O|||

ONE2MANY

AN EVERBRIDGE COMPANY

END-TO-END PUBLIC WARNING SOLUTION FOR NATIONWIDE ALERTS

A multi-hazard, multi-channel alerting solution designed for Governments and Mobile Cellular Providers to meet all the emergency alerting technology requirements. Putting the safety of citizens first.

With the increase in the frequency and ferocity of natural and human-made disasters, efficient public warning is critical. Effective communication is at the heart of multi-hazard alerting systems; before, during, and after an emergency. Guiding all people to safety.

INTRODUCTION

Governments are under significant public scrutiny to ensure that they are doing all they can to prevent the loss of life, damage to property, and critical infrastructure during an emergency. With new public warning mandates from, for instance, EECC Article 110 from the European Union (EU) or Wireless Emergency Alerts (WEA) from the Federal Communications Commission (FCC), there is even more pressure to deploy the most efficient multi-hazard alerting system.

To implement a nationwide public warning solution successfully requires technology that meets the criteria of the emergency warning requirements. This includes coverage, capacity, security, privacy, and ease of use to reach the population. All of this applies to both residents and temporary visitors to the affected area.

Yet, nationwide public warning is about more than setting policy. It's choosing the right underlying technology service that allows you to enforce jurisdiction while applying approval and notification rules. And given the extensive reach of mobile networks, leveraging the

ever-present mobile device to send life-saving information to citizens is a natural choice.

Get it right and studies have proven that effective early warning solutions substantially reduce deaths, injuries and damage.

one2many's Public Warning Solution is a multi-channel based nationwide emergency alerting system, which utilizes cell broadcast as the primary channel for dissemination as it reaches the maximum number of people in the shortest possible time. It comprises of the multi-hazard, multi-channel Public Warning Platform and the Cell Broadcast Center. With one2many, you have a partner who combines a mobile network heritage, with being an active member of the standardization bodies. The comprehensive high-available, geo-redundant, proven Public Warning Solution reflects over 20 years' experience in developing, implementing, and managing mission-critical products. one2many's Public Warning Solution meets all the emergency alerting technology requirements and is available on-premise or as a cloud-based managed service.

KEY BENEFITS

■ A multi-hazard alerting solution which supports multi-channel communication

As the only standardized emergency alerting technology service, cell broadcast enables you meet to all the public warning requirements. one2many's cell-broadcast Public Warning Solution doesn't limit you to just one channel. The Public Warning Solution lets you disseminate alert and warning messages using a variety of channels. Cell broadcast is used as the primary channel, and includes supporting channels, such as, location-based SMS, email, voice dial-out, RSS feeds, social media, and Common Alerting Protocol (CAP) compliant systems, such as siren network, electronic signage, or those utilizing C and C1 interfaces.

■ Two solutions in one to meet your specific needs

The Public Warning Solution is uniquely positioned to offer flexibility, depending on your needs. The solution combines the Public Warning Platform and Cell Broadcast Center. For greenfield countries, the Public Warning Solution provides all you need in one system to create, manage, monitor, and deliver emergency alerts. Acting as a gateway, the Public Warning Solution complements an established Emergency Management Alert Control Center. You can easily add a new cell delivery channel to your existing set-up while being able to monitor and deliver emergency alerts across multiple channels.

■ Continuous end-to-end technology chain testing

It's paramount that when needed, your public warning system is fully operational. No matter how long it's been idle. one2many's Public Warning Solution is the only offering that provides you with the ability to perform end-to-end testing to validate continuously that the system is working. The diagnostic messaging lets you test each step of the process from alert creation to individual cell delivery, without issuing an external alert to the general public. With one2many, you have the confidence that the Public Warning Solution is ready whenever you need it.

■ A global proven track record

Only one2many combines telecommunication knowledge with over 20 years of practical experience of developing, implementing, and managing mission-critical solutions. One2many has the most extensive heritage in public warning solutions, multi-hazard alerting systems, and multi-channel early warning systems in the industry. Having built the world's first 2G Cell Broadcast Centre in 1996, one2many continues to be a first mover in innovation in 3G, 4G, and 5G, as well as being a leading light in the associated standardization bodies with their active membership and contribution. With over 85 installations at more than 55 customers in over 32 countries, one2many is a world leader in nationwide public warning solutions.

WIRELESS ALERT REQUIREMENTS AND THE PUBLIC WARNING SOLUTION

There are several country-specific mandates relating to wireless alerts: EU-Alert, W-PAS, K-Pas, ETWS, EMA, CMAS, WEA, to name a few. Yet, no matter which mandate you are following, when it comes to the essential requirements, there are commonalities across them all. They are

- Reach the maximum of a population, 'no download/sign-up', including visitors
- Location specific information to be received during a crisis in specific areas
- Fast delivery. Timing is everything.
- Should always work, even if the mobile network is congested or network access is barred
- The public's privacy should not be compromised

- Only Government agencies should be able to issue alerts
- Attract the public's attention and initiate a call for action
- Adhere to international Standards
- Free to receive

With one2many's cell broadcast-based Public Warning Solution, you're assured that all these requirements are met.

