New traffic app and disaster prevention technology road tested

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A new smartphone traffic app tested by citizens in Dublin, Ireland allows users to give feedback on traffic incidents, enabling traffic management centres to respond quicker when collisions and other incidents happen around the city. The 'CrowdAlert' app, which is now available for download, is one of the key components utilised in the EU-funded INSIGHT project and a good example of how smartphones and social networks can be harnessed to improve public services and safety.

'We are witnessing an explosion in the quantity, quality, and variety of available information, fuelled in large part by advances in sensor networking, the availability of low-cost sensor-enabled devices and by the widespread adoption of powerful smart-phones,' explains project coordinator professor Dimitrios Gunopulos from the National and Kapodistrian University of Athens. 'These revolutionary technologies are

driving the development and adoption of applications where mobile devices are used for continuous data sensing and analysis.'

The project also developed a novel citywide real-time traffic monitoring tool, the 'INSIGHT System', which was tested in real conditions in the Dublin City control room, along with nationwide disaster monitoring technologies. The INSIGHT system was shown to provide early warnings to experts at situation centres, enabling them to monitor situations in real-time, including disasters with potentially nation-wide impacts such as severe weather conditions, floods and subsequent knock-on events such as fires and power outages.

The project's results will be of interest to public services, which have until now lacked the necessary infrastructure for handling and integrating miscellaneous data streams, including data from static and mobile sensors as well as information coming from social network sources, in real-time. Providing cities with the ability to manage emergency situations with enhanced capabilities will also open up new markets for network technologies.

'The project has been very successful in meeting and exceeding the objectives we set up in the beginning,' says Gunopulos. 'We pioneered the development and use of new techniques, including the leveraging of information from uncertain sources (such as social networks or crowdsourcing), and the fusing of information from multiple sources in the area of emergency management systems.'

The end result is a fully developed system that integrates novel technological solutions designed to improve both public services and citizens' quality of life. New algorithmic techniques and methodologies for traffic modelling, active learning, crowdsourcing, and event monitoring were integrated into the system. Indeed, individual components will be of great interest not only to transportation officials

but also to end residents, daily commuters and city visitors across Europe.

'The keys to success of this project were focusing on incorporating the user's perspective, developing robust systems and evaluating these under realistic conditions,' concludes Gunopulos. 'The project has shown that bringing in new technologies can improve traffic and emergency management and provide a successful model for developing such complex systems. We also anticipated several trends that became widespread during the project development time, including the impact of social media, crowdsourcing, and fully distributed solutions on smart city and traffic management problems.'

The INSIGHT project was officially completed at the end of August 2015, and the consortium has made real traffic data publicly available in order to promote further research interest in this field.

  More information: For further information please visit INSIGHT project website: www.insight-ict.eu/

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