Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications	)	PS Docket No. 11-153
	)	
Framework for Next Generation 911 Deployment	)	PS Docket No. 10-255
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To: The Commission

REPLY COMMENTS OF
THE BOULDER REGIONAL EMERGENCY TELEPHONE SERVICE AUTHORITY
ON POLICY STATEMENT AND SECOND FURTHER NOTICE OF PROPOSED RULEMAKING REGARDING TEXT TO 9-1-1

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Summary

It is critical that 9-1-1 compatibility is designed into services *ab-initio*. Waiting until the service becomes a popular method of communications which users expect will allow contact with 9-1-1, means that people will have to die before it is recognized that people expect to be able to contact 9-1-1 and that capability is provided.

In practice, the TDD interface and browser methods for delivering text messages to 9-1-1 entail little or no cost to the PSAPs. The alternative of obtaining an IP data line for delivery of ANI/ALI, text messages, and other NG9-1-1 type services to the PSAP entails some costs, but will be appropriate for PSAPs expecting to receive larger numbers of text messages or wishing to receive the additional NG9-1-1 type services. Under these circumstances, the barriers to implementation of text messaging by PSAPs are so low, that nearly ubiquitous deployment of the capability of PSAPs to receive text messages to 9-1-1 is likely to be rapidly realized.

Safe Harbors will not encourage future voluntary agreements, and will result in one-off regulations applicable to different providers which will be difficult to administer. Immunity from liability is a matter of state law, and should be applied only where statutes or regulations establish requirements and standards of performance. Where services are deregulated, liability for negligence is a market force.

The Commission's proposed regulations can be effectively applied to domestic and foreign providers, equipment manufacturers and OS providers. The size of the domestic market will lead to the Commission's requirements being *de facto* standards for other nations also seeking to provide emergency calling and texting solutions.

The Commission should address the impending discontinuance of true SMS service, which will reduce text-only coverage areas extending beyond areas in which voice coverage is provided.

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The Boulder Emergency Telephone Service Authority ("BRETSA"), by its attorney, hereby submits it's Reply Comments on the Commission's proposals in its January 31, 2014 Policy Statement and Second Further Notice of Proposed Rulemaking in the above-referenced Docket.

I. 9-1-1 Compatibility Must Precede Demand.

A significant selling point for CMRS services has been the ability to reach help if something happens while away from home. Yet we will never know how many people depending upon CMRS services to reach help, died for lack of 9-1-1 compatibility from the commencement of commercial cellular service in 1985 until the Commission found it necessary to mandate the provision of even Phase 0 Wireless 9-1-1 Service almost 15 years later.

How many people would the members of the VON Coalition, CenturyLink, Microsoft, and the Information Technology Industry Council have perish before they stop opposing, and actively pursue, 9-1-1 compatibility for *all* communications services and applications, including text?[1] How many deaths must they see before they find consumer expectations of 9-1-1 compatibility? Just as BRETSA has repeatedly urged the Commission to require developers of *new* communications services provide a 9-1-1 solution as a prerequisite to authorization of the service, it is essential that the Commission move as quickly as possible to require deployment of 9-1-1 solutions for *existing* communications applications and services.

Commenters in this proceeding make statements as to consumer expectations, without any evidence as to what consumers actually expect and apparently rationalized to support each commenter's position. The fact that the volumes of OTT text messages now exceed the volumes of SMS text messages is strong evidence that consumers see them as interchangeable, and substitutes for each other. TruePosition states that 100 Million people per day rely upon location services provided by its technology.[2] It is thus reasonable for users to expect that their alternative text messaging services are functionally equivalent to SMS text messaging, and location aware consistent with E9-1-1 service.

As use of services or applications for communications become more common, consumers are more likely to expect that those services will enable them to communicate with 9-1-1. Waiting until such expectations are demonstrated to provide 9-1-1 compatibility necessarily means that lives and property will be lost before such compatibility is provided. Moreover, retrofitting services or applications for 9-1-1 compatibility is a poor substitute for developing the service with 9-1-1 compatibility *ab initio*. Thus, while AT&T states that CMRS providers

[1] CenturyLink would have the Commission delay the deadline so that it can bring to market a product it has designed without text-to-911 compliance! CenturyLink Comments, at 2-8. Microsoft Comments, at 10.
[2] TruePosition Comments, at 1.

cautioned against "rushing" to adopt SMS-based text-to-911 because it was not designed to standards appropriate for emergency communications; the more salient point is that CMRS providers did not design SMS text as an emergency communications tool. Further, CMRS providers did nothing to address the lack of text-to-911 capability despite the popularity of the service, until it was clear the Commission was going to mandate an SMS text-to-911 solution.[3]

Moreover, when confronted with an emergency, consumers will use any means available and workable to contact 9-1-1. For example, there are numerous instances of people injured or lost in the Colorado backcountry and other areas from which wireless voice calls cannot be placed, who have used text messaging to reach family or friends to relay messages to public safety agencies. There are published instances of women hiding from a violent boyfriend or spouse who used text messaging to contact a friend and ask them to call the police, because they feared the sound of a voice call would reveal their hiding place. It has similarly been reported that during school shooting incidents, students have tried to text-message 9-1-1.

Aside from the "any means available" approach to reaching 9-1-1 when POTS or CMRS voice service is not available or safe for use; people faced with an emergency situation will often be excited or panicked, and cannot be expected to act in the most clear-headed and rational manner.

