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Association of Public Safety Communications Officials (APCO) International

The Warning, Alert and Response Network (WARN) Act

On October 13, 2006, the President signed the Security and Accountability For Every Port (SAFE Port) Act into law. Title VI of the SAFE Port Act, the Warning, Alert and Response Network (WARN) Act, establishes a process for Commercial Mobile Service Providers (CMSPs) to voluntarily elect to transmit emergency alerts.

The purpose of the WARN Act is to create a national alert system that will build upon current alerting capabilities to provide alerts to the public across a variety of media technologies to protect public safety. The bill provides for the development and administration of a unified alerting system that will allow Federal, State, tribal and local officials to provide alerts to their communities across a variety of communication technologies. The law aims to ensure that an individual will receive an alert of a pending threat regardless of their location or the communication technologies in use.

Position Statement

APCO International supports the Warning, Alert, and Response Network (WARN) Act (P.L. 109-347) that enables commercial mobile service alerting capability for commercial mobile service providers that voluntarily elect to transmit emergency alerts to subscribers.

APCO International supports standardized and well governed implementation of commercial mobile alerting services as required by the WARN Act.

APCO International believes that all emergency alerts by commercial mobile service providers must provide adequate information to manage the publics' concerns during a large scale incident. APCO International is concerned that inadequate information, which requires the thousands of subscribers to call a number to get additional information about an emergency, could result in a bottleneck of the telecommunications and 9-1-1 systems. APCO International does not support the use of call back numbers.

APCO International strongly believes that before commercial mobile service providers deploy alerting systems they should work with local, regional and state

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government authorities to ensure the information being transmitted is well communicated and coordinated with the appropriate public safety agencies including public safety communications centers who will have to respond to publics' inquiries about the emergencies.

APCO International believes that the alerting system boundary should be at the smallest geographic area that is technically possible, but at the very least the alerting system's geographic boundary should be a county within a state.

APCO International believes that such systems should have priority status to transmit alerts as long as this priority does not interfere with other emergency service transmissions using the commercial mobile service provider's networks.

Background [Excerpt from Senate Report 109-204]

Currently Federal, State, and local governments use a variety of mechanisms to alert the public to threats from natural hazards, man-made accidents, and terrorist incidents. Most prominent among the alerting mechanisms is the Emergency Alert System that utilizes cable and broadcast television and radio to rebroadcast alerts to the listening public. Additionally, NOAA operates the NOAA All-Hazards Radio program that includes over 900 radio transmitters across the United States that broadcast alerts to specially configured devices.

Recently, many municipalities have begun operating their own alerting systems. These systems allow citizens to receive alerts over cell phones, email, and wireline communications from the government on events ranging from school closings to terrorist attacks. The wireless industry has also implemented a program that allows their customers to receive Amber Alerts as text messages over their cell phones.

The new alerting programs that are being fielded by municipalities require citizens to 'opt-in' to the program. Even with the best education efforts, large segments of the population are unaware of the system and unable to receive alerts. For example in the National Capital region there are only approximately 50,000 subscribers to mobile wireless alerts in a region of approximately 4 million people, most of whom own a wireless device and are very attuned to the threat of natural disasters and terrorist incidents. Similarly, although the NOAA All-Hazards Radio system broadcasts to over 98 percent of the population of the United States, only 17 percent of households own a receiver. While there are a number of alerting mechanisms available to the public, because of coordination and implementation problems, there is not a comprehensive and reliable alerting ability for emergency managers.

Beyond the difficulties associated with low penetration within affected populations, problems exist with some alerting tools not being able to target their alerts to only to the population at risk. NOAA All-Hazard Radio, for example, sends alerts according to county boundaries. This causes significant problems when the county is very large and the threat is confined to a small geographic region in the county. It is

particularly troublesome when the county is densely populated and large sections of the unaffected population receive an alert. Traditional broadcast media only have the ability to provide an alert to all of their customers within their broadcast region. In addition, a significant problem develops when citizens begin to ignore the alerts because they are receiving numerous alerts that do not pertain to them.

