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Via ECFS

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

Re: Notice of *Ex Parte* Communication
2016 FCC Report to Congress to Facilitate Earthquake-related Emergency Alerts; PS
Docket No. 16-32

Dear Ms. Dortch:

This notice of *ex parte* communication was filed on July 29, 2016 in PS Docket No. 15-91 but it has come to our attention that it should have been included in PS Docket No. 16-32. Accordingly, we now submit that notice for inclusion in PS Docket No. 16-32.

On 27 July 2016, the undersigned along with Susan Chory, Aaron Staser, and Gunnar Halley, all from Microsoft Corporation, spoke by telephone with Rasoul Safavian and Behzad Ghaffari from the Commission's Public Safety and Homeland Security Bureau, at the request of Mr. Safavian and Mr. Ghaffari, to discuss matters pertaining to improvements to the wireless emergency alert system under consideration in the above-referenced docket. We responded to questions from Mr. Safavian and Mr. Ghaffari with the following information:

- We are not aware of the imminent alert event code EQW being used in the U.S. but we don't track this information. Our assumption would be that if an EQW alert were issued it would follow the protocol for imminent alerts in mobile phones running the Windows 10 Mobile operating system.
- We were asked about the actions for the mobile operating system that would be necessary to accommodate a combination of Wireless Emergency Alerts (WEA) and an Earthquake/Tsunami Warning System (ETWS) in mobile phones employing Windows 10 Mobile. We explained that a thorough review of the new regulations and standards would need to occur to determine the scope of actions that would be necessary. The implementation of ETWS for Japan on mobile phones running Windows 10 Mobile is

restricted to messages that are received when the user is in Japan. To make that capability available for use within the U.S., certain changes in the mobile phone's operating system and device would have to occur, including but not limited to the following:

- Enable ETWS channels for messages received while in the U.S.
- Determine if the display of ETWS messages in the U.S. would follow the display parameters for U.S. WEA or for the current ETWS in Japan. Some examples of differences are:
 - The use of pre-populated icons in Japan and distinctive alert sound. (In Japan the alert sounds like an air raid siren.)
 - Japan uses primary and secondary alert types. The primary alert type arrives blank and default text from the OS is inserted into the blank. We would need to know whether the default text would be the same in the U.S. as it is for Japan or, if different, what that text should be;
 - There is de-duplication logic unique to primary and secondary alert types in the operating system for use in Japan that would need to be activated for use in the U.S.;
 - The user settings for ETWS in the U.S. would need to be reconciled with the WEA settings. For example, in Japan's ETWS, a user can turn off the audio signal for the alerts. That user action is not available for WEA in the U.S.
- An investigation would be needed to determine whether the modem configuration would need to be updated, including with respect to the channels for use in the U.S.; and
- In addition, industry standards (*e.g.*, 3GPP TS 23.041 "Technical Realization of Cell Broadcast Service") should be updated to address the new behaviors that are expected and how they should be implemented. Once these standards are developed, OS providers, device manufacturers, chip manufacturers, and mobile operators must be given adequate time to develop updates to implement the standard. For example:
 - OS providers would need to activate ETWS in the U.S., implement changes to displaying the alert or default text that would be needed for the U.S., and the user settings page would need to be updated.
 - Device manufacturers would need to configure this new behavior for the device.
 - If modem changes are necessary, they must be deployed.
 - Manufacturers and mobile operators would need to test the devices with the new configuration to ensure that they function as expected when an alert arrives and mobile operators would need to certify the new configuration.
 - The approved OS update and manufacturer's device configuration update would need to be deployed to devices.
- The application layer of mobile phones running Windows 10 Mobile receives full time stamps that include seconds, although the application does not display seconds in the time stamp for end users in the messaging application.

- There is an API available (<https://msdn.microsoft.com/en-us/library/windows/apps/windows.applicationmodel.chat.chatmessage.networktimestamp.aspx>) to allow users to employ third party applications to access the full time, including seconds, of SMS message arrival on the device. The API is not usable for cellular broadcast messages, including emergency alerts.
- The time stored in the application database for Emergency Alert messages is stamped by the modem when the message is received by the device to facilitate deduplication.
- The 3GPP standard TS 23.041 ("Technical realization of Cell Broadcast Service") does not include time and date stamp for WEA alerts. At one time, the standard contained a provision for an ETWS time/date stamp, but it now indicates that user equipment should ignore time/stamp information if it is present. Accordingly, a mobile phone will not have a way to determine when the message was sent.
- We emphasized on several occasions during the call that the time the message arrived on the device cannot be compared with the network time that the message was sent to calculate latency because network time and device times are not synchronized. Indeed, for SMS messages, sometimes the message arrival time on the device is earlier than the network sent time. It would be highly unreliable and misleading to compare network time sent and device time arrival.
- Microsoft recognizes the life-saving capabilities that an earthquake early warning system could bring to the Wireless Emergency Alert system and we expressed a desire to be helpful in any efforts to improve the system, but emphasized that changes to the alert system should be standards driven to ensure reliability, effectiveness, and transparency.

Respectfully submitted,

/s/ Paula Boyd

Paula Boyd
Director, Government and Regulatory Affairs
Microsoft Corporation

cc: Rasoul Safavian (via e-mail)
Behzad Ghaffari (via e-mail)