6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 20

[PS Docket Nos. 11-153, 10-255; FCC 14-118]

Facilitating the Deployment of Text to 911 and Other Next Generation 911 Applications; Framework for Next Generation 911 Deployment

AGENCY: Federal Communications Commission.

ACTION: Notice of proposed rulemaking.

SUMMARY: In this Third Further Notice of Proposed Rulemaking (Third Further Notice), the Commission seeks comment on technical issues related to the provision of enhanced location information and support for roaming for texts to 911, as well as the capabilities of future texting services. Comments received will inform the Commission of the technological and business issues related to the provision of location and roaming support for text-to-911, and how text-to-911 may be applied to future texting services. If the proposals are adopted, they will enhance existing text-to-911 service and lead to improved emergency response.

DATES: Submit comments on or before **[30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]** and reply comments by **[60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Written comments on the Paperwork Reduction Act proposed information collection requirements must be submitted by the public, Office of Management and Budget (OMB), and other interested parties on or before **[60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may submit comments, identified by either PS Docket No. 10-255 or PS Docket No. 11-153, by any of the following methods:

- Federal eRulemaking Portal: http://www.regulations.gov. Follow the instructions for submitting comments.
- Federal Communications Commission's Web Site: http://fjallfoss.fcc.gov/ecfs2/. Follow the instructions for submitting comments.
- People with Disabilities: Contact the FCC to request reasonable accommodations (accessible format documents, sign language interpreters, CART, etc.) by e-mail: FCC504@fcc.gov or phone: (202) 418-0530 or TTY: (202) 418-0432.

For detailed instructions for submitting comments and additional information on the rulemaking process, see the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Dana Zelman of the Policy and Licensing Division of the Public Safety and Homeland Security Bureau, (202) 418-0546 or dana.zelman@fcc.gov. For additional information concerning the Paperwork Reduction Act information collection requirements contained in this document, contact Benish Shah, (202) 418-7866, or send an email to PRA@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Third Further Notice of Proposed Rulemaking in PS Docket Nos. 10-255 and 11-153, released on August 13, 2014. The full text of this document is available for public inspection during regular business hours in the FCC Reference Center, Room CY–A257, 445 12th Street SW, Washington, DC 20554, or online at http://www.fcc.gov/document/fcc-adopts-text-911-rules. The Second Report and Order that was adopted concurrently with the Third Further Notice is published elsewhere in this issue of the Federal Register. Parties wishing to file materials with a claim of confidentiality should follow the procedures set forth in § 0.459 of the Commission's rules. Confidential submissions may not be filed via ECFS but rather should be filed with the

Secretary's Office following the procedures set forth in 47 CFR 0.459. Redacted versions of confidential submissions may be filed via ECFS.

Summary of the Third Further Notice of Proposed Rulemaking

Introduction

1. In this Third Further Notice of Proposed Rulemaking (Third Further Notice), we affirm the Commission's commitment to ensuring access to emergency services for all Americans. The Commission's rules must evolve as legacy networks and services transition to next generation technologies, and as consumer expectations and needs evolve. Current trends in mobile wireless usage show the continued evolution from a predominantly voice-driven medium of communication to one based more on text and data transmissions. The need to provide text-to-911 service in a timely manner is made more pressing because many consumers believe text-to-911 is already an available service, because of the unique value of text-to-911 for the millions of Americans with hearing or speech disabilities, and because of the crucial role it can play in protecting life and property when making a voice call would be dangerous, impractical, or impossible due to transmission problems.

Background

2. In September 2011, the Commission released a Notice of Proposed Rulemaking (NPRM), 26 FCC Rcd 13615, which sought comment on a number of issues related to the deployment of Next Generation 911 (NG911), including how to implement text-to-911. In the NPRM, the Commission stated that sending text messages, photos, and video clips has become an everyday activity for mobile device users on 21st century broadband networks, and that adding non-voice capabilities to our 911 system will substantially improve emergency response, save lives, and reduce property damage, as well as expand access to emergency help, both for people

with disabilities and for people in situations where placing a voice call to 911 could be difficult or dangerous.

3. In December 2012, AT&T, Sprint Nextel, T-Mobile, and Verizon Wireless entered into a voluntary agreement with the National Emergency Number Association (NENA) and APCO International (APCO) in which each of the four carriers agreed to be capable of providing text-to-911 service to requesting PSAPs by May 15, 2014 (Carrier-NENA-APCO Agreement). As part of the Carrier-NENA-APCO Agreement, the four major carriers committed to implementing text-to-911 service to a PSAP making a "valid" request of the carrier "within a reasonable amount of time," not to exceed six months. Carriers promised to meet these commitments "independent of their ability to recover these associated costs from state or local governments." The commitments specifically did not extend to customers roaming on a network.

4. Also in December 2012, the Commission released a Further Notice of Proposed Rulemaking (Further Notice), 27 FCC Rcd 15659, which proposed, inter alia, to require all CMRS providers, as well as interconnected text messaging providers, to support text messaging to 911 in all areas throughout the nation where PSAPs are capable of and prepared to receive the texts. The Commission defined interconnected text messaging applications as those using IP-based protocols to deliver text messages to a service provider and the service provider then delivers the text messages to destinations identified by a telephone number, using either IP-based or Short Message Service (SMS) protocols. The Further Notice noted the extent to which consumers had begun to gravitate toward IP-based messaging applications as their primary means of communicating by text, that consumers may reasonably come to expect these applications to also support text-to-911, and that consumer familiarity is critical in emergency

situations where each second matters. To that end, the Further Notice sought to ensure consumers' access to text-to-911 capabilities on the full array of texting applications available today – regardless of provider or platform.

5. Recognizing that text-to-911 would not be rolled out uniformly across the country or across text messaging platforms, the Commission took steps to provide consumers with clarity regarding the availability of text-to-911. In May 2013, the Commission issued a Report and Order, 28 FCC Rcd 7556, requiring covered text providers to provide consumers attempting to send a text to 911 with an automatic bounce-back message when the service is unavailable. The Commission found a "clear benefit and present need" for persons who attempt to send text messages to 911 to know immediately if their text cannot be delivered to the proper authorities. The Commission noted specifically that, "[a]s these applications proliferate, consumers are likely to assume that they should be as capable of reaching 911 as any other telephone number."

6. In January 2014, we adopted a Policy Statement, 29 FCC Rcd 1547, stating that the Commission believes that every provider of a text messaging service that enables a consumer to send text messages using numbers from the North American Numbering Plan (NANP) should support text-to-911 capabilities. The Commission clarified that it intends to take a technologically neutral approach to any rules adopted for text-to-911 service, and it encouraged voluntary agreements to support text-to-911.

7. We also released a Second Further Notice of Proposed Rulemaking (Second Further Notice), 29 FCC Rcd 1547, seeking comment on technical issues for the implementation of text-to-911 service with respect to interconnected text providers, the provision of location information with texts to 911, and roaming support for text-to-911 service.

