

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the matter of

Review of the Emergency Alert System

EB Docket No. 04-296

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**COMMENTS OF ERICSSON INC**

**I. Introduction.**

Ericsson Inc (“Ericsson”) hereby submits these comments in response to the Federal Communications Commission’s (“FCC” or “Commission”) *Further Notice of Proposed Rulemaking* (“*FNPRM*”), released November 10, 2005, regarding the Emergency Alert System (“EAS”).<sup>1</sup> The Commission seeks comment generally on how it can facilitate the development of a more effective and comprehensive digital public alert and warning system.<sup>2</sup> In particular, it seeks comment on a prospective EAS, which would utilize future and emerging technologies to deliver an enhanced level of alert and warning capabilities.<sup>3</sup> As an industry leader in advanced core wireless technologies including GSM, GPRS, EDGE, HSDPA, and WCDMA, as well as the solution that will likely be used to deliver enhanced EAS, Multimedia Broadcast/Multicast Service (“MBMS”).<sup>4</sup> Ericsson is pleased to offer the Commission its wireless EAS insights.

As the Commission aptly recognizes in its *FNPRM*, an accurate, wide-reaching public alert and warning system is critical to the public’s safety.<sup>5</sup> The unfortunate and tragic events of the last year make this point all the more clear. Ericsson agrees with the Commission that a system that

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<sup>1</sup> See *First Report and Order and Further Notice of Proposed Rulemaking, In the Matter of Review of the Emergency Alert System*, EB Docket No.04-296 (Nov. 10, 2005) (“*R&O*” or “*FNPRM*”).

<sup>2</sup> See *id.* at ¶ 61.

<sup>3</sup> See *id.*

<sup>4</sup> 3GPP and 3GPP2 began addressing broadcast/multicast services in GSM/WCDMA and CDMA2000, respectively. In 3GPP, the work item is called Multimedia Broadcast and Multicast Service (MBMS). In 3GPP2, this feature is called Broadcast and Multicast Service (BCMCS). MBMS and 3GPP2 BCMCS have many commonalities and both support multicast.

<sup>5</sup> See *id.* at ¶ 62.

enables officials at the national, state, and local levels to reach affected citizens in the most effective and efficient manner possible is an essential public benefit and Ericsson supports the Commission's efforts to achieve this goal. The Commission's recent decision to extend the current EAS to digital broadcasts was an important step in furtherance of this goal and will ensure that the majority of Americans are able to receive emergency alerts through audio and televised broadcasts, which are nearly universally accessible. When it is properly and timely utilized, the existing EAS system effectively provides detailed, real-time emergency alerts and other emergency information to the public.

In its *NPRM*, the Commission describes types of enhanced emergency alerts, such as video alerts with embedded evacuation routes, that are impossible to deliver to wireless subscribers today, using existing technology.<sup>6</sup> However, looking into the future, the wireless industry will have the ability to reliably deliver sophisticated emergency alerts and warnings to wireless consumers as a support to the existing EAS. Indeed, wireless EAS will likely become a valuable public safety tool.

MBMS is the evolving technology that is most capable of providing a strong complement to the existing EAS. It will allow officials to provide more detailed, targeted, and useful alerts and warnings to wireless consumers. Though coming, MBMS is not yet commercially deployed. As a result, mandating its use for wireless EAS is inappropriate at this stage.

However, the Commission can facilitate the availability of MBMS for wireless EAS purposes by establishing a framework of policies and requirements. Ericsson recommends that the Commission articulate the core public safety requirements it expects a wireless EAS system to meet so that these requirements can be timely standardized. Contemporaneous with these efforts, the Commission must also undertake a careful examination of the economic and policy

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<sup>6</sup> See *id.* at ¶ 64.

considerations that impact wireless EAS. This will not only drive harmonized wireless EAS deployment, but also serve to educate consumers about wireless emergency warning capabilities.

## **II. Technology Considerations.**

There are a number of technologies that may be able to deliver some level of wireless alerts in the future. Ericsson's comments focus on MBMS because Ericsson believes that it is the most promising long-term solution. MBMS is a more efficient and reliable technology than other possible solutions. In addition, MBMS will ultimately offer the most comprehensive and enhanced alert information capacity and functionality. Further, MBMS is an overall better technology choice than any of the alternatives because of its mass market consumer appeal. For these reasons, Ericsson views MBMS as the preferred solution.

First, MBMS is a point-to-multipoint solution, which offers "true" broadcast on radio interface. MBMS includes a paging mechanism to activate receivers, which conserves hand-sets' battery resources. Network capacity concerns associated with other solutions, such as Short Message Service ("SMS"), are not a limitation with MBMS. Second, messages can be delivered to targeted geographic areas. MBMS also allows wireless users roaming in the targeted delivery area to receive the alerts. Accordingly, it offers a more efficient mechanism for reaching a large number of geographically selected people than point-to-point solutions.