The National Alert System, envisioned under the WARN Act, would ensure that regardless of where individuals are or what kind of communication technologies they are using, they would receive a life-saving alert [**note: as long as the commercial mobile service provider offers the service**]. Alerts would be transmitted in response to all threats to public safety, including natural disasters, man-made accidents, and terrorist incidents.

The WARN Act attempts to establish a network for the transmission of alerts across a broad variety of communications technologies, including wireless communications devices (cell phones, Blackberries, etc.), the Internet, digital, analog, cable, and satellite television, and satellite and terrestrial radio, as well as non-traditional media such as sirens and 'radios-on-a-stick.' Alerts would only be allowed for hazards that pose a grave risk to public health and safety. This would avoid over-activation of the system and individuals ignoring alerts (the 'car-alarm' syndrome).

The system would provide Federal, State, and local emergency managers with a tool to input alerts into the system and have them directed out to a geographically targeted section of the population. The legislation would require that alerts provide individuals with instructions on what to do in response to the threat, so as to trigger protective action, not panic.

The WARN Act established a grant program to provide assistance to remote communities to install sirens and other devices to alert communities, where penetration of the telecommunications infrastructure may not be high, ensuring that all Americans are protected.

Section 603 (c) of the WARN Act required that the Federal Communications Commission (Commission) establish the Commercial Mobile Service Alert Advisory Committee (CMSAAC) to develop and recommend technical standards and protocols for the **voluntary transmission** of emergency alerts by CMSPs within one year from the date of enactment of the WARN Act. (i.e., by October 12, 2007). Please visit <http://www.fcc.gov/pshs/cmsaac> for more information about the advisory committee.

Commercial Mobile Service Alert Advisory Committee Report [Excerpt]

Many of the conclusions and recommendations apply to initial deployments of the Commercial Mobile Alert System (CMAS), for a text-based service profile. Future technologies, such as streaming audio, streaming video, and multimedia, are mentioned

throughout this document; however, technology advances to support these future capabilities are just beginning to be developed and introduced. As Commercial Mobile Service Providers (CMSPs) gain experience with these technologies, the applicability of those technologies to the CMAS will be better understood.

The CMSAAC recommends that there are three classes of Commercial Mobile Alerts:

1. Presidential-level
2. Imminent threat to life and property (defined as alerts where the CAP severity equals Extreme or Severe, CAP urgency is Immediate or Expected, and CAP certainty is Observed or Likely).
3. Child Abduction Emergency or “AMBER Alert”

Because of the technical limitations in delivering emergency alerts on CMSP systems, the CMSAAC recommends that only the 3 classes defined above will be transmitted as CMA messages.

CMSAAC Recommendations

- The CMSAAC recommends that the CMSPs who elect to support CMAs are considered for this purpose only to be agents of the federal, state, local, or tribal agencies that originate the alerts and are providing CMAs on their behalf.
- A CMSP that elects to transmit alerts under Section 602(b)(2) of the WARN Act may not impose a separate or additional charge for such transmission or capability when the emergency alerts are transmitted in a manner consistent with the technical standards, protocols, procedures, and other technical requirements implemented by the Commission.
- CMAS will be provided according to the technical standards, protocols, procedures, and other technical requirements implemented by the Commission to support the WARN Act. A CMSP’s networks shall not be bound to use any specific vendor, technology, software, implementation, client, device, or third party agent, in order to meet the obligations under the WARN Act.

CMSAAC Requirements and Conclusions

This section contains the CMSAAC’s recommendations for general requirements and assumptions for CMAS.

1. Federal, state, tribal, and local level CMAS alert messages will be supported using the same CMAS solution.
2. Point-to-point or unicast delivery technologies are not feasible or practical for the support of CMAS, i.e. SMS point-to-point, MMS. Reasons for point-to-point technologies not being feasible or practical are:
 - a. Point-to-point technologies can experience significant delivery delays.

