

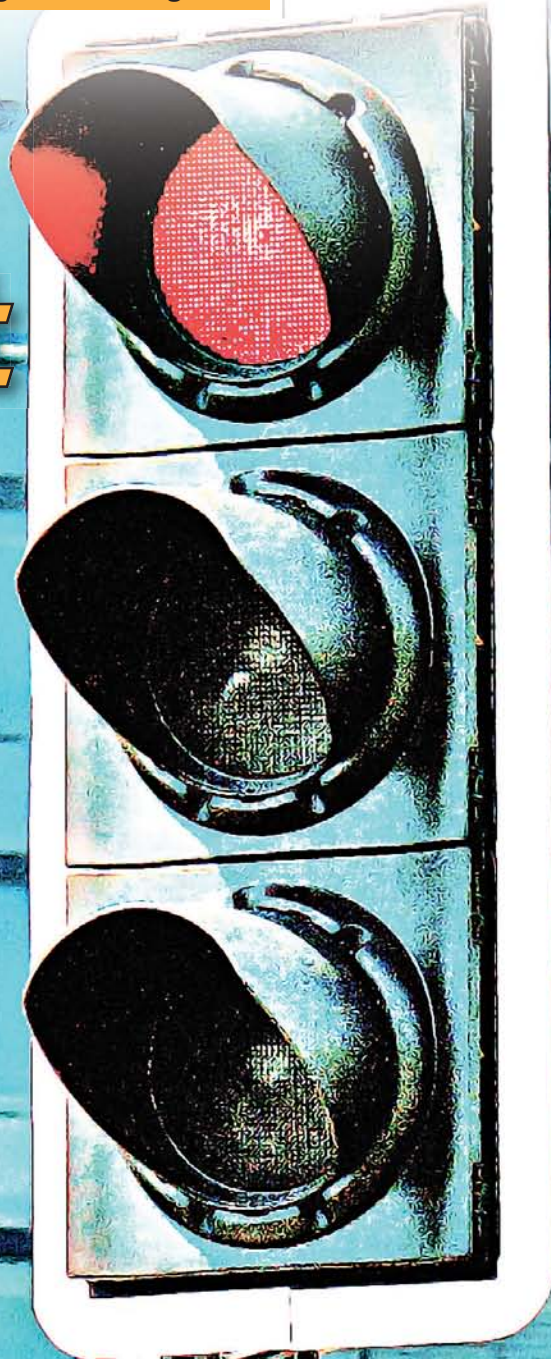
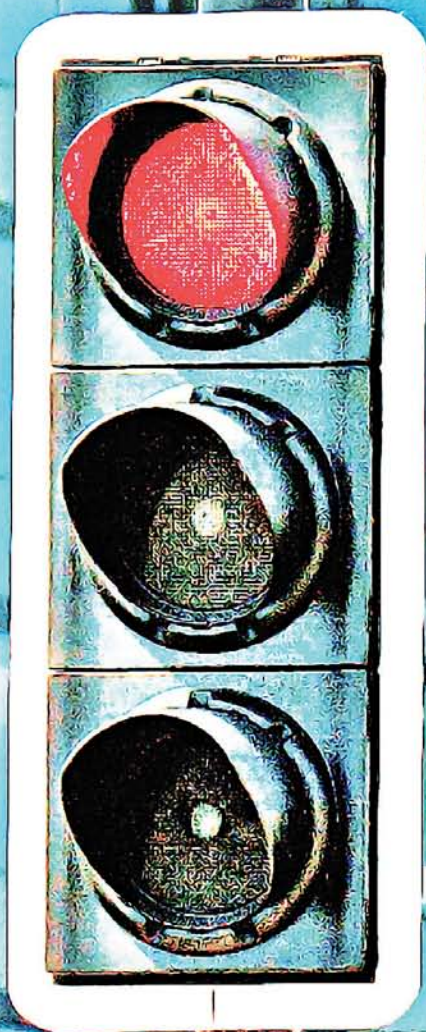
SMART HIGHWAYS

Volume 2 Number 2

The UK's only ITS and Advanced Traffic Management magazine

Signalling investment

TFL'S RECORD SPENDING ON
TRAFFIC LIGHT UPGRADES



BIG INTERVIEW

Steven Norris
on education,
privatisation and ITS

THE ATKINS INVESTIGATION

Is ITS dead?
Leading experts
discuss

ROAD SAFETY

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Alad Limited

Paul Hutton



The editor writes about a new columnist, editorial board members and "letters to the editor"



any thanks to you if you took the time to email about the last issue of *Smart Highways*, which was the first under my editorship. It's always good to get feedback about the magazine in general and about specific articles.

It's been a busy time since the last publication, including a visit to Helsinki to chat to people from across the continent at the ITS European congress. I'm glad to say, all the copies of *Smart Highways* were taken! We're also working on our website, Twitter feed and LinkedIn discussion groups, so there'll be much more to come from *Smart Highways* in the future.