Third Further Notice of Proposed Rulemaking

Enhanced Location

8. While we recognize that enhanced location information is not yet universally attainable for texts to 911 over either SMS or other messaging platforms protocols under development, we seek comment on the specific approaches and a likely timeframe for covered text providers to achieve the capability to provide enhanced location with text-to-911 communications. This additional functionality will enable PSAPs to dispatch first responders more directly and quickly to the scene of an emergency. We acknowledge the collaborative effort underlying CSRIC's report, CSRIC IV WG1, Final Report – Investigation into Location Improvements for Interim SMS (Text) to 9-1-1 (rel. June 19, 2014) (Enhanced Location Report), available at http://transition.fcc.gov/pshs/advisory/csric4/CSRIC_IV_WG-1_Task-1_Final_061814.pdf, and CSRIC's recommendation that the Commission "refrain from wireless E9-1-1 Phase II-like mandates" for SMS text to 911 service and instead encourage further development and implementation of more robust solutions. CSRIC's report, however, suggests that one CMRS provider can currently deliver enhanced location information, using a commercial location-based technology in support of SMS text-to-911. In light of our important public safety interest in delivering more accurate location information with texts to 911, and considering that enhanced location technologies already exist and that other standards development beyond the current J-STD-110 have been underway, we see no reason to delay the potentially life-saving delivery of enhanced location information.

9. We propose that, no later than two years of the effective date of the adoption of final rules on enhanced location, covered text providers must deliver enhanced location information (consisting of the best available location that covered text providers could obtain

from any available location technology or combination of technologies, including device-based location) with texts to 911. We seek comment on whether solutions could be developed to provide enhanced location in this timeframe and, if not, what would be a suitable timeframe. Our ultimate location accuracy objective is to require covered text providers to deliver all communications with 911 with location information that is sufficiently granular to provide a "dispatchable address."

10. For purposes of a near-term requirement, we propose to use the term "enhanced location" to mean the best available location. We recognize that the granularity of the enhanced location may vary by text-to-911 session, according to the user's particular device capabilities and settings. In some instances, we would expect that the device would approximate the user's address, consistent with what a consumer could expect from commercial location-based services (cLBS) capabilities today. We believe an enhanced location requirement would provide substantial public safety benefits to consumers who need to reach 911 through text-capable communications. We seek comment on this assertion, particularly to the extent to which such improvements would result in tangible benefits with respect to the safety of life and property compared to the cost of meeting the proposed requirements.

11. Technical feasibility. The Policy Statement and Second Further Notice, 29 FCC Rcd 1547, indicated that "developing the capability to provide Phase II-comparable location information" with 911 text messages "would be part of the long-term evolution of text-to-911." The Second Further Notice requested comment on the provision of Phase II-equivalent location information with text-to-911 calls. In response, the majority of commenters indicate that delivery of enhanced location information is not possible at this time.

12. CSRIC's Enhanced Location Report assesses the capability to include enhanced

location information for SMS text-to-911 services and addresses the limitations of the current standard, ATIS/TIA J-STD-110, underlying SMS text-to-911. In view of the differences between the SMS text platform and the CMRS network, CSRIC finds three key limitations contributing to the problem of delivering enhanced location information over SMS architecture: (1) the current standard does not include a specification for the emergency message interaction with the handset, such that an emergency text to 911 cannot enable location information by overriding user location privacy settings and GPS location capabilities enabled by the handset; (2) enhanced location information takes more time to generate than coarse location, such that relying on enhanced location to initially route an SMS text to 911 could delay the routing process up to 30 seconds; and (3) only some of the location platforms that are currently deployed have the technology necessary to generate enhanced location information. CSRIC's Enhanced Location Report concludes that "there is no solution for generating enhanced location in an SMS text to 9-1-1 session for any currently deployed systems that does not require user equipment (UE) changes, network changes, or both."

13. Although current text-to-911 deployments may not support enhanced location, CSRIC's report recommends several approaches that stakeholders could explore to provide enhanced location information during SMS text-to-911 sessions. In particular, CSRIC examines four approaches: (1) network-based location; (2) handset-based approaches; (3) end-to-end text-to-911 with location embedded in the SMS message, and (4) a modified "embedded location" approach using a user-downloaded texting application. We seek comment on these different approaches, as described in the Enhanced Location Report, and whether they could support the delivery of enhanced location information with texts to 911 in a near-term timeframe. What challenges must be overcome and what are the costs associated with implementation of the

different approaches? In what timeframe could these approaches be implemented?

14. We observe that using device-specific location appears to be technically feasible, given CSRIC's remark that handset-based location technology, "using cLBS methods, is currently being used by at least one U.S. CDMA carrier for network deployments supporting SMS text-to-9-1-1." We acknowledge CSRIC's findings that the delivery of more granular location information than coarse location continues to present challenges. For this reason, we believe that an enhanced location requirement that is premised upon the delivery of best available location, using any available location technology or combination of technologies, strikes a balance that promotes our important public safety objectives, while being practicable and reasonable within these potential limitations. We seek comment on how "best available" location information would be determined. Among multiple "available" locations, what would determine which available location information is "best?" What are the necessary conditions for a location technology to be considered "available," to the device, such that a covered text provider may use it for routing or providing additional location information? Are there any additional factors we should consider with respect to assessing what should be considered the "best available location" for a particular text-to-911 session?

15. In addition to the approaches examined by CSRIC, two commenters suggest that the delivery of some form of enhanced location information by CMRS providers is technically feasible in the near term. First, TruePosition contends that existing network-based U-TDOA location capabilities could be used to deliver location information, with "relatively minor development effort," for texts to 911. TruePosition asserts that, although "[t]he solutions produced by the voluntary Carrier-NENA-APCO agreement, and the J-STD-110 standard, do not currently define an interface protocol to retrieve sender/customer location information," those

solutions provide a platform "to build a more permanent solution to the problem of identifying the location of the customer who has sent an emergency text message." We seek comment on the technical feasibility of TruePosition's proposed approach and whether it offers a path forward for providing enhanced location. Would the "silent SMS" approach be feasible for other location determination mechanisms other than U-TDOA, such as A-GPS? What standards development work would be necessary to implement such an approach?

16. Second, TCS asserts that what it characterizes as "updated Phase II compatible" location technology is readily available to CMRS providers as deployable cLBS platforms, and that such solutions can be deployed either by the user or the CMRS provider. According to TCS, these cLBS solutions support existing 2G and 3G systems, and are possible under the current J-STD-110. TCS's view appears to be consistent with CSRIC's reporting that the J-STD-110 architecture also "allows for routing based on a more accurate enhanced location," and that one U.S. CMRS provider is using "using cLBS methods." CSRIC observes, however, that while enhanced location may be possible where a cLBS platform is available, "based on a CMRS provider's existing network infrastructure, the availability to provide a cLBS platform can be limited or technically challenging." We seek comment on these particular implementation challenges, and whether it would be possible for covered text providers to deliver enhanced location information in this manner within a near-term timeframe.

17. Further, the comment record indicates that technical complexities exist for interconnected text providers to deliver enhanced location. For example, Microsoft submits that, for OTT applications, "the cell site location is not readily available" and that server-based implementation approaches would require testing of location accuracy information, as well as the creation of "standardized acquisition and transmission of that location information" through TCC

gateways. Bandwidth contends that there is a need for location accuracy solutions that are consistent with both established technical standards supporting existing CMRS solutions and "a broad range of application-derived location solutions commonly used by today's OTT providers." TCS proposes that OTT providers leverage the existing J-STD-110 standard to require that "emergency text message requests re-use existing SMS APIs in the device, effectively changing the OTT text message interaction into an SMS message dialogue . . ." TCS submits that, although this approach "would require OTT text application software modifications," it "represents the shortest path to having support for emergency OTT text." We seek comment on the different approaches described by TCS, as well as any additional proposals that would resolve the technical issues of covered text providers in delivering enhanced location information.