Third, MBMS is the most promising evolving technology for wireless EAS. MBMS is more advanced than other potential wireless EAS solutions, such as Cell Broadcast Service ("CBS"), and supports enhanced capabilities that other solutions do not. For example, MBMS allows broadcast of messages with audio and video components such as those envisioned by the Commission, which provides a distinct enhancement advantage over other technologies.<sup>7</sup> Moreover, MBMS-enabled handsets permit dual reception, allowing a handset to receive an

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<sup>7</sup> See *id.* at ¶ 64.

emergency broadcast during an active voice call, which a CBS-enabled handset cannot.<sup>8</sup> Thus, MBMS offers enhanced capabilities and reliability as an emergency warning tool.

Last, MBMS promises richer consumer-oriented multimedia services, including Mobile TV, radio, and multimedia file distributions, such as the ability to retrieve and display maps. MBMS can transmit multimedia at up to 256 kbps. These capabilities appeal broadly to operators and consumers and will be introduced and adopted irrespective of their wireless EAS application. MBMS-based EAS will likely be an add-on that requires only a small enhancement to MBMS. For this reason, MBMS is more likely to be readily adopted in the marketplace and to reach more consumers in a reasonable time frame than other potential EAS solutions.

CBS, for example, has little consumer appeal. With its low bitrate transmission capability, CBS does not offer multimedia capabilities. In fact, CBS offers very little consumer benefit, beyond its potential use for wireless EAS. Moreover, even its use for wireless EAS is problematic. Under the current CBS protocol, a handset must be set to always listen for broadcasts. This constitutes a substantial drain on the handset's battery resources. Consumers must affirmatively activate CBS and many may never do so, or, after suffering substantially decreased battery life when it is on, turn it off. Consumers view CBS as a nuisance much more than as a valuable communication tool. Consequently, consumer adoption of this technology is likely to be minimal, especially since consumers do not gain from CBS synergies with any other consumer services. Therefore, Ericsson believes MBMS is the preferable solution for wireless EAS.

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<sup>8</sup> Even if a consumer has activated CBS, an emergency alert may not reach a consumer if he or she is engaged in an active voice call when the broadcast is sent.

In Ericsson's view, SMS, on the other hand, is a solution that can provide rudimentary wireless EAS in the short term. Many consumers are already familiar with SMS as a tool to provide limited alerts, due to local subscription services that provide consumers with traffic updates, school closing information, and the like. Although SMS is a viable interim solution that can deliver short alerts and warnings in the near term, there are limitations to this technical solution.

The most significant is that SMS is a point-to-point technology. Point-to-point messages of the magnitude required to provide effective emergency alerts and warnings require substantial network capacity. Any attempt to deliver a large number of SMS messages to the public simultaneously could compromise a network, causing congestion and potentially degrading voice communications. Even if short-lived, such diminished network function at the time of an emergency could compromise important public safety and emergency response efforts. Although message staging may mitigate the network congestion effects of mass message delivery, it will also decrease the timeliness of messages, particularly in densely populated areas.

Another limitation of SMS is that messages are limited to 160 characters. This message length limitation does not allow for delivery of long, detailed emergency messages of the type described by the FCC.<sup>9</sup> SMS messages can be concatenated to create a message of longer length. However, this requires transmission of multiple consecutive SMS messages, which could cause additional capacity and timing complications. Therefore, although SMS can serve as an alert tool until MBMS is fully deployed, it is not a permanent, long-term wireless solution because it cannot provide the rich alert and warning capabilities the Commission envisions and that MBMS can deliver.<sup>10</sup>

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<sup>9</sup> *See id.*

<sup>10</sup> *See id.*

Until MBMS-based EAS is fully available, SMS's usefulness can be significantly improved with enhancements that incorporate authentication and prioritization procedures, language support, and location-based delivery capabilities.<sup>11</sup> As with MBMS-based wireless EAS, the FCC must establish specific wireless EAS criteria and parameters before SMS can be implemented. If the Commission contemplates a temporary SMS-based wireless EAS, it must be mindful of SMS's limitations when it establishes parameters. In any event, Ericsson recommends that the Commission only consider SMS and Enhanced SMS as an interim solution until MBMS is sufficiently deployed to support enhanced EAS.

Based on the foregoing, MBMS is the preferable solution for wireless EAS; it offers the best complement to the existing system. Ericsson urges the Commission to adopt wireless EAS specifications that contemplate and facilitate evolution to MBMS-based alerts, because this technology will provide the sophisticated and effective warnings that the Commission envisions. In this way, the Commission can best facilitate prompt and efficient adoption, standardization, and implementation of wireless EAS technology and ensure that the public is properly educated about wireless EAS capabilities.