I'd like to welcome our newest columnist, Mark Pleydell (page 18), who has a wealth of experience in the industry. And judging by his first comments, we have a lot to think about when it comes to specifications.

We also now have an editorial board who are here to give their views and ideas about the content of *Smart Highways*. Welcome to Lee Woodcock of Atkins, Nabil Abou-Rahme of Mott MacDonald, TRL's Dennis Naberezhnykh, ITS UK Chairman and MD of Kapsch UK Sharon Kindleyside and local government veteran Peter Speroni. I really look forward to working with them on making *Smart Highways* a must-read publication every quarter.

In this issue we're largely focussing on road safety and self-driving vehicles, mixing details of British initiatives with some fascinating articles from around the world that we can think about to adapt for the UK market. We also hear from ITS UK president and former Transport Minister Steven Norris in our "big interview" in which he has some interesting things to say about the reliance on cost-benefit analysis and the long-term needs of transport versus the short-term needs of vote winning, and we introduce the "Atkins Investigation" getting to the bottom of major ITS issues.

I'm always keen for our readers to have a say too, so your feedback is important. If you've got a story to tell – and when I say story, I mean something interesting and not just a rehash of a sales brochure – then please get in touch because it could well end up on the pages of the magazine.

And despite the positive feedback from the last magazine, one thing you won't see is a letters page, just yet anyway. A friend who edited a magazine in a different field once included letters, except he never received any so had to spend a day inventing them. In the end he gave up and abandoned the letters page completely, only for him to then get his first genuine correspondence, asking him what had happened to the letters page...

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More intelligent traffic signals for London in £300m contracts



Transport for London says its decision to spend more than £300m

on upgrading the capital's traffic lights will expand the use of intelligent traffic signals, and mean London remains at the cutting edge of traffic control technology.

TfL has awarded maintenance contracts to upgrade and maintain London's 6,000 signals to the latest, greenest standards.

Five contracts, covering different parts of London, have been awarded to three companies. Telent will be responsible for West and South West London, Siemens for North and North East London while the South East area contract has been awarded to Cubic Transportation Systems (ITMS).

As well as intelligent signals investment, the new Traffic Control Management Services contracts will also mean new crossings for pedestrians and cyclists. The contract also covers variable message signs and over-height vehicle detectors.

During the timeframe of the contracts, TfL will carry out a range of works to improve traffic signals across London, including:

- Rolling out a new 'gold standard' for all new and upgraded pedestrian crossings, which was launched recently as part of the Pedestrian Safety Action Plan. This will look to include Pedestrian Countdown timers to give pedestrians a clear indication of how much time they have to safely cross the road, as well as ensuring that all pedestrian crossing times take account of national



The contract involves the maintenance and upgrade of more than 6,000 signals across London

safety standards and the level of pedestrian demand. TfL will also expand the use of Pedestrian Countdown across all 33 London boroughs in the coming years:

- Continuing the roll-out of energy efficient LED traffic lights across London to further reduce costs and associated emissions across London. Currently, 13 per cent of London's traffic signals use LEDs and TfL is working to expand this to 100 per cent;
- Accelerating the installation of pedestrian and cycle improvement schemes, such as low level cycle signals, at key junctions across London. The contract will also see the

completion of the roll-out of audible alerts or tactile rotating cones for visually impaired pedestrians at all pedestrian crossings by 2016

- Expanding the use of SCOOT technology (which changes signal timings based on traffic levels second by second) from half of all signals to three quarters by the end of 2018. TfL says that, on average, installing SCOOT at a junction reduces traffic disruption by between 8 and 12 per cent.

Dana Skelley, Director of Asset Management at TfL, said: "London is world-leading when it comes to traffic signals

management and these new contracts will allow us to continue this well into the future.

"By entering into competitive dialogue with the bidders we have been able to deliver huge savings for London, which can be reinvested back into delivering further improvements for all road users."

"Winning this contract is a tremendous moment for telent and builds on our growing capability and reputation for world class levels of commitment, support and know-how," said Chris Metcalfe, Managing Director Technology Solutions at telent. "It positions us as a key technology services supplier to TfL's Surface Transport Directorate in what is undoubtedly a flagship contract anywhere within the Urban Traffic Industry. It is also a great acknowledgement for our people - who have tremendous pride and dedication in what they do - their individual efforts and track record have all contributed to making this possible."

From the Olympic Park to the City of London's 'square mile', the two contracts awarded to Siemens represent an increase of more than double the number of sites currently being maintained by the company and over one third of all TfL traffic control sites across the capital. The contracts also include Europe's largest shopping complex, Westfield Shopping Centre and planned new schemes for the replacement and upgrade of 30 signalised junctions at Tottenham Court Road, the replacement and upgrade of 10 signalised junctions at Kings Cross and Bishopsgate, Brent Cross regeneration and a new Cycle Super highway.



Commenting on the substantial increase of maintenance activity and capitals works for TfL, Tom MacMorran, Sales and Marketing Director at Siemens, said: 'By upgrading a number of signalised junctions to the latest, energy-saving technology and continuing the roll-out of energy efficient light emitting diode traffic lights to further reduce costs and associated emissions across London, the new contracts will deliver significant cost savings to TfL.'