It is also reasonable for the Commission to conclude that people should be able to use the service or application interface with which they are most familiar to communicate with 9-1-1; or alternatively, that people should not be expected to communicate with 9-1-1 in an emergency with an interface with which they are not familiar. It is equally reasonable, and important, that the PSAP personnel with whom they are communicating be just as familiar with the service or application interface that *they* are using. This would seem to be most practically met through the

[3] AT&T Comments at ii. ATIS Comments at 6.

providers of the underlying connections to the PSTN or CMRS networks or public Internet publishing API's for their voice, text or other communications/messaging systems or applications.[4] The alternative VoIP providers and OTT providers can allow their users to work in a familiar interface, and transmit the messages via the underlying provider's system or application. The TCCs or CAD Systems can in turn present the text message in a consistent and familiar format for PSAP personnel. If, in a specific instance, the text message was to be transmitted to PSAP personnel or a First Responder via a commercial service and smartphone, the message would also arrive in a familiar format. BRETSA agrees with NASNA that alternate text-to-911 delivery methods should be indistinguishable from one another at the PSAP level, and that a PSAP should be able to use a single interface for messages from different text-messaging systems.[5]

If the Commission must recognize the changing paradigm to Broadband as the new twisted-pair and the Internet as the new PSTN, and determine that CMRS data services and broadband providers should be regulated as common carriers in order to require practical and ubiquitous 9-1-1 solutions across communications services and applications, then it should do so.

II. Deployment of NG9-1-1 and PSAP Readiness Are Not Necessary Prerequisites To Text-TO-911 Service.

Many Commenters suggest that deployment of NG9-1-1 is a prerequisite to Commission requirements for text-to-911.[6] Commenters also express concern with PSAP readiness to receive

[4] BRETSA is ambivalent with regard to transmission of photo attachments and video calls or attachments to 9-1-1. BRETSA believes that in the vast majority of cases, the photos or videos the end user would choose to send would be of little or no utility even if PSAP personnel or First Responders would have the opportunity to view them without delaying arrival of First Responders at the scene of the incident, and would adversely impact PSAP personnel. In those rare instances when photos or videos may be of utility, BRETSA believes transmission of such media to the PSAP via commercial service provider to a browser or smartphone would suffice with minimal cost impact.

[5] NASNA Comments, at 3.

[6] See Comments of AT&T, at v, 1, 7. See, also, Comments of NTCA, at 2, 5-6, Comments of T-Mobile, at 6.

text-to-911 messages.[7] These concerns are misplaced, as neither NG9-1-1 nor PSAP readiness is a prerequisite for text-to-911.

A. Delivery of Text-to-911 Messages To Non-NG9-1-1 PSAPs.[8]

There are two principle components to NG9-1-1. The first is the "Data Complex" which is a combination of location determination, routing, security and related functions. The second component of NG9-1-1 is IP-enabled transport; generally an ESInet. Non NG9-1-1PSAPs may be IP-enabled, as many PSAPs utilize IP-based phone systems as well as CAD systems and are NG9-1-1 ready even though NG9-1-1 service is not provided.

There are three primary methods by which text-to-911 messages are delivered to non-NG9-1-1 PSAPs. The first method utilizes the TDD devices or interfaces each PSAP is required to maintain for delivery of text-to-911 messages, by converting the text messages to for delivery over analog lines using Baudot tones. This appears to be the least-favored option, is discouraged by TCCs, but may be an initially appropriate solution for PSAPs which rarely receive TDD calls, such as those which report having received no or one TDD calls in the past 15 years. PSAPs incur no costs in implementing this solution.

With the second method, the PSAP accesses text messages using a browser interface. The TCC provides a browser interface, accessed via the public Internet, for PSAP personnel to review and respond to text-to-911 messages, access location and other relevant information, access transcripts of prior text message conversations, and perform most of the text-messaging functions which would be available with NG9-1-1 delivering text-to-911 into a CAD system

[7] CTIA Comments at 7-8.

[8] Gogo, Inc. states that its in-flight connectivity solutions for general aviation should not be required to comply with the rules and route 9-1-1 calls to PSAPs when used in an airborne context. Gogo Comments. BRETSA notes one of the PSAPs it supports is located adjacent to the Boulder County Airport, and there are instances when routing of calls from airborne users to that PSAP might be appropriate. However it is also clear from Gogo's Comments that routing a 9-1-1 call to a PSAP while a plane is en route between airports would not meaningfully improve public safety. It may be appropriate to instead route messages using in-flight connectivity solutions to the FAA, Homeland Security or another appropriate agency, which can relay emergency information to local PSAPs as appropriate.

(except perhaps forward or cut-and-paste text message content directly to a First Responder using mobile-CAD). To use this solution, the PSAP requires a browser application installed on a CAD workstation or an independent PC, and an Internet connection. Most PSAPs already have Internet connections (digital IP connections) which may not be capable of carrying in VoIP format the volume of voice calls the PSAP typically receives, but which is more than adequate for delivery of text messages over the browser interface. Outside of the cost of the PC or other device on which the text messages are displayed using a browser, and the cost of the Internet connection which the PSAP will usually already have; there is no cost to the PSAP in implementing this solution.[9]

The third method for delivery of text-to-911 messages to non-NG911 PSAPs is through the PSAP's subscription to a digital IP-enabled data line, in addition to its *existing* CAMA trunks on which 9-1-1 voice calls are delivered. Indeed, TCC Intrado offers to deliver additional NG9-1-1 type services along with text-to-911 messages over such a data line, and will utilize its Viper PSAP phone system to display the text messages delivered via IP data line. This solution entails additional cost, but that cost is significantly less than that which would be incurred in transitioning to full NG9-1-1.

