

Emergency Notification Systems (ENS)

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INTRODUCTION

With the advance of technology and the greater utilization of the FEMA/IPAWS system, private vendors have created software systems (SAAS) that provide mass notification capabilities to qualifying jurisdictions. These systems are commonly called “Mass Notification or Emergency Notification Systems”. These systems have the capability of notifying the public through multiple paths, including EAS, affording the local jurisdiction a choice of tools to use within one common platform.

HOW THEY WORK

ENS systems are software products, developed by private vendors, wherein the software resides on the vendor’s servers, and is leased by a jurisdiction who then uses the system to notify its constituents. These systems rely upon access to the internet, and have multiple components/tools which can be used individually or together. Jurisdictions typically sign a lease with the vendor, and then notify the public within their jurisdictional boundaries, using the vendor’s software via the internet. The vendor, if approved by FEMA, has the capability to send out messages via the IPAWS servers, on behalf of the initiating jurisdiction, either to local broadcasters and/or to local cell users, using the participating wireless carrier’s cell sites. The systems also have the ability to send out messages directly to local land line and cell users, using a computer process called “Geo-targeting”, whereas the system selects phones in a defined geographical area, targeting the message. The phone numbers are entered into the system via 911 data download (land lines), or user voluntary entry via opt-in/signup. Finally, users can create pre-defined contact groups, such as elected officials, law enforcement, or other internal groups, to send out regular or emergency messages. Notifications are typically initiated from 911/PSAP dispatch centers or Emergency Management Agencies. In addition, specialized groups, such as special needs, can be targeted. Special alerts, such as NOAA weather, can be automatically generated. Due to the advances in technology, thousands of messages can be sent out in a very short period of time, limited only by the local “copper line” capabilities.

NOTIFICATION PATHWAYS

ENS systems, due to advances in technology, have the capability to notify the public via the following pathways: 1 – text messages to multiple devices; 2 – voice messages to multiple devices, both land lines and cell phones. Voice messages can use either “text to voice” technology, or actual user voice recorded messages, 3 – emails to multiple locations, 4 – Fax, 5 – TTY, and 6 – pagers.

IPAWS/EAS PATHWAY

Once approved by FEMA, ENS vendors are able to generate EAS messages for approved COGS (Collaborative Operating Groups), which are local jurisdictions that have been approved to generate messages in the EAS system for specific FIPS codes. Hence, a jurisdiction can create a notification with all EAS criteria, which will then be sent out by the vendor to the FIPS codes that are approved/selected. EAS RWT and RMT's can be sent, in addition to actual EAS messages. The EAS option can be used alone or in conjunction with other notification pathways. The EAS alert will then go out via the FEMA/IPAWS server to the broadcasters in the FIPS code(s) areas selected.

IPAWS/WEA PATHWAY

In addition to EAS, approved vendors can send out text message notifications to cell phones within a geo-targeted area. These messages are currently limited to 90 characters. In addition, due to the 360 degree geographical footprint of the carrier cell towers, the WEA messages will go out to a larger area than is specifically geo-targeted. Cell phone numbers not listed in the ENS database, including visitors from outside the area. The advantage of this pathway is that all cell users of participating wireless carriers within the geo-targeted area will get the notification, increasing the penetration and coverage of the message, which is one of the goals of the system.

GEO-TARGETING PATHWAY

One of the major advantages of ENS systems is the ability to "Geo-target" notifications. In other words, notifications can be sent out to contacts within a specific targeted geographic footprint, such as a city, or even parts of a city. If an incident, such as a fire or hazmat spill occurs, the notification can be sent to a radius around that incident, such as a half mile or mile. This geo-targeting capability allow for only those that need to be notified will receive the message, as opposed to an entire city or county, which is required by the FIPs code/EAS system. When used with the WEA system, all land line and active sell phones within the geo-targeted area will be notified, resulting in high message penetration to the public. This can be even more effective when coupled with Social Media messaging tied to the ENS message.

ADVANTAGES OF ENS SYSTEMS

- ENS systems provide a common platform with all tools "under one roof". This includes the FEMA IPAWS system, WEA, Geo-targeting, and individual/private group notification. Jurisdictions can select the notification pathways that are appropriate to the situation/incident (all or some), depending on the geographical footprint. Having many pathways to send a message to a given contact results in a very effective means to reach as many people as possible.
- Users of these systems can be "siloeed" into public and private organizations, protecting the privacy of individuals, and preventing accidental messages to the wrong contacts

- Contacts for 911 land line phones can be imported into the system, and these numbers are protected from public disclosure by Washington RCW.
- Robust technology allowed quick launching of messages that can go out to thousands of contacts in a very short period of time. This is valuable in the case of fast moving incidents, such as wildland fires, flood, earthquakes or tsunamis.
- System reports show exactly how and when the notifications went out, who received them, and who confirmed them.
- Integrated with smart phone technology, both to send and receive messages.
- Limited English Proficiency for public signup into the systems.
- Are able to interface with social media, such as Facebook and Twitter, such that notifications are automatically forwarded to those outlets.

DISADVANTAGES OF ENS SYSTEMS

- Initial and ongoing costs of leasing the software from the vendor (can be paid for from Homeland Security Grants – “Public Notification and Warning”. In other words, there is a yearly fee for the use of these systems, and a recurring source of funding must be found to support them.
- Training needed for both administrators and users to properly and efficiently use the system, that is, personnel initiating notifications must be trained.
- Updates needed for private groups, that is, there is an ongoing need to maintain current contact information, unless that task is put upon the contacts themselves.
- There are some technological limitations to various components of these systems, such as the 90 character limit of WEA. SMS text messages are limited to 120 characters. These limitations can result in messages being “cutoff”, or not enough information being sent to the public, resulting in more questions, and the need to provide a way for the public to get more information.

CONCLUSIONS

ENS systems, due to technological advances, have now “come of age”, and provide jurisdictions with a common platform, with all notification methods “under one roof”. This allows the message originator to pick and choose which notification pathways are appropriate for any given situation. For larger geographical events, or incidents that have an impact upon the entire jurisdictional boundaries, using EAS would be appropriate. For smaller incidents, limited in size and scope to a small area, geo-targeting with WEA can be an effective tool. In addition to the “public” tools, ENS systems allow for the companion use of “private’ (predesignated) groups to receive notifications at the same time as the public message. Although there are currently no laws that require jurisdictions to send notifications to the public, the public has come to expect that they will be informed on a timely basis upon emergency situations that can or will impact their safety. ENS systems provide more tools in the toolbox, with all tools under one roof, and this is a good thing for the common goal of notifying the public.