

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of

Wireless E911 Location Accuracy Requirements	)	PS Docket No. 07-114
	)	
Request by ATN International, Inc., on behalf of its	)	
CMRS subsidiaries, for Waiver of the Location Accuracy	)	
Benchmarks of Section 20.18(h)(2)(ii) of the	)	
Commission's Rules	)	

To: Chief, Policy and Licensing Division  
Public Safety and Homeland Security Bureau

**CONTINGENT REQUEST FOR WAIVER**

ATN International, Inc.  
By Its Attorneys

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January 18, 2019

## SUMMARY

ATN International, Inc., on behalf of itself and its wireless carrier subsidiaries (collectively, “ATN”), and pursuant to Sections 1.3 and 1.925 of the Commission’s Rules, 47 C.F.R. §§1.3, 1.925, hereby requests a contingent waiver of the location accuracy benchmarks of Section 20.18(h)(2)(ii) of the Commission’s Rules, 47 C.F.R. §20.18(h)(2)(ii). Specifically, ATN requests an extension of time until July 2020 within which to come into compliance with respect to: (1) its CDMA networks that it uses to serve ATN subscribers in the continental United States; and (2) its UMTS networks that it uses to serve incoming GSM and UMTS roamers, to the extent a waiver request is necessary.

ATN provides a niche CMRS service, specializing in serving rural and insular areas neglected by the major nationwide carriers. One of those remote and insular populations is that of the United States Virgin Islands (“USVI”), the entirety of which is within ATN’s licensed service area. In addition, ATN is a major provider of CMRS as well as broadband service to Native American populations and to other extremely remote rural populations. Because St. Thomas in the USVI, from a population density standpoint, qualifies as “urban”, ATN is deemed to serve two E911 morphologies, urban and rural.

ATN provides CMRS service to both its own subscribers and to incoming roamers. ATN operates CDMA-technology networks to serve its own subscribers in the Continental United States and UMTS-technology networks to serve its own subscribers in the United States Virgin Islands (“USVI”). In some but not all licensed areas in the continental United States, ATN has also built out GSM/UMTS networks solely to serve incoming GSM/UMTS roamers.

ATN meets the benchmark requirements with its own subscribers in the USVI but does not meet the benchmarks for its subscribers on its CDMA network in the United States.

Accordingly, ATN is requesting a waiver for its own subscribers on its CDMA network in the Continental United States. ATN cannot state with certainty that it meets the benchmark requirements for roamers both in the USVI and the Continental United States. However, the Commission has indicated the agency would monitor E911 compliance for roamers and revisit the matter in the future. To the extent necessary, ATN is requesting a waiver of the benchmarks for its roamers.

ATN is making progress with respect to its CDMA operations in the Continental United States (the operations which support all of the ATN customer base), and expects to meet the requirements of Section 20.18(h)(2) by July 2020. Therefore, ATN is seeking an extension until then within which to achieve the accuracy level for its CDMA operations.

However, until all phones of all incoming GSM/UMTS roamers are also GPS-assisted, ATN will not be able to achieve such location accuracy for the GSM/UMTS networks it has built in some markets solely to accommodate incoming roamers. However, ATN only builds such roam-only networks where there is sufficient incoming UMTS roamer traffic to financially support such a parallel roam-only network, which generally means ATN's roamer network is the *only* available UMTS network in such an area. Therefore, in such areas, the question is not basic 911 service vs. enhanced 911 service; it is between basic 911 service and no 911 service.

Under the unique circumstances present here, a waiver of the rule is therefore in the public interest.

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**CONTINGENT REQUEST FOR WAIVER**

ATN International, Inc., on behalf of its direct and indirect Commercial Mobile Radio Service ("CMRS") subsidiaries (collectively, "ATN") and pursuant to Sections 1.3 and 1.925 of the Commission's Rules, 47 C.F.R. §§1.3, 1.925, hereby requests a waiver of the location accuracy benchmarks of Section 20.18(h)(2)(ii) of the Commission's Rules, 47 C.F.R. §20.18(h)(2)(ii). Specifically, ATN requests an extension of time until July 2020, within which to come into compliance with respect to (1) its CDMA networks in the Continental United States that are used to serve ATN subscribers, and (2) roamers in the USVI and Continental United States, to the extent such a waiver is required.

