

# SMART TECHNOLOGIES FOR INTELLIGENT TRANSPORT

Working in partnership for the next generation about town, across Europe and around the world putting policies into practice cost-effective, sustainable solutions local diversity - global interoperability environmentally sound schemes meeting needs for mobility and safety future oriented standards using global capability to create benefits

Working with ITS UK at the World Congress, Beijing to present advanced road pricing, traffic management and telematics solutions

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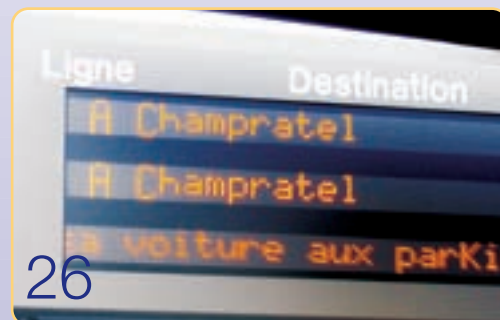


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## EU transport research budget 'not enough'

The €4bn that the EU is dedicating to transport research in its seven-year Seventh Framework R&D Programme (FP7) is 'almost certainly' not enough, according to its Science & Research Commissioner. But we can be 'more effective with the resources that we have', Janez Potočnik (pictured right) told the 2008 Transport Research Arena conference in Ljubljana, Slovenia.

Transport is a major research spender, he continued, investing more than any other European industrial sector. But he stressed that effective research spending will only happen through effective coordination.

'Building sustainable road transport needs a systemic approach, one that links vehicles, infrastructure and users; and links users with other users.' Achieving this seamless web of integrated transport chains needs better communication between car makers, researchers and policy makers; 'good partnerships are based on communication,' he said.

Meanwhile, Potočnik warned, the sector faces new challenges. Competitive pressures



have intensified with the arrival of cheaper cars, while oil prices continue to soar.

It is also under growing pressure to tackle its emission levels, which account for 26% of

Europe's total greenhouse gas emissions. The EU is already committed to reducing CO<sub>2</sub> emissions from new cars to 120g per km driven by 2012, a cut of around 25% on current levels.

'This will help, but it won't be enough to meet our wider obligations to making Europe a low-carbon economy,' said Potočnik, adding that freight and passenger transport are set to grow significantly in the coming years.

At the same time, he was encouraged by the extent to which member states are addressing the issue of relevant technologies such as alternative fuels and fuel cells

Jointly organised by the EC, the European Road Transport Research Advisory Council (ERTRAC) and the Confederation of European Directors of Roads (CEDR), TRA 2008 tackled issues including urban mobility, new engines and power trains, alternative fuels and technologies, and smart vehicles.

[ec.europa.eu/research](http://ec.europa.eu/research)

[www.tra2008.si](http://www.tra2008.si)

[www.ertrac.org](http://www.ertrac.org)

### EC agrees common standard for rail networks

The EC has agreed a common standard for interoperable train travel. Fine-tuning of specifications in the European Train Control System (ETCS) standard has opened the way for equipped services to travel continent-wide and, comments EC Vice-President in charge of transport Jacques Barrot, 'paves the way for a legally stable and interoperable future for Europe's rail network.'

ETCS is a core component of the European Rail Traffic Management System, which aims to improve the punctuality and safety of rail transport. An on-board computer uses information transmitted from the ground to calculate maximum authorised speeds and automatically slows down limit-breaking trains.

Incompatibility between the 20-plus different signalling systems currently operating across

Europe has proved a serious technical barrier to cross-border rail potential. ETCS is already installed on more than 2,000km of track - a figure due to rise to 11,000km by 2012, increasing freight volumes on key corridors by 55%.

### Fiat EcoDrive going live for 2009

By 2009, Fiat drivers in Europe will be able to monitor their own environmental performance. The company will commercially launch its new EcoDrive in the 2009 Grande Punto model, with free upgrades on all existing models integrated with its Blue&Me voice-activated entertainment system, which is already available on existing Grande Punto models.

EcoDrive is designed to track data from a trip, recording it for downloading onto a USB key and subsequent uploading onto a PC. Using a special Fiat computer program, the driver will then be able to analyse the results, to find out the emissions level for the trip and take advantage of advice on how to improve driving efficiency in future. This could include recommendations on braking or uphill driving, maintaining constant highway

speed, or driving in the correct gear. The company claims that resulting modifications of driver behaviour can reduce emissions by up to 20% in urban areas.

The platform is Blue&Me, which Fiat developed through Microsoft's Automotive Business Unit and launched in 2006 for wirelessly connecting mobile phones, iPods or MP3 players to its vehicles.

In 2005, the company introduced Blue&Me Nav, which uses satellite positioning-based navigation capability to report to the emergency services and accidents that trigger air bag releases, and also prompts a concierge service to call the driver. If the driver fails to respond, the emergency services will be alerted.