Chris Bax, Managing Director of Cubic's ITMS division said, "We are delighted to continue with our commitment to keep London Traffic moving. Working closely with TfL, partners and stakeholders, the new contract is a great opportunity for us to drive innovation into the service to improve the customer experience for the people of London."

The awards are worth around £317m. This is expected to deliver a saving of around £42m compared with previous contracts. It's part of a doubling of spending on London's road network from £2bn to £4bn over the life of TfL's business plan.

Financial savings made through this contract will be shared between TfL and the boroughs to help accelerate delivery of further improvements to London's roads.

TomTom creates new location system



A new way of pinpointing every location on earth simply and for free has been launched by the founders of TomTom.

Mapcode gives any location a simple and a unique code. The codes are short, easy to remember and simple to communicate. The system was created to cope with countries in the world where there is no universal address or postal system, but can be used in Britain without the cost of using the postcode database. Mapcode gives every location a unique four-to-seven character identification code. The designers say it is accurate to a few metres.

"The idea of Mapcode came about when we saw that millions of locations around the world do not have a recognisable address

and were hard to find," said Pieter Geelen, Co-Founder of Mapcode. "Introducing a Mapcode system means everyone is empowered with the ability to identify any location on earth, regardless of the country or its infrastructure."

"Mapcode is an important development in creating a new global standard that makes it easy for anyone to pinpoint any location. The technology will be supported by TomTom, and we hope to see other organisations adopting it in the near future," commented Harold Goddijn, CEO TomTom.

The Mapcode developers have donated the system to The Mapcode Foundation, which is responsible for ensuring the technology is made freely available to everyone.

TELENT WINS THREE HA CONTRACTS AT ONCE

Telent is describing the awarding of three Highways Agency contracts as a "significant vote of confidence" for the company.

The three five-year deals, worth more than £15m, are to maintain critical roadside technology across the East, Southeast and M25.

It's the first time a company has been awarded contracts for three regions at once - the most the Highways Agency is able to

grant to any one company at a time. Telent completed rapid and successful mobilisation of the project within nine weeks and now manages all routine and reactive maintenance for over 12,000 technology assets, such as emergency roadside telephones, message signs, traffic signal sites, the Highways Agency weather stations, CCTV cameras, tunnels and many more.

NEWS in brief

■ **RECOM's** takeover of URS is expected to close in October. The \$6bn deal will create a business with 95 thousand employees in 150 countries which, according to Recom, will create an "industry leader with the ability to deliver more capabilities from a broad global platform to reach more clients in more industry end markets". Both companies have transport divisions and insist they will benefit from complementary businesses and highly compatible cultures. They do expect to make \$250 savings from synergies across the businesses. They say they will make further statements when the deal is closed.

■ **BALFOUR BEATTY** have been awarded the contract to upgrade more than 30 miles of motorway to become "smart motorway". One scheme in Surrey and Hampshire is designed to reduce congestion and shorten journey times for 120,000 motorists who use the road every day. It's expected to be completed by Spring 2017.



The other will upgrade the M60 (pictured above) and M62 in Greater Manchester and should benefit 180,000 drivers and be completed in autumn of that year. Balfour Beatty has also been awarded the contract to design and build the Al Coal House to Metro Centre improvement scheme in Gateshead.

TEMPORARY JOURNEY TIME SIGNS FOR M1 SMART MOTORWAY WORKS

Temporary solutions provider, Mobile Visual Information Systems Ltd (MVIS), has made its first temporary journey time solution (JTS) sale for long-term constant use on a smart motorway project.

In partnership with Vysionics, MVIS developed a temporary JTS for continuous operation throughout the two-year installation of the smart motorway scheme between junctions 28 and 31 of the M1.

At an estimated cost of between £168m and £225m, the installation by Costain is expected to be complete by autumn 2015.

The temporary JTS was required in order to enhance the experience of 170,000 road users across both carriageways every day for the project's entire duration, as they negotiate the roadworks involved in the transition of the section into a smart motorway, minimising journey disruption and promoting safety.

MVIS sold to Costain eight of its VMS-C signs to communicate with Vysionics' own Vector integrated ANPR cameras via MVIS' Web Studio web-based sign management and control system, providing real time journey information to drivers at strategic points along the route.

The cameras send vehicle number plate data back to a remote server which calculates journey times, and the average

journey time is relayed to MVIS' signs throughout the works. In this way, drivers are enabled to plan alternative routes as appropriate.

When necessary, control centre operators can override the default journey time information display with additional driver information, for example regarding incidents ahead, thereby negating the need for additional signs.

This is the second time that MVIS has worked in partnership with Vysionics on a temporary JTS for application during a smart motorway transition. In 2012, the companies delivered a solution for use during the M4/5

managed motorway installation.

Costain's senior agent for traffic management, Howard Dukes commented "MVIS is establishing a name as a leader in temporary JTS, and the M1 solution is a reliable means of providing drivers with the information they need in order to negotiate roadworks safely and with minimum delay."

