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June 28, 2019

## VIA ELECTRONIC FILING

Ms. Marlene Dortch  
Secretary  
Federal Communications Commission  
445 12th Street SW  
Washington DC 20554

**Re: Improving Wireless Emergency Alerts and Community-Initiated Alerting, PS Docket No. 15-91**

Dear Ms. Dortch:

AT&T Services, Inc., on behalf of itself and its affiliates (collectively, “AT&T”), submits its response to the letter from Ms. Lisa Fowlkes, Chief of the Public Safety and Homeland Security Bureau, about AT&T’s progress on Wireless Emergency Alert (“WEA”) geo-targeting functionality (“WEA 3.0”).<sup>1</sup>

## I. Introduction

The WEA System serves as one of our nation’s most effective alerting tools for federal, state, and local alert originators to warn the public of imminent threats such as tornados, flooding, hurricanes, missing or abducted children (AMBER Alerts), and national emergencies. As such, AT&T has been committed to the success of WEA since it was first deployed in April 2012 and was a strong supporter of the initial standards to define WEA after it was included in the WARN Act.<sup>2</sup>

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<sup>1</sup> Letter to Joan Marsh, AT&T, from Lisa M. Fowlkes, Public Safety and Homeland Security Bureau, FCC (June 5, 2019).

<sup>2</sup> Warning, Alert and Response Network (WARN) Act, 47 U.S.C. §§ 1202(a),(b),(c), (f), 1203, 1204, 1206 (2006) (“WARN Act”).

In 2008, AT&T voluntarily elected to participate in WEA when it originally filed its CMAS election letter<sup>3</sup> and has supported timely updates to the system ever since. AT&T remains committed to standards-based enhancements to WEA to support the WEA 3.0 functionality pursuant to the *Second Report & Order*<sup>4</sup> and has been diligently working toward that goal of delivering the functionality by November 30, 2019. There are very complex network and handset interdependencies required to have a fully deployed system that supports the WEA solution. Prior to the adoption of the *Second Report & Order*, CTIA and its member companies projected that the fully deployed solution would take no less than 36 months from the effective date of the order to implement.<sup>5</sup> Given ongoing work in support of the WEA 3.0 solution, AT&T is not currently in a position to state definitively its ability to comply with the Commission's WEA 3.0 geo-targeting mandates by November 30, 2019.

The WEA System is not a single node or component in the wireless network, but instead is a complex set of functionalities embedded in many inter-related nodes within the various commercial wireless networks, interworked with a diverse base of subscriber handsets, and functionalities within the FEMA gateway. This level of complexity requires standards-based solutions to ensure proper operation and interworking of the various components. In AT&T's network, the advanced geo-targeting functionality requires changes from multiple network elements including the multiple Radio Access Network (RAN) systems from different vendors, the Cell Broadcast Center (CBC), the Mobility Management Entity (MME), an enhanced provisioning solution that includes databases of cell site data, a testing tool, and new handsets. This solution involves the integration of no fewer than eleven separate project schedules, each with its own lab delivery date, lab exit date, first field application date, and generally availability date—each of which must be coordinated toward a nationwide rollout. AT&T has developed a solid schedule for each of these separate

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<sup>3</sup> See Letter to Marlene H. Dortch, FCC, from Joseph P. Marx, AT&T Services, Inc., PS Docket No. 08-146 (Feb. 14, 2013); Letter to Marlene H. Dortch, FCC, from Jim Bugel, AT&T Services, Inc., PS Docket No. 08-146 (Sep. 8, 2008).

<sup>4</sup> See *Wireless Emergency Alerts; Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket Nos. 15-91, 15-94, Second Report and Order and Second Order on Reconsideration, 33 FCC Rcd 1320 (2018) ("*Second Report & Order*").

<sup>5</sup> See Letter to Marlene H. Dortch, FCC, from Matthew Gerst, CTIA, PS Docket No. 15-91 (Dec. 21, 2017).

projects and the integration steps required to have a complete solution available for the WEA 3.0. As a result of these efforts, we believe we will make substantial progress by the November 30, 2019 deadline.

## **II. Progress Toward Deadline**

Even before adoption of the *Second Report & Order*, AT&T was already working toward the goal of providing WEA 3.0 functionality. To that end, AT&T, along with other wireless carriers, had detailed discussions with the various stakeholders, including chipset makers, handset OEMs, operating system vendors, and network vendors so that we could understand the scope of possible solutions necessary to provide the WEA 3.0 functionality.