18. Further Standards-Setting Work. Most commenters indicate that standards bodies and covered text providers will need more time to develop and implement the capability to deliver enhanced location information with texts to 911. Many of the commenters believe that, rather than investing further to modify the interim J-STD-110, the standards work should focus on a long-term approach that would incorporate the enhanced features and location capabilities that NG911 is expected to provide for more granular location information. For example, NENA supports a longer-term approach based on standards efforts that "would incorporate an integrated location standard which . . . would apply to both voice and text service providers." Additionally, CSRIC reports that modifying the J-STD-110 "would require substantial [3GPP] standards development work, requiring significant development costs and potentially lead to major operational impacts on existing network systems." We seek comment on the extent to which development of enhanced location solutions for the interim SMS standard would divert resources

from NG911 solutions. We also seek comment on when the relevant standards work, referenced by the commenters, is likely to be completed, and whether covered text providers ultimately will be capable of providing dispatchable address information, consistent with the Commission's long-term goals.

19. We note that Verizon indicates there is "under development" standards work on the Global Text Telephony (GTT) standard. Verizon asserts that this effort focuses on providing capabilities for LTE networks "to include more precise caller location than cell site location by leveraging the same location solution currently under development for VoLTE." We seek comment on the current status of the GTT standards effort for the following potential capabilities: (1) providing interoperability or interworking between text messaging platforms and E911 legacy and NG911 networks; and (2) enabling CMRS and other covered text providers to deliver granular location information to PSAPs as more CMRS providers implement LTE networks.

20. Further, the record indicates that LTE networks present the opportunity for providing enhanced location determination with text. We seek comment on what measures covered text providers would need to take to implement in LTE networks the ability to provide enhanced location. What would be the costs of implementing such capability? What should the Commission do to encourage the necessary standards work?

21. Similarly, we seek comment on the provision of enhanced location information with MMS-to-911 texts and for location determination of MMS callers. For purposes of providing enhanced location information, MMS-to-911 will need to be evaluated once ATIS develops such standard in which cost effectiveness of MMS is considered, as well as potential problems with receiving MMS at PSAPs. What is the status of standards work on MMS

messaging to include enhanced location information? We also seek comment on what factors exist that could affect covered text providers' use of MMS to route texts to 911 with enhanced location information. Will the eventual sunset of SMS further our goal of providing dispatchable address information for communications to 911 on all text-capable media? We seek comment on the costs for covered text providers to develop, test, and implement the capability to provide enhanced location information using MMS.

22. Finally, the record reflects that the technological developments and standards-setting efforts on LTE networks, MMS, and multimedia message emergency services (MMES) have already commenced. With developments in the CMRS wireless industry to migrate to LTE networks already underway, and the continued evolution and growth of OTT text applications in response to consumer demand, we believe that a reasonable basis exists to anticipate that within the near future, standards bodies will be adopting or releasing standards that address the provision of enhanced location information for 911 text messages. We seek comment on this view.

23. Enhanced Location through the Use of Commercial Location-Based Services. cLBS may present a solution for covered text providers to deliver enhanced location information in the near term. In light of the significant potential that cLBS might offer, we seek comment on the technical, privacy, and security issues associated with using cLBS for text-to-911 enhanced location information.[1] CSRIC suggests that the use of cLBS platforms is limited and challenging. More specifically, CSRIC reports that, concerning cLBS support for A-GPS generated location information, "not all carriers have location platforms capable of providing A-

[1] Here, we take cLBS to refer narrowly to the location services that allow a third party to query for the geo-location of a device, rather than many cLBS, such as apps, that rely on location information provided by operating system location application programming interfaces (APIs).

GPS location fixes to support the [TCC]."

24. The record is mixed concerning capabilities for covered text providers to use cLBS platforms. T-Mobile urges that"[t]he Commission . . . ensure that any rules it adopts regarding SMS text-to-911 location information acknowledge the fundamental difference between Phase II E911 voice location estimates and cLBS-based enhanced location estimates," and that "those requirements must be grounded in the technical and economic limitations of the cLBS service." ATIS suggests that location information derived from cLBS may be a "'best available' location" and "not equivalent to the location information obtained for voice emergency calls." Similarly, CSRIC observes that CMRS providers do not exercise the same control over cLBS platforms as they do for E911 voice calls, and thus, "location estimates may or may not be as reliable or accurate" as E911 voice location technologies.

25. We seek further comment on how cLBS could be leveraged to provide enhanced location information for text-to-911 in the short term and more granular, dispatchable address information in the long term. While cLBS may deliver location information that is not equivalent to voice location, there are also many instances where cLBS could offer even more granular location than Phase II information provided with voice calls to 911. In fact, consumers today regularly use applications that leverage cLBS to pinpoint their location to a high level of precision. We recognize, however, that cLBS information may vary in quality and reliability. How likely is it that location information derived from cLBS will increase in reliability and accuracy over time? What additional standards work must be accomplished? What would be the costs for covered text providers to test and implement the capabilities that cLBS offer?

26. Privacy. Commenters submit that leveraging cLBS services for purposes of providing enhanced location information raises privacy concerns. For example, Verizon notes

that, in order to deliver location information using cLBS, covered text providers may "need to maintain ongoing access to providers' and devices' commercial [LBS] capabilities," which "may require a user to turn off all the device's privacy settings with respect to all communications, not just 911-related communications." Sprint and other commenters observe that with cLBS, "a user is capable of disabling GPS location services on the device and there is currently no 'override' that exists on most wireless handsets to enable GPS to function if a text message is directed to emergency services." CSRIC also reports that the capability to override privacy settings may not be possible, depending on the smartphone operating system and the device's equipment manufacturer.

27. We seek comment on what solutions need to be developed for cLBS platforms to address these privacy issues. What technological developments and standards work needs to occur to override privacy settings for SMS text-based applications over legacy networks in order for enhanced location to be acquired and transmitted consistently to PSAPs with texts to 911? How quickly could these modifications be made? We emphasize that any such override of a user's device settings should be limited to those instances where a user is sending a 911 text message, and for the sole purpose of delivering the 911 text message to the appropriate PSAP.[2] Similarly, in the long term, for advanced NG911-compatible networks, such as IP-based text over LTE networks, what technological developments and standards work by stakeholders must occur to enable overriding of privacy settings for emergency texts to 911? The record generally suggests that, at least for a certain subset of devices, covered text providers and OS providers routinely upgrade the firmware and OS software. Could any modifications to implement

[2] In this discussion, we are focused on the development of standards necessary to enable an "emergency mode" for texts to 911, similar to the functionality that would be enabled if the user were to place a voice call to 911.

emergency overriding of privacy settings be accomplished in this manner? What are the specific costs that both firmware and software approaches would entail?

28. Finally, what measures can or should the Commission take to address Heywire's contention that OS providers and hardware manufacturers have been removing or disabling access to geo-location functions available to applications outside of the native pre-authorized applications? How many applications and what OS platforms have been affected by this? What coordination must occur to address the issue of privacy settings?

29. Security. The record further indicates that the technical and privacy issues in implementing enhanced location over cLBS also raise the issue of security. TCS contends that "application-managed location solutions place too much reliance on handset environment, configuration, and capability and are subject to security threats, including authentication and location spoofing." Motorola Mobility asserts that "[a]ny location privacy override solution for SMS to 911 must be thoroughly validated using elaborate regression testing," and that "[w]hile the [original equipment manufacturers] that develop smartphones could apply such rigorous testing to the system SMS [application], they have no control over the testing regimen applied to an OTT [application]." We seek comment on what solutions need to be developed for cLBS to enable enhanced location capability that is secure. What measures can the Commission take to promote secure enhanced location capability and guard against security risks such as location spoofing? What would the cost burdens be on covered text providers, OS providers, and other stakeholders? Should we task CSRIC with location issues further – particularly in the context of making recommendations for enabling the use of cLBS and addressing security concerns to provide enhanced location for texts-to-911?