- b. Point-to-point technologies can result in network and radio interface congestion to the point of blocking voice calls.
 - c. Point-to-point technologies lack security and can be easily spoofed.
 - d. Point-to-point technologies lack geo-targeting capabilities because it is targeted to phone numbers instead of a specific alert area.
 - e. Point-to-point technologies lack emergency alert specific alert tones and thereby emergency alerts can not be distinguished from normal SMS message traffic.
 - f. Point-to-point technologies lack support of roamers
3. For a CMSP that elects to transmit CMAS alerts, text is the minimum requirement for CMAS alert messages. All CMAS alert messages delivered to the CMSP will contain at least a textual component.
4. No new CALEA lawful intercept access points will be created for CMAS alert broadcast delivery technologies.
5. There is no interaction between CMAS alert message delivery and Number Portability. There is no guarantee that the end user will receive the CMAS alert message during the time interval that the user's subscription is being ported between CMSPs. As part of Number Portability, there is no service portability between CMSPs.
6. It is not a requirement to support CMAS on non-initialized mobile devices, including mobile devices that are not authorized for service.
7. CMAS is intended for commercial mobile services (i.e, cellular phones and pagers) supported by commercial mobile service licensees. Some devices are not designed to support CMAS (e.g., telematics, data only devices such as laptop data cards) and thus are outside the scope of the CMAS architecture.
8. The CMAMs are delivered across Reference Point C to the CMSP network at no cost to the CMSP.
9. In order to notify mobile service subscribers that an emergency alert message has been received on the mobile device, the CMSAAC recommends that the CMAS support a common audio attention signal and a common vibrating cadence to be used solely for CMAMs. These alerting mechanisms must be distinct from all other audio alerting signals and vibrations available in the mobile device and must not be able to be selected or modified by the user for any other purpose. The CMAS audio attention signals and vibration cadence signals as defined in Section 7.2 below are applicable to all mobile devices which support CMAS including any specialized mobile devices for individuals with special needs.

CMSAAC Geo-Targeting Recommendation

The CMSAAC acknowledges that it is the goal of the CMAS for CMSPs to be able to deliver geo-targeted alerts to the areas specified by the Alert Initiator. Systems used by Alert Initiators may allow them to define an alert area on a map. For example, the defined alert area could include the projected path of a tornado or an event that encompasses a portion of an urban area. The CMSAAC further recognizes that CMSPs currently have limited capability to deliver geo-targeted alerts.

Based upon current capabilities, the CMSAAC recommends the following for geo-targeting of CMAS alerts:

1. In order to expedite initial deployments of CMAS an alert that is specified by a geocode, circle or polygon (See Section 10.4) will be transmitted to an area not larger than the CMSP's approximation of coverage for the county or counties with which that geocode, circle, or polygon intersects. Some wireless technology RF propagation areas, for systems such as paging systems or multi-county cell sites, may greatly exceed a single county. In these instances, CMSPs will support geo-targeting subject to the limitations imposed by their technology. Cell sites' / paging transceivers' physical location within the alert area may be used to determine the initial predefined alert areas. The CMSP is not required to perform RF coverage mapping of cell sites / paging transceivers to initial alert areas.
 - a. A CMSP may elect to target smaller areas. CMSP may elect to target CMAM for distributions to predefined alert areas smaller than a county and may use GNIS codes, polygon, or circle information to identify a predefined list of cell sites / paging transceivers within the alert area. In the interim period before the availability of dynamic targeting, the CMSAAC recommends that certain urban areas with populations exceeding 1,000,000 inhabitants or with other specialized alerting needs be identified for priority consideration regarding implementation of more precise geo-targeting. The CMSAAC further recommends that a process be established by the Alert Gateway operator and the CMSPs to identify no later than August 2008 those initial areas that should be given such priority treatment for more precise geo-targeting. The CMSAAC recognizes the desire to move forward with this process on a small number of areas with particularly urgent alerting needs as soon as possible. The CMSAAC recommends that Section 604 funding be provided to FEMA for this purpose.
2. The CMSAAC recognizes that the use of predefined sets of cell sites frequently will not optimally cover the alert area desired. Therefore, the CMSAAC recommends that the FCC encourage DHS/FEMA, in concert with 1 CMSPs, to immediately initiate the research, development, testing, and evaluation program referenced in Section 604 of the WARN Act. Section 604 requires DHS to establish a program to develop innovative technologies that will allow CMSPs to efficiently transmit geo-targeted CMAMs to the public. The CMSAAC further recommends that CMSPs work with this DHS program to evaluate the feasibility and implementation issues associated with proposed solutions to increase geographic targeting specificity. Finally, the CMSAAC recommends that the FCC assess the progress of the CMSP geo-targeting as part of the biennial review process.