Added MVIS' sales manager, Graeme Lee: "This is the first time that we have sold our signs for long-term, constant use within a JTS solution on a smart motorway scheme, and we are tremendously proud to be playing such an important role in this significant project."



MVIS signs displaying temporary journey time technology



Vehicle makers urged to build in protection from **cyberattacks**

The automotive industry is being urged to invest to secure the technology in its vehicles to ensure they are not victims of cyber attacks. Audit and advisory company KPMG is warning that a typical connected car has more than 50 potential access points for a cyber attacker, and this will only increase as more integrated technology is added.

Wil Rockall, Director at the company's cyber security practice warned, "As the automotive industry increases the

level of technology used in new vehicles, the nature of threats also increases, particularly in the form of cyber-attacks. These attacks could potentially allow cyber attackers to penetrate in-car systems, either using physical interaction or also by seizing control over the internet".

He adds that three-quarters of cars stolen in London are done so without keys, as thieves use electronic methods. He suggests it is important cyber attacks do not become physical

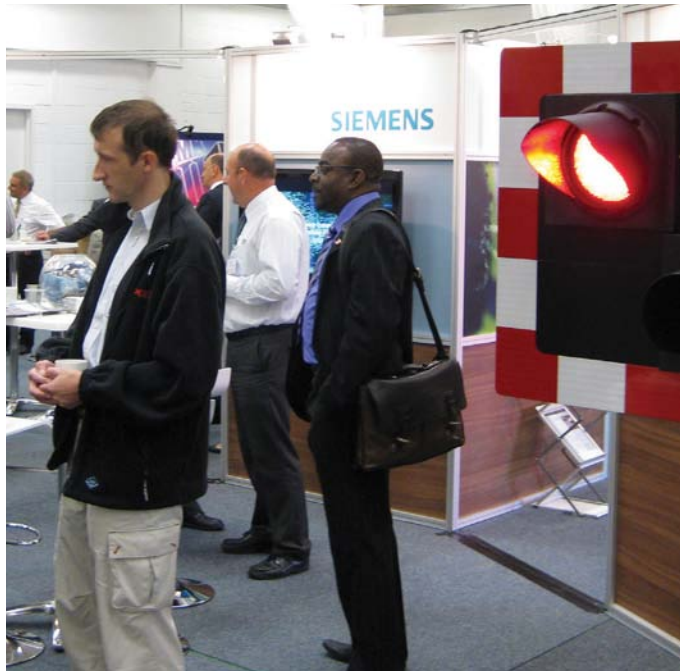
ones because manufacturers are unable or unwilling to design in security. "The industry needs to invest in creating systems that are securely built and well tested, with capabilities that can be improved as threats evolve and vulnerabilities discovered. The public must be able to trust the new systems put in place and be confident when operating their vehicles that a "crash" is not going to be caused by cyber attackers. We should look towards making vehicles 'secure by design'."

Programme launched for JCT Traffic Signals Symposium

The programme has been released for the JCT Traffic Signals Symposium on the 18th and 19th September at the University of Warwick. The event, which is in its 19th year, brings together people with an interest in traffic signals or traffic control.

It consists of around 20 papers from a range of speakers including:

- Right of Weight – HGV extensions in MOVA Dan Preece, Integrated Traffic Services Ltd
- Traffic Open Products and Standards (TOPAS) – a replacement for type approval Adrian Gray, Hampshire County Council and Keith Manston, Siemens
- Birmingham Cycling Revolution Will Martin, Birmingham City Council
- NET2 – Tram Story 2 (Nottingham) David Parkin & Tom Hargreaves, Mott MacDonald
- Design and delivery – a partnering approach Nottingham City Council & Siemens
- Traffic signal bus priority – is it time for a health check? Jackie Davies, Bristol City Council
- A review of SCATS deployment and operation in Dublin Barry McCann, Dublin City Council
- A review of pedestrian walking speeds and time needed to cross the road M R Crabtree, P Emmerson & P Lodge, TRL



- Using technology to fill the gap (maxed out networks, limited road space, increased users and Smart Cities) Imtech Traffic & Infra UK Ltd
- Innovations in bridge mounted detection: Overcoming challenges in South Wales Tom Sidall, Atkins
- How to solve your communications issues and save £1m Imtech Traffic & Infra UK Ltd
- How technology influence and aided in the redesign of Lissenhall Interchange, Dublin Robert Kelly & Joe Seymour, AECOM
- An update on Traffic Signal

Briefing Notes – the final chapter Ian Routledge, Ian Routledge Consultancy

The format of the event will be the same as in previous years and will include a Symposium programme filled with topical technical presentations, a specialist Exhibition and organised evening social events, plus plenty of networking events. There will also be an exhibition with important suppliers from across the industry.

Full details and registration are at www.jctconsultancy.co.uk.

