The automotive internet, from vision to reality

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(PhysOrg.com) -- European researchers developed a vision for a new, cooperative traffic system based on advanced communication hardware and software, a kind of automotive internet; they also created all the necessary enabling technologies. So when will an automotive internet become reality?

We have the technology; we can build an automotive internet… a communications infrastructure that can enable any number of new applications to dramatically improve the safety, efficiency and reliability of driving. This is the vision of the EU-funded CVIS project.

The question remains: can it be done and, if yes, then how and when?

Deploying an 'internet of traffic' is a vast task that can learn some

lessons from the internet of yore which relied on computers, modems and phone lines to provide the most basic of surfing experience.

But the automotive internet is starting out with even more humble beginnings, as most cars in circulation do not come equipped with built-in mobile communications; those that do often use a proprietary system that does not 'play nice' with other technologies.

CVIS plans to change all that. The technologies developed by the consortium are reasonably inexpensive (per unit) considering what needs to be installed to make up for a lack of roadside communications infrastructure communicating wirelessly with passing vehicles.

But like every aspect of the project, CVIS has thought long and hard about how its technologies could and should be sensibly deployed.

Come on in, we are open

A key aspect of the project's efforts to break new ground has been a determination to quickly involve third-party application developers and service providers.

Nearly two decades after it started, mobile-phone data communications is still a relatively tiny market, because mobile operators have tried to remain 'gatekeepers' of the service, preferring to buy in applications from third parties rather than letting developers create their own business on the network.

As a result, mobile data applications tend to be expensive, difficult to use, rarely innovative and a very small part of overall telecoms revenues. Consumers are thus less interested in what the operators have to offer.

But CVIS is taking a much more open, 'free market' approach, enabling

third-party application and service providers to share in the profit. All evidence indicates that this leads to rapid application development, faster user adoption of new technology and greater profits for everybody. NTT's iMode service was an early example, Apple's iPhone App Store is a more recent one.

In a canny move, CVIS hopes to leverage the same process to boost deployment of its hardware, software and service environment.

Moreover, there is a flourishing market developing in 'machine-to-machine' or M2M communication, using simple cellular data modems in fixed or mobile equipment to create new revenue streams for mobile telecom operators.
CVIS is something like M2M in a mobile scenario.

P>Nonetheless challenges remain before the complete system gets deployed in any jurisdiction, but undoubtedly CVIS has many factors in its favour, not least of which is the support of governments and stakeholders in the industry.

The lead partner and coordinator of the project is ERTICO - ITS Europe, a public-private consortium gathering all the major stakeholders together in a bid to deploy cooperative vehicle infrastructure systems.

Organic growth?

Apart from a compelling platform and some big European industry behind it, CVIS benefits from one other crucial advantage: realistic expectations.

Paul Kompfner, Head of Sector, Cooperative Mobility, at ERTICO - ITS Europe, and coordinator of the CVIS project, believes in organic growth. In this scenario, resources gather naturally in specific areas where they

can enable really compelling applications with immediate effect and large benefits; later, other applications can be deployed at these nodes, starting a virtuous circle that can establish an ever-wider arc of infrastructure installation and application development.

For example, one of the large-scale tests that generated enormous interest among the users was parking reservations for delivery vans and trucks. For obvious reasons, traffic management is extremely strict in cities like London, so if there is no free loading bay to take a delivery the truck must go around the block again.

Unfortunately, given the one-way systems in use, that ‘block’ can be up to eight kilometres long and heavily trafficked. Going around again can take a long time and adds to the cost of fuel, emissions and congestion resulting from a failure to move trucks in and out of the city efficiently.

The CVIS solution is compelling. Trucks 'book' a loading-bay spot in advance and get a reservation time and duration. The reservations are managed by software and executed through wireless nodes, and are automatically updated if the truck is ahead of or behind schedule - like airport landing slot management.

100,000 reasons to deploy

During the field test, Coca-Cola, one of the participants, was astonished to discover that they could save €100,000 directly each year, at one delivery location, just by being able to reliably unload at their destination. The potential savings across the entire city of London, or across the UK or across the continent are literally staggering.

"These nodes are not terribly expensive," notes Kompfner, "When in mass production they should cost only a few 10s or 100s of euros each. Of course, if you had to roll them out all at once across the country, the

cost would be astronomical," he notes.

However, companies like Coca-Cola, which was involved in the loading-bay demonstration, would be very happy to pay a subscription if it would help underwrite the cost of the infrastructure at highly desirable locations.

"And once the infrastructure is in place for one application, it can be used by any other application, too," Kompfner stresses. So once a communication point is deployed at a particular location for the loading-bay application, another application could be rolled out at no extra cost, for instance for private car parking, traffic light information or traffic data collection.

This is how Kompfner believes the cooperative society envisaged by CVIS will spread; relatively rapid deployment around highly desirable nodes pushing the early adopters.

Then, high-end private vehicles could start enjoying major advantages by being able to talk to this infrastructure. And we could see a massive, generalised spread of the technology along major arteries, followed by subsidiary routes over time - not unlike take-up of GPS, which just five years ago was a relative novelty.

So, the internet for automobiles could be coming sooner than we think.

More information: CVIS project - www.cvisproject.org/

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