

For the driver who has everything

Swiss automotive innovation specialist Rinspeed presented its sQuba concept car in a driverless version at the 2008 Geneva Motor Show, which ran from 6-16 March. The vehicle uses laser scanners, developed by Hamburg, Germany-based Ibeo and deployed in the 2007 US DARPA Grand Challenge for autonomous military vehicle initiatives, to negotiate road and traffic scenarios. Ibeo plans to start series production of the Ibeo LUX sensor in autumn 2008.

Rinspeed also claims that the sQuba as the world's first truly submersible car. Company founder Frank Rinderknecht says his inspiration came from seeing, 30 years ago, the James Bond film *The Spy Who Loved Me* – in which the hero drives beneath the waves – and sees important military applications.

Developed jointly with Swiss engineering specialist Esoro, the car has three electric motors, one providing propulsion on land, the other driving twin screws for underwater travel. Power comes from rechargeable Lithium-Ion batteries, making the vehicle zero-emission.

The vehicle also uses energy-saving LED lighting. A VDO Automotive instrument cluster and controls are designed to manage all



vehicle functions when it is submerged as well as on land.

It is open-top, so that a driver and passenger can escape easily in an underwater emergency; their breathing air comes from an integrated scuba diving-type tank of compressed air.

Without occupants the sQuba surfaces automatically.

www.rinspeed.com

www.esoro.ch

www.ibeo-as.com

www.vdo.com

Two million-plus European cars have telematics

By end-2007, 2.2 million passenger cars in Europe had on-board telematics devices, according to Swedish analysts Berg Insight. The widest-used application is stolen vehicle tracking (popular in most Western European countries except Germany), followed by automatic emergency call, driver assistance, and motor insurance. Italy's insurance industry actively supports telematics initiatives that help reduce vehicle-related risks. With high levels of theft and fraud, the country has Europe's most expensive motor insurance market.

Berg Insight senior analyst Tobias Ryberg forecasts that the major breakthrough will come with the introduction of the EC's eCall system. Even though the original 2010 deadline for a mandatory GPS/GSM-based emergency call device to be fitted in all new cars will be impossible to meet, he sees a high probability of eCall becoming reality in the early 2010s.

Berg Insight projects that, once implemented, it will generate 16 million new telematics-enabled cars per year.

www.berginsight.com

Global LBS Challenge winners

Italian location-based service (LBS) specialist UbiEst (Latin for 'where is?') is the European grand prize winner in digital mapping specialist NAVTEQ's 2008 Global LBS Challenge with its UbiSafe application. Designed for personal security, contact locating and emergency needs this can, for example, give parents the comfort of always knowing where their children are.

Users can set preferences or obtain notifications via their mobile phone, alerting them when a child has left school or another defined safety zone.

There are three runners-up. The Netherlands-based GyPSii is an integrated web and wireless application introduced to deliver user-generated content (eg restaurant reviews) via mobile phones.

UK company Oxford Softworks' Nearme portable LBS application makes possible advanced point of interest (POI) searches based on user locations and preferences. Mobile phones can receive content including reviews, photographs and prices, enabling users to explore locations where they find themselves and make informed consumer choices. Nearme is powered by deCarta.

French company Senda's Chronomove is designed to relieve commuting stresses by giving drivers fastest-route options based on

real-time traffic conditions and accurate travel-time estimates. SENDA currently provides the service in over 30 major European metropolitan areas in five countries.

SENDA is a provider of travel-time management information services dedicated to companies in a variety of industries including media, transport, wireless and the web. By supplying valuable content for millions of users performing daily trips, we help companies attract and maintain the audience to their sites. Chronomove is powered by AtlasCT.

The successful entrants have won cash prizes and NAVTEQ map or territory licences for up to three years. Co-sponsors are Autodesk, deCarta, PTV, Telefonica (Movistar), Orange and GPS World.

Over 316 companies registered for the 2008 Challenge globally, with 12 being shortlisted in the European sector. The Challenge first launched in North America in 2003.

www.navteq.com

www.LBSChallenge.com

www.ubiest.com

www.gypsii.com

www.oxfordsoftworks.co.uk

www.decarta.com

www.senda-online.com

www.atlasct.com

Service from the refuelling robot

Dutch company Intion Development has launched its Tankpitstop refuelling robot. The system is designed to recognise an RFID tag in a participating car as it arrives at a service station, and match it to a stored database of fuel types and tank cap designs.