30. Timeframe. Based on the CSRIC Enhanced Location Report and the record, we

seek comment on the timeframe in which covered text providers could reasonably offer either enhanced location information or more granular location information sufficient to provide dispatchable address information for some or all text-to-911 users. Based on the record, if we wait for covered text providers to migrate from interim SMS solutions to 4G LTE solutions before including enhanced location, we may be looking at a time horizon of five years or more.

31. In light of the serious public safety implications, we seek comment on what can be accomplished to deliver enhanced location in a shorter timeframe. With respect to the timeframe to migrate to LTE, TruePosition contends it is "simply far too long to wait while tens of millions of wireless users are left without a Phase II-like location capability." We agree. While NENA asserts that a "Commission mandate for enhanced text location capabilities would, at this juncture, be premature," it notes that "multiple industry stakeholders have already begun developing solutions to enable more precise location capabilities . . . ." RWA suggests that its members will need "at least two years" to "be capable of achieving more precise location capabilities." Heywire adds that an "undertaking" to address OS providers and hardware manufacturers removing or disabling access to "geo-location functions" could take "at least two years," and that "until … a technical method" is found, "it would be impossible to establish a realistic timeframe . . . ." In light of these comments, and balanced against the significant public policy interest and statutory mandate to promote public safety, we believe that a two-year timeframe to provide enhanced location – from the adoption of final rules on this issue – should be reasonable. We seek comment on this view, as well as how the various factors, including privacy and security concerns, would impact the establishment of timeframes for covered text providers to deliver enhanced location information.

32. Confidence and Uncertainty. Finally, we seek comment on CSRIC's recommendation that "[a]lthough not all location platforms may be capable of delivering enhanced location information, when such information is available it should be delivered with uncertainty and confidence values." CSRIC recommends that the Commission "encourage appropriate standards development organizations to incorporate confidence and uncertainty values into existing standards for enhanced location when it can be provided." Is this a necessary component for the delivery of enhanced location with texts to 911? Additionally, CSRIC observes that only one Class of Service (CoS) designation is available under the interim J-STD-110 and recommends adding CoS values to assist PSAPs "in determining the best way to use additional resources to locate a caller in the event the location is not provided or the location that is verbally provided is inaccurate." We seek comment on CSRIC's recommendations and how these additional features would support the provision of enhanced location for texts to 911, and whether they would help PSAPs respond to texts to 911 by dispatching emergency resources more expeditiously.

Roaming Support

33. In the Second Further Notice, we emphasized that access to 911 through text messaging is just as critical for roaming consumers as it is for consumers utilizing a home CMRS provider's network, especially because consumers may be unaware of when they are roaming. Further, roaming is necessary to encourage competition by allowing smaller and rural CMRS providers the ability to offer their subscribers services comparable to those of larger CMRS providers. We recognize that roaming limitations are likely to disproportionately affect subscribers of smaller and rural CMRS providers, which often "rely extensively" on roaming.

34. Moreover, we acknowledged in the Second Further Notice that routing 911 text

messages from roaming consumers presented technical complexities that might be necessary to resolve before we could require covered text providers to support text-to-911 in roaming situations. A key component of providing text-to-911 while roaming is obtaining location information to ensure proper routing of the text to the appropriate PSAP. Current SMS text delivery protocols do not allow for location information to be included with SMS texts-to-911 while roaming, which precludes the ability of covered text providers to route texts to an appropriate PSAP. SMS texts to 911 are handled by the consumer's home network,[3] which routes the text to the appropriate PSAP based on coarse location the TCC obtains from a location server in the home CMRS provider's network. When a consumer is roaming, the SMS text-to-911 is sent back to the home network for handling. As T-Mobile explains, "[l]ocation lookup occurs in the home network," but "in the case of roaming SMS messages, that lookup, which allows the TCC to determine whether an applicable PSAP accepts 911 texts, will fail because the location information was not generated by the home network but rather by the serving network, and the serving network does not pass along this location data with the SMS."

35. While the record shows that roaming cannot be supported for text-to-911 at this time, there is also evidence that there may be several different solutions that could be implemented to address this issue. We therefore refrain from adopting a roaming requirement at this time, but propose to require covered text providers to support roaming for text-to-911 no later than two years from the effective date of the adoption of final roaming rules, and we seek comment on this approach. Specifically, we seek comment on whether solutions could be developed to provide roaming support in this timeframe and, if not, what would be a suitable

[3] The "home network" refers to the network of the subscriber's CMRS provider, whereas the "serving network" refers to the network of the roaming partner.

timeframe.

36. One potential solution would be to update the current text-to-911 standard for SMS to provide for sharing of cell sector data through a hub-and-spoke mechanism. RWA notes that "the establishment of a centralized database of supported PSAPs accessible to all carriers could address this issue." Using a "hub-and-spoke" model, CCA states, "carriers' location platforms would interconnect into a centralized hub which could make cell sector information available to all connected providers." We seek comment on the technical feasibility of adopting the hub-and-spoke approach to address near-term roaming issues, and on any challenges associated with this approach. We also seek comment on whether this approach could be implemented within two years of the effective date of the adoption of final roaming rules. TCS claims that initial implementation of this approach could take place within six months, with full implementation within 18 months.

37. We also seek comment on the technical feasibility of other solutions. For example, we seek comment on the feasibility of modifying the current text-messaging protocol to provide that texts to 911 are handled by the serving network's TCC when a consumer is roaming. Modifying the protocol would resolve the routing issue and enable the text to be sent to the appropriate PSAP. Sprint argues that treating text-to-911 as a "local 'break out' service" in this manner "would require changes in how SMS messages are routed and would involve changes to the SMS servers and likely to handsets as well." What changes to handsets are likely to be necessary, and could any such changes be implemented through an over-the-air software update? What SMS server changes would be necessary, and how quickly could these changes be implemented? We also seek comment on whether the serving network could either: (1) automatically include location information embedded in the message, which could then be used

by the home network to route the text to the appropriate PSAP; or (2) otherwise communicate and coordinate location information with the home network through other means, such as by responding to a location query from the home network to provide the serving cell's location, rather than the serving cell's identification number.

38. For each potential solution, we seek detailed and specific information on the potential technical hurdles associated with each step of the implementation process. We emphasize that we will not be persuaded by vague or unsupported arguments. We sought comment on supporting roaming for text-to-911 in our Second Further Notice, and we made it clear that roaming is an important public safety consideration. We therefore reasonably expect that studies regarding support for text-to-911 while roaming should already be underway, if not completed, and we ask covered text providers to include detailed information regarding the results of such studies in their comments in this proceeding.

39. We also seek comment on the potential costs. We recognize that commenters generally do not support the adoption of roaming requirements for an interim SMS standard, arguing instead that we should refrain from such requirements while covered text providers focus their resources on next-generation networks and applications. We seek comment on whether requiring near-term investments to support SMS-based roaming for text-to-911 would delay the deployment of new wireless technologies that incorporate roaming capability and, if so, by what length of time. We also seek comment on T-Mobile's statement that wireless networks are transitioning to LTE, which has "native support . . . for robust text-to-911 features." Specifically, to what extent do LTE networks support roaming for text-to-911? In what timeframe could covered text providers support roaming, using an LTE network, on a nationwide basis?