As APCO noted in its comments, delays in transition to NG9-1-1 are likely cost based; resulting in part from the overall tightening of state and local government budgets in the current economy, as well as consumers moving away from telecommunications services subject to 9-1-1 fees.[10] In Colorado, the difficulty is in even identifying VoIP providers let alone collecting the

[9] BRETSA believes the utility of the browser method would be significantly enhanced by CAD vendors incorporating a browser window, or the ability to display the text-to-911 messages delivered via commercial internet connection in a window consistent with its CAD interface, and to record the text messages in the CAD system incident records. BRETSA has been advised that CAD vendors have not pursued such a solution in anticipation of deployment of full NG9-1-1, although the browser-delivery and dedicated data-line options may make upgrading to NG9-1-1 less urgent.

[10] APCO Comments, at 5.

Emergency Telephone Surcharge, and the administrative burden and uneven collection of surcharges on prepaid wireless service at the point-of-sale. [11] The availability of no-cost and lower cost alternatives to NG9-1-1 for delivery of text-to-911 messages, including the alternative of subscribing to a digital IP data line for delivery of text-messages *and other NG9-1-1 type services*, may reduce the pressure on PSAPs to transition to full NG9-1-1.

With these methods for delivery of text-to911 messages to non-NG9-1-1 PSAPs, the TCCs provide the location and other NG9-1-1 Data Complex functions. Indeed, the provision of these functions by a small number of nationwide TCCs may be most efficient. NG9-1-1 is simply one of several methods of delivery of text-to-911 messages to the PSAP, separate and distinct from the text-provider's provision of text-to-911 service to its customers and delivery of the messages to the TCC. NG9-1-1 is not a prerequisite for text-to-911.

B. The Low Barriers To PSAP Implementation Of Text-To-911 Eliminate Concerns With NG9-1-1 Deployment And PSAP Readiness.

BRETSA's position regarding text-to-911 has evolved over the last few years. BRETSA initially recognized the importance of text-to-911 for the deaf and hard-of-hearing, silent call situations, and users out of range of an adequate signal for to place a wireless voice call; but was

[11] NTCA claims that the current 9-1-1 funding model is broken. NTCA Comments, at 4. The funding model is not broken, but it is strained by uneven remittance of fees or surcharges for VoIP and prepaid wireless. BRETSA has submitted that (i) surcharges should be assessed on broadband "connections" per unit of upstream bandwidth rather than on applications or services which may operate over that bandwidth, and (ii) the Commission should implement a prepaid wireless surcharge program under which the service provider would remit the appropriate surcharge when minutes are activated, rather than leave local authorities to seek to collect the small amount of surcharges per transaction from the numerous and often small local vendors as well as Internet vendors. The inconsistent collection and remittance of prepaid wireless surcharges at the point-of-sale results in inequities between customers who do and don't remit the surcharges, discrimination and "free riders," based solely on the happenstance of where a consumer buys prepaid minutes. The point-of-sale surcharge collection systems to which the providers have agreed on a state-by-state basis is also administratively expensive and burdensome. While some prepaid providers use the difficulties of the point-of-sale collection program, the only program to which they would agree, to urge funding of 9-1-1 out of general funds (impossible in Colorado and other states due to the Taxpayer Bill of Rights and similar initiatives in other states which limit the ability of legislatures to raise taxes). The better solution is to adopt a national prepaid wireless surcharge with the surcharge remitted by the service provider to the jurisdiction of the purchaser's residence upon activation of minutes. As with the Colorado Emergency Telephone Surcharge, providers should be permitted to retain 2% of the surcharge amounts as compensation for the administrative costs of collecting and remitting the surcharge.

concerned with the impact on 9-1-1 of general use of text-to-911 messaging, particularly if consumers used it as a substitute for voice calls.

As BRETSA feared, the average text-message conversation with a PSAP takes longer than a voice call to 9-1-1. However the evidence is mounting that individuals realize that voice calls are more expeditious and efficient than text-to-911 and place voice calls when possible. When they use text messaging, people appear to be avoiding use of text-messaging abbreviations that could cause confusion. While text-to-911 is not sufficiently widely available to draw a final conclusion, BRETSA is cautiously optimistic that it will not cause the problems that many feared.

Another significant concern was the cost to PSAPs of implementing and providing text-to-911. There was concern that NG9-1-1 would have to be implemented, and that the additional time required to handle text messages would require employment of additional personnel. For public safety agencies, budgeting is a "zero-sum game." The agencies have limited funding to provide all of the required services from patrol services to vehicle acquisition and maintenance, victims services and jail operations, as well as PSAP operation, for example. In general figures, BRETSA provides an average of $3.5 Million per year in surcharge-based funding to the Boulder County PSAPs, and the agencies which operate the PSAPs already provide in the aggregate and additional $7 Million per year in PSAP funding.[12] If additional equipment, service or personnel costs were required to receive text-to-911 messages, the funding to meet these costs would have to be drawn from other public safety services, or perhaps from other public services such as K-12 education.

The availability of the TDD and browser solutions for text-to-911 at little or no cost to the PSAP, and the extant usage patterns which have not required engagement of additional

[12] BRETSA funding based on a forward-looking 5-year average, not including NG9-1-1 transition costs.

personnel, means that there are no or very low barriers to implementation. PSAPs have the ability to implement the TDD or browser solution, and upgrade to a data-line solution if and when the volume of text messages (or availability of other NG9-1-1 type services over the same connection) justifies it. BRETSA anticipates that PSAP receipt of text-to-911 messages will soon be almost ubiquitous.