When establishing the location accuracy benchmarks of Section 20.18(h), the Commission specifically recognized that for carriers in extremely rural, tribal and insular areas, compliance might well be difficult or impossible, and even considered the possibility of establishing "safe harbors" or other special procedures to apply to carriers with respect to such areas. Although the Commission ultimately rejected the notion of a "safe harbor", the Commission explicitly anticipated that some carriers would need to seek waiver of the new

location accuracy rules being established in that order, and said: “Any CMRS provider that is unable to comply with the rules or deadlines adopted herein may seek waiver relief.”<sup>1</sup>

ATN is one such carrier that requires a waiver despite its best efforts. As discussed below, good cause exists for the grant of the requested waiver.<sup>2</sup>

## **BACKGROUND**

### **Description of ATN CMRS Providers**

ATN provides a niche CMRS service, specializing in serving rural, tribal and insular areas neglected by the major nationwide carriers. One of those remote and insular populations is that of the United States Virgin Islands (“USVI”), the entirety of which is within ATN’s licensed service area. In addition, ATN is a major provider of CMRS as well as broadband service to Native American populations<sup>3</sup> and to other remote rural populations. Because St. Thomas in the USVI, from a population density standpoint, qualifies as “urban”, ATN is deemed to serve two E911 morphologies, urban and rural.<sup>4</sup>

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<sup>1</sup> *Wireless E911 Location Accuracy Requirements*, PS Docket No. 07-114, *Fourth Report and Order*, 30 FCC Rcd 1259, 1315-16 (¶¶156-57) (2015) (“*Fourth R&O*”).

<sup>2</sup> ATN is filing concurrently herewith in PS Docket No. 17-78 a notice of the filing of this Contingent Waiver Request signed by James Fredrickson, Vice President Network Engineering for ATN and Leonard Westlake, Vice President Network Engineering for Comment Wireless, LLC, certifying therein that to the best of their knowledge, information and belief, all facts set forth in this Contingent Waiver Request are true and correct.

<sup>3</sup> Service to the nation’s largest Native American community, the Navajo Nation, is provided by ATN’s 49%-owned indirect subsidiary, NTUA Wireless, LLC (“NTUAW”), whose network E911 operations are fully integrated with ATN’s other CMRS networks. The other 51% of NTUAW is owned by the Navajo Tribal Utility Authority (“NTUA”), an instrumentality of the Navajo Nation government. As a partially-owned subsidiary of ATN, NTUAW is included within this Waiver Request.

<sup>4</sup> ATN is a non-nationwide carrier, as defined in Section 20.18(i)(1)(v), which does not provide service in any portion of any of the six Test Cities, as defined in Section 20.18(i)(1)(vi). Thus, according to the 2014 ATIS Document, “Considerations in Selecting Indoor Test Regions” (referenced in Section 20.18(i)(1)(vi)), and according to the Public Notice, *Public Safety and Homeland Security Bureau Provides Guidance to CMRS Providers Regarding Submission of*

ATN provides CMRS service to both its own subscribers and to incoming roamers. ATN operates CDMA-technology networks to serve its own subscribers in the Continental United States and UMTS-technology networks to serve its own subscribers in the USVI. ATN has built out UMTS networks to serve incoming roamers in the USVI and GSM/UMTS networks to serve incoming roamers in the continental United States.

### **Location Accuracy Results to Date**

In the fall of 2017, the USVI was devastated by not one, but two major hurricanes --- Irma and Maria, which together ravaged most of the islands' infrastructure, including not only its telecommunications infrastructure, but also its transportation and other utility infrastructure. Moreover, because these are islands, the only way to deliver supplies for rebuilding infrastructure is by boat, a slow and expensive undertaking. When coupled with the fact that even the port facilities in the islands suffered major damage, the entire rebuilding process for islands has been slow and painful.

Notwithstanding, in October 2017, ATN completed construction of, and launched, a new UMTS network to serve USVI under the "Viya" trademark. The USVI VIYA wireless network is a UMTS/LTE wireless network. The GSM and CDMA networks have been shut down and all subscribers migrated to the new UMTS network since the hurricanes of 2017 Irma and

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*Periodic E911 Location Accuracy Live Call Data Reports, DA 17-82, released January 18, 2017 ("Guidance PN"), ATN is required to measure and report with respect to one county representing each of those two morphologies, i.e., urban and rural. St. Thomas, USVI is ATN's urban morphology county, and Pima County, AZ is ATN's rural morphology county. (ATN is licensed only in the sparsely-populated rural portion of Pima County; ATN is not licensed in, and does not serve the urban portion of that county.)*

Maria. All voice calls today including E911 calls are UMTS based since ATN has not introduced VoLTE to date.