Since the adoption of the *Second Report & Order*, AT&T has been instrumental in the development of standards as part of the Alliance for Telecommunications Industry Solutions (“ATIS”), including developing contributions into the 3<sup>rd</sup> Generation Partnership Project (“3GPP”) required to support WEA capabilities in the underlying cell broadcast service.

AT&T chaired the ATIS WEA standards group with a mission of identifying and analyzing potential solutions for WEA 3.0, determining an optimal solution, developing 3GPP change requests, approving balloting, resolving industry comments, and approving publication for four high priority ATIS WEA 3.0 standards to allow wireless operators to meet the Commission’s geo-targeting mandate. WEA uses the 3GPP defined cell broadcast service capabilities and is part of the global Public Warning System (PWS) standard. To provide the mobile device with the information needed to support device-based geo-fencing, the ATIS WEA group identified a solution for broadcasting this information to the device and developed “change requests” (“CRs”) into the 3GPP cell broadcast service specifications, which were submitted into the March 2019 3GPP SA Plenary Meeting. These CRs defined the lower layer changes that are needed in the mobile device chipset and firmware for the mobile device to receive the device-based geo-fencing information and pass to the higher protocol layers for processing.

The wireless industry completed the four ATIS network and mobile device behavior standards in early May 2019, after more than a year of effort undertaken on an accelerated basis. The ATIS WEA group included leadership by multiple AT&T WEA experts. The ATIS WEA group was chaired by an AT&T Lead Member of the Technical Staff in the Standards and Industry Alliances group with overall strategy and oversight by the AT&T Assistant Vice President in the Standards and Industry Alliances group. AT&T also brought into the standards process additional product development subject matter experts to expedite the standards process, including a Member of Technical Staff as a mobile device expert and, two Lead Members of Technical Staff as WEA network element experts. Participation by AT&T network and device experts proved particularly useful in the decision-making processes used in ATIS WEA to reach consensus on the key WEA 3.0 standards issues, as a constant balancing act between WEA network functions and WEA device functions was required.

On May 6, 2019, the significant milestone of reaching publication status for the following four highest-priority WEA 3.0 standards was achieved by ATIS:

- (1) ATIS-0700041 WEA 3.0 Device-Based Geo-Fencing spec (editor Qualcomm) describes the coding of polygon/circle coordinates with a max total of 10 polygons/circles and a max total of 100 coordinates per message, the Wireless Handset Action Message contents including message IDs and serial numbers for active WEA alerts for which a device-based geo-fencing location check should be made based on previously received and stored WEA messages that have not yet been presented to the user, max geo-fencing wait timer for location-determination by the phone;
- (2) ATIS-0700037v002 WEA 3.0 C-interface spec (editor Sprint) describes the interface from Federal Alert Gateway to Commercial Mobile Service Provider which required modifications to support WEA3.0;
- (3) ATIS-0700010v003 WEA 3.0 via EPS PWS (editor one2Many) describes LTE-related broadcast procedures; and
- (4) ATIS-0700036v002 WEA 3.0 Mobile Device Behavior (MDB) spec (editor AT&T) describes all procedures for receiving WEA 3.0 alerts, handling initial device-based

geo-fencing location check, handling receipt of periodic Wireless Handset Action Message, which triggers a new location check for previously received but not-yet-presented alerts.

These standards were deemed critical by consensus of the ATIS WEA group to allow both network node vendors and device vendors to begin development in order to allow the wireless operators to attempt to meet the implementation deadline for WEA 3.0. Note that the completion of these standards in May 2019 is only approximately six months in advance of the November 2019 deadline. AT&T's extensive experience with vendor development, testing and deployment of wireless network features has demonstrated implementation of standards of this complexity typically requires a minimum of twelve months.

In addition to working on the standards, AT&T has spent significant resources working with the vendors both prior to and after approval of the various standards. The first step for AT&T as the standards were complete was to align the functional requirements from these standards to the AT&T specific network elements within our network architecture. This required each of the AT&T project managers to work with each vendor for the inclusion of the WEA 3.0 functionality into the earliest software release for the various network elements (CBC, MME, and RAN types) and devices. This was a challenging task because the WEA functionality must be slotted into a vendor release along with all of the other high priority features (*i.e.*, FirstNet features, LTE enhancements, 5G Features, etc.) required to operate our commercial network. Slotting of capabilities into a vendor release is highly dependent on the vendors, who typically must balance multiple priorities in releases from competing entities.

