On Exposing WEA to Third-Party Developers.

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INRODUCTION: The upcoming and highly anticipated national rollout of the Commercial Mobile Alert System (CMAS) is the culmination of a multi-year collaborative effort between (a) DHS S&T, (b) FEMA's IPAWS (Integrated Public Alert and Warning System) program, (c) FCC, (d) ATIS (Alliance of Telecommunications Industry Solutions), and (e) TIA (Telecommunications Industry Association); in response to the WARN Act.

Unlike existing subscription-based text messaging alert services, CMAS enables alert messages to be sent to any cell phone within range of a particular cellular communications tower; and utilizes a broadcast-based cellular transmission technology that greatly limits the impact of alert message delivery on network congestion during times of emergency.

However, the public safety community has been pointing to several limitations in CMAS (some more perceived than actual). These include (A) limited number of characters, (B) lack of multi-language delivery, and (C) not possessing more granular geo-targeting. In the age of 4G networks it is indeed surprising that such limitations exist. The reason goes back to the technical planning phase when a deliberate decision was made to set CMAS's technical requirements so as to not exceed the technical capabilities of the weakest wireless network; in order to accommodate and include all Commercial Mobile Service Providers (CMSPs).

In the meantime, the industry has experienced the smartphone revolution. The power of today's smartphone can and should be harnessed to address the CMAS limitations, preferably via mobile apps by third-party developers who are best positioned to generate a "killer CMAS app". Unfortunately, third-party developers face a prohibitive barrier due to the lack of clarity about programming rules and procedures for accessing and retrieving CMAS messages.

ENHANCING CMAS: As wireless carriers modernize their networks, future CMAS versions will surely address current CMAS limitations, but this process will take many years. In the interim, these limitations can be compensated by the power of the increasingly common smartphone. The power of today's smartphone is derived not solely from its computer-like capabilities and Broadband connectivity, but also from its openness to third-party developers, who have been responsible for most of the hit mobile applications (apps) on smartphones.

For the initial rollout of CMAS, smartphones will have built-in mobile apps for presenting CMAS alerts (henceforth referred to as ***CMAS apps***). Whereas the built-in CMAS apps are relatively unsophisticated, essentially limited to the CMAS presentation requirements (e.g. up to 90 characters and vibration), more sophisticated third-party CMAS apps can take advantage of the smartphone's capabilities to provide more than 90 characters using information from the Internet, translate the message to another language, map the incident relative to the user, provide customized response instructions etc. If

permitted by CMAS rules, the CMAS app may also ignore alerts not intended for the user's location (e.g., if cell tower has a very wide coverage), or at least inform the user as such. A sophisticated CMAS app can also be part of a larger multifunctional app e.g., an all-in-one personal alerter for meetings, daycare incidents, national emergencies etc; thus increasing its utility and commercial appeal to the user.

Built-in CMAS apps were apparently developed by device manufacturers, in collaboration with and/or under the direction of CMSPs. This was necessary because (A) only device manufacturers were in a position to make required hardware enhancements for receiving broadcast messages, and (B) the smartphones needed to come with the built-in CMAS app pre-installed. The device manufacturers' effort entailed creating/developing specific programming procedures and rules for allowing their CMAS apps to access and retrieve messages from the "***CMAS Inbox***".

These programming procedures and rules are not available to third-party developers at large – neither formally (via official documentation from CMSPs or device manufacturers) nor informally (via online blogs/discussion forums for developers). This creates a prohibitive barrier for those interested in developing value-added and feature-rich CMAS apps; which is undesirable because device manufacturers are unlikely to come up with the recipe for a hit CMAS app, whereas left to the millions in the developer community, one or more winning CMAS app(s) is (are) guaranteed to emerge. If permitted, the presentation of a CMAS message can be fully delegated to the third-party app. Alternatively, the third-party app can kick in as soon as the built-in app has completed its presentation.