This new network is equipped with the capability to provide Phase 2 location accuracy data, and has been designed to meet location accuracy threshold requirements. Unfortunately, the Public Safety Answering Point (“PSAP”) for St. Thomas still has no capability to process 911 location information, even though ATN provides such information. ATN does not know how long it will take the St. Thomas PSAP to overcome the hurricane damages sufficiently to again become E911 capable. Until the PSAP becomes E911 capable, users in St. Thomas only have basic 911 service.<sup>5</sup>

The St. Croix PSAP was able to restore its Phase 2 E911 capability in late March 2018, and ATN has been delivering Phase 2 E911 location information to that PSAP since it regained its E911 capability. Although initially there were some PSAP/carrier issues pertaining to handsets utilizing the Android operating system, ATN purchased additional software products from its 911 vendor, West Corporation (formerly Intrado, hereafter, “West”), including the new West “Wireless Data Location System” or WDLS product. ATN believes that the E911 facilities are in good working order, and that as soon as the St. Thomas PSAP regains E911 capability, ATN’s network will work harmoniously with it as well.

ATN is confident handsets of ATN subscribers comply fully with the accuracy benchmarks. However, the USVI market is a series of islands in the Caribbean, Consequently, the roaming traffic constitutes 75% of the active subscribers total today, and as a result the vast majority of devices on the VIYA network do not support control plane E911 at this time as the

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<sup>5</sup> The same situation applies with respect to the third USVI “county”, St. John, as St. John has no separate PSAP but shares the St. Thomas PSAP.



roaming carriers have not enabled that function on their devices as not mandated in their countries, and they see USVI as an International market. To address this problem, VIYA went to their E911 vendor West and initiated a new service called ELS, the first service in the world adopting the user plane data via Android/Google based devices to provide device location as a supplement to control plane location. This service actually helps improve the accuracy of the existing control plane data (if available) and is supplemental to control plane locations service. ELS is working as supplemental service for all control plane capable Android devices in the VIYA network on VIYA active subscribers, but foreign roaming devices are not yet working until West finishes their software development. ATN is waiting for the update and will install it as soon as possible and available. ATN expects West to deliver the update in the next six months.

Once the ELS service enables foreign roamers to work and provide E911 location information via the user plane, ATN believes it will be able to test and meet the new E911 locations accuracy measurements, and will perform drive testing to insure this is true. The ELS service using the user plane has one limitation, it will not work with devices that do not have an active subscription or a SIM with an active subscription installed. That is why this is a supplemental location service to the existing conventional control plane service. But ATN feels the number of foreign roamers in the USVI market without a SIM or active service to be very small, and the great majority of foreign Android/Google based devices not supporting control plane E911 service will work with the ELS solution.

ATN presently does not comply with the location accuracy benchmarks in the United States. ATN believes that when it upgrades its network to LTE, ATN will comply with the

Phase 2 requirements. In the interim, ATN has implemented certain audits of its system with the goal of improving local accuracy for 911 calls, including the following:

- Audit of West BSA data to correct band class and frequency information – correct data increases chances of the handset getting a GPS fix quicker and reduces time out errors.
- Audit of West BSA data to correctly flag repeater sites - undocumented repeaters slew AFLT and GPS acquisition assistance, even when they are not the actual serving cell. Problems from repeaters show up in the PDE logs as Time Solution Errors, RAIM or SMO faults.
- Audit of West BSA data to correct cell radius values – when MAR values are too large, calls can overlap multiple sites which can delay valid GPS fixes.
- Audit of West BSA data to correct transmit pseudo noise values.

ATN is working with West to generate results of its E911 location accuracy. For UMTS in the United States, ATN worked with ZTE over the last three to four months of 2018 and have identified an MSC software fix for unregistered users. ATN is considering retaining ZTE to proceed on performing that patch in the near future.

