsibility to “better” equip themselves with devices that are “safer” than others and are capable of more advanced emergency response coordination, like voice interaction and streaming video.

Manufacturers can provide the consumer with information about devices, so that consumers may make an educated decision regarding the purchase of a device.

For example, if an electronic device does not have a GPS chip (or other means of automatically acquiring precise location information) that could be activated during an emergency, then an educated consumer could decide not to purchase that device based on a consumer-friendly safety rating. Also, if the device did not have the ability to open a line of voice communication either through voice or data (the consumer doesn't care – all things being equal), then they can decide not to purchase that specific device and opt for one that would provide voice communication during an emergency situation.

94. We also seek comment on whether third-party interconnected text software providers face technical issues or obstacles in the implementation of text-to-911 that could affect the extent to which a text-to-911 requirement may be implemented, or the timeframe for such implementation. Commenters agree that flexibility in implementation is important to reduce the burden of deploying text-to-911. This is likely to be particularly important for interconnected text applications, since they are often designed by smaller enterprises. Do third-party software providers face difficulties assuring that their application works reliably on all hardware platforms, operating systems, and operation system versions supported by the application? Do these applications have access, possibly after asking for user permission, to cell tower and/or geo location information via platform application programming interfaces? Can applications warn users that disabling location functionality for an application may interfere with the ability to send text-to-911 messages? Could operating system providers facilitate the access to location information for emergency calling and texting purposes? If the text application cannot obtain location information, under what circumstances can the application deliver the text message to a gateway and have the gateway service determine the approximate location of the message sender? Can texting applications determine the cellular telephone number of handsets to help locate the mobile device?

Comment: In the handset-server-web-browser architecture, third-party software providers do face additional challenges in supporting a multitude of versions and in the implementation of hardware platforms and operating systems. However, a server-based, API-integration solution can serve to lighten the burdensome task of quality assurance testing on the myriad of combinations.

In the handset-server-web-browser architecture, third-party software developers generally do have access to location information on GPS-enabled devices via programming application interfaces.

Applications can warn consumers that disabling location functionality for an application is likely to impede an emergency response. However, while consumers don't want to be tracked for “marketing” purposes, they *do* want to be found in an emergency, and presently there is no technological differentiation between the two.

So, consumers are confronted with being “tracked” if they want to “be safe” and—in the true American tradition—most consumers will choose to be unsafe rather than be tracked.

A gateway service can provide location information by first checking the subscriber's last location update. In the case of outdated or no information, the server pings back to the device for precise location information. If none is retrieved, then the call must be forwarded to call triage for manual location acquisition.

Therefore, the gateway service solution must be supplemented with the classic “call or text taker” that has the skill to acquire locations manually when precise GPS location is not available automatically (as with a non-smart-phone or a turned-off-GPS).

The cellular telephone number is not essential for locating the mobile device.

99. Are there alternative mechanisms that might be used? Which of these methods provides advantages or disadvantages for the application developer? For the PSAP? For the consumer? Which options are more likely to transition seamlessly to NG911, or provide a foundation that can be leveraged by one or more of the parties in the NG911 delivery chain? How do these options differ in terms of implementation complexity, reliance on technologies not readily available, cost to the text messaging provider or reliability?

Comment: The handset-server-web-browser architecture is a viable alternative mechanism. In this architecture, the SMS Gateway Service provides an API to application developers, enabling them to:

- Seamlessly integrate text messaging into their emergency response protocols.
- Initiate emergency response sessions based on a text-to-911;
- Deliver SMS-web-based chat sessions to PSAPs by opening a session on the E911 network via the legacy ANI/ALI mechanism.
- The SMS-web-based chat sessions can be accompanied by a web-based Personal Safety Profile of information to any internet-capable PSAP.

In effect, the handset-server-web-browser architecture delivers NG features to both the consumer and PSAP with limited impact on existing systems and protocols.