40. We also seek comment on NENA's proposal that the Commission combine elements of two different approaches to "achieve the right balance of incentives to ensure that the current lack of roaming support is timely resolved, while facilitating, and preserving resources for, the IP and NG transitions." First, the Commission could encourage industry standards work and establish a "medium-term roaming capability requirement," tied to the development of necessary standards, for integrated text origination platforms. Second, the Commission could require roaming support for text-to-911 service "as a precondition to the turn-up of any IP-based replacement for current-generation integrated text platforms." NENA also proposes that covered text providers may opt out of the medium-term deadline if they voluntarily commit to transition from their current generation platforms to NG911-compatible protocols and location mechanisms. Specifically, NENA proposes that the Commission "establish a three-year deadline (December 31st, 2017) for roaming support on existing platforms, extendable to five years (December 31st, 2019) for carriers who commit to supporting NG-compatible text service on a network-wide basis by that date." NENA contends that this timeframe "would better align with handset development cycles, encourage consumer adoption of more advanced handsets capable of leveraging the new texting platforms, and allow carriers additional time to recoup investments in their existing SMS platforms, which could continue to exist in parallel with newer platform for some time." We seek comment on NENA's proposal, and whether this two-step approach would achieve near-term support for roaming for text-to-911 while encouraging deployment of next generation wireless networks that provide automatic location information while roaming. We also seek comment on whether NENA's proposed timeframes are reasonable and would encourage investment and standards work for roaming support. In order to qualify for the opt-out provision, should covered text providers be required to substantiate their voluntary

commitment to transitioning to NG-compatible technology, such as by providing the Commission with a transition timeline and specific benchmarks that show how they will support roaming for text-to-911 by the end of 2019? What other factors should we consider in evaluating this approach?

41. Finally, we seek comment on whether CSRIC should be tasked with investigating roaming support for delivering texts to 911. Several commenters suggest that it would be useful for CSRIC to examine roaming. What specific technical approaches and standards for roaming support should we task CSRIC with examining? What additional information could we expect from CSRIC that could not be provided by commenters that could help facilitate our decision-making process?

42. International Roaming. As we noted in the Second Further Notice, due to the limitations of the current ATIS/TIA J-STD-110 standard, significant changes to the SMS text platform would be necessary to handle roaming internationally. The comments indicate that international roaming present unique challenges to implement text-to-911 for consumers roaming on CMRS networks in the United States. Motorola Mobility suggests that "any roaming requirements . . . should, like the 911 rules as a whole, be limited to equipment manufactured or imported for sale in the United States." We seek comment on this suggestion. Also, we seek comment on the role of U.S. standards bodies in coordinating with international standards organizations. Are U.S. standards bodies working on an international roaming standard for LTE networks as part of the IP transition? Are ATIS and similar standards groups addressing international roaming in the context of their standards work on MMES? What would be the costs for covered text providers, OS providers, and other relevant stakeholders to support of international roaming for text-to-911 in the U.S.?

Cost-Benefit Analysis for Enhanced Location and Roaming

43. In the Second Report and Order, we examine the overall benefits compared to the costs of a requirement for covered text providers to deliver 911 text messages. In assessing the benefits of the requirement, we stress that a universal capability to send 911 text messages can provide substantial, quantifiable public safety benefits to the disabilities community and to the public at large. In this Third Further Notice, we seek comment on the public safety benefits and improvements that our proposed enhanced location information and roaming requirements will provide, compared to the costs of meeting such requirements.

44. In particular, we seek comment on the extent to which the improvements proposed herein would result in tangible benefits with respect to safety of life and property compared to the costs of providing the best available location that covered text providers could obtain from any available location technology or technologies. We believe that enhanced location and a nationwide roaming capability will assist public safety entities in dispatching first responders more expeditiously and directly to the scene of emergencies, thereby saving lives. We seek quantitative data on this issue.

45. We acknowledge that quantifying the benefits and burdens for delivering enhanced location and roaming support for texts to 911 is potentially difficult. However, we anticipate that the proposed requirements will further contribute to the broad benefits of text messages to 911. We believe that our proposed requirements will enable public safety entities to better respond to texted requests for emergency assistance. Moreover, the roaming requirement will expand the benefits of text-to-911 to more consumers – those traveling beyond their home service area or those who may not realize they are roaming when their text-capable device is attached to a cell sector of their CMRS provider's roaming partner. We therefore expect the

proposed requirements to provide an additional level of benefits beyond the estimated "benefits floor" of $63.7 million for the text-to-911 requirements adopted by the Second Report and Order. We seek comment on the increased value and benefits for providing more accurate location information enhanced location and a roaming capability with text messages to 911.

46. Further, we seek comment on the extent to which the generally recognizable benefits of the proposed requirements can be quantified with respect to the safety of life and property. In its pending E911 Location Accuracy proceeding, the Commission analyzed a 2013 study of the Salt Lake City, Utah area and derived from the study's relevant data an annual benefit of approximately $92 billion, based on an estimate that improvements in location accuracy for wireless 911 voice calls could save approximately 10,120 lives annually. We seek comment on whether our analysis and underlying assumptions are relevant to similarly quantifying the benefits of more granular location information and a roaming capability for text messages to 911.

47. We recognize that implementing the proposed location and roaming requirements will impose costs on covered text providers. We seek detailed information on all of the costs covered text providers estimate the proposed enhanced location and roaming requirements would impose, including how these costs were determined. We seek comment on what universal costs would be necessary across all enhanced location and roaming technologies, as well as on any specific costs that are unique to the solutions that covered text providers may choose to implement. For instance, if covered text providers choose to use CMRS-based solutions using the SMS text-to-911 platform to meet the proposed requirements, we seek quantitative cost data for any possible modifications to the J-STD-110 and for the SMS text-to-911 platform in the near-term, e.g., the next five years. We also request similarly detailed and quantitative data on

the costs to implement enhanced location and roaming capabilities for LTE or other IP-based networks. Does the recent and ongoing the implementation of LTE networks result in the long run in lower overall cost levels, compared to the costs of changes to the SMS text-to-911 platform and of stranding investment in that current platform?

48. We also seek comment regarding the specific costs providers of interconnected text messaging applications may incur to resolve the technical complexities in delivering enhanced location and to meet the proposed roaming requirement. To the extent those costs may vary depending on the approaches that an interconnected text provider chooses, we seek quantitative cost information on these different approaches. Further, what other potential costs, if any, to interconnected text providers should the Commission consider? Since many interconnected text providers offer their services at no charge and they may incur significant costs to implement text-to-911, will interconnected text providers have to charge for these services, or are there other ways to obtain revenues to cover those costs? Finally, we seek comment on any additional costs or burdens that covered text providers may incur as a result of our proposed requirements.

Future Texting Services

49. Scope of text-to-911 service and requirements. In this proceeding, we believe that a forward-looking view of text messaging services, encompassing all text-capable media, is necessary to ensure continued access to emergency services as covered text providers migrate from legacy 911 networks to an all-IP environment. The limitations of SMS-based text-to-911, made clear in the record, underscore the need for further development of platform architectures and standards that can deliver enhanced location and support roaming with text-to-911. As new text messaging platforms are deployed, and to ensure that all consumers can reach 911 by

sending a text message, we seek comment on our ultimate goal that text-to-911 be available on all text-capable media, regardless of the transmission method (e.g., whether texts are delivered by IP or circuit-switched networks).