A sensor-equipped robotic arm attached to the fuel pump then extends to open the fuel tank flap, unscrews the cap, picks up the fuel pipe nozzle and guides this into the opening. Participating drivers specify in advance how much petrol they want.

Entrepreneur Nico van Staveren, who runs a chain of 30 service stations in the Netherlands province of Flevoland, developed the system jointly with Dutch Engineering consultancy Rotec Engineering and plans phased deployment during 2008. He sees the units, which cost €111,100, attracting increased custom to service stations where drivers no longer need to get out of their cars in wet or cold weather, or fear getting their hands or clothes dirty, or smelling of petrol.

www.intion.nl
www.rotec-engineering.nl



Digital pictogram progress

In February 2008, drivers on the M42 motorway in the English Midlands became the first on the network to see digital pictograms on overhead electronic variable message signs (VMS). The internationally-recognised symbols appear on 36 existing signs over the Highways Agency's 17.5km Active Traffic Management (ATM)-controlled sector.

They help warn of hazards including accidents, congestion, snow or ice, high winds or

increased skid risk. They will also enable foreign drivers to respond to warnings more quickly.

The now permanent ATM scheme, which allows motorists to drive on hard shoulders during busy periods, has seen average journey times fall by more than a quarter on the northbound carriageway. Drivers' ability to predict weekday journey times has improved by 27%, fuel consumption has fallen by 4% and vehicle emissions by up to 10%.

The Agency, which manages the English trunk road network, states that road safety has not been compromised, with personal injury accident rates falling from an average of 5.2 per month to 1.5 per month on the ATM-controlled sector. In March 2008, it announced that it was extending the scheme to other motorways; the UK Department for Transport (DfT) sees this as a partial replacement for national road pricing introduction of which has now shelved.

Navigational system residual values

Global digital mapping specialist NAVTEQ and European automotive business intelligence supplier EurotaxGlass are joining forces to study the impact of navigation systems on automotive residual values. The focus will be on factory-fitted, in-dash units, as currently installed in over nine million vehicles on European roads. Costing between 3% and 6% of new vehicle purchase prices, the partners say that these units are often underestimated in terms of residual values forecasts and total cost of ownership.

A survey being run during 2008 will cover seven European countries – Belgium, France, Germany, Italy, The Netherlands, Spain and the UK – and be repeated in 2009 and 2010 to identify changes and update results. An earlier study showed more than 50% of drivers saying they would update their navigation devices at least once a year; this one aims to show the impact of regular maintenance.

www.navteq.com
www.eurotaxglass.co.uk

Turkish traffic information

Traffic information for Istanbul, Turkey, is now available via mobile phone through the IBB Cep Trafik mobile information system, developed by the Istanbul Metropolitan Municipality in conjunction with Turkcell, the country's leading mobile phone operator with 35 million subscribers. Drivers can now obtain real-time average highway speeds, images from traffic cameras at 176, and travel time information to their destinations.

The service, which became operational in March 2008, will cost YTL5 (€2.5) per month after an initial charge-free three-month period. Subscribers with Java capability on their mobile phones can text the word 'trafik' to 1530.

www.turkcell.com.tr

Finnish Ministry heads Helsinki charge

Finland's Ministry of Transport and Communications is assuming overall responsibility for a feasibility study on the introduction of congestion charging in the Helsinki capital region. All its 14 component municipalities will

contribute to the project.

Transport policy department head Juhani Tervala says the Ministry is currently establishing key research areas. The work will be carried out by a private consultancy within an €400,000 budget, and the Ministry will call for

tenders in Summer 2008.

It expects the successful consultancy to report by Summer 2009. There will be implications for Finnish legislation, which does not currently provide for congestion charging.

www.mintc.fi

Forecasters prove to be too pessimistic

Forecasts of the decline of embedded OE navigation systems in the face of competition from personal navigation devices (PND) have proved overly pessimistic, according to a recent report from independent automotive research company SBD. There is, it says, still a strong market for embedded systems offered by vehicle manufacturers.