BRETSA shares NASNA's concerns about comments by Commission officials about PSAPs needing to step up to the plate relative to text-to-911.[13] As BRETSA outlined in the "agenda-setting" Section 1 of its Comments in this proceeding, 9-1-1 Authorities and PSAPs are grappling with many issues regarding 9-1-1 and evolving technologies which the Commission has yet to resolve, including uncertainty over whether states have jurisdiction over IP-based NG9-1-1 Services such as the ESInet, as well as the Data Complex functions, which impact whether services rates can be tariffed on a cost-basis and averaged across high- and low-cost areas, and whether competition must be permitted regardless of the inefficiencies which may result. However BRETSA is uncertain that PSAPs are waiting for a soon-to-be available native IP solution as suggested by NASNA.[14] Intrado and TCS, both TCCs, have stated in a Colorado PUC workshop that the TDD and browser solutions for text-to-911 are free, and Intrado is actively marketing native IP text and other NG9-1-1 type solutions through subscription to an IP data line to deliver traditional ANI/ALI plus these other applications. These developments may reduce the pressure for PSAPs to upgrade to NG9-1-1 and allow them to develop the funding for the transition over time. BRETSA believes that the no-cost alternatives for receipt of text-to-911, plus the growing record of text-to-911 traffic being quite manageable, will result in rapid adoption of text-to-911 by PSAPs. For this reason, BRETSA does not share NENA's view that

[13] NASNA Comments, at 4.
[14] NASNA Comments at 4.

the Commission needs to engage in outreach efforts to encourage state and local support for Text-to-911 deployment.[15]

C. The Commission Should Create And Maintain, Or Mandate, A Database Of PSAPs Requesting Text-to-911.

There are numerous text messaging providers whose services consumers in any jurisdiction may use. Consumers using any particular text messaging application or service may travel into the jurisdiction of a PSAP, even within their home service area (non-roaming). It is simply unreasonable, impractical and unrealistic for a PSAP to identify and notify all text messaging providers of its election to receive text-to-911 messages. BRETSA agrees with the Texas 9-1-1 Entities that this would be an unmanageable burden.[16]

As BRETSA has stated, it will be most efficient and effective and least costly for the underlying "connection" providers, such as the CMRS providers, to make available the APIs for OTT text providers to utilize the CMRS text messaging interfaces to transmit and deliver text-to-911 messages. These messages would thus be transmitted to a TCC, which would deliver the text-to-911 message to the PSAP, or an appropriate bounce-back message to the end user. The TCCs, which appear to be competitively marketing text-to-911 solutions to the PSAPs, would thus be the logical entities to receive the PSAP requests for text-to-911 service and their preferred method of delivery, and to maintain online databases of these elections.[17] Alternatively, if the Commission made the CMRS providers responsible for development and maintenance of online databases of PSAPs requesting text-to-911 service, the CMRS providers would likely

[15] NENA Comments, at 7-8.
[16] Texas 9-1-1 Entities Comments, at 3.
[17] BRETSA believes that the TCCs, Twilio, and all other entities in the chain of delivery of 9-1-1 calls and messages to the PSAPs, and all functions incident thereto, should be subject to state PUC and/or Commission oversight (regulation), or alternatively must face liability for their negligence, gross negligence and intentional torts. In this regard, BRETSA shares NTCA's concerns with the lack of regulatory mandate for TCCs to interconnect, or other oversight of these providers who play a critical role in the delivery of text-to-911 messages and claim insulation from oversight as "information service providers." NTCA Comments, at 6.

contract with the TCCs to provide this service. Alternatively, the Commission should develop and maintain the databases, and publish them online.

III. Safe Harbors Should Not Be Provided, And Immunity Should Only Be Incident To Regulatory Oversight.

Voluntary agreements entered to forestall regulatory action should not limit further regulatory requirements. Providing "safe harbors" for entities which enter into voluntary agreements could also result in a variety of "one-off" regulations applicable to various parties, resulting in confusion and inconsistent requirements and results.

Further, immunity is grounded in compliance with government regulations establishing the standard of care; the measures deemed prudent. In the absence of such regulations, liability for negligence, gross negligence and/or intentional conduct is an essential market force compelling prudent conduct.

A. "Safe Harbors" Should Not Be Accorded Providers Entering Into Voluntary Agreements.

The long-used script is now dog-eared and well worn. Oppose regulations. When mere opposition is losing its effectiveness, agree with the goals of the regulation but argue that more study and research, and development of standards, must first be completed. As that tactic runs its course, adopt voluntary standards to further forestall regulatory action. Argue that this course of action, grudging adoption of standards to forestall Commission action, should be rewarded with permanently limited obligations in place of the requirements the Commission finds are in the public interest. BRETSA submits that if such limitation of obligations is ever appropriate, it is most certainly not appropriate in the context of public safety.[18]

[18] Indeed, BRETSA asserts that rather than waiting for industry providers to develop service-by-service solutions, the Commission should consider adopting solutions which will provide location awareness across multiple services which challenge the 9-1-1 system, including wireless voice and text communications with 9-1-1 and multi-line telephone systems (MLTS).

