

I. INTRODUCTION

ATN is a non-nationwide CMRS provider serving rural and insular areas around the United States. In many instances, ATN is the only CMRS provider in an area, or at least the only CMRS provider of a certain technology. ATN operates both UMTS (GSM) and CDMA networks, although it does not necessarily operate both technologies in every area it serves. The areas served by ATN often lack substantial cell overlap, complicating or eliminating the ability to use network-based location technologies. These areas generally have either no buildings higher than two stories, or else very few such buildings (and even then, not much higher than two stories). Moreover, many of the PSAPs in the areas served by ATN are lacking in funds, and obtain the facilities capable of using additional 911 information either much later in time than do PSAPs in major urban areas, or else not at all.

The largest county where ATN serves its own subscriber base is Pima County, Arizona; however, ATN is licensed to serve only remote, rural portions of this county which lie in the Sonoran Desert – ATN does *not* serve metropolitan Tucson. In addition, ATN has two service areas consisting of an “urban” morphology, St. Thomas and St. Croix, USVI, two of the poorest and most insular areas in the United States.² ATN does not serve any portion of any of the so-called “Test Bed” markets.

Implementation of newer E911 location accuracy technologies has been, and remains, a challenge for a niche carrier such as ATN, especially where implementation involves more than handset-based facilities. Aside from the fact that many involved PSAPs lack the ability to utilize such information even if ATN were to deliver it to them, there is the cost-benefit balancing which must be assessed. Specifically, many of ATN’s remote cell sites handle relatively less traffic (whether voice or data) per month than do the cell sites in urban areas or along interstate highways. Therefore, these ATN cell sites generate much less revenue than do other carriers’ cell sites. If the cost of implementing E911 becomes too high, the entire cell site becomes uneconomic, and the only rational business action is to take the cell site out of service permanently. Where, as is often the case, the involved cell site had been the only cell site providing basic 911 service within a given area, the result is a loss of *any* 911 service to subscribers and incoming roamers – a result contrary to the intent of the 911 service rules.

¹ This Report is filed on behalf of ATN International, Inc. and its various direct and indirect subsidiaries which provide Commercial Mobile Radio Service (“CMRS”) (collectively, hereafter, “ATN”), including partially owned indirect subsidiaries such as NTUA Wireless, LLC.

² According to the 2010 Census, St. Thomas has a population of 51,634, and St. Croix a population of 50,601, rendering St. Thomas the larger of the two for purposes of 911 reporting for the urban morphology reports.

ATN does seek subsidization and/or reimbursement of E911 expenditures where and when it can do so, but whether there will be such funding available for indoor location technologies in places without tall buildings is questionable, even assuming the local PSAP has paid to obtain the facilities to receive and utilize such information (which may well not be the case if the PSAP sees no benefit).

Another problem that ATN faces due to its concentration on rural niches is the inability to “blend” its results within a county. In the western United States, any given county generally covers a very large area, sometimes larger than Rhode Island or even Delaware. A nationwide carrier can blend its results across the entire county, and claim to have met the accuracy threshold, even though it comes nowhere near meeting the threshold in that portion of the county where ATN provides service. For example, in Pima County, Arizona, the four nationwide carriers can easily reach the 50% horizontal threshold, because for them, the vast majority of 911 calls occur in the dense confines of metropolitan Tucson; the relatively tiny proportion of their 911 calls occurring in cell sites in the Sonoran Desert are insufficient to drop their overall accuracy level below 50% for Pima County, even if those remote cell sites might have accuracy levels far below 50%. Conversely, since all of ATN’s cells within that county lie in the Sonoran Desert, ATN must reach the 50% threshold measuring only rural, desert cell site locations. Thus, ATN has likely surpassed the nationwide carriers’ performance within the Sonoran Desert.

Notwithstanding these challenges, ATN remains committed to providing the greatest level of location accuracy economically feasible to its subscribers, and to continually upgrading accuracy levels as and when new technologies become available that have relevance to ATN’s service areas.

II. ADDITIONAL DISCUSSION RE US VIRGIN ISLANDS

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 the islands has been slow and often painful.

Notwithstanding, in October, 2017, ATN completed construction of, and launched, a new UMTS network to serve the USVI, under the “Viya” trademark. 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 St. Thomas PSAP 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 damage sufficiently to again become E911-capable. Until the PSAP becomes E911-capable, users in St. Thomas only have basic 911 service.³

³ 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.

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 horizontal 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, including the new West “Wireless Data Location System” or WDLS, product. ATN believes that the E911 facilities in St. Croix are working in good order, and that as soon as the St. Thomas PSAP regains E911 capability, ATN’s network will work harmoniously with it as well.