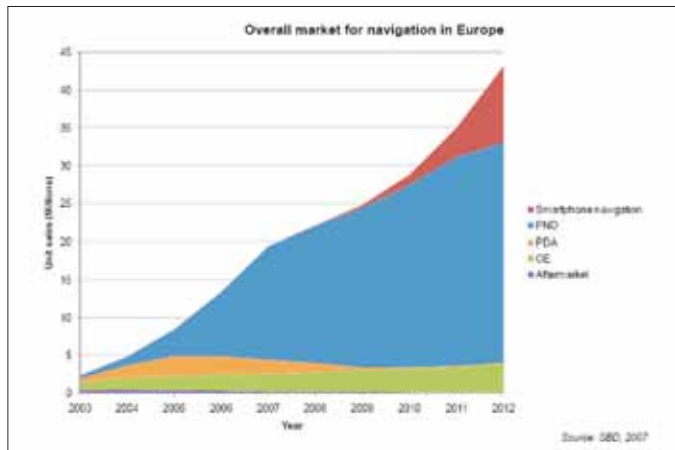
'Indeed, experience of using PNDs has given many drivers a taste of navigation, and they are now upgrading to embedded systems with their superior in-vehicle integration,' it says. Traditional embedded OE navigation systems do, however, continue to face a strong challenge from PNDs, launched in 2003,

and the emergence of mobile phone-based navigation applications.

Away from the high-end luxury vehicle segment, there is high price sensitivity. Over the last two years, many companies have begun to target an emerging segment of consumers who have already experienced PND navigation but are unwilling to pay for traditional high-end OE products

The automotives are therefore responding by developing low-cost embedded navigation systems with a target retail price of around €400 by 2012. This is creating a two-tiered cost trend.

Overall, SBD sees the European navigation market continuing to grow at a healthy pace, with all three major seg-



The market split for navigation systems, as predicted by SBD

ments (OE, PND and smartphones) expected to co-exist over the next five years. SBD expects sales of over 10m million naviga-

tion-focused handsets forecast to be sold in 2012. Its report is available to purchase.

www.sbd.co.uk

Motorists in Milan pay pollution charge to enter city

Milan in Italy, long considered to be one of Europe's most heavily-polluted cities, has introduced a charge of up to €10 per day for vehicles entering its inner district. The 'eco-pass' is being policed by cameras located at 43 electronic gates around the 8km² central area.

Mayor Letizia Moratti expects a resulting reduction of 30% in emissions and 10% in traffic levels. Electric and hybrid cars can enter the zone free of charge.

On weekdays, between 0730hrs and 1930hrs, drivers have to buy a ticket either online or from sales points in the city. The price depends on the type of vehicle involved and defaulters face a fine of at least €70. Net revenues will be invested on transport improvements.

Two other cities in northern Italy, Turin and Genoa, are also considering implementing a pollution-based charge.

www.comune.milano.it

New Swiss OBU in test phase

Switzerland's CH-OBU-2 project, which started in 2003 and aims to replace the current on-board units (OBUs) being used for the country's mileage-related heavy vehicle charging system, is now moving into its major test phase. Contract winner Siemens Switzerland supplied the first new OBUs in September 2007.

This allowed individual component testing to proceed until the end of the year. The next phase, of integration tests of combined individual components and entire operational procedures, is due to begin in August 2008.

January 2009 should then see a final major field test with some 800 vehicles taking part. Provided that this proves satisfactory, the new unit will start being introduced in the final quarter of 2009, with 2011 as the date for definitive conversion. Until then, drivers will be able to use their existing OBUs without restriction.

www.ezv.admin.ch
www.siemens.ch

Belgium trials text message tickets

Belgian National Railway Company SNCB is trialling a text messaging service for rail ticket deliveries. Initial participants will be frequent and business travellers and holders of monthly or annual passes. They will receive a code by text message to their mobile phone, and show the SMS to on-board ticket inspectors who will be able to check validity on their handheld terminals. A later phase will extend the trial to holders of single tickets.

www.b-rail.be

RFID windscreen inlay will ensure more accurate and secure vehicle access

German RFID component supplier KSW Microtec has launched a new RFID windscreen inlay, designed to give customers more accurate and secure vehicle access into premises. The inlay has a read

range of approximately 6m and a large memory chip.