Following the script, CTIA and Verizon suggest that unless the four national CMRS providers who entered into the voluntary agreement with APCO and NENA are rewarded with limitation of their obligations to those included in the agreement, there will be no incentive to enter into future voluntary agreements.[19] So much for corporate responsibility and doing what's right; as if the years that passed from commencement of commercial cellular service until the Commission finally required that providers supply even Phase 0 Wireless 9-1-1 service did not already evidence that these providers serve the basic corporate goal of maximizing shareholder wealth, and serve the public interest only under regulatory mandate or the threat of that mandate. Put another way, providing these carriers safe harbor for their voluntary agreement to implement text-to-911 will provide no assurance that they will enter into such agreements in the future. Only the hammer of potential regulation will compel them to do so.

As a practical matter, the provision of a safe harbor for entities entering to voluntary agreements to forestall regulation will result in a panoply of one-off requirements applicable to various providers or combination providers, none fully serving the public interest. It will cause confusion for parties subject to unique requirements and the PSAPs and authorities seeking to obtain text-to-911 service. It will complicate implementation and enforcement of the regulations.

Finally, the providers entering into the voluntary agreement have already realized the benefit of their bargain, forestalling the implementation of regulations and influencing the direction and trajectory of the regulations.

B. Immunity Is A State Concern, And Should Be Tied To Regulatory Oversight.

As BRETSA has stated and the Commission has acknowledged, liability for negligence, gross negligence and intentional acts is primarily a matter of state law, and thus immunity from

[19] CTIA Comments at 2-6, 8-12. Verizon Comments at 1-6. See, also, Telecommunications Industry Association Comments supporting a "safe harbor," at 3, NENA Comments at 13-15. T-Mobile Comments, at 14.

liability is a matter of State law. In Colorado, providers benefit from limited immunity: immunity from liability for their negligence but not from liability for their gross negligence or intentional acts. However BRETSA recognizes that it would not be unreasonable for a state to impose liability upon providers for their negligence, recognizing that the provider would increase customer charges to spread the costs of service failures to all consumers, rather than requiring a consumer who is the victim of a provider's negligence to solely bear the resulting injury and loss. The federal interest would be to require the costs be spread through service rates or surcharges *within* that state and that the costs not be spread to other states pursuing a different policy. Liability can also incent the provider to comply with regulations and act prudently.

Immunity is appropriate where a governmental authority establishes the requirements for service, and imposes penalties to compel compliance and prudent behavior. (As demonstrated above, regulation must compel 9-1-1 compliance.) BRETSA has no objection to limitation of liability where state or federal regulation compels 9-1-1 compliance and defines the service requirements. However commenters in this proceeding argue that they should not be subject to regulation, and CMRS and Broadband providers claim to have succeeded in getting broad legislative deregulation of IP services in over 20 states.[20] Elimination of regulation in favor of market regulation requires that the providers be subject to market forces. Market forces include liability for negligent, grossly negligent and intentional acts, which incentivize prudent behavior.

[20] AT&T, for example, argues that the Commission should reconsider its position on national limitation of liability protection, even though it is one if the providers which pushed for legislative deregulation of IP-enabled services in Colorado. AT&T Comments at vi, 7-8. (Colorado PUC oversight of Basic Emergency Service was retained, regardless of the technology used.) Twilio argues that it should not be subject to Commission text-to-911 requirements (Twilio Comments, at 1), and should be immune from liability (Twilio Comments, at 2), notwithstanding its playing a direct if intermediary role in the transmission of the 9-1-1 communications (Twilio Comments, at 3-5).

IV. The Commission's Proposed Requirements Will Be Effective And Enforceable.

Some commenters suggest that the Commission's proposed rules will be unenforceable and ineffective because, for example, OTT text messaging applications may be developed overseas or marketed from overseas, many text applications are offered for free and the cost of modifying them to be 9-1-1 compliant would run into the thousands or tens of thousands of dollars, carriers do not have the influence over device manufacturers to assure device compatibility, and it is unrealistic to expect the level of coordination between service providers, OS developers, and device providers which would be required.[21]

BRETSA believes that if the opponents to these rules would stop their knee-jerk response to fight the 9-1-1 text regulations (any regulation), and instead devote the fiscal and other resources they have committed to fighting the regulations to developing a universal solution for text-to-911, they could develop an elegant and efficient solution(s), perhaps including open source solutions. It is difficult to believe that the entrepreneurial companies and inventive minds that are spearheading the development of all manner of new applications and technologies which are so rapidly transforming our way of life, cannot come up with a solution for OTT text-to-911.

The implementation of short dialing codes to reach emergency services, and interest in text-messaging to those same short dialing codes, is an international undertaking. Other countries use different short codes to reach emergency services, but that is a difference without a distinction.[22] In making their argument that applications developed in other countries may be marketed and used in the US, the commenters underscore the international scope of the markets

[21] VON Comments, at 5. Microsoft Comments at ii, 7, suggesting the regulations may place domestic companies at a disadvantage vis-à-vis their foreign competitors.

[22] In the Colorado counties which are home to the greatest skiing in the world and ski resorts which are destinations for international travelers, foreign visitors needing emergency services frequently dial the short-codes established in their home country, and their calls are still routed to the appropriate PSAP. That is, providers deliver calls to "9-1-1," and to foreign equivalents to the short code "9-1-1," to the PSAP serving the caller's location. Providers should also be required to deliver text messages addressed to foreign equivalents to "9-1-1," to the PSAP serving the "caller's" location.

and that devices, services and applications are designed and developed for international markets. The size and importance of the US market makes it likely that the regulations or solutions adopted by the Commission will become at least a *de facto* international standard. Moreover, the Commission can enforce the requirements through its type acceptance procedures for equipment and prohibiting marketing of non-compliant devices and applications on web sites and stores of service providers licensed in the US, and vendors located in the US. To the extent that it may be impractical to apply regulations to some developers and vendors of devices and applications, establishment of a standard applicable to devices and applications sold or distributed to users in the US should create a private cause of action.