100. Commenters have previously expressed concerns about the lack of access by the third party provider to consumer location information associated with a text-to-911 message, impacting both the ability to deliver the text message to the appropriate PSAP and the ability to locate the consumer seeking assistance. Which of the options described above facilitate delivery of location information? Are there other technical mechanisms or commercial arrangements that would facilitate the ability of a third party text application to ascertain the location from which the text originated? Can a requirement to provide text-to-911 precede such an ability? Can privacy controls utilized by some applications to limit access to location information interfere with the ability to identify the origination of a text-to-911 message? Are there other privacy concerns that need to be considered, or is it reasonable to assume that a person sending a text to 911 implicitly waives such privacy concerns? Can third party text messaging applications bypass any privacy safeguards when 911 is the destination short code?

Comment: The handset-server-web-browser architecture can facilitate delivery of location information if:

- The handset/initiating-device is capable of providing location information,
- The consumer has opted to share location information during an emergency, and
- The device can be reached over the internet.

It is important to note that operating system makers and device manufacturers could develop a way for consumers to activate the location retrieval function either for safety and/or marketing.

Privacy controls utilized by some applications to limit access to location information can interfere with the ability to identify the origination of a text-to-911 message. At present, if the GPS is turned off because a consumer doesn't want to be “tracked” by other applications, they have inadvertently impeded the ability the sharing of automatic, precise location information during an emergency.

118. Discussion. Verizon and TCS have indicated that they will use coarse location as the basis for PSAP routing determination in their deployment of text-to-911. Moreover, according to the Tennessee Emergency Communications Board (TECB), ‘‘[t]he TECB would not have agreed to host the pilot [with AT&T] had it not included the capability for location information to travel with the text. The Tennessee pilot will include a texting solution that includes rough location information.’’ The coarse or rough location information as referred to by Verizon and TECB is the equivalent to the location of the cell sector from which the wireless 911 call is made—or generally E911 Phase I information under the Commission’s E911 rules. Given the apparent technical feasibility of cell sector location and its actual use in text-to-911 trials to date, we propose that CMRS

providers be required to route text messages automatically to the appropriate PSAP based on the cell sector to which the mobile device is connected. We also propose to define the ‘‘appropriate’’ PSAP presumptively for text-to-911 routing purposes to be the same PSAP that would receive 911 voice calls from the same cell sector. However, we recognize that in some instances, state or local 911 authorities may wish to have text messages routed to a different PSAP from the one that receives 911 voice calls from the same location (e.g., to have all 911 texts within a state or region routed to a single central PSAP rather than to individual local PSAPs). Therefore, we propose to allow designation of an alternative PSAP for routing purposes based on notification by the responsible state or local 911 authority. We seek comment on these proposals. We also seek comment on whether there are any technical obstacles or cost factors that could make it more difficult for some CMRS providers, such as small or rural carriers, to support automated routing of text messages to the appropriate PSAP.

Comment: The handset-server-web-browser architecture has enabled a mobile overlay of the existing 911 infrastructure. This mobile overlay routes calls based on “personal preferences” of an “authenticated subscriber.” The routing is dynamic so that it can accommodate consumer preferences of universities, schools, and the deaf and hearing impaired.

123. Discussion. The record in this proceeding indicates that providing precise location information in connection with text messages is technically feasible but could involve significant changes and upgrades to existing SMS-based text networks. We are therefore concerned that it could initially be overly burdensome to require CMRS providers to comply with the Commission’s Phase II E911 location accuracy rules when transmitting text messages to 911. While we recognize the importance of providing precise location information to PSAPs, we believe that the benefits of enabling consumers, particularly consumers with hearing and speech disabilities, to send SMS-based or non-SMS-based text messages to 911 outweigh the disadvantages of being unable to provide precise location information. Accordingly, we propose that the Commission’s Phase II E911 location accuracy requirements not apply to the initial implementation of text-to-911. Nevertheless, we encourage the voluntary development of automatic location solutions for text-to-911 that provide at least the same capability as Phase II location information for voice calls to 911, even if the location solution does not use the same underlying location infrastructure. For example, messaging applications could transmit location information that is available on handsets using the data channel. Further, applications that use IP-based message delivery may also be able to include location information obtained via a mobile device API along with the text message. We also seek comment on whether operating system vendors or CMRS providers can facilitate the delivery of more precise location for

interconnected text providers. Are there any other factors that the Commission should consider in regard to location delivery for interconnected text providers?