This requirement has been particularly challenging for vendors because the time between the completion of the WEA 3.0 standards and required delivery to AT&T was extremely short. This required significant negotiation with our vendors since there is a give-and-take process required to evaluate commitments for existing features and the new functionality for WEA 3.0. Each of these negotiations required numerous meetings, which started even prior to the completion of the standards.

After getting prospective schedules for each vendor from the AT&T project managers, this information was put into a master project schedule to align the various

deliveries from an integration and test perspective (both lab and production). Each vendor release has features that go beyond WEA capabilities, and thus many of these vendor releases have additional critical functionalities that have corresponding delivery dates needed for other AT&T projects that need to be aligned. After identifying the critical integration dates, many of these releases had to be renegotiated with the vendors to improve on the delivery so the lab and integration dates aligned. For example, it is not possible to test the WEA 3.0 functionality in the RAN without first having the capability from the CBC and handsets. In some cases, that meant negotiating multiple software releases from a single vendor to provide the basic geo-targeting functionality in the lab before the final release would be available.

As a result of the delays associated with WEA 2.0<sup>6</sup>, AT&T has been forced to arrange for atypical configurations in the lab where one CBC remains on WEA 2.0 in support of FEMA testing while the other CBC is being upgraded to WEA 3.0 to support an expedited schedule for WEA 3.0 end-to-end testing. While this allows us to make progress on WEA 3.0, it essentially doubles our testing efforts because there will be the need to repeat this testing in the final configuration before delivering this software to our production network.

And finally, AT&T had to ensure that we had at least a single handset that supports the WEA 3.0 functionality to have it available to begin lab testing with other network elements. To achieve this, we negotiated with one of the device vendors to start development prior to completion of the standard. This also required us to realign our network first field application to test against both macro-network RAN vendors, since it is required by device certification before a device is released for production.

While the most critical WEA 3.0 standards were published in May, the ATIS WEA group is continuing to develop additional standards related to WEA 3.0 that will be needed as the project moves to implementation. These standards include:

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<sup>6</sup> See, e.g., *Public Safety and Homeland Security Bureau Announces Delay in Availability of Certain Improvements to Wireless Emergency Alerts*, PS Docket Nos. 15-91, 15-94, DA 19-534 (PSHSB June 7, 2019).

A. WEA 3.0 End-to-End Testing and Verification spec (this will be required when FEMA IPAWS, network vendors, and device vendors have created WEA 3.0-compliant equipment to be used for testing);

B. WEA 3.0 Service Description spec (overview of requirements, regulations, architecture, and service expectations):

C. WEA 3.0 International Roaming spec (describes expected behavior of 3GPP Public Warning System (PWS)-compliant foreign devices when roaming into the USA, and when WEA 3.0-compliant devices roam internationally outside the USA in 3GPP PWS-compliant systems):

D. WEA 3.0 via 5G PWS (describes how WEA 3.0 messages will be delivered in a 5G standalone environment):

E. WEA 3.0 Cell Broadcast Entity (CBE)-to-Cell Broadcast Center (CBC) interface spec (describes the external interface between two 3GPP-defined cell broadcast functions if an operator chooses to implement as separate entities):

F. WEA 3.0 via GSM/UMTS Cell Broadcast Service spec (describes how WEA 3.0 messages are mapped onto 2G and 3G broadcast technology; note that Device-Based Geo-Fencing is not supported on these legacy radio technologies, but the 90-character English and Spanish alerts must continue to be supported in 2G and 3G); and

G. WEA Best Practices for Alert Originators.

### **III. Conclusion**

As demonstrated, AT&T has been actively working toward the Commission's aggressive implementation date for WEA 3.0, both with its own network requirements and in cooperation with industry. As the Commission is aware, standards development and subsequent testing are absolutely required for successful implementation of WEA 3.0. Cutting corners on implementation is not possible, and in any event, would not serve the interest of customers who depend on WEA to get critical safety information. Moreover, as the Commission is aware, critical parts of implementation—including availability of WEA

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3.0-capable handsets and FEMA testing—require AT&T coordination but are beyond AT&T's sole control. AT&T continues to press ahead with all requirements for compliance by the November 30, 2019 deadline. But based on current information, AT&T is not in a position to confirm that it will meet the November 30, 2019 compliance deadline.

Sincerely,

/s/ Joseph P. Marx  
Assistant Vice President, AT&T Services, Inc.

cc: Linda Pintro, FCC