### **Prospects for Reaching the Benchmark**

ATN believes it is making progress with respect to its primary networks, that is, the networks which ATN uses to serve its local subscribers. ATN believes it will consistently reach the required location accuracy benchmarks with respect to its CDMA networks no later than July 2020, if not earlier. The important factor here is that virtually all CDMA phones, whether new or older models, are GPS-assisted, and CDMA networks rely almost entirely on handset-based location technology.

Unfortunately, the same cannot be said for UMTS networks constructed for the sole purpose of serving incoming roamers. To reach the required level of location accuracy for these

networks may prove an impossible task. ATN is reporting this information on roamers to assist the Commission in determining whether roaming should be considered in complying with the benchmarks.

In fact, for these incoming roamers, location accuracy becomes simply a function of whether or not the user has a GPS-assisted phone, such as an iPhone or Samsung Galaxy. If the user has such a GPS-assisted phone, ATN has a much higher likelihood of reporting accurate location information to the local PSAP.<sup>6</sup> If the user is calling 911 from an older phone, ATN cannot feasibly obtain or report the caller's location with the accuracy required by the rules. At this stage, and for the foreseeable future, ATN's UMTS location accuracy results will be a function of the percentage of 911 calls that are able to obtain positioning data using GPS-assisted or GPS-based technologies.

## **WAIVER REQUEST**

### **I. CDMA Network Waiver Request.**

As noted, CDMA networks have always relied primarily upon handset-based location technologies, such that improving location accuracy is a function of developing better handset-based technologies, as opposed to reinventing the wheel. Although rural areas do present certain challenges for any location accuracy technology,<sup>7</sup> ATN is working to improve its network infrastructure, to reach the required threshold.

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<sup>6</sup> We assume, throughout this Waiver Request, that each rural PSAP in ATN's service areas is able to receive such location information. That is not necessarily the case in many areas served by ATN.

<sup>7</sup> The Commission has long recognized that even for handset-based technologies, rural areas present a challenge with respect to location accuracy, due to factors such as forestation or terrain. *See, e.g., Wireless E911 Location Accuracy Requirements*, PS Docket No. 07-114,

Nevertheless, based on its improvements to date, ATN reasonably believes that it can reach the required location accuracy threshold no later than July 2020, and that location accuracy results for that quarter, when gathered and assessed after the end of the quarter, will demonstrate that ATN met the threshold in that quarter and moving forward.

Therefore, ATN requests an extension of time to achieve the location accuracy benchmarks for CDMA networks in the United States until July 2020. ATN commits to promptly gather and report to the Commission its CDMA location accuracy results, to be delivered to the Commission no later than February 2020.

ATN has been and is being diligent in its efforts to comply. Moreover, location accuracy itself is an *enhancement* of 911 emergency service, it is not 911 service. In the areas where ATN operates, the main question is often whether there is a wireless signal at all (*i.e.*, whether there is basic 911 available in an emergency). Where, as here, there are finite resources, more lives are generally saved by extending the reliable wireless footprint than by enhancing the quality of the information conveyed. Stated otherwise, a 911 call without perfect location accuracy is better than not being able to call 911 at all.

## **II. UMTS Waiver Request.**

With respect to its UMTS networks ATN requests an extension of time within which to achieve the location accuracy threshold for roamer, to the extent it is necessary, until July 2020. This would enable ATN to utilize handset-based technology to locate the phones of incoming

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*Second Report and Order*, 25 FCC Rcd 18909, 18916 (2010) (“*Second R&O*”). Although technically “urban”, St. Thomas is both hilly and heavily forested.

roamers, and thereby probably achieve the requisite accuracy.<sup>8</sup> ATN shall provide its location accuracy results to the Commission no later than July 2020.

This waiver is in the public interest. ATN's customary practice has been to not build UMTS networks except to serve incoming roamers. Because such networks can only be justified where the volume of incoming roamers is heavy, ATN generally does not build such networks in areas that have significant GSM/UMTS build-out by others (with the exception of the USVI). Thus, to a significant extent, the alternative to an ATN UMTS network would be an absence of service – including a complete absence of basic 911 service – for GSM/UMTS phones.

Stated simply, ATN cannot feasibly meet the horizontal location accuracy benchmark for its roam-only UMTS networks, and the only alternative is for ATN to completely shut these networks down, leaving the involved GSM/UMTS phones without *any* 911 service whatsoever. Since basic 911 service is better than no 911 service, the public interest is best served by granting the requested waiver with respect to the ATN UMTS networks.