There may be no perfect solution to enforcing universal text-to-911 compliance, but the perfect cannot be the enemy of the good. Coupling regulatory requirements with penalties for violation and creating private causes of action, with very low barriers to compliance, should promote broad compliance with text-to-911 requirements. Low barriers to compliance are established by requiring that providers and device manufacturers (i) publish open APIs for other text-messaging applications to access their native text-messaging services for messages to 9-1-1, (ii) publish sample or open source code for applications to utilize the APIs, or at least make available online a library of code developed for that purpose by others, and (iii) establish a test-bed for application developers to test their respective applications use of the API for proper delivery of text-to-911 messages (preferably using an alternative short-code for testing purposes to avoid delivery of test messages to a PSAP.)[23] The Voice on the Net Coalition ("VON")

[23] Developing native applications which automatically insert GPS coordinates at the beginning of a text message could resolve the problem with routing text-to-911 messages from roaming users to the correct PSAP.

affirms that the SMS-API solution is technically feasible and can likely be implemented by December 31, 2014.[24]

Commenter's recognition that some text applications are offered for free, and that some such applications serve hundreds of millions of users, would seem to bely the claim that modifying them to provide text-to-911 compliance would cost thousands or tens of thousands of dollars.[25] The requirement that those service providers supplying the underlying connection to the CMRS networks and/or Internet, who do charge for their services, provide (i) basic applications for voice and text E9-1-1 communications, (ii) the ability (APIs) for OTT VoIP and text applications to access those basic applications to reach 9-1-1, and (iii) develop or make available sample code for use of the APIs, would ameliorate this concern. Although this might impact provider cost structures, all CMRS providers (competitors) would be equally burdened.[26]

Finally, it is not unreasonable to expect that if the Commission adopts rules which require that service providers, OS developers and device manufacturers cooperate to provide text-to-911 compliance, they will do so. There would be no market for devices and the operating systems which run on them if there were no CMRS licensees providing the service, marketing the devices in their physical and on-line stores, and subsidizing or spreading the subscriber costs of the devices through monthly recurring charges. OS developers and device manufacturers are not going to develop and manufacture products which would not obtain Commission equipment authorization and which Commission rules would prohibit CMRS licensees from selling or otherwise providing their customers for use on their networks. Nothing in such requirements

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[24] VON Comments, at 4.

[25] VON Comments at 6-7. These application providers may monetize their applications other than through user fees. They may alternatively develop and distribute applications, such as open source applications, for free as a public service, in which case compensation is not sought for time spent on application development.

[26] To the extent that CMRS and other facilities based providers may believe this improperly subsidizes their competition, the subsidy should actually be met through subscriber charges, since universal 9-1-1 compatibility is an essential service for end users. In any event, OTT text applications gained a foothold and now provide for the majority of text messages sent due to the CMRS licensees pricing SMS text messaging service so far above cost.

should impact flexibility with respect to commercial negotiations between carriers, handset manufacturers, resellers and OTT providers, as T-Mobile suggests would occur.[27] Flexibility in commercial negotiations would be preserved, although there may be additional terms to negotiate.

AT&T argues that "burdening carriers with the obligation of providing OTT Text Providers a delivery solution to their Text-to-911 service" "could create market distortions."[28] However AT&T and other CMRS providers supply their customers connections to the CMRS networks, PSTN and Internet, over which voice and text messages are transmitted. Market distortions will not result from requiring that *all* CMRS providers provide OTT applications access to location and voice or text messaging capabilities only where their customers seek to contact 9-1-1. Not only is this a vital service for their customers, but the Commission and states have traditionally prohibited facilities-based providers from charging customers for individual calls to 9-1-1; the cost of 9-1-1 calling has been an overhead expense included in the basic service charge for all customers, and spread among all customers. The rise in popularity of OTT text messaging has likely resulted from the relatively high fees CMRS providers charged for text messages, approximately 300 of which could be transmitted in the same bandwidth of 1 minute of voice, on "spare capacity." The rise of OTT text messaging applications has corrected rather than created market distortions. Moreover, customers purchase data plans from CMRS providers to permit use of these OTT applications.

Providing for OTT text applications to utilize the CMRS provider "native" text messaging solution to transmit text messages to 9-1-1 would also allow OTT applications which use an NANP telephone number *only* for user authentication, identifying other users of the

[27] T-Mobile Comments, at 4.
[28] AT&T Comments, at iv, v, 1-4.

service or other administrative purposes, or *which do not use an NANP telephone number at all*, to deliver a user's message to the appropriate PSAP.[29]

In the end, the significant importance of permitting CMRS customers to reach 9-1-1 using the interface with which they are most familiar in an emergency, and the advantage of utilizing consistent solutions across providers, outweighs any competitive advantage a CMRS provider may realize from requiring OTT applications to develop wholly independent text-to-911 solutions. BRETSA does not suggest that the requirement for CMRS providers to provide the capability for OTT text applications to utilize the CMRS native text applications when a CMRS customer addresses a text-message to 9-1-1, should be uncompensated. But BRETSA also disagrees with NENA's position that OTT providers should not have a right to access the API hooks.[30] The goal is to make reliable and consistent text-to-911 service available over as many services and applications as possible, with minimal barriers. BRETSA thus supports a model in which such API hooks will by regulatory mandate be generally available, and CMRS providers will recover the costs as overhead spread across all customers in their basic service rates.