50. There is support in the record for a more expansive scope of our text-to-911 requirements. NASNA contends that the Commission's rules "should apply to all text applications capable of texting to 911, regardless of the technology used." NENA emphasizes that, to ensure that future text users can be located in an emergency, the Commission should clarify that "NG9-1-1 location determination and transmission obligations will eventually apply to access network providers and text originating service providers, respectively." Further, comments in response to the Second Further Notice indicate that consumers' expectations regarding the availability text-to-911 are likely to increase as covered text providers implement and offer new text messaging services. In further addressing these issues, we seek comment on the following matters: (1) 911 text messages delivered over Wi-Fi and non-CMRS networks; (2) non-interconnected text applications; (3) rich media services, including texts, video, photos, and the like; (4) real-time text communications; and (5) telematics and potentially additional public safety services.

51. Location Information for Wi-Fi Enabled Devices. In the Second Report and Order, we exclude 911 text messages that come from Wi-Fi only locations from the scope of the requirements at this time. In view of the record and recent trends suggesting the growth in the use of Wi-Fi generally, we believe that the public interest warrants further exploration of the feasibility of sending 911 text messages over non-CMRS networks. For instance, CMRS providers migrating to 4G LTE networks have network traffic and engineering incentives to off-load their subscriber traffic on to Wi-Fi networks that are connected to wired broadband

connections, such as those provided by cable or telephone companies. The Commission's Sixteenth Mobile Wireless Competition Report observed that the large demand for wireless data by mobile users at public locations has been inducing CMRS providers to reduce congestion on their mobile wireless networks, and that the forecast for total mobile data traffic offload from CMRS mobile wireless networks to wireless local area networks (WLANs), which primarily use Wi-Fi technology will increase from 11 percent (72 petabytes/month) in 2011 to 22 percent (3.1 exabytes/month) in 2016.

52. We seek comment on the feasibility of sending text messages to 911 via Wi-Fi networks and on the ability of covered text providers to route those texts to the proper PSAP and provide granular location data. Public safety commenters support moving ahead on evaluating location solutions that could route text-to-911 messages using Wi-Fi networks only. NENA suggests that the Commission's medium- to long-term focus on text-to-911 should take a general approach that would address "emerging technologies such as WiFi positioning."

53. The record includes contrasting views. For example, Heywire submits that the technical issues will require "substantial development" to address matters ranging from "the mobile devices themselves" to the "validity of the identification" of individuals who use text-to-911 on Wi-Fi only devices. Similarly, VON Coalition contends that "[i]n a Wi-Fi-only environment there is a lack of reliable location information and no reliable way for the text to be routed." In contrast, TCS submits that "[a]dvances in the user plane protocol enable" location techniques, including Wi-Fi and Bluetooth, that are not dependent on the macro cellular network. Also, Bandwidth describes two options for location capability with text-to-911 through Wi-Fi service: (1) "platform-derived location options," querying a database of Wi-Fi hotspots, and knowing the Wi-Fi router locations; and (2) "off-platform services," available to application

developers … that use hybrid positioning technology to determine a consumer's location. We seek comment on the approaches suggested by TCS and Bandwidth, as well as any other potential solutions.

54. Non-interconnected text applications. Additionally, the Second Further Notice sought comment on non-interconnected text applications that only support communications between a defined set of users, but do not support general communication with all or substantially all North American Numbering Plan numbers. The record shows support for addressing consumer expectations with respect to the use of such non-interconnected text applications. For instance, TCS submits that an interconnected text provider that offers a service that sends and receives text messages "between essentially any data-capable device should be required to fulfill the same 9-1-1 obligations as an OTT provider that provides such a service via one interface." Heywire observes that the differences between an interconnected versus non-interconnected application are not understood by the average person, and that further confusion arises with non-interconnected text providers using the consumer' mobile phone number for identification purposes or "sending an 'authorization' SMS message" to the consumer's mobile device. We seek comment on the appropriate approach to address non-interconnected text services – whether through voluntary commitments or by extending the text-to-911 rules we adopt today. We also seek comment generally on the scope of non-interconnected text applications that should be covered by any requirements. Should text-to-911 requirements address non-interconnected text providers offering services to consumers who participate in social media or choose to use applications that enable texting within an affinity group but that do not use NANP numbers? What could the Commission do to encourage rather than require relevant stakeholders to implement the text platforms and technologies necessary to achieve text-

to-911, and in what timeframe? What standards are being developed or would have to be adopted to allow stakeholders to implement text-to-911 on all text-capable media on a technologically neutral basis?

55. We also seek comment on what bases of authority the Commission has that are sufficient for us to extend the scope of our text-to-911 requirements. VON Coalition opposes regulations that would apply to non-interconnected text services, especially services that "only permit users to text other users of the same service." Additionally, the Second Further Notice sought comment on non-interconnected applications that only support communications between a defined set of users, but do not support general communication with using North American Numbering Plan numbers. The record shows support for addressing consumer expectations with respect to the use of such non-interconnected text applications. ITIC contends that this proceeding should not include text applications that "only allow consumers to communication with other users running the same application." We seek comment on whether the legal authority set forth in the Second Report and Order would also support extending text-to-911 obligations to non-interconnected text providers. Alternatively, does the Commission have adequate bases of authority to require non-interconnected text providers to provide a bounce-back message that text-to-911 service to 911 not available? VON Coalition suggests that the Commission should recommend that non-interconnected text providers "notify customers in their terms of use that texting 911 is not available" but refrain from imposing requirements on such providers. We seek comment on VON Coalition's view.

56. We also seek comment on the technical feasibility for non-interconnected text messaging providers to deliver texts-to-911. Bandwidth asserts that because the "application-centric model" posed in the Second Further Notice "does not depend on the 10-digit number

assigned to the underlying communications device," that model would "technically allow for the possible expansion of text-to-911 requirements to include non-interconnected OTT application providers in the future." Heywire suggests that the CMRS-based model would be feasible for non-interconnected text providers as well as interconnected text providers. We seek comment on these proposals. What costs would non-interconnected text providers incur to comply with requirements to provide either text-to-911 or a bounce-back message?

57. Rich media text services. We also seek comment on the delivery of multimedia messages to PSAPs.[4] Both MMS and MMES provide the capability to send multimedia, including photos and videos, in addition to text. We seek comment on PSAP implementation of multimedia messaging services and how the delivery of multimedia could affect PSAPs. Are PSAPs concerned regarding the amount of multimedia information they may receive? Currently, certain covered text providers remove non-text content and non-911 addresses from a MMS before delivery to the PSAP. Verizon adds that the "potential for PSAP and consumer confusion" can arise "in various scenarios associated with MMS," and that the Commission should "allow industry and public safety stakeholders to address issues concerning non-voice and non-text content in the context of NG911 systems and IP-enabled originating networks." Verizon contends that if the Commission intends to regulate messages delivered as MMS, it will need to provide "the opportunity to resolve the technical issues in a consistent, standard way, and to address the potential for consumer confusion." ATIS urges that "industry begin its technical evaluation quickly," because users today connect to CMRS and Wi-Fi networks "at the same time to run SMS-like applications," including "sophisticated applications that incorporate texting

[4] The text portion of text-to-911 message initiated using an MMS or other text messaging platform must be transmitted to the PSAP pursuant to our requirements set forth in the Second Report and Order. In this section, we discuss the inclusion of rich media, including images, video, and the like.

with other multimedia capabilities." We seek comment on these industry views. We also seek comment on what factors public safety entities must consider before they can efficiently handle text, photos, and video from whatever multimedia technologies covered text and other service providers choose to deploy. What best practices are being developed as more PSAPs implement IP-based or NG911 capabilities? Do regional or virtual PSAPs provide efficiencies to filter the flow of multimedia messages to 911, especially in disasters or other critical circumstances? Should the Commission impose requirements on covered text providers to restrict multimedia information to PSAPs? What cybersecurity concerns might multimedia messages introduce for covered text providers and PSAPs? We seek comment generally on the promise and potential of media-rich text messaging services, and how soon those capabilities will be realized.