Comment: Our experience over the past three years has proven that providing precise location information can be achieved without any change to existing SMS-based text networks. In addition, delivery and routing of location information to PSAPs can be achieved over the existing E911 legacy network.

Our experience has further demonstrated that CMRS providers have several challenges complying with the Commission's Phase II E911 location accuracy rules when transmitting text messages to 911—but application developers can accomplish this task without requiring onerous change by stakeholders.

In addition, since text-to-911 adheres to the same requirements that were implemented for voice calls, the risk to the safety and security of citizens is dramatically reduced.

The handset-server-web-browser architecture does not utilize the same underlying infrastructure for gathering location information. This is because that infrastructure is heavily network-based.

Operating System and Handset vendors can facilitate the implementation by ensuring the APIs—which exist today—are accessible to developers, and that the purpose of their access is vetted, managed, and protected.

In short, consumers should have a choice between activating the tracker to save their life—or to receive a timely and targeted marketing promotion.

126. Discussion. We agree with NENA and APCO that it is critical for consumers who are roaming to have the ability to text-to-911 during an emergency, and we further note that current voluntary measures do not provide for text-to-911 service while a subscriber is roaming. Accordingly, we seek comment on whether both the home and visited network operators must cooperate to support the delivery of the text to the appropriate PSAP serving the sender's location when a consumer sends a text message to 911 while roaming. We also seek comment on T-Mobile's assertion that its network is unable to collect location information on a roaming subscriber and is thus, technically limited from providing text-to-911 for roaming subscribers. Could the visited network intercept text-to-911 messages and determine the mobile device location? What technical and economic obstacles need to be addressed in order to provide text-to-911 service to consumers? How can these obstacles be overcome? We also seek comment on whether the same approach should apply to international roamers while they are located in the United States.

Comment: Roaming must be supported. Consumers will not understand why text-to-911 isn't working while roaming because they don't even know *when* they are roaming.

It would be futile to “educate” consumers about this issue, because even when it is understood, there is no way to know if one is roaming during an emergency. This runs the risk of creating a confused and frustrated citizenry that might well lose trust in text-to-911.

The problem is that the carriers have substantial barriers to supporting roaming.

The answer is to move away from a solution that is network-centric—which has inherent limitations—to the handset/device.

As for text-to-911 effectiveness on university campuses: because many students are roaming at school, it is uncertain whether the solution would work as intended. It is chilling to think that, following another school shooting, the headlines will not report the bravery and stellar response efforts of our first responders—it will instead report the failings of the text-to-911 solution.

131. We seek comment on the web browser approach. Because many PSAPs already have Internet connectivity even if they are not NG911-capable, we believe that this approach would offer PSAPs a cost-effective alternative for receiving text messages without having to upgrade to NG911. We seek comment on what costs, other than Internet access, a PSAP would have to incur when implementing a web browser solution. For example, T-Mobile contends that TCS’ web browser application would require PSAPs to upgrade their CPE. Is this accurate, and if so, what would the nature and cost of the required upgrade?

Comment: We've worked with many PSAPs across the nation and found that the web browser approach provides the most effective means of incident information, which includes a text incident log, pictures, and other information that could be vital to the survival of a citizen.

Further, most incidents—and therefore all PSAPs—require only the most simple information to handle an incident. That is “Do you require emergency assistance?” and “Where are you located?”

There are situations where additional material, like photographs and guardian information, can save the life of the subscriber if it is available when first responders need it.

Respectfully submitted,

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