VON argues that the Commission's proposed rules should only apply to "smart phones" and not other "mobile devices."[31] BRETSA believes that the rule should apply to any interconnected device through which a user can send a text message to anyone connected to a CMRS network or the public Internet. Devices which are CMRS enabled and have a current contract should be capable of connecting to the CMRS network as necessary to send a message to 9-1-1. If a location-aware device through which a message can be sent can only connect to WiFi, the device and applications on the device should transmit text-to-911 messages to a TCC

[29] The VON Coalition's concern with requiring such applications to provide text-to-911 capability is thus resolved. VON Comments, at 3.
[30] NENA Comments, at 6-7.
[31] VON Comments, at 7-8.

via the Internet. A bounce-back message or device-generated message that the text message cannot be delivered to 9-1-1 should be provided the user when the device is not connected to a CMRS provider or the Internet, or the message cannot otherwise be delivered. This would also address VON's concern that customer confusion about when a device is not interconnected or does not have location information available would result in lawsuits and liability exposure.[32]

V. Timing; Waivers.

Several parties claim that there will not be adequate time to implement the text-to-911 requirements in the Commission's proposed rules.[33] Providers have been on notice of that the Commission is considering such requirements since at least the December 13, 2012 release of the Commission's Further Notice of Proposed Rulemaking in this Docket. *Facilitating The Deployment Of Text-To-911 And Other Next Generation 911 Applications Framework For Next Generation 911 Deployment (Further Notice of Proposed Rulemaking)*, 27 F.C.C Rcd. 15659 (2012).

To obtain a waiver of the deadline for compliance with the proposed rules, a provider should be required to set forth the steps it has taken to comply with the Commission's rules, the circumstances beyond its reasonable control (occurring since any previous waiver request) which have prevented it from complying with the rules, and the measures towards compliance which it will complete within the waiver period. A waiver requested on grounds such as suggested by CenturyLink, that it has designed a product which does not meet the Commission's requirements and which would be less valuable to potential customers (less competitive and profitable in the market) should not be sufficient.[34] A vendor's pecuniary interest cannot outweigh the public

[32] VON Comments, at 8.
[33] Comcast Comments at 3
[34] See CenturyLink Comments, at 2-5.

interest in assuring that consumers can reach 9-1-1 using the communications services or applications (interfaces) available and with which they are most familiar.

VI. Privacy Concerns.

Comcast and Twilio assert that under certain options for OTT text-to-911, customer consent would be required prior to disclosure of a customer's location in connection with the transmission of a text-to-911.[35] People generally expect that when they contact 9-1-1, the PSAP will know their location. Moreover, a prudent provider should include in their user agreement the provision that when sending a message to 9-1-1, the user waives any right to privacy in their location or the message content. Finally, BRETSA would not object to inclusion in such a provision in statutes or regulations, where not already firmly established.

VII. Public Education.

In 2013, BRETSA joined with other Colorado 9-1-1 Authorities in contributing funding to the *9-1-1*Colorado Foundation to support a four-month, statewide broadcast advertising campaign, in conjunction with the Colorado Broadcasters Association, to promote registration of wireless and VoIP phones with Emergency Notification Services. At a cost of $12,000 per month, four English language and one Spanish language television commercials were produced and aired approximately 1,000 times per month on television stations across Colorado, and four English language and three Spanish language radio commercials were produced and broadcast approximately 4,000 times per month on radio stations across Colorado. Almost every television and radio station in the state participated, and the rate-card value of the spots aired over the four month period totaled over $1.1 Million. The Colorado broadcast station licensees who participated in this program deserve high praise, and broadcasters associations in many other

[35] Comcast Comments, at 10. Twilio Comments, at 2.

states provide similar programs. BRETSA understands that the *9-1-1*Colorado Foundation is now seeking to raise approximately $300,000 to fund a year-round advertising campaign, supported by messages in other media, to provide public education regarding text-to-911 as well as promoting registration for ENS and other messaging in support of 9-1-1 and ENS services.

BRETSA believes that if this type of campaign is accompanied by CMRS Provider messaging regarding text-to-911 through bill inserts, informational pages on provider web-sites, and free provider text-messages to customers, the majority of CMRS users can be appropriately educated as to when text-to-911 messaging should be used, when it should not be used, regarding the uneven availability of the service during transition, and the limitations of the service.

The *9-1-1*Colorado Foundation brings together a diverse group of representatives of urban and rural 9-1-1 Authorities and PSAPs to develop the messaging for its public education campaigns, and BRETSA believes the same approach should be used for CMRS Provider messaging. Jurisdictions which have already implemented text-to-911 should also be included in the development of messaging, to reap the benefits of their experiences.

BRETSA thus agrees with NASNA that consumer education is necessary and may vary from community to community.[36] BRETSA believes it is unreasonable to expect CMRS providers to coordinate public education with the state 9-1-1 programs and PSAPs regarding educational efforts in the various jurisdictions, because of the administrative difficulties and expense for national or regional providers of targeting different educational messages to different jurisdictions. Rather, the providers should work with a representative group of state and local 9-1-1 program or PSAP representatives to develop generic messaging suitable across their service areas. State programs or Authorities within states should pursue statewide or regional public education programs, also of a generic, if more localized nature. Finally, local PSAPs and

[36] NASNA Comments, at 3.

public safety agencies can provide localized information through their websites, cable access channels, and other customary local media outlets for such localized messaging.

