

Car horns warn against natural disasters

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Car horns warn against natural disasters. Credit: Fraunhofer

In the past, sirens howled to warn the population against floods, large fires or chemical accidents. Today, however, there is no extensive warning system in Germany, as most sirens were dismantled after the Cold War. Researchers of the Fraunhofer Institute for Technological Trend Analysis INT in Euskirchen want the population to be warned by car horns in the future.

In Batman's hometown of Gotham City, a gigantic searchlight projects the Bat signal into the sky in case of disaster to alarm the superhero and the population. In Germany, an extensive network of sirens was used in the past to warn the population against disasters: in case of forest fires, industrial accidents or a looming inundation of a part of town, civil protection agencies could trigger the loud and clear siren alarm, while detailed information was provided by radio and television. However, after the end of the Cold War, most sirens were dismantled in the mid-nineties to be replaced by the satellite-based [warning system](#) SatWaS, which informs the population only via radio and television. But if TV

and radio are switched off, the warning goes unheard.

In recent years, different individual solutions for warning systems have been developed. Cell-broadcast systems can send mass SMS messages to mobile phones. Smoke detectors, radio-controlled clocks and weather stations equipped with radio receivers can also trigger alarm. Despite the high distribution rate of some of these devices, it cannot be ensured that a warning reaches the entire population. Only individual persons or households would be warned, and only if the devices are on standby 24/7/365. Today, fire brigades and disaster protection agencies would rather want the sirens back. However, the resulting costs would amount to several 100 million Euros for German federal and state governments, which share the responsibility for civil protection.

In January, researchers of the INT applied for a patent of a technology which allows the horns of parked cars to be activated in case of disaster. The technology is based on the eCall emergency system, which new cars are going to be equipped with as from September 2010. The eCall system was developed at the initiative of the EU Commission to help reduce the number of road traffic fatalities. It consists of a GPS sensor and a mobile phone component, which is activated only in case of an accident (i.e. when the airbags are triggered) and which can transmit data (e.g. accident time, coordinates and driving direction of the vehicle) to an emergency call center.

The INT researchers found out that this infrastructure can also be used to warn the population. Once the cars are equipped with a radio receiver, their horns can be triggered in case of disaster. The receiver can be activated only by civil protection agencies. These might send e.g. the following signal to the vehicles: »To all vehicles that are equipped with the receiver and that are currently within the boundaries of the following GPS coordinates: If the engine is off, start sounding the horn!«

Dipl.-Ing. Guido Huppertz from the INT's Technology Analyses and Forecasts (TAV) department has worked on the system and explains the advantages of honking cars: »All hitherto suggested solutions such as mobile phones or smoke detectors only inform the respective device user. The entire population can only be informed if 100% are equipped with these devices.« The INT suggestion has a clear statistical advantage: a mere 14% of the registered vehicles are already sufficient to provide extensive alarming. »If all new vehicles are equipped with eCall from the end of next year, the warning system may be ready for use after an establishment phase of 2 to 4 years,« Huppertz predicts.

The new system is meant to complement rather than replace the other options. »The effort is restricted to the integration of a small electronic module into new vehicles« Huppertz states. »As far as the authorities are concerned, the necessary infrastructure is already available.«

Source: Fraunhofer-Gesellschaft

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