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Using “Wireless Emergency Alerts” for Planetary Defense Notifications

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ABSTRACT

While most Planetary Defense scenarios play out on timelines measured in years, there is the potential for impacts happening with little to no warning, as illustrated by the recent Chelyabinsk event. Such short-notice threats require rapid and effective alerting of the population in the affected areas. In addition, alerting systems are vital during the disaster response phase for all impacts, for example to provide affected populations with updates on the extent of the damage and on ongoing response efforts. This makes alerting an important topic for Planetary Defense professionals to understand.

Mass notification capabilities based on cellular networks, such as the “Wireless Emergency Alerts” (WEA) system in the United States can play an important role in this context. A recent U.S.-wide test of the “Presidential Alert” feature of WEA provided an opportunity to examine the end-to-end performance of the WEA system and identify issues relevant to Planetary Defense alerting. This paper discusses the results of a small-scale (N=237) survey of U.S. cellular phone users conducted on the day of the Presidential Alert test. The survey was designed to collect information

about reception of the WEA test message and associated factors. Key findings include:

- 95% of survey respondents received the test alert message, with some variation by cellular carrier;
- Almost all of those who received the message did so within a minute of it being sent; and
- Handset-specific presentation of alerting options led to some confusion.

The paper also includes an overview of WEA, and highlights broader issues associated with using WEA for Planetary Defense alerting, such as recipient response to alerts, fitting the content of a notification to the WEA character limit, creating ready-to-use message templates for various Planetary Defense scenarios, selecting appropriate Emergency Alert System event codes, and geotargeting WEA messages.