3. The architecture to support CMAS shall not require the CMSPs to open the configuration, interfaces and topology of their network including cell or paging transceiver towers to any third parties, nor provide subscriber information or data outside their network. A CMSP shall not be required to report cell site / paging transceiver information, coverage information, or any RF properties of their respective networks. The CMSP shall be the sole agent responsible for determining which network facilities, elements, or locations are involved in transmitting an alert to a mobile device.
4. Transmission of alerts shall be to two-dimensional areas. There shall not be any altitude or ceiling component.

CMSAAC Message Content Requirements

General Guideline: alert initiator use clear and simple language whenever possible, with minimal use of abbreviations. The most important information should be presented first.

Text messages:

The mobile devices should use a font to make the message easily readable. Per the American Foundation for the Blind, the goal in font selection is to use easily recognizable characters, either standard Roman or Sans Serif fonts. Another good choice is Arial. Avoid decorative fonts.

The use of color should be avoided for the purpose of conveying information, as some people are color blind, and some devices do not display color.

If technically feasible, the mobile device display should provide high contrast display and provide adjustable font size.

One area of particular concern is that people who are blind or visually impaired will be most underserved by a solely text-based CMAM. The Committee recognizes that these subscribers could be best served by having the CMAM made available in speech format. There are mobile devices and software on the market with screen reading and text-to-speech conversion capability. It is agreed that such specialized mobile devices, which are geared for people who are blind and who have low vision, could be a solution. The CMSAAC recommends that participating CMSPs who elect to transmit CMAS alert messages strongly consider offering this capability.

In mobile devices/software that includes capabilities to support text-to-speech access, the CMAS text should be accessible to the screen-reading functions in phones that are capable of generating text- to speech. The opt-out menus on displays also should be available to these screen readers. The CMSAAC recommends that the CMAS text is accessible to these screen readers when CMAS capability is incorporated in those devices.

Future Audio messages:

Alert initiators should insure that speech is enunciated and presented at a slow pace. Alert initiators should provide a text version along with the audio version. Note this is not the text-based alert; this is a multimedia alert that contains both a text and audio component consistent with the multimedia profiles. The alert initiator must insure abbreviations are spoken as full words.

Future Video messages:

Alert initiators should provide text versions of the audio content of video alerts. CMSPs and mobile device vendors should consider appropriate methods for delivery and allowing users the ability to display this associated text on mobile devices as technology evolves and video and captioning capabilities become available. Also, the alert initiator should provide an audio description of the video content as a separate multimedia audio component consistent with the multimedia profiles.

Future Multimedia messages:

The alert initiator should provide ample text and audio to explain images such as maps, so that message recipients understand the content of the graphics/images.

Conclusion

The WARN Act provides the general framework for the CMAS and considerations that must be addressed by the Commission before establishing regulations on CMSPs. While this is a voluntary alerting service, it is important to note the CMSPs that elect to offer the service to their subscribers will need to follow the recommend technical standards and protocols that were established by the CMSAAC.

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