### **III. Timing Considerations.**

Although MBMS will provide an optimal EAS solution in the future, two significant factors impede the near term deployment of an MBMS-based EAS solution. First, MBMS is an advanced technology that has not yet been commercially deployed. Second, once deployed, MBMS technology is likely only to be available in higher-end handsets. Low-end handsets (as well as legacy handsets) will not be capable of receiving MBMS broadcasts. Consequently, a

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<sup>11</sup> At present, SMS messages can be directed to limited geographic locations. Messages can be directed to consumers with a specific zip code or area code of record. Messages can also be sent based on information gleaned from the Visitor Location Register. However, this is an inefficient and cumbersome mechanism for location-specific messaging and the granularity of the geographic scope of the alert depends on the number and distance of cities in the Location Area. As a result, carriers are unable to send alert messages to targeted areas with much precision.

significant handset exchange must occur before all consumers can receive MBMS-based alerts and warnings.

Although MBMS cannot provide a wireless EAS solution immediately, Ericsson believes that MBMS is the preferable long-term technology. Unlike CBS, the MBMS standard may not need any significant update in order to provide wireless EAS. Rather, MBMS-based wireless EAS can likely be achieved through the development of an EAS application, once an EAS specification is established. Ultimately, when compared to other technology solutions, MBMS's deployment time frame may not be significantly different. Indeed, it may be deployed more rapidly because of its consumer appeal.<sup>12</sup>

Ericsson expects that MBMS will be widely deployed within 5 years. Accordingly, Ericsson urges the Commission to timely establish its core public safety requirements for wireless EAS so that these requirements can be standardized and EAS capability can be rolled out in coordination with MBMS deployment, to the fullest extent possible. In this way, the Commission can facilitate the timely availability of enhanced wireless EAS alerts.

#### **IV. Economic Considerations.**

As noted above, further developments and/or standardization of an EAS specification must occur before reliable delivery of the types of alert messages the Commission envisions is possible. In the case of MBMS, the most promising technology, full handset exchange will be necessary for the service to be broadly available to consumers. Industry is working to secure government funding to support the development and deployment of wireless EAS. The Commission could facilitate wireless EAS deployment by working in concert with industry to identify and secure the

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<sup>12</sup> See Amy Schatz, *Millions Resist Shift to Mobiles Fit for 911 Calls*, WALL ST. J., Jan. 6, 2006, at A9 regarding consumers' marked resistance to upgrading their handsets solely for their public safety benefit.

funding imperative to successfully deploy a complementary wireless emergency alert and warning system.

## **V. Policy Considerations.**

Though addressed in a separate section, policy considerations are not independent of technology considerations and are equally important to deployment of a relevant and useful wireless EAS. For example, how to authenticate and prioritize certain recipients and messages is both a technical question (*i.e.*, what the solution is capable of doing), and a policy question (*i.e.*, who should have highest priority and who should define the recipient group). The FCC must resolve numerous questions related to who is authorized to initiate an alert, what are triggering events, what the geographic scope of a particular alert should be, and how to authenticate a call for an alert, among others. The Commission must also address carriers' legitimate liability concerns surrounding message authentication and the delivery of, or failure to deliver, an alert message. Additionally, there may be cost recovery considerations that must be resolved. The Commission's prompt resolution of these outstanding issues will enable industry to proceed to incorporate these parameters into the selected wireless EAS technology.

## **VI. Conclusion.**

Industry continues to be committed to the safety and welfare of consumers and is dedicated to developing and deploying a wireless alert solution to complement the existing EAS. Unfortunately, there is no wireless EAS solution capable of delivering the full panoply of alert information the Commission envisions available at this time. MBMS, the most promising technology, is not yet commercially deployed and may need minimal enhancements for wireless EAS purposes. In addition, the Commission's resolution of open policy questions is central to the timely deployment of wireless EAS. Specifically, the Commission must take affirmative steps to

establish a wireless EAS framework before it can be implemented, either using MBMS in the longer term, or using SMS in the near term. For these reasons, neither a technology mandate nor a near term wireless EAS deployment deadline is appropriate.

Instead, to speed wireless EAS deployment, Ericsson respectfully recommends that the Commission articulate its core public safety requirements for a wireless EAS complement so that these specifications can be standardized. These efforts will have the added public safety benefit of educating consumers about the capabilities of wireless EAS. In addition, Ericsson urges the Commission to assist industry in securing federal funding for development and deployment of wireless EAS. This approach will best serve the public interest and ensure that, upon deployment, wireless EAS is a truly valuable and reliable complement to the existing system.

Respectfully submitted this 24th day of January, 2005.

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