DRIVING DOWN ROAD ACCIDENT FATALITIES

Each year over 40,000 people are killed on Europe's roads, and 1.7 million injured. The partners of MEDEA+ project CARING CARS aim to drive down these statistics with in-car sensors capable of monitoring the vital signs of drivers and sounding an alert if there is a problem.

The Turkish, Dutch and Spanish partners of MEDEA+ project CARING CARS set out to make driving safer by developing an in-car network of sensors capable of running applications that monitor a driver's vital signs and responding accordingly. Sensors integrated within conductive textiles are located in the car steering wheel and, through contact with the driver's hands, monitor its heart rate, while wearable sensors provide a range of additional data such as alertness. Should a driver fall asleep, a vibration in the steering wheel or accelerator pedal will wake him.

The sensor network is coupled with a control and communications infrastructure which gathers data and acts as a gateway to emergency services. 'In the event of a crash, the technology, which incorporates an on-board camera, can assess the severity of the situation and the level of emergency response required,' explains Keith Baker, Director of Partnerships of Philips Applied Technologies, the project's Dutch lead partner. 'Data on the location and condition of the passengers can be transmitted to rescue personnel and healthcare professionals and help to identify any potential risks. When emergency teams are on site, information can be communicated to hospitals, increasing the efficiency of the response and potentially reducing the impact of injuries in the critical first hour or so after an accident.'

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Keeping an eye on novice motorists

According to the European Road Safety Observatory, 16-25 year old drivers are two to three times more likely to have an accident than more experienced drivers. Some insurance companies won't insure young drivers, while others charge prohibitively expensive premiums.

Some companies are showing an interest in the technology as a way of monitoring the on-road behaviour of young drivers. The system would enable them to offer younger motorists with a record of safe driving more affordable premiums. The project's partner NXP, a leading manufacturer of semiconductors, is currently developing 4,000 modules with an insurance company for trials in Assen, Netherlands.

High market potential

The project partners are also collaborating individually with telecoms providers and vehicle manufacturers to develop and test specific applications. The market potential for such applications is high, from taxis to commercial vehicle fleets and hire cars. Spanish aerospace partner Deimos is currently developing applications for eCall in Spain, and Turkish partner TOFAŞ, which makes light commercial vehicles for the European market, is developing a computer module for Fiat and PSA Peugeot Citroën.

Read more on the project at
www.eurekanetwork.org

KEITH BAKER
Philips Applied Technologies

"We envisage vehicle manufacturers installing the on-board unit into top-end cars as standard one day, enabling its facilities to be marketed as a range of additional vehicle options either by the manufacturers or third party service suppliers. By 2018, all new cars could be fitted with such on-board units, offering the same potentially life-saving facilities as those we demonstrated."