NEWS in brief

Dart Charge

■ The first phase of the **DARTFORD CROSSING** tolling project has been completed. Five gantries have been installed at the entrance to the tunnels and QE2 Bridge. One is to carry signage and four to hold equipment to detect and identify vehicles passing beneath them. The project will see the toll booths removed at the traffic-jam blackspot, replacing them with free-flow payment where motorists pay their toll by prepay, online, phone or in selected shops. It's expected to be live in October.



■ Some 55% of all cars sold in the second quarter of 2014 had **DAB DIGITAL RADIOS** fitted as standard, up a tenth on the first quarter of the year, and more than double the proportion two years ago. DAB radio can be used to receive in-vehicle traffic information which can contain far more data than RDS TMC on FM. The Highways Agency closed its "Traffic Radio" service on DAB and online in 2011.

Connect Plus offers work experience to students

The company responsible for managing and upgrading the M25 network has given 11 students an opportunity to work in the highways sector through the first 'Get Into Highways' programme ever run in the south of England. The scheme, run in collaboration with the

Princes Trust, is aimed at giving young people an insight into highways services and a positive experience of the kinds of opportunities available.

The students from North Kent Construction College gained work experience and professional qualifications at Connect Plus

Services under the guidance of the operations teams based at its Blunts Farm, Swanley and Dartford maintenance depots. Participants, aged between 18 and 24, followed the work of the Incident Support, Maintenance and Electrical and Mechanical teams.

They received their CSCS Green Construction Skills Card, LISS Green Environment Card and Lantra 12A/B Traffic Management certificate. CPS MD Ian Spellacey said: "The 'Get Into Highways' programme is a unique opportunity for young people to gain an insight into an industry."



Track record

Steven Norris is a former transport minister who oversaw London's transport network and rail privatisation. He twice stood for mayor of London and has been on the board of a number of leading transport companies. For 14 years he has been President of ITS (UK)

INTERVIEW BY **PAUL HUTTON**

Q

Firstly, a Tory from Liverpool – how did that happen?

That's because I had a great break in life,

which was the Liverpool Institute High School, it was one of the classic Northern Grammar Schools, it was one of the best schools in the country. When I got an open exhibition to Oxford, they didn't have a half holiday because every year my school got half a dozen Oxbridge entrances. Our generation

Steven Norris was born in Liverpool in 1945, elected as an MP in 1983 and stood down in 1997, running for London mayor in 2000 and 2004

could do that, and I could bore you rigid talking about what real social mobility is about. I don't know yet of a greater engine of social mobility than a good education.

I was lucky enough after Oxford, I went to work in the City and then began working for myself and I made some money. But when I stood for parliament it was because in the days of Harold Wilson if you had done well for yourself as a result of which you were a taxpayer and not a benefit recipient, and in those days I was

fit and healthy and never went near a doctor, I didn't have any children, didn't go near the education system, I paid my road tax, my taxes and national insurance so was a massive contributor and I was treated like a pariah, because I'd had the temerity to do well for myself and I thought "hang on a minute, this is crazy". I've always thought from the outset you never make the poor richer by making the rich poorer. I passionately believe if you keep the rate of tax low, you'll actually take more taxes.



So I was a natural Conservative. A Tory from Liverpool. It's not quite illegal, rare, but I suspect quietly there are a lot more of us than you might imagine.

Q So when you say working for yourself, was transport involved in that?

Not particularly, I was involved with the Ford Motor Company and they taught me business management, and I bought and sold garage businesses. I wasn't a used car dealer, I was somebody who bought and sold companies and I enjoyed that and I had a couple of VW dealerships for a decade or more but my real interest in transportation policy did develop in the five years I was a minister when I came across a fascinating field.

But it does help to have business experience. I'd already been running my business for 15, 20 years by then and I believe that for MPs a second occupation should be mandatory, let alone desirable. I think MPs who have never done anything but politics are rarely firing on all cylinders, it's hard to see how they can be.

Q Well, I think you could say "MPs who have never done anything but politics are rare" these days...

Well maybe coming from a business background to some of the problems that we encounter in the transport world is a useful start. Also I found it a really genuinely fascinating area. We were at the start of the technological revolution, we were at the end of predict and provide, never a good model for looking at road development, we had to find something different. We were right at the start of the renaissance of the railway – I was the only minister who saw privatisation of the railways through from start to finish.

Privatisation of airports, airlines was going on while I was there and I found it fascinating. But if you said to me what made it special, it was the absence of idiotic party political arguments.

Arguments around transport, of which there are many, are arguments around how you can best do the job right, not left and right.



“Twenty years ago you couldn't see technology, now it's everywhere”

We'd already got over the idea of privatisation and it's been interesting that in the 13 years of Labour government not one single bit of that has been repealed and although Labour talks about renationalising railways, Ed Miliband has made it clear that that's not actually on the agenda. I should think not. Now given that that's out of the way we can all talk about how we're going to get a better railway, we're going to deliver better bus services, more information to passengers.

I'm a passionate believer that in the 21st century we have to rethink travel patterns. As somebody who owns four cars in two countries, I still use the tube and bus to get to work. Why? Not because I'm a better person, or because I'm trying to make a statement but because it's more convenient, less expensive, more reliable. Who wouldn't?