Accurately delivering the right information, at the right time to the right people

By its very nature, one2many's cell broadcast-based Public Warning Solution is a location-based service. Alerts and warning messages are sent to a specified area. With the enhanced specification of device-based geo-fencing, it's possible to deliver potentially life-saving alerts even more precisely by using the mobile device's actual location. This translates into the accuracy of meters and is equal to that of GPS navigation.

Whether you are a resident or visitor, all communication sent by the Public Warning Solution is received by people within that specified area. The cell broadcast service, for example CMAS and EU-Alert, is supported on all devices and has been commonly available on Android, iOS, and Windows mobile devices since 2012. You don't need to download or register. It's free.

With the cell broadcast service, warning messages and alerts are delivered at a pre-defined interval. For instance, the communication can be sent once, which means on receipt, that same message won't be presented again. However, any new person entering that area will automatically receive it as the system has a unique identifier ensuring that communication is not repeatedly presented unnecessarily.

With the cell broadcast service being available on all mobile devices, December 2019 studies in The Netherlands indicated that coverage was at 90.7%.

Real-time messages are the difference between safety and catastrophe

Depending on the nature of the emergency, speed is critical; for instance, with a tsunami or a bomb threat. With one2many's Public Warning Solution, it only takes seconds to send a warning message to millions of people.

The cell broadcast service is part of the mobile network signaling. Under 3GPP standards, cell broadcast by default has priority over any other service and, in some cases, utilizes a separate channel to regular messaging traffic. The service is not affected by mobile network congestion, whether this is a crowded area such as a stadium or as a result of increased traffic due to people urgently trying to contact their loved ones during an emergency. What's more, the Public Warning Solution doesn't contribute to network congestion. It requires only one message per cell to be sent to reach all the mobile devices within that specified area. Cell broadcast messages are one to many people, unlike SMS or IP based messages which are one to one which significantly impacts how quickly the messages are received.

Unlike location-based SMS, alerts and messages sent using the cell broadcast service are not impacted if the mobile network is deliberately closed to the general population to allow only emergency responder SIM class-based access. Everyone in that specified area receives the emergency communication.

Emergency alerts and messages sent via the Public Warning Solution get delivered, fast.

■ Guiding people to safety before, during and after an emergency

The purpose of sending emergency communication is to attract people's attention and guide them to safety. With the Public Warning Solution, messages are automatically displayed. No interaction to see the message is required. In fact, you need to acknowledge the warning message before they can continue using their mobile.

Cell-broadcast is the only emergency warning technology service that is standardized. As a result, there is a special standardized ringtone and vibration. Only used for emergency communication. It's used across the world. It's instantly recognizable as an emergency alert and there is no confusion as to whether it's for a regular SMS or application message.

Using the device's language settings, information contained in the emergency message is automatically received in your chosen language. With up to 1395 characters, the Public Warning Solution enables you to provide relevant and clear instructions. All received messages are retrievable which lets you refer back to the instructions in case you've forgotten what to do or where to go. As the communication is location specific, the messages for that area can be updated during the course of the emergency, ensuring that the latest information is provided. People receive up to date advice, related to their current location.

Using the multi-channel capability of the Public Warning Solution, you are able to disseminate supplementary information. For instance, posting a social media alert, sending an RSS to email or updating electronic signage. Leveraging the benefits of each communication channel, you amplify the call for action by providing corroborating information.

■ Reassuringly secure and protects people's privacy

In an emergency situation, the public needs to be sure that any emergency alerts originate from the Government. As a cell broadcast based technology, the Public Warning Solution is as secure as the mobile network itself. Hackers can't spoof a cell-broadcast message, like they can easily with other technology. With the Public Warning Solution, only designated authorized agencies can broadcast emergency alerts. No chance of false guidance or mis-information being sent that could potentially harm the public.

As much as the public can be reassured that only Government designated personnel are able to send emergency alerts, there is another aspect which needs to be taken into account. Typically, the general public doesn't want the Government tracking them. In some countries, it's prohibited by law to use location information.

The Public Warning Solution sends alerts and emergency messages to all people in the specified area without needing to know their mobile number. The solution utilizes the anonymous nature of the cell broadcast technology that is effectively unaware of the receipients. With the Public Warning Solution there is no location based server which keeps track of a person's mobile location. People's privacy is protected. It's completely unaffected.