III. IMPLEMENTATION PLAN/MILESTONES

March, 2018:

Began delivering Phase-2 horizontal location information to the St. Croix PSAP immediately upon that PSAP having regained its E911 capability.

Post-VoLTE Platform Launch:

At this time, ATN has no specific projected date for the deployment of a VoLTE platform in any of its markets.

IV. HORIZONTAL ACCURACY PROGRESS

ATN has been working diligently to reach the requisite horizontal location accuracy thresholds for non-nationwide carriers, at least with respect to those networks serving ATN’s subscribers. ATN’s results for the second half of 2017 indicate ATN achieved an accuracy level on its network serving its Pima County subscribers in excess of the 50% x/y-axis threshold. ATN is diligently working to maintain that level in Pima County. ATN continues to implement the recommendations and changes recommended by its equipment suppliers and by West in order to achieve required location accuracy levels.

With regard to the USVI, ATN has launched a state-of-the-art UMTS network, is providing Phase-2 E911 in St. Croix, and stands ready to provide the same in the rest of the USVI as soon as the other USVI PSAPs are E911-capable.

V. NATIONAL EMERGENCY ACCESS DATABASE

ATN indirectly helped to fund the creation of the National Emergency Access Database (“NEAD”), through ATN’s membership in CTIA. ATN has had no direct part in the creation of the NEAD. However, ATN’s E911 contractor, West, has been retained by NEAD, LLC (the CTIA subsidiary established to implement NEAD) to design, implement, operate and maintain the NEAD Platform.

None of the PSAPs in ATN’s coverage areas has notified ATN that such PSAP is capable of receiving or utilizing data from NEAD. As and when any PSAP in any ATN coverage area

notifies ATN that it is NEAD-capable, ATN intends to begin using the NEAD. ATN is in communication with West as to the mechanics for same.

VI. VERTICAL/Z-AXIS LOCATION ACCURACY

A. Uncompensated Barometric Pressure (“UBP”) Information.

Section 20.18(i)(2)(ii)(A) of the Commission’s Rules requires all CMRS providers to supply UBP information to PSAPs within three years of the effective date of that subparagraph, or as of August 1, 2018. ATN has been advised by its contractor, West, as follows (emphasis added):

West supports Uncompensated Barometric Pressure (UBP) at the Enhanced-Serving Mobile Location Center (E-SMLC) and Gateway Mobile Location Center (GMLC), the West Fixed Mobile Convergence Center (FMCC).

The E-SMLC queries the device using the Open Mobile Alliance (OMA) LTE Positioning Protocol extension (LPPE) 1.0 protocol carried inside the 3GPP LPP protocol for the UBP as measured by the User Equipment (UE), i.e. device. **The UBP value, if received, is included in the Location Services – Application Protocol (LCS-AP) response message that is sent to the Mobility Management Entity (MME) at the end of the location procedure.** The E-SMLC does not perform validation of the barometric pressure value received from the device.

The GMLC parses UBP from the SLg interface, between the GMLC and MME, LRR and PLA messages, per the TS 29.172 Release 13.0 standard, stores it internally, and includes it in the E2 ESPOSREQ response, per the guidance in ATIS-0700028. Once UBP is received for a call, it is included in all ESPOSREQ responses (if configured as “allowed” for the applicable PSAP), regardless of the query type (Initial, Updated, Updated or Last), and regardless if the UBP has been updated or not. It is assumed that if a UE supports delivery of UBP, it will supply UBP for all location updates, therefore the value will always be current with the latest latitude/longitude.

Based on the foregoing, ATN believes it is in compliance with this rule. ATN has not received any request for this UBP information from any of its PSAPs, and does not know if any of them have made use of the UBP information provided by ATN.

B. Dispatchable Location/Z-Axis Location.

Section 20.18(i)(2)(ii)(E) of the Commission’s Rules contains requirements for implementation of either dispatchable location or other z-axis vertical location technologies for non-nationwide carriers, within seven years (as to operations in any of the top -25 CMAs), and nine years (as to any of the top-50 CMAs), respectively. ATN does not serve subscribers in any of the top-50 CMAs, as defined by Appendix B of the Commission’s *Fourth Report & Order*, 30 FCC Rcd 1259 (2015). While ATN has limited roam-only operations in a rural portion of the

Phoenix CMA, to ATN's knowledge, the involved limited roam-only coverage area contains no buildings higher than two stories.

Notwithstanding, ATN intends to implement vertical location technology in its service areas, as and when: a) it is economically feasible; b) there are multi-story buildings in the particular coverage area; and c) the involved PSAP is installing the capability to receive and utilize such vertical location information.