58. Real-Time Text. Further, we seek comment on the delivery of real-time text communications to PSAPs, wherein the text is transmitted as it is typed. The EAAC recommended that "standards and functional requirements be adopted that are technically and economically feasible" to achieve direct access to 911 using, among other IP-based text communications, real-time text communications. We note that real-time text differs from traditional forms of text communications such as SMS, in that it provides an instantaneous exchange, character by character or word by word, whereas SMS and other traditional forms of text communications require uses to finish their typed message before sending it. According to the Rehabilitation Engineering Research Center for Telecommunications Access (RERC-TA), in an emergency, real-time text can allow for interruption and reduce the risk of crossed messages because the PSAP call taker is able to read the caller's message as it is being typed, rather than waiting until the caller presses the "send" key.

59. Telematics and additional public safety services. Telematics services offer a

number of public-safety oriented services, including automatic crash notification (ACN), navigation, concierge, and diagnostic features. Until recently, these telematics services have not offered texting capability. Telematics services have now evolved, however, to enable text messaging over SMS platforms or platforms incorporating the ability to connect with LTE networks, either through device toggling or through a voice-to-text recognition capability in the telematics device embedded in the architecture of vehicles. We seek comment on the capabilities of telematics services devices to enable consumers to use text messaging to reach 911 services other than through the telematics call centers. For instance, we note that telematics-connected "docks" in vehicles can enhance the capabilities of smart phones to access telematics services. Additionally, we recognize that 911-only mobile devices and certain alarm services using either CMRS data or Wi-Fi networks have also evolved to incorporate new capabilities that can include 911-specific text messaging.

60. We request comment on whether the Commission should extend the scope of text-to-911 requirements to apply to public safety-oriented telematics services that include text capability. What expectations do consumers have in reaching PSAPs directly, using such telematics services, rather than through a third-party call center? What sources of jurisdictional authority does the Commission have to adopt text-to-911 requirements for such telematics services? What are the costs and benefits of including these services within the scope of the text-to-911 requirements for the purposes of providing enhanced location information or routing the emergency text-to-911 message to the appropriate PSAP?

Procedural Matters

61. Ex Parte Rules. The proceeding of which this Third Further Notice is a part is a "permit-but-disclose" proceeding in accordance with the Commission's ex parte rules. Persons

making ex parte presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral ex parte presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the ex parte presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during ex parte meetings are deemed to be written ex parte presentations and must be filed consistent with 47 CFR1.1206(b). In proceedings governed by 47 CFR 1.49(f) or for which the Commission has made available a method of electronic filing, written ex parte presentations and memoranda summarizing oral ex parte presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's ex parte rules.

62. Comment Filing Procedures. Pursuant to §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments should be filed in PS Dockets No. 11-153 and 10-255. Comments may be filed using the Commission's

Electronic Comment Filing System (ECFS). See Electronic Filing of Documents in Rulemaking Proceedings, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: http://fjallfoss.fcc.gov/ecfs2/.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing.

  Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

  1. All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
  2. Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
  3. U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

63. Accessible Formats. To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an email to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (TTY).

64. Regulatory Flexibility Act. As required by the Regulatory Flexibility Act of 1980, as amended (RFA), the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact of the proposal described in the attached Third Further Notice of Proposed Rulemaking (Third Further Notice) on small entities. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments in the Third Further Notice. The Commission will send a copy of the Third Further Notice, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA). In addition, the Third Further Notice and IRFA (or summaries thereof) will be published in the Federal Register.

Initial Regulatory Flexibility Analysis

A. Need for, and Objectives of, the Proposed Rules

65. In the Third Further Notice, we seek comment on ways to improve text-to-911 service for Americans by providing enhanced location and roaming support, and how to best include future texting services within the scope of existing and proposed text-to-911 requirements. We seek comment regarding the technical feasibility of specific approaches, and likely timeframe for covered text providers to achieve these capabilities. We seek comment on solutions for roaming support and whether we should consider near-term requirements for roaming, or whether we should focus on roaming in conjunction with the deployment of next generation wireless networks, such as LTE. Finally, we seek comment on how newer services and networks will affect the delivery of text-to-911. These improvements will further long-term objectives to improve 911 communications and enable PSAPs to dispatch first responders directly and quickly to the scene of an emergency.

66. Currently, SMS text-to-911 does not provide for enhanced location of a mobile device due to differences in platforms for voice and text to send enhanced location information. We propose that, no later than two years from the effective date of the adoption of final rules, covered text providers must deliver enhanced location information (consisting of the best available location that covered text providers could obtain from any location technologies, or combination of technologies, including device-based location) with texts to 911. We also seek comment on the technical, privacy, and security issues associated with using commercial location-based services (cLBS) for enhanced text-to-911 location information. Lastly, we seek comment on the feasibility of sending text messages to 911 through Wi-Fi networks and on the capability of covered text providers to deliver location information with texts routed based on Wi-Fi location. There are times when a user's cell phone has only Wi-Fi as a means of connectivity, and being able to utilize it to connect with PSAPs when no other medium is available could save lives.

67. We must also consider the availability of roaming. If a subscriber is outside of his or her coverage area, the subscriber may not be able to reach 911 via text message unless roaming technology is provided where the mobile device can "roam" on another network and connect to other service providers that can support the delivery of 911 text messages. Thus we propose to require covered text providers to support roaming for text-to-911 no later than two years from the effective date of the adoption of final roaming rules and seek comment on this approach.

68. We also seek specific comment on NENA's proposal with regard to roaming solutions. NENA's proposal would first have the Commission encourage industry standards work and establish a medium-term roaming requirement, tied to the development of necessary

standards, for integrated text origination platforms. Second, the Commission would require roaming support for text-to-911 service as a precondition to the launch of any IP-based replacement for current-generation integrated text platforms. NENA also proposes that covered text providers could opt out of the medium-term deadline if they voluntarily commit to transition from their current generation platforms to NG911-compatible protocols and location mechanisms. Specifically, NENA proposes that the Commission "establish a three-year deadline (December 31st, 2017) for roaming support on existing platforms, extendable to five years (December 31st, 2019) for carriers who commit to supporting NG-compatible text service on a network-wide basis by that date." Providing roaming support for text-to-911 is important to ensure that the benefits of text-to-911 are shared by all consumers, and to encourage wireless competition by allowing smaller and rural CMRS providers the ability to offer their subscribers comparable services as larger CMRS providers.

69. Finally, we seek comment on our ultimate goal that text and other messaging to 911 be available on all text-capable media, regardless of the transmission method. The limitations of SMS-based text-to-911 underscore the need for further development of evolving platform architectures and standards that can deliver enhanced location and support roaming with text-to-911. We believe that a forward-looking view of text messaging services, encompassing all text-capable media, is warranted to ensure continued access to emergency services as some covered text providers migrate from legacy 911 networks to an all-IP environment. We also seek comment on how newer services and networks, as well as the transition to such newer services and networks, will affect the delivery of text-to-911, including text messages originating from Wi-Fi only locations, non-interconnected text applications, rich media text services, real-time text, and telematics and other public safety services. Thus, in the Third Further Notice, we seek

to ensure that consumers have access to non-voice/text capabilities to our 911 system with enhanced location, roaming support, and future texting services, affirming our commitment to ensuring access to emergency services for all Americans, as well as advance the Commission's goal of enabling text, photo, and video transmission to 911.