PUBLIC WARNING SOLUTION OVERVIEW

The Public Warning Solution is a cell-broadcast service based nationwide emergency alerting system. It comprises of the Public Warning Platform and the Cell Broadcast Center.
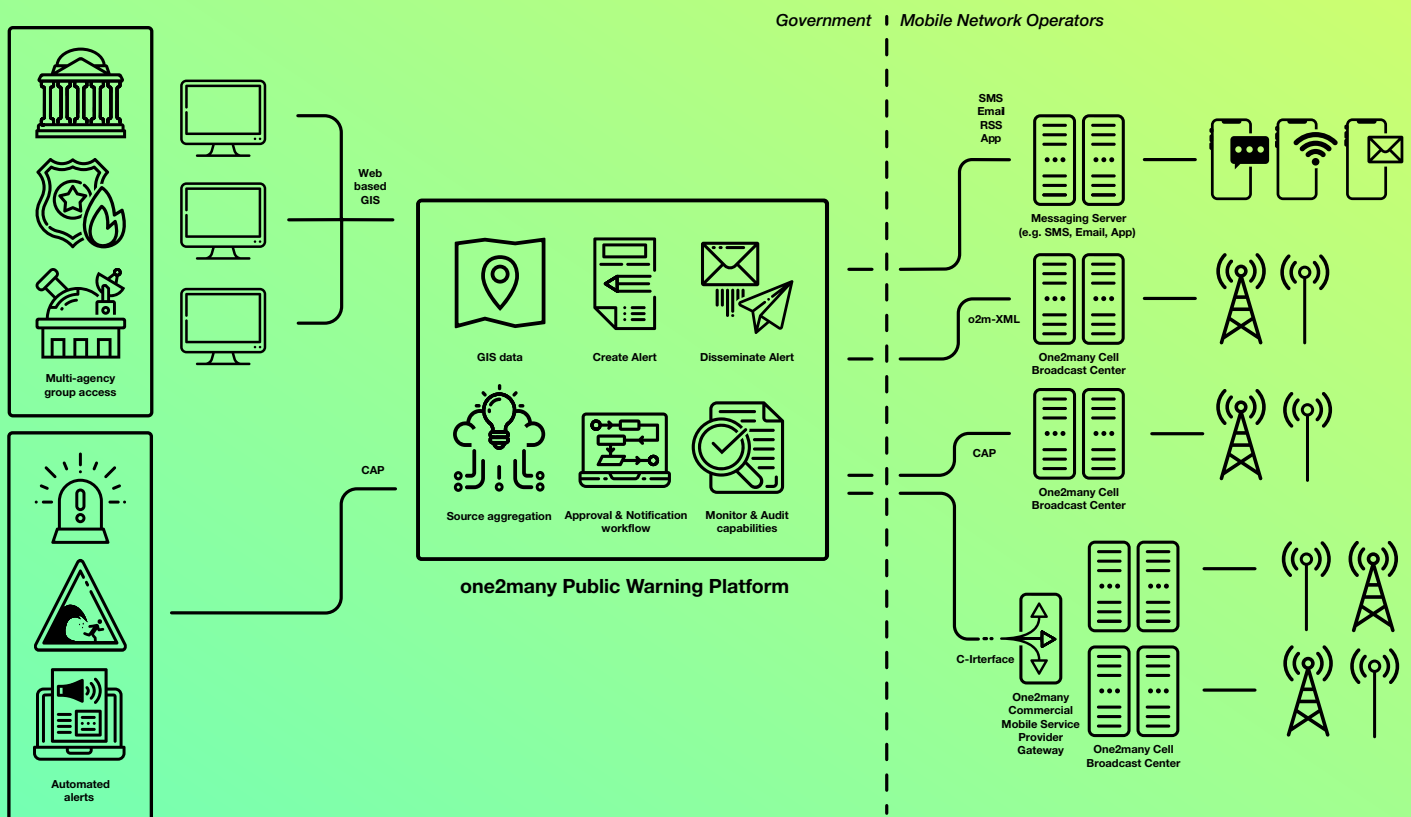
The Public Warning Platform is the emergency alerting hub. From here, alert information is monitored and aggregated. Using the permission-based user interface, you can create emergency alerts and messages with the automated workflow ensuring that the required approval levels are followed. Once approved, the emergency communication is published and disseminated by selecting one of the multiple channels available from the dashboard. Cell broadcast is used as the primary channel, and includes supporting channels, such as, location-based SMS,

email, voice dial-out, RSS feeds, social media, and Common Alerting Protocol (CAP) compliant systems, such as siren network, electronic signage, or those utilizing C and C1 interfaces.

The Cell Broadcast Center is the central point from where cell broadcast messages are distributed across the mobile network. One2many's cell broadcast system simultaneously supports GSM, UMTS, LTE and 5G cell controller interfaces of all leading network suppliers.

The Public Warning Solution is a high-available, geo-redundant solution.

ONE2MANY

PUBLIC WARNING SOLUTION HIGH-LEVEL OVERVIEW

Government | *Mobile Network Operators*

Multi-agency group access

Automated alerts

Web based GIS

CAP

GIS data

Create Alert

Disseminate Alert

Source aggregation

Approval & Notification workflow

Monitor & Audit capabilities

one2many Public Warning Platform

SMS Email RSS App

Messaging Server (e.g. SMS, Email, App)

o2m-XML

One2many Cell Broadcast Center

CAP

One2many Cell Broadcast Center

C-Interface

One2many Commercial Mobile Service Provider Gateway

One2many Cell Broadcast Center

one2many's Public Warning Solution meets all the emergency alerting technology requirements and is available on-premise or as a cloud-based managed service

ONE2MANY

AN EVERBRIDGE COMPANY

INFO@ONE2MANY.EU