KSW says it has developed the inlay following demand from customers that require more chip memory space for individual data. The KSW Gen2 chip has an

increased 512-bit user memory, to allow multiple tag reads, faster read rates and greater range for tracking entrances, exits and traffic patterns within closed environments.

www.ksw-microtec.de

New camera counts people

A new traffic camera that can check how many people are in a car underwent an advanced second batch of tests in March 2008 on the A647 near Leeds, England UK. The road became the site of the UK's first car-share – or high occupancy vehicle (HOV) – lane for Leeds-bound traffic in 1998, and effectively enforcing the more-than-one-occupant rule has proved problematical ever since.

As US experience has shown, CCTV cameras can be can be misled by dogs or blow-up mannequins. Vehicle Occupancy Ltd (VOL)'s dtcc camera, which has also been tested on the Forth Road Bridge near Edinburgh, in Scotland, and has a permanent test site at Loughborough University, counts people by



A dtcc unit at VOL's permanent test site at the exit gate from Loughborough University, England, UK

detecting the presence of human skin.

When a vehicle comes into view, it triggers a roadside camera

which immediately illuminates the windscreen area, using two different wavelengths of infrared light and taking specialised digital

photographs that allow the elimination of anything that is not skin. Algorithms ensure that images are head-sized, to prevent drivers trying to cheat by raising their hands across the passenger seat.

If the system finds only one person in the car, it records the numberplate, the time and date of the event, and vehicle speed for storage on a local network or wireless transmission to a traffic management centre for human processing. It also records an image of the driver's head, rendered unrecognisable to safeguard privacy.

VOL Technical Director Dr John Tyrer is confident that dtcc has the potential eventually to enable occupancy-based variable RUC.

www.vehicleoccupancy.com

User-generated content growing

User-generated content is becoming increasingly important for business strategies in the location-based and navigation industries, according to *User-generated digital maps and POIs*, a recently-published report from US-headquartered ABI Research. It will be seen as a key complement to core professionally-produced content such as map updates, points of interest (POIs) and safety camera locations.

In recent months, says ABI, both major players and start-up companies have launched

services that engage user communities in updating their existing content and dynamically creating new content in real time. Many such initiatives are embedded in mobile social networking contexts for sharing real-time experiences.

'Tom Tom has announced that it has reached a milestone of one million map improvements suggested by users via its Map Share technology' says ABI Research Principal Analyst Dominique Bonte. 'The feature allows users to enter map corrections on their person-

al navigation devices (PNDs) while driving.'

On the other side of the spectrum, start-up company GyPSii officially launched its mobile social networking application at the 2008 Mobile World Congress in Barcelona, Spain, in February. GyPSii allows users to create and share location-based content via their mobile phones. It plans to add location-based advertising in future.

www.abiresearch.com

www.tomtom.com

www.gypsii.com

Crash warning for connected cars?

European researchers have staged a laboratory demonstration of a collision warning system (CWS) for cars that could alert a driver several seconds in advance of an imminent impact.

Developed within the EC-supported REPOSIT (Relative Positioning for collision avoidance systems) project, the prototype can use satellite-based positioning and the emerging V2V car communication protocol to find the location, speed and trajectory of nearby traffic.

It uses this data to calculate the

relative position of other vehicles and then extrapolate their location in a few seconds' time. If the result predicts a collision, it warns the driver.

Says REPOSIT coordinator José Ignacio Herrero Zarzosa, of Spanish company GMV Sistemas: 'So far, we've achieved predictions between about one and three seconds ahead of a collision... but anything from two seconds up gives drivers time to react. The system works better at medium-to-high speeds, above 50km/h.'

Even with poor satellite reception, technology has achieved 1.5

seconds warning times in a simulator. Zarzosa believes that performance can improve using vehicles' available sensors.

REPOSIT partners include CRF (Italy), Tadiran Spectralink (Israel), Grupo Antolin (Spain) and JPM (France). Development

work on V2V is being undertaken by the CAR2CAR Communication Consortium, a non-profit organisation initiated by European vehicle manufacturers.

www.istreposit.org

www.gmv.es

www.car-to-car.org

A well-packaged solution

German packaging manufacturer Heuchemer Verpackung has implemented UK company SLR Technology Solutions' RFID-based Smartflow pallet-tracking system to increase the visibility of its plastic pallets and other products. The company claims to be the first to combine plastic pallets and tracking.

www.slr-solutions.eu