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Cellphones could unite to broadcast disaster alerts

07 June 2009

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CELLPHONES could sound the alarm in the event of a disaster and pass on the alert from phone to phone - even if most of a cellphone network is down. So says Motorola in a new [patent application](#).

In an emergency, such as a [hurricane](#) or terrorist attack, the US government can operate the Emergency Alert System (EAS), which harnesses all TV and radio frequencies, to broadcast warning messages to people in their homes. "Unfortunately, a large portion of the intended recipients will not have their TV and radio systems turned on when a disaster occurs," says Motorola engineer Jerome Vogedes of Milwaukee, Wisconsin, in a US [patent](#) filed on 21 May.

His answer is a new generation of cellphones that can rapidly form a peer-to-peer network when an emergency alert is broadcast. A phone on the edge of a disaster area, where a cellphone service still operates, receives the alert. It contacts the nearest phone using Wi-Fi, establishes a P2P network with it, and sends it the alert. That cellphone then does likewise until as many mobiles as possible have received the alert.

This way, the warning message gets out with "minimal use of infrastructure", Vogedes says.



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An indoor positioning system for cellphones, similar to GPS, is being tested in Finland – the system could let firemen find each other in smoky buildings

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When The Power Grid Goes

Thu Jun 04 18:02:00 BST 2009 by **Eric Kvaalen**

This is a great idea.

We have had several articles in NS about how the electricity grid in a country could be out of service for a long time. This system would allow mobile phones to continue to communicate in such an eventuality, even though the local cellular network of base stations would not be functional.

Of course, people would need some way of recharging their mobile phone, but this is a minor problem.

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When The Power Grid Goes

Sun Jun 07 23:15:13 BST 2009 by **Daniel**

Routing telephone calls through p2p would quickly overwhelm the system, because one phonecall uses up the available bandwidth of several thousand phones as it hops from one to another to create a tunnel through. If more than few people try to use it, the network grinds to a halt.

And the wi-fi range of a typical cellphone is so short that people will be at a shouting distance anyhow. This subjects the network to gaps where there isn't enough people or there are obstacles blocking normal wifi.

The most succesful way to create such a peered network would be to use the regular voice band transmissions, which enable the phone to send out a signal that can hop couple miles, instead of wifi that only goes a few hundred feet under ideal conditions. Each phone would recieve what basically constitutes a short text message, which it would then re-broadcast on the same frequency after a random delay and after determining that the band is quiet, and then ignore any future messages with the same ID so it won't start a transmission loop.

There already exists an amateur network that does essentially that. It consists of a number of towers that relay simple short messages by repeating them. Each station repeats the message it recieves to propagate it between stations that can't hear each other until the message has echoed through the entire network.

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When The Power Grid Goes

Tue Jun 09 10:41:40 BST 2009 by **Waqar**

completely wrong, it wont use too much resources, also people are working on improving wifi bandwidth, and till then that technology/application get release, the wifi bandwidth would be much higher then today.

The only problem would be how to stop false alarm. How cell phone will confirm, is it false alarm or disaster has began. I see solution for this problem as encryption. but all cell service provider must change encryption key on regular basis to ensure, no false alarm can trigger. But still security will be ver big problem

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When The Power Grid Goes

Sun Jun 07 23:32:48 BST 2009 by **Daniel**

Here's the amateur network:

http://en.wikipedia.org/wiki/Automatic_Packet_Reporting_System

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This comment breached our [terms of use](#) and has been removed.

Too Easy To Abuse

Sun Jun 07 14:43:11 BST 2009 by **slawek**

This is useless.

If a single mobile (or a few of them) can start the p2p netowrk distributing the alert, they may just as well distribute something like 'enlarge your (enter body part here)'. Spammers' dream coming true...

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Too Easy To Abuse

Sun Jun 07 17:34:07 BST 2009 by **No Sense**

....and how does the network find its edge? Do people in California get the hurricane alerts? I assume a location setting based on number would fix this... but it still seems like it just open your phone to more vulnerabilities

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Too Easy To Abuse

Sun Jun 07 23:09:53 BST 2009 by **Chris**

Locating the edge through a number system will not work in the UK. Our mobile numbers are not geographically based at all. A great many phones

have GPS though. Maybe setting a radius and allowing the GPS to establish whether the phone is inside the required area.

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