Population alert – Possibilities in the past, present and in the future

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Introduction
During the process of developing a population alert System Unified Messaging System has done a lot of investigation, interview and research of the past, current and future need for a population Alert System in general and available systems. The presentation gives an overview of this research in order to highlight things to consider now and in the future both for authorities working with and programmers developing systems covering early warning systems before, during and after an event.

In the past:
Most countries rely today on sirens in order to evacuate and inform the citizens about disasters. But is the warning heard and understood by the populations and can it live up to the standards of living today with new building regulations, travelling citizens, behaviours in the modern society etc.

Can the sirens itselves be used independently or do we need to look for other options in the modern society where people constant is on the move? Several countries are today looking for other ways to communicate with the public in case of emergencies and daily events and needs therefore to consider different aspects such as the way of living, way to behave and need for information.

Today:
What possibilities are there today in order to evacuate the citizens and inform about disasters and other incidents? UMS has done a lot of research into the different possibilities of warning the citizens via various channels and systems. The presentation will explain the advantages and disadvantages of the various systems.

Traditional SMS
A traditional SMS routing can under no circumstances be used as a public warning. This is due to the structure of the telenetwork with a great risk of congestion and overload especially in critical situations where the public normally will increase their need for communication.

Alert SMS
Alert SMS is a new developed way of overcome congestion and overload problems in the network and the function can and is used in crises. Alert SMS will be described on a slide for itself as it is quite an innovative and newly developed possibility.

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Voice messaging
Sending voice messages to all fixed phones in a given geographical area has been done for years by many different companies and most of them give the possibility of response. What must be highlighted when using a system like this for population alert is that the supplier must be able to detect and prohibit overload and congestion in the network specially at the local switches.

Cell Broadcast
Cell Broadcast is a powerful tool. It has a very large capacity and is capable of sending targeted information to millions of mobile phones in a given geographical area. Until one year ago this was the only secure way of transmitting critical information to all mobile phones in an area and it is free of congestion and overload.
The disadvantages of the Cell Broadcast system is among others that all citizens have to enable their phones to be able to receive a Cell Broadcast message, that it reduces the capacity of the infrastructure and that there are no response and logistics as the technology only supports one way communication. In addition there are a lot of cell phones without the function of Cell Broadcast on the market. How you make Cell Broadcast work with 3G and 4G are also unsolved issues.

Lokation based warning
Location based warning based on Voice messaging as described earlier, is an efficient way of sending alert messages to all fixed phones in an area. The technology today gives the possibility to ask the population questions and get responses. This means that there are many logistic possibilities for the Governments in case of a disaster and you can keep track of the citizens before, under and after a disaster.. The Location based system is effective especially at night when people are at home but not as effective during day time. The disadvantages are the infrastructure in case of ex. flooding and risk of overload if a congestion avoidance function is not implemented.

Mobile phone warning with Alert SMS
Using Alert SMS it is possible to send SMS to all mobile phone phones in a given geographical area with targeted information without risk for congestion and overload. In addition to that there are possibilities for logistics and 2 way communication with the citizens. The Alarm SMS do not require any changes to the mobile phone or any registration and is therefore easy to implement. This type of system can also alert foreign and national visitors entering the area.
The system does not have the same capacity as Cell Broadcast, although the capacity is substantial. Even more, the implementation of 3G ad 4G networks will take away the problems of capacity since broadband technology will have more than sufficient space for alert communication.

Travellers alert
In addition to Mobile phone warning via Alarm SMS, it is today also possible to alert own citizens travelling in other countries as long they have their own mobile phone switched on in the country they are visiting.

In the future:
It is essential that a population Alert System is build in a way that is allows integration with other systems like Control room software and detecting systems. This can ex. be done via CAP, WebServices or other known industrial standard. It is also advisable that a population alert system can incorporate existing maps, other population alert channels, sirens and TV/radio etc. All this in order to make an alert as effective as possible.

Any big events or crises normally involve several authorities and rescue forces. Therefore it is of great advantages if the population alert system can handle several logon at different levels

and with different roles i.e. who can make a transmission and who can just monitor the results. The access must also be possible from the location of the event. To coordinate the efforts from the different stake holders in a crisis – knowing of the logistics of the situation is crucial. Depending on communicating without knowing how many persons are in the affected area is liability that makes this kind of work much harder to cope with.

As the world and technology changes rapidly it is advisable that any supplier of Population alert systems can adapt to any new communication method common used by the citizens. This can be 3G, 4G etc.

Summary
The summary summarizes the presentation but also highlights that different suppliers in the future must be able to work together in order to create the best possible warnings to the population through different channels and that all different systems that focus at different aspects within public safety area have its place in the chain, and must therefore be able to integrate.

Any system must be easy to use and reliable now and in the future.