[www.fiat.com/ecodrive](http://www.fiat.com/ecodrive)

[microsoft.com/windowsautomotive](http://microsoft.com/windowsautomotive)

### Slovakia 'on course for EFC'

Slovakia is on course to launch EFC for commercial vehicles on 2,400km of motorways, expressways and defined parallel road sections from 1 January 2009, according to the country's Transport Ministry. It has admitted, however, that the €620 million system may not be completely functional from the outset.

This follows the third public tender (two

previous ones were cancelled) for a scheme, which was announced by the Slovak National Highway Agency (NDS) in September 2007. It opened offers from four groups - Tossy, Slovakpass, SanToll and Kapsch - in March 2008, and plans to complete an agreement with the winner by mid-June 2008. Charges will be levied on buses and lorries weighing over 3.5 tonnes.

## EU Parliament adopts intelligent car report

The European Parliament's Transport Committee has adopted the EC's first intelligent car report: *Towards Euro-wide safe, clean and efficient mobility*. This focuses largely on an information society, rather than purely transport, perspective.

It fully supports the goal of a full-scale roll-out of the planned eCall system, aimed at sending fast help to European motorists involved in accidents. It further encourages those member states which have yet to sign the eCall memorandum of understanding to

do so, ideally by the middle of this year, and urges the EC to pay "special attention" to member states where ITS availability is currently low.

The report also fully supports the goal of achieving 100 per cent availability, for model year 2012, of electronic stability control (ESC). Research by Germany's University of Cologne suggests that, if all cars had ESC installed, 4000 lives could be saved each year on European roads and 100,000 injury accidents avoided.

The Intelligent Car Initiative is a flagship project within 2010, the EC's strategic policy framework for information society and the media. It aims to promote the positive contribution that information and communication technologies can make to the economy, society and quality of life - including transport, where it supports the development, deployment and use of intelligent safety systems in vehicles.

[ec.europa.eu/information\\_society/activities/safety](http://ec.europa.eu/information_society/activities/safety)

## SensorLeg makes impact

UK transport research consultancy TRL has won the 2008 Automotive Engineer International Award for Innovative New Products and Technologies. The presentation, for its SensorLeg product, took place at the 2008 Society of Automotive Engineers World Congress in Detroit, US.

SensorLeg is a biofidelic lower-leg impactor designed for use by vehicle and component developers in testing and developing highly-accurate contact sensor technology for activating new safety pedestrian systems. These include pop-up bonnets, and are aimed at reducing head injuries to pedestrians in the event of an accident.



The SensorLeg in action in the TRL laboratory

In the lab testing process SensorLeg, which is designed to be as close to a human leg as possible, is fired at the front of a stationary car. It is modelled on a 50th percentile male and simu-

lates human muscle shape, flesh density and bone fracture in the interests of optimum authenticity. The context for its development is in terms of the proposed EC pedestrian protection regulations.

SensorLeg is designed as a tool for use in tests for which there has, until now, been no specifically-designed procedure.

It complements TRL's existing pedestrian legform (WG17), which was introduced to evaluate the risk of lower leg injuries in pedestrian impacts rather than test the sensor technology. SensorLeg is now commercially available.

[www.sae.org](http://www.sae.org)  
[www.trl.co.uk](http://www.trl.co.uk)

## TRKC's new research portal

The Transport Research Knowledge Centre (TRKC) has relaunched its web portal, to offer policymakers and researchers easier access to the results of EU- or nationally-funded transport research. It provides, inter alia, a compendium of European funding mechanisms; a database of ongoing and completed European and national transport research projects (with main results and policy implications outlined and categorised into key thematic areas); and links to relevant governmental and academic research institutions, professional organizations and information sources.

The TRKC is funded by the EC's Directorate General for Energy and Transport (DG TREN) under the EU's Sixth R&TD Framework Programme (FP6). It follows on from the earlier programmes EXTRA (1999-2001) and EXTR@Web (2002-2006).

[www.transport-research.info](http://www.transport-research.info)

## Tracking plastic can save costs

German packaging manufacturer Heuchemer Verpackungen is claiming to be the first European company in the distribution industry to use a combination of plastic pallets with a tracking system. It has implemented the RFID-based

Smartflow system, developed by UK-headquartered SLR Technology Solutions, which uses management software to track reusable plastic pallets.

Heuchemer says it chose Smartflow because of its ability to integrate with the company's exist-

ing Enterprise Resource Planning and logistics systems. It comments: "The system enables us to monitor our supply chain performance online and reduce the costs of pallets, as we pay only for those we are currently using".

<http://slr-solutions.eu>

## Switzerland to get HDT info system

Navigation solutions provider TomTom is working with Swiss telecoms company Swisscom to bring the company's High Definition Traffic (HDT) traffic information system to Switzerland during the second half of this year. Following the established HDT model, it will combine, anonymously, third-party information collected from traffic authorities and road operators with data generated by the movement patterns of mobile phones in cars, tracked via the Swisscom mobile phone network.

