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Front Page

News & Analysis

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 Education & Science
 Skills
 e-Government & EU
 Comms & Mobile
 Data & Security
 Media & Marketing
 Enterprise

Reviews

Products
 Websites

People

Interviews
 Appointments
 Post Appointments


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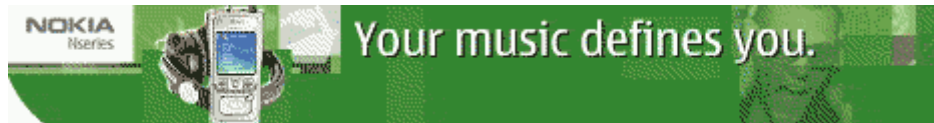
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New technology is king of the road

16.08.2006 - As commuters around the Dublin area wearily brace themselves for further disruptions while the M50 is upgraded, some consolation may be at hand.

A major new EU research project into the future of motoring aims to examine how technology can help cars and roads to 'talk' to one another, paving the way for improved traffic flow in the process.

Think of the benefits: instead of trying to remember the speed limit on the last road sign, a driver could have this information sent wirelessly into the car and displayed to them. Other road sign information, weather alerts, warnings of approaching emergency vehicles or notification of accidents could be relayed in the same way.

Another potential benefit of the technology would be to improve the movement of freight goods, so that when a truck carrying heavy goods is on the road, it could be possible to determine a prescheduled time to load or unload so that it causes the minimum amount of disruption to other traffic on the road.

Emergency vehicles could also benefit from a more integrated road communications system, where the traffic patterns could be analysed to determine the fastest route to the scene of an accident. Traffic managers could also begin using alerts to warn other drivers on the same route that an accident has happened.

The thinking behind the project is that cars or trucks on the road have many sources of information such as roadside signs, parking areas, traffic sensors or toll points that drivers can use to determine the route they take or the speed at which they travel. Equally, information about the vehicle could also be relayed to the road infrastructure for more efficient traffic planning.

Up until now, however, much of that information has been available in piecemeal form — there hasn't been a way to aggregate it and present it to drivers — or to take car information and relay it to traffic systems.

That's where CVIS (Co-operative Vehicle-Infrastructure Systems) comes in. A new four-year technology research project, it covers the design, development and testing of technologies to allow cars to communicate with each other and with the nearby roadside infrastructure over a wireless network.

And at the hub of the project is a Dublin-based company; Mapflow, a software house that specialises in geographic information systems (GIS) and location-based systems.



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The company has won a key role in the consortium working on the project, which will cost €41m with the EU contributing just over half of the total funding.

The wider aim of CVIS is to begin what it says will be "a revolution in mobility for travellers and goods", increasing road safety and efficiency and reducing the environmental impact of road transport in the process.

The project consortium is led by ERTICO, a public-private partnership that represents car manufacturers and other stakeholders in intelligent transport systems. The entire project team comprises 61 different companies, including car makers, technology suppliers, mobile networks and local authorities in several countries.

Mapflow is a partner of Navteq, which is leading one of the work streams in the project consortium. The Dublin firm's role will be to develop technologies that use positioning and mapping components to provide spatial data for next-generation traffic management and information systems.

"The gap in the project that we fill is in being able to broker the location of vehicles and the location of roadside infrastructure," says Mapflow CEO Richard Bryce. "We're the glue in the middle."

Several applications will use the Mapflow technology, including dynamic information and guidance services for drivers, hazardous goods monitoring, emergency vehicle support and the provision of roadside sign information through in-car displays.

Referring to the earlier example of a truck in transit, Bryce points out that the driver needs to receive route guidance about the best way to travel. In addition, if the load involved hazardous materials there might also be a need to monitor the truck from a safety perspective. "If you could have the vehicle interface with the roadside infrastructure, you could smooth the passage of the truck and the logistics associated with that," adds Bryce.

A lot of data about traffic flows and road status is already gathered but until now these have all resided on different systems, so that drivers or city planners haven't had access to the bigger picture. "Much of that information exists today, but it's not managed on a co-ordinated basis, so the benefit of [this project] is that you can improve the quality of information that's delivered to the vehicles and the quality of information delivered to the roadside infrastructure," Bryce continues.

As a CVIS briefing document makes clear, this scenario will only be possible if there is full interoperability in communication between different makes of vehicle and between vehicles and different types of roadside systems. To that end, CVIS hopes to develop what it claims will be a world first: a standardised piece of networking equipment that can connect all of the elements, using a variety of communications systems such as mobile phone networks, infrared or short-range microwave.

Another goal of the project will be to determine how the roadside information should be presented to the driver. Various user interfaces such as in-car navigation systems will be tested to see which works best. Unfortunately, Ireland's participation in the project doesn't extend beyond Mapflow's involvement: the designated test sites for CVIS technologies and applications are in Belgium, France, Germany, Italy, the Netherlands, Sweden and the UK.

But once the project has been completed, the prospect of an easier ride around streets and on motorways throughout Europe is a tantalising one.

By Gordon Smith

Pictured: Harvey Appelbe, Mapflow CTO and co-founder with CEO Richard Bryce

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