That's going to be the norm in big cities, and getting us from our car-based culture to where we are now has been the biggest journey of the last 20 years. Bludgeoning

people isn't going to do it, and trying to portray motorists as pariahs won't do it because motorists are voters and pedestrians and cyclists too, but giving people more attractive alternatives is how you do it and that's what's been a prominent feature of the last decade.

Q How does it work as a politician that you suddenly get given a ministerial role, surrounded by people in the department who know all about the subject and you've got to tell them what to do?

One example would be the Jubilee Line extension which was blindingly clear we were going to have to do. And the treasury argument was “we haven't got the money” and my argument was “we can't afford not to do it”. And I think history has borne me out and I'm very passionate about that.

I remember them saying “but Minister it doesn't go anywhere where anybody lives” and I said “no, that's the point, but they will when you build it. I know you're going to unlock the whole of Docklands, you're going to transform Docklands, transform Stratford and you're going to transform the areas in between. And all of that has happened. Now I don't think I was a genius, or some futuristic seer, I think that was always blindingly obvious but you had to bludgeon your way through the treasury and use the techniques you'd use in private business.

I think where the question is interesting is that you go into a department – I'd spent time in the Home Office, DTI and Environment – and I'm thinking “what's with this?” and, well you listen, you read the brief, you should know what your party wants to deliver and whilst you're doing that there are the day-to-day things that come across your desk that you have to say yes or no to, because that doesn't stop.

My attitude was that if I don't understand this I want you to explain this to me, tell me what the issues are and the great thing I discovered is that the vast majority of civil servants are extremely dedicated bright people who do not want to





force you to their agenda or to subvert what the Government wants to do, they just want to make the thing happen. But if they think that a piece of policy doesn't work, they'll tell you and they'll tell you why. I love that kind of environment.

Q Anything administrative rather than policy that you particularly remember being groundbreaking?

Deciding to scrap predict and provide was quite a step because it was what the department believed in. The department, not Tories or Labour, had since time immemorial believed that the only political debate was how much can you build and when you couldn't build as much as people wanted, you pointed to other priorities and the opposition would say you weren't building enough, that was the only politics there was in transport, whereas saying predict and provide is wrong because you'll never feed the beast enough and you've got to think of managing the need for travel rather than predicting economic growth and trying to satisfy demand – that was a much more intense issue.

Q I heard recently that when you were involved in Government, a public transport initiative's cost benefit analysis included a loss in fuel duty – that sounds insane! How do you battle that sort of ingrained logic?

Any normal person who saw that

“I still use the tube and bus to get to work. Why? Not because I'm a better person, or because I'm trying to make a statement but because it's more convenient, less expensive, more reliable”

would say “that's nonsense”, but it's true that if I build a piece of public transport infrastructure which will cost £x million, it will raise some revenue through fares but it's fair to say those passengers will not be using petrol to drive their cars and therefore the fuel duty will no longer be collected.

Of course the issue is “does society and the economy actually demand that this disbenefit is ignored” and the answer is of course it does. We're actively planning to get to the stage where we no longer have fuel duty to collect because the whole aim of policy is to get rid of fossil fuel.

Long-term vision: Norris maintained the Jubilee Line wasn't worth the £3bn it cost to build – but that it would become worth up to 10 times that with development

Now if somebody's going to say it's wrong to pursue green policy because we make so much money flogging fossil fuel, well you know what reception they'll get. It's like saying “why don't we lower the tax on tobacco because we'll get more revenue and we'll kill more people early so we don't have to care for them on the NHS?” Because if you follow that utterly logical stream I

think it's called *reductio ad absurdum*, reducing the principle until you realise it's just plain stupid.

So you just had to point to the wider benefits and say cost benefit analysis had to be treated as an interesting, relevant view of a project but not the yes-no. And that's what we achieved at that time.

And I think it's worth saying that when Doug Ogilvy gave his farewell speech as chairman of HS2 he said, “I don't think there is a cost-benefit analysis which is adequate to express the cost and benefits of high speed rail because it's a 100 year exercise because the cost is great but the impact is even greater and that impact may not be what we predict because life never is what we predict.” Look at the Jubilee, it wasn't worth the three billion it cost to build, it's been worth 20, 30 billion in less than 15 years.

Q But that's where you have the whole problem with the long-term timescales of transport, I remember there was a bypass near where I grew up where they built a single lane each way to save money in the short term, only to have to build another road later. And the fact projects have such a long life span, yet politics is a five-year cycle, must really show up in transport.

It's probably true. We went through a period of quite savage reductions in public spending, necessary





incidentally, but during those times when there is limited funds available the temptation is to go for what's called TALC – Technically Acceptable Lowest Cost – so once a bid is deemed technically acceptable you take the lowest price, but what that excludes is any sense of value and that's the issue the single lane is all about, short term thinking ignoring value, whole cost of ownership about where you will funnel future growth. That's an example of getting the cost benefit analysis wrong.