It will use this aggregation to calculate travel times and recalculate planned routes. HDT is already available in the Netherlands, and the company has already reached agreements with Vodafone UK, Vodafone D2 in Germany and SFR in France. It claims to be on target to have HDT available to 50% of its installed base in Europe by the end of the year.

[www.tomtom.com](http://www.tomtom.com) [www.swisscom.ch](http://www.swisscom.ch)

## Security concerns over Dutch smartcard

Security issues could impact on the planned 1 January 2009 national launch of the Netherlands' public transport smartcard OV-chipkaart. The scheme, currently on trial in Rotterdam, aims to replace all existing rail, tram, metro and bus paper tickets.

Security concerns have emerged from investigations by Dutch research institute TNO and the Information Security Group (IFS) at London University's Royal Holloway. These followed incidents of hackers breaking into the card's security system and recovering its cryptographic algorithm. The Dutch Government has now demanded further research.

The US\$2bn project is a joint venture between the five main public transport concerns in The Netherlands - Dutch Railways

(NS); the municipal transport authorities in Amsterdam (GVB), Rotterdam (RET) and The Hague (HTM); and bus operator Connexion - which collectively account for 80% of the 1.4bn public transport trips made each year by the country's 16 million inhabitants.

To implement the system, they have set up TRANS Link Systems (TLS), which is working with the remaining Dutch operators through the Mobis umbrella organisation. The scheme is modelled on the Octopus smartcard, which is operational in Hong Kong.

\*Meanwhile the EC has authorised a German state funding aid measure aimed at supporting development of a smartcard-based electronic fare management system for the country's public trans-



OV-chipkaart will have benefits for Dutch rail users

port. The approved aid, over the period 2007-9, amounts to some €9.75 million and is intended to make public transport more attractive, especially to passengers with restricted mobility.

The Commission has decided that the funding is consistent with

the requirements of the 2006 European Community Framework for state aid for research, development and innovation. It believes that the aid will encourage beneficiaries to devote more effort than they would otherwise have done to R&D.

## Galileo gets green light

The 27 April successful launch of the second European experimental satellite, GIOVE-B, came days after the European Parliament finally backed the €3.4bn Galileo deployment phase, which will now be entirely EU-funded. The vote has paved the way for Europe's own-brand satellite radio navigation system to be operational by 2013 - three years later than planned.

New regulations lay down security requirements for Galileo and its precursor European Geostationary Satellite Navigation Service (EGNOS), to be managed by the

EC and, in a revised role, the European Global Navigation Satellite System Supervisory Authority (GSA). The EC will set technical requirements for controlling access to technologies that provide security.

At the same time, EU member states are expected to adopt national regulations that guarantee at least the same level of protection as the industrial security of EURATOM. The GSA will also be responsible for preparing for the commercialisation of Galileo.

Infrastructure contracts will be tendered in six main packages: system engineering sup-

port; ground mission infrastructure completion; ground control infrastructure completion; satellites; launchers and operations; and additional works.

The European Parliament's suggestion of applying dual sourcing for a single product, to improve programme control, costs and schedules, has been accepted.

Meanwhile, the US continues to work on plans for an upgraded GPS system; while Chinese officials have announced plans for an Asia-wide service by 2010.

[www.gsa.europa.eu](http://www.gsa.europa.eu)

## Self-parking car

Volkswagen has demonstrated a Passat estate prototype fitted with a remotely-controlled Park Assist Vision system that reverses it into a space, cuts the engine and then locks itself. The driver selects a space as indicated on the car's satnav system and sets the lever on the direct-shift gearbox (DSG) gearbox to 'P'.

The system, which was demonstrated at the 2008 Hannover Fair in Germany, measures the available space using two cameras set in the exterior mirrors, and analyses the resulting video signals to generate instructions for the steering and transmission. Additional cameras at front and rear, and ultrasound sensors, monitor the car throughout the manoeuvre; it will stop if the system detects any risk of impact or an obstruction coming within range. The driver can override the system via steering or braking input, or by using an external remote control. The system currently only works for parking at an angle to travel direction, rather than parallel to the roadside. The company has yet to set a date for commercial production.

[www.volkswagen.com](http://www.volkswagen.com)

## Electrostatic 'roof' wins top award

Dutch engineering group BAM Infratechniek has won the overall 2008 Intertraffic Innovation Award for its road-based Fine Dust Removal System. The company is now looking for up to three pilot implementation sites in The Netherlands.

In partnership with the Technical University of Delft, BAM Infratechniek developed an electrostatic 'roof' to cover individual road segments. This innovation gives fine (PM10) particles an electrical charge, enabling them to be collected by roadside filters for safe disposal.

The system also came top in the competition's Infrastructure & Safety category. Koos Vermeulen from BAM Infratechniek received the award from Wim Kuijken, secretary-general of the Netherlands Ministry of Transport, during the Intertraffic 2008 event in Amsterdam.

[www.bam-it.nl](http://www.bam-it.nl)



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[www.peek-traffic.co.uk](http://www.peek-traffic.co.uk)



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