



SWEDE SIXTEEN

As the World Congress rollercoaster touches down in Stockholm, **Louise Smyth** and **Nick Bradley** highlight some of the standout sessions, the key product launches, and discover how business has been for ITS in 2009

Illustration by Ben White

Taking place at the Stockholm International Fair from September 21-25, the 16th World Congress on Intelligent Transport Systems is 2009's much anticipated industry showcase. The focus this year is 'ITS in Daily Life' – and there are few better cities worldwide where ITS can be seen in action than in Sweden's capital. The country's renowned position in traffic safety aside, Stockholm is a great example of how transportation technology – when used intelligently – can make a real difference to its citizens' lives.

For example, congestion charging was rolled out permanently in 2007 following a successful six-month trial in 2006, and had an immediate positive impact, cutting traffic by 20%, reducing harmful emissions, producing a surge in the use of public transport, and raising revenue to go toward other local infrastructure projects. This is ITS in full swing, and no doubt there

will be a massive demand to attend the technical tour of Trafik Stockholm, as ITS practitioners from around the world clamor to see and hear for themselves how cordon charging is making a difference.

HIGHLIGHTS

Of course, there are numerous other technical tours and demonstrations, plus over 170 exhibitors and 250 conference sessions to whet your appetite. Over the following 20 or so pages, you will read about some of the must-attend sessions, while we also preview some of the product launches that will be making the news when the show doors open. As usual, *Traffic Technology International* will have a booth in the exhibition hall (Z70), at which we will welcome you to share some of your own experiences of ITS, suggest an article, or even renew your subscription. We look forward to meeting you in Stockholm! ■



How to make sure the heavyweights pay

Weigh-in-motion methods for dealing with overloaded, dangerous trucks on toll roads

➔ WIM has a long history of application in data collection for use in planning transportation infrastructure. This has expanded to use in enforcement in sorting compliant from violating vehicles to increase the throughput and ease congestion at inspection stations. In various applications – particularly within the tolling area – it has long proved itself to be a valuable option for road managers. Using this concept, both axle and gross vehicle weights are monitored.

Various vehicle-weighing strategies include the use of static scales as well as high-speed and slow-speed WIM sensors. The WIM technology deployed, installed, and



weight. There is a direct relationship between the wear and tear on pavements, bridge structures, and other components of the transportation infrastructure as a relationship to the increase in weight of the vehicle or the vehicle's number of axles.

IRD has installed several WIM@Toll plaza systems in India, China, and Korea, and has several systems at the

“Concessionaires support this concept as charging tolls to overloaded vehicles is beneficial in recovering the infrastructure development and maintenance costs”



maintained by International Road Dynamics Inc (IRD) in various locations worldwide includes single loadcells, bending plates, slow-speed WIM scales, lineas quartz, and piezoelectric sensors. Systems in operation use a range of video-imaging technologies, including color, low-light, and infrared imaging. Some use ALPR and RFID to assist in identification. Most systems installed by IRD also include various vehicle dimensioning sensors, such as height sensors, light curtains, tire width sensors, and axle sensors.

Data collection, weight and dimension enforcement, truck weighstations, and toll collection have in the past been separate operations, but integration of these fields equates to efficiency. WIM at the toll plaza (or WIM@Toll) is the most easily implemented and efficient method of collecting tolls based on

planning stages in Africa, the Middle East, and North America. The concept of tolling based on weight is seen as a fair and equitable way to recoup the cost of consumption of transportation infrastructure by a commercial carrier. IRD's bending plates are widely used in China where the WIM@Toll concept has been implemented. Concessionaires and other commercial vehicle operators are in support of this concept as charging tolls to the overloaded trucks recovers the infrastructure development and maintenance costs in the long run.

IRD's successful implementation of WIM@Toll is based on its years of expertise in WIM, automatic vehicle identification, video imaging, database management, and application service provision. The future trend is toward the use of universal RFID in commercial vehicles, and in doing so leading to further integration of transportation management functions via ETC of overloaded vehicles.

TS086
Thurs, Sept 24
 14:00-15:30
 IRTD WORLD CONGRESS
 STOCKHOLM 2009

Safer driving, whatever the weather

A new atmospheric weather detector can detect rain, wind, temperature and humidity

➔ The fieldbus-based WS600 atmospheric weather detector from Lufft can measure a number of conditions. For instance, an innovative Doppler radar sensor can record the type and intensity of precipitation. The direction and speed of wind can also be measured through the use of a non-mechanical ultrasonic transducer, and air pressure can be measured with a built-in pressure transducer. Air temperature and relative humidity are measured within a protection shield, with active ventilation that helps to speed up the response time and ensure accurate measurement of the surrounding atmosphere.

The device has one serial interface within which all

the temperature. Finally, it can measure road surface conditions based on the dielectric characteristics of the cover.

The ARS31-UMB sensor device measures the freeze point temperature by cooling and heating up a small sensitive area on top of the sensor surface, allowing the measurement the actual freeze temperature of the liquid solution on the pavement.



“For traveler information, a service operation platform processes meteorological and road weather data sources, producing TMC-coded warnings”

measured data is reported. The communication protocol specification is open and can easily be implemented into OEM solutions.

The IRSx-UMB series of road surface sensors from Lufft has proved successful in accurately reporting all parameters appropriate to the evaluation of the condition of the road surface. It measures road surface temperature (in °C), benefits from up to two subsurface temperature probes (for a depth of 30cm), and provides waterfilm depth measurement by means of a microwave radar transducer. Freeze temperatures can also be measured via gold electrodes that assess the chemical concentration and conductivity within the solution, while also considering the waterfilm thickness and

For traveler and traffic information, a road weather service operation platform was developed by mickS MSR in cooperation with BMW. This processes meteorological and road weather data sources, which can also have various time and geographical references, producing TMC-coded warnings and messages referred to short road sections based on digital map links or TMC locator.

The platform has been run since 2008 by the Bavarian Traffic Information Agency (VIB), established by the Bavarian Interior Ministry and a consortium of private firms.

To meet the requirements of a premium service, BMW has also run several automatic quality measurement and probe-collecting tours by XFCV vehicles from BMW is called upon. The results show a reliability of over 80% for critical weather warnings.



TS116
Friday, Sept 25
 11:00-12:30
 IRTD WORLD CONGRESS
 STOCKHOLM 2009