CMRS providers should bear the costs of messaging through their bill inserts, on their web site, text-messaging customers, and through any messaging included in their advertising. While BRETSA would hope that CMRS providers would make grants to support state and local educational messaging, those costs should otherwise be the responsibility of state 9-1-1 programs, local authorities and other funding sources which might be developed. Because public safety budgeting *is* a zero-sum game, outside financial support will be important.

VIII. Relay Services.

BRETSA disagrees with NASNA regarding the role of Relay Services.[37] BRETSA understands that the deaf and hard-of-hearing community want the same access as hearing individuals. Indeed, some representatives of this community have stated that each PSAP should have a pool of American Sign Language ("ASL") capable personnel available at all times. However this goes well beyond a reasonable accommodation, and would actually disserve the deaf and hard-of-hearing community and the public generally.

As BRETSA has previously stated, it is generally accepted in the 9-1-1 community that fewer than 2% of people have the communications and multi-tasking skills, emotional disposition and other characteristics required to be a good PSAP calltaker/dispatcher. The vast majority of PSAPs have five or fewer positions, and likely have two or fewer dispatchers on duty at any time, and certainly on some shifts. BRETSA is also aware of PSAPs which report that they have received one or fewer TDD calls in the past 15 years.

[37] NASNA Comments, at 4.

For many PSAPs, the requirement to hire qualified calltakers/dispatchers who are also experienced in ASL, or to train calltakers/dispatchers in ASL to a level at which they could communicate effectively with an ASL video caller who is in an excited state, when they may only rarely receive an ASL video call, simply isn't reasonable. The cost of providing for video calls solely for a rare ASL video caller may also require that funding be diverted from other public safety priorities, such as hiring, equipping and training First Responders.

In larger, better-funded PSAPs, calltaking and dispatching tasks are separated, so that those personnel taking calls on any shift are not dispatching First Responders and in radio contact with the First Responders. This has been found to be more efficient than having personnel both take calls and dispatch First Responders, and it avoids callers overhearing relevant information being provided the First Responders. The calltakers and dispatchers are often in the same room, but this is not required as the call taker enters information provided by the caller in the CAD incident file and the dispatcher dispatches First Responders based on the information in the incident file.

Similarly, when non-English speakers call 9-1-1, the PSAP does not maintain its own pool of calltakers fluent in every language to answer these calls. The PSAP conferences-in an Interpreter from Language Line or a similar service, where an intake person identifies the caller's language, and brings on-line an interpreter fluent in that language as well as English.

BRETSA believes the most effective solution for people wishing to communicate an emergency situation via ASL would be through a regional or national Relay Service with qualified 9-1-1 calltakers who are also experienced or trained in ASL and who remain in practice because they only handle ASL-911 calls. These specialized 9-1-1 Relay Centers would communicate with the ASL caller, enter the information obtained into a CAD incident file, and

transmit the incident information to the appropriate PSAP. This would generally result in First Responders being dispatched to the ASL-caller's location sooner than if a less ASL-fluent call taker in the local PSAP attempted to handle a rare ASL call with equally rarely-used videoconferencing systems or applications.

As BRETSA has noted, the difficulty with this situation is that comments in this docket have made clear that Relay Services do not generally include as a hiring criteria the multitasking capabilities and emotional makeup that makes for a good calltaker/dispatcher. They also lack the systems to identify the caller's location, and to identify and connect to the PSAP serving that location to relay the caller information to the PSAP. BRETSA also understands that Relay Services currently operate somewhat "virtually" with personnel located around the country. This may enhance the capability of an interested entity to establish a specialized 9-1-1 Relay Center taking ASL calls.

IX. The Commission Must Address The Impact Of Discontinuance Of True SMS Messaging.

It has been demonstrated that SMS text messages can be sent and received by users in locations where there is an insufficient signal to place a voice call. BRETSA is familiar with circumstances in which people in remote areas of Colorado, or in areas subject to some terrain shielding or signal attenuation due to heavy foliage, were unable to make wireless voice calls but were able to send text messages to friends or family. Their friends or family, in turn, contacted Public Safety agencies to affect their rescue. With text-to-911, people lost or stranded in the back country within range of cell towers to send a text message will be able to contact the appropriate PSAP immediately, and avoid delays which have resulted in loss of limb or life due to frostbite or hypothermia, for example.

BRETSA is also aware that there are residences in remote areas from which people can send text messages but cannot get an adequate signal to make wireless voice calls. However BRETSA has also noted recent testimony before committees of the Colorado legislature and other testimonials of people who are unable to place or receive voice calls from their homes, from locations in large apartment or office buildings, and other locations in urban settings. These are all instances in which text-to-911 may be critical to preservation of life, limb and/or property.

Meanwhile, the LTE deployments CMRS providers are pursuing will eliminate true SMS. The emulated SMS or Real Time Text ("RTT") which may be provided over a data connection, also used for VoIP calls, will largely eliminate the additional margin of coverage for text-messaging over the coverage area for voice calls. This means that in urban and remote areas where CMRS can currently provide coverage for text-messaging but not voice calls, that text-messaging coverage will be lost. The life-saving service the Commission is giving through its proposed text-to-911 requirements, may be taken away even before it is deployed in some areas by changing service technologies. BRETSA believes it essential that the Commission address this loss of SMS service areas, and alternatives which may be available to continue SMS service or provide alternative service in these areas.

Respectfully submitted,

BOULDER REGIONAL EMERGENCY TELEPHONE SERVICE AUTHORITY

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