### **III. The Requested Waivers Are in the Public Interest.**

The Commission has consistently said that its goal is public safety, that its 911 rules are intended to meet that goal, and that therefore its 911 rules have to be interpreted and applied flexibly to achieve that goal, as opposed to being applied robotically or without regard to the

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<sup>8</sup> ATN intends to continue to monitor its horizontal location accuracy for incoming GSM/UMTS roamers. If, leading up to July 2020, there does not appear to be sufficient improvement in horizontal location accuracy with respect to these roamers' 911 calls, ATN may need to seek an extension of the waiver. In such event, ATN will notify the Commission and seek such further extension in advance of the waiver request deadline.

circumstances of a particular case.<sup>9</sup> The most important aspect of public safety is the ability to reach emergency personnel, *i.e.*, the local PSAP, promptly and reliably in an emergency.

Remote and rural areas, such as those served by ATN, have a variety of unique issues not found in major urban areas. In major urban areas, there are numerous carriers, and cell sizes are small in order to increase capacity; moreover, there are usually multiple cells covering any particular inch of space.<sup>10</sup> Basic 911 service is a given in such areas; hence the desire to enhance basic 911 service as the best means to improve public safety.

Conversely, in the areas served by ATN, basic 911 service is not a given. Most of the time when ATN initiates service in an area, that area was without wireless service until ATN came along. ATN is generally the first, and often remains the only, provider of basic 911 service in a particular area. While ATN sometimes also builds a parallel UMTS network, ATN only does so where ATN would receive so much incoming GSM/UMTS roamer traffic as to pay for the entire cost of the parallel network. That generally means there is otherwise no other GSM/UMTS network in that area, and that without ATN, there would be no basic 911 service for such incoming roamers.

Where the cost of upgrading network infrastructure so as to provide the level of enhanced location accuracy would render the entire network non-remunerative, the only rational action would be to shut down the network entirely and cease offering wireless service. But shutting

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<sup>9</sup> See, e.g., *Improving 911 Reliability*, PS Docket No. 13-75, *Order on Reconsideration*, 30 FCC Rcd 8650, 8654-55 (2015) (“*Intrado Order*”) (“Inflexible insistence on specified actions as part of each certification despite technical considerations that show those actions may not be appropriate in all cases would undermine this principle of flexibility without advancing the Commission’s goal of improving 911 reliability.”)

<sup>10</sup> While, from a population density standpoint, St. Thomas, USVI is “urban”, it is an insular and rural areas in the tropics, with heavier vegetation than is found in more temperate zones such as the continental United States. It is not the typical urban area.

down an entire network would mean the end of basic 911 service, and a significant harm to public safety. Thus, the choice is not between basic 911 service and enhanced 911 service – it is between basic 911 service and no 911 service at all.

Thus, ATN here meets the standard for receipt of a waiver, whether one looks at Section 1.3 or Section 1.925 of the Rules. The standard under Section 1.3 is “good cause”, and manifestly, preserving basic 911 service to affected areas constitutes “good cause.” The standard under Section 1.925 is:

- i) The underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest; or
- (ii) In view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.

ATN meets either of these standards.

Enforcing the rule here would frustrate the Commission’s underlying goal of improving public safety, while granting the requested waiver is in the public interest. It would be unduly burdensome to require ATN to choose between constructing additional, otherwise unneeded, cell sites merely to improve location accuracy, or shutting down an entire wireless network. And in any event, ATN has no reasonable alternative here.

ATN has large incentives to reach the location accuracy benchmarks of the rules as soon as feasible. Subscribers want to feel safe and secure. Roaming partners want ATN to meet their network quality standards to the maximum extent possible. Certainly, at least in St. Thomas, ATN has to remain competitive with other providers of wireless service. Therefore, grant of a waiver here will not result in ATN “dragging its feet” in terms of coming into compliance.

## CONCLUSION

The public interest is best served by granting ATN a waiver of the horizontal location accuracy benchmarks of Section 20.18(h)(2)(ii) of the Commission's Rules through July 2020 for (a) its CDMA network in the United States and (b) for roamers using the GSM/UMTS network to extent a waiver is necessary.

Respectfully submitted,  
**ATN INTERNATIONAL, INC.**

January 18, 2019

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