B. Legal Basis

70. The legal basis for any action that may be taken pursuant to this Third Further Notice of Proposed Rulemaking is contained in sections 1, 2, 4(i), 4(j), 4(o), 251(e), 303(b), 303(g), 303(r), 316, and 403 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), 154(j), 154(o), 251(e), 303(b), 303(g), 303(r), 316, 403, and section 4 of the Wireless Communications and Public Safety Act of 1999, Pub. L. 106-81, sections 101 and 201 of the New and Emerging Technologies 911 Improvement Act of 2008, Pub. L. 110-283, and section 106 of the Twenty-First Century Communications and Video Accessibility Act of 2010, Pub. L. 111-260, 47 U.S.C 615a, 615a-1, 615b, 615c.

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Would Apply

71. The RFA directs agencies to provide a description of, and where feasible, an estimate of the number of small entities that may be affected by the proposed rules. The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction." In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act. A "small business concern" is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).

72. Small Businesses, Small Organizations, and Small Governmental Jurisdictions. Our action may, over time, affect small entities that are not easily categorized at present. The Commission's current Master PSAP registry indicates that there are more than 6,000 active PSAPs, which we conclude fall into this category. Should a PSAP choose to implement text-to-911, they will be affected by the proposed rules. We emphasize, however, that PSAPs retain the choice of whether to implement text-to-911; any PSAP that chooses not to implement text-to-911 will not be affected by the adopted rules. As of 2009, small businesses represented 99.9% of the 27.5 million businesses in the United States, according to the SBA. Additionally, a "small organization" is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field." Nationwide, as of 2007, there were approximately 1,621,315 small organizations. Finally, the term "small governmental jurisdiction" is defined generally as "governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand." Census Bureau data for 2007 indicate that there were 89,527 governmental jurisdictions in the United States. We estimate that, of this total, as many as 88,761 entities may qualify as "small governmental jurisdictions." Thus, we estimate that most governmental jurisdictions are small.

73. Other Small Entities to Which the Proposed Rules Would Apply. The following small entities may be affected by the proposed rules: Wireless Telecommunications Carriers (except satellite); Wireless Service Providers; Incumbent Local Exchange Carriers (Incumbent LECs); Competitive Local Exchange Carriers (Competitive LECs), Competitive Access Providers (CAPs), Shared-Tenant Service Providers, and Other Local Service Providers; Broadband Personal Communications Service; Narrowband Personal Communications Services; Specialized Mobile Radio; AWS Services (1710–1755 MHz and 2110–2155 MHz bands (AWS-

1); 1915–1920 MHz, 1995–2000 MHz, 2020–2025 MHz and 2175–2180 MHz bands (AWS-2); 2155–2175 MHz band (AWS-3)); Wireless Communications Services; Upper 700 MHZ Band Licensees; Lower 700 MHz Band Licensees; Wireless Telephony; Satellite Telecommunications Providers; Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing; Semiconductor and Related Device Manufacturing; Software Publishers; Internet Service Providers; Internet Publishing and Broadcasting and Web Search Portals.

The full Initial Regulatory Flexibility Analysis (IRFA), which includes descriptions and estimates of the small entities to which the rules proposed would apply, can be found in the Third Further Notice, available at http://www.fcc.gov/document/fcc-adopts-text-911-rules. The Third Further Notice and its accompanying IRFA can also be accessed through the Commission's Electronic Document Management System (EDOCS) by searching for FCC No. 14-118.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

74. The Third Further Notice proposes that no later than two years of the effective date of the adoption of final rules, covered text providers must deliver enhanced location information (consisting of the best available location that covered text providers could obtain from any available location technology or combination of technologies, including device-based location) with texts to 911. The Third Further Notice also proposes to require covered text providers to support roaming for text-to-911 no later than two years from the effective date of the adoption of final rules. The Third Further Notice also seeks comment on alternative proposals for enhanced location and roaming support.

E. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

75. The RFA requires an agency to describe any significant, specifically small business alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): "(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) and exemption from coverage of the rule, or any part thereof, for small entities."

76. The Third Further Notice analyzes a variety of ways in which covered text providers could use enhanced location to route 911 text messages, as well as provide the PSAP with the caller's actual location, and seeks comment on associated costs. It also seeks comment on possible roaming solutions and the evolution of texting applications and how consumers use them. The Third Further Notice seeks comment on costs associated with the proposed requirements for enhanced location and roaming support, as well as the costs associated with alternative proposals. It also seeks comment on how future texting services would be best and most cost-efficiently incorporated into the 911 ecosystem.

77. The Third Further Notice also seeks comment on ways existing infrastructure and resources could be used to comply with the proposed rules, as well as how enhanced location and roaming capabilities could be addressed via expenditures made for broader NG911 deployments.

78. Paperwork Reduction Analysis. This document contains proposed new

information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Pub. L. 104-13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Pub. L. 107-198, see 44 U.S.C. 3506(c)(4), we seek specific comment on how we might further reduce the information collection burden for small business concerns with fewer than 25 employees.

79. We note that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4), we previously sought specific comment on how the Commission might "further reduce the information collection burden for small business concerns with fewer than 25 employees."

80. Congressional Review Act. The Commission will send a copy of this Third Further Notice in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act (CRA), see 5 U.S.C. 801(a)(1)(A).

Ordering Clauses

81. Accordingly, IT IS ORDERED, pursuant to sections 1, 2, 4(i), 4(j), 4(o), 251(e), 303(b), 303(g), 303(r), 316, and 403 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), 154(j), 154(o), 251(e), 303(b), 303(g), 303(r), 316, 403, and section 4 of the Wireless Communications and Public Safety Act of 1999, Pub. L. 106-81, sections 101 and 201 of the New and Emerging Technologies 911 Improvement Act of 2008, Pub. L. 110-283, and section 106 of the Twenty-First Century Communications and Video Accessibility Act of 2010, Pub. L. 111-260, 47 U.S.C. 615a, 615a-1, 615b, 615c, that the Second Report and Order and Third Further Notice of Proposed Rulemaking in PS Docket No. 11-153 and PS Docket No. 10-

255 IS ADOPTED and shall become effective thirty (30) days after publication of the text or summary thereof in the Federal Register, except for those rules and requirements that require approval by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, which shall become effective after the Commission publishes a notice in the Federal Register announcing such approval and the relevant effective date.

82. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Second Report and Order and Third Further Notice of Proposed Rulemaking, including the Final Regulatory Flexibility Analysis and Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects in 47 CFR Part 20

Communications common carriers, Communications equipment, Radio

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch,
Secretary.

Proposed rules

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR Part 20 as follows:

PART 20 – COMMERCIAL MOBILE RADIO SERVICES

1. The authority citation for Part 20 is revised to read as follows:

Authority**:** 47 U.S.C. 151, 152, 154(i), 201(b), 225, 301, 303(b), 303(g), 303(r), 316, 403, 615a, 615a-1, 615b, and 47 U.S.C. 615c.

2**.** Section 20.18 is amended by adding paragraphs (n)(12) and (13) to read as follows:

§ 20.18 911 Service.

* * * * *

(n) * * *

(12) Enhanced location for 911 text messages. Covered text providers subject to this section must provide the designated Public Safety Answering Point enhanced location, i.e., the best available location that covered text providers can obtain from any available location technology or combination of technologies, with 911 text messages no later than [DATE 2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE].

(13) Roaming. Covered text providers subject to this section must support roaming for 911 text messages no later than two years from the effective date of this rule.

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