Q Let's move on to the mayoralty. You twice stood for mayor of London, now transport has been one of the really high profile things both mayors have been known for – congestion charge, more buses, Boris Bikes – what's been good about two mayors' policies and what would you have done differently?

I did supervise London's transport system for five years and what I realised was we needed strong intervention from a guiding force and I was very strongly in favour of an elected mayor to replace the GLC – the GLC was rightly abolished because it was a monstrosity but wrongly we assumed you needed nothing to replace it, and I've been a strong supporter of the mayoralty ever since. Of course I didn't want to lose either of the elections I stood at and of course I think I could have done the job better than either of the mayors we've had but that's the arrogance of any politician!

I think more to the point you can demonstrate that the most important job the mayor does is around transport and you can demonstrate having a mayoralty has allowed us to deliver things on a city-wide basis. And that's very difficult to deliver without there being a strong mayoral presence. Most obvious of these will be expanding the bus network, putting the funding into that, the timetable systems and the apps that TfL can operate, the contracting system, all of that has been a really important step forward. The night buses, a weekend all-night tube system, all of that comes from the political pressure exercised by the mayors.



Capital plans: Norris during one of his two candidacies for London mayor

“The congestion charge I always disagreed with, and I think history has proved me right”

The congestion charge I always disagreed with, and I think history has proved me right in that I always said it'd have a temporary impact but it would be eroded by time and familiarity and both those things have happened. People just pay it, grudgingly or willingly but they do it. But it was certainly a brave thing to do, and I admired the fact he did it even when his own side people it would be unpopular. He did it because he thought it was the right thing to do and even though I thought it was wrong my objection wasn't just because he'd said it was a good idea.

I'm actually attracted to the Nottingham idea where you charge workplace parking instead. So those who have to drive don't have to pay, but those who perhaps need to be driving but choose to do so because they can park at work will have to pay, and therefore may make a different choice.

Q Among your many roles, you're president of ITS UK – do you wish you were a minister now, rather than when ITS was so new?

I think most of the ministers I've met have been perfectly well aware how technology has been centre stage. I think some of the things I was wary about I've been proved wrong. I was worried about hard shoulder running, concerned there would be serious accidents but the managed motorway project is well developed and I was unduly cautious. I think with all new technologies there will be trial and error but ITS is now at the centre and remember Alasdair Darling, who I had a lot of time for when he was Transport Secretary, produced a white paper that said 20 years ago you couldn't see technology, now it's everywhere. It's the basis of policy, even the congestion charge is an ITS project. ANPR, the way we tax vehicles, manage traffic, take tolls, all this is second nature.

Q You're in your 70th year now, how much longer are you going to be doing all this? When will you decide to lie on a beach instead? (He smiles) When the phone stops ringing, and not until!



Jennie Martin



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ITS (UK)'s Secretary General explains how working virtually can help us all, but isn't a silver bullet

At this year's European ITS Congress in Helsinki (see page 50) I was unlucky to be moderating a session at 9am the morning after the gala evening, but lucky in that the session topic was New Approaches to Learning and that we covered two projects which certainly are moving ITS learning forward.

AustriaTech, an agency of the Austrian Federal Ministry for Transport, Innovation and Technology, spoke about their work with mobile learning sites for school children. Building on the principles of learning through exploring and discovering, AustriaTech is developing a mobile learning facility – a van, in short – for school children. The intention is to promote STEM subjects in general and mobility and ITS in particular to young people and hopefully steer them in that direction when it comes to career choice.

The van-laboratory provides equipment and devices for the children to experiment with technology-enabled mobility. They will learn about personalised route planning, traffic simulation, digital mapping and driver assistance systems including connected vehicles and cooperative systems.

At the time of the Helsinki Congress, preparations were nearly complete and the facility will be used for the first time when the 2014/15 school year starts.

One of the germs of this idea can be found at the 2012 ITS World Congress in Vienna, when AustriaTech and the Ministry were very active in using the Congress to inform young people about ITS and promote it as a career.

There was an extensive specially designed programme for student delegates to the Vienna Congress, and also activities for school children. AustriaTech created a "serious game" entitled Smarter on the Way (also the Congress slogan) which children played by making transport choices to reduce their carbon footprint and take on 10 challenges built into the game. The game was played by about 350 children during the Congress and proved very popular.

The Swedish contribution to the session came from the Swedish Transport Administration (Trafikverket). The STA is working on a programme of virtual ITS training for its staff, including virtual study trips. To bring staff together over the long distances often involved in Sweden is time consuming and expensive. Some training and team-building activity will always have to be done face to face, but the STA is investing in virtual activities to enable more training and learning to be offered to staff.

The talk at the Congress referred to the first of the planned programme of virtual study trips, which will enable attendees to learn about a new environmental message service offered in

the far northern town of Umeå. The target group for the virtual trips is traffic planners and engineers and the STA is happy for local authorities and relevant consultancy staff to join in the trips with the STA's own staff. It even envisages offering the virtual study trips to members of the public once the programme is bedded in.

The virtual training package consists of web media facilities and enables the participants to see the ITS installation via video link while fully operational. In the case of the Umeå installation, the subject of the virtual study trip is the traffic management system which provides information about alternative routes to help mitigate high levels of air pollution in the city centre, in real time as the pollution occurs.

Umeå is located in a river valley and the geographic situation and prevailing weather patterns lead to problems with poor air quality in the city centre. Re-routing traffic can help address these problems when they occur. This is obviously an ITS implementation which can be replicated elsewhere in Sweden with similar problems, and is therefore a good candidate for the first virtual study tours.

The virtual study trips are designed to work within the STA's existing ITS Manual for staff and other training options already in use, including web based ones.

At the end of our session, we had an interjection from the floor to the effect that it was all very well talking about these Swedish and Austrian initiatives but we had already failed because the Congress itself – 2,500 human beings in the same conference centre on the northern outskirts of Helsinki for the same four days – was hopelessly outmoded and should have been replaced with some sort of web based remote learning facility years ago. In short, what the heck were we all doing there?

This I think is so wrong that it is actually a useful point to consider. These mega events combined with virtual meetings, visits and learning are the way forward. The personal relationships which create the trust and respect essential to useful collaboration have to have a physical element – you need to meet occasionally to nurture them. But one single four-day trip once a year to meet all your contacts is a super-efficient way of doing this, much more so than a calendar full of travel and meetings, and more conducive to a happy life than residing at the airport.

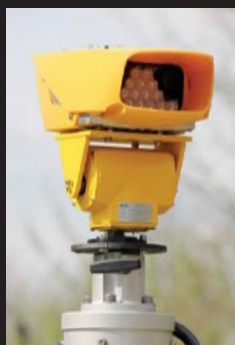
The alternative championed by our friend in the audience, of not meeting physically at all on the grounds of that doing so is somehow "old fashioned", is a great example of valuing style over results. Just as a tweet with a link is useful in its particular way but cannot replace 2000 coherently arranged words if you want to actually understand, say, an ITS implementation.

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Dr Stephen Ladyman



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The former Transport Minister has an idea to help authorities in their requirement to hit their carbon emission reduction targets

Once upon a time I was an IT Consultant. Although I've not practiced at the sharp end of IT for many years I retain the technologist's love of technology.

Of course, when technologists reach management level they soon come to realise that new technology cannot be justified solely on the elegance of its design or because it represents a 'leap forward' from the technology it is intended to replace, it has to pay for itself. The business case for a technology investment is every bit as important as the technology case.

Later in my career I became a politician and came up against the hard reality of national budgets and competing demands on limited resources.

It was at this point that I realised that when governments or local authorities are considering technological solutions there is a special derivative of the business case that must be made, the political case.

Which is where the Climate Change Act 2008 comes in. It requires that UK carbon emission levels be cut to 80% of their level in 1990 by 2050.

Not only that, it puts that responsibility on the Government and requires the Government of the day to report back to Parliament every year on progress.

A carbon reduction target of this magnitude is no small matter and its impact on the highways of the future will be immense. I have not heard or read a serious authoritative suggestion that the target can be met without every road vehicle in use being an electric or a hydrogen powered vehicle by that time.

Which means, given that vehicles have about a 10-year life span, that by 2040 every vehicle sold must be electric or hydrogen powered and, in the meantime, we need to have made serious progress with replacing passive vehicle safety systems with active safety systems and using smart technology to address congestion.



“ What I can predict with confidence is that as the carbon emission deadline gets closer... intelligent transport solutions and smart mobility will have a massive role to play ”

I can't say that I believe we are on target. 2040 is just 26 years away, but most cities have yet to adopt an agenda that would suggest their intention is that their citizens should be able to travel freely using public transport alone or using public transport and zero emission vehicles by the target date and many of those cities that have adopted a smart city agenda have not yet prioritised smart mobility.

What I can predict with confidence is that as the carbon emission deadline gets closer and closer government will insist that transport decisions are increasingly skewed towards achieving carbon reduction targets and intelligent transport solutions and smart mobility will have a massive role to play.

So, if 'smart' solutions offer such big advantages for the environment, citizens and

government, why are some local authorities so slow to grasp the nettle? Budgets and competing demands on limited resources are one reason, of course, but another is fear of implementing solutions that are quickly seen as redundant.

No decision maker wants to recommend the purchase of what subsequently is seen as the 'BetaMax of traffic control systems'.

So what is the solution? Adherence to open standards, where they exist, is one. At least then, when you upgrade or add new kit it should be able to use your archived data or be interoperable with legacy equipment. But there is another, and possibly better, solution.

Don't buy the kit, buy the data. Data as a Service means you get the data you need, in the format you want it, and the risk that the equipment needed to collect that data might become redundant is carried by someone else.

But whether you buy or lease kit, or buy data or services, there is no time to waste – the Climate Change Act clock is ticking.



David Bonn



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David Bonn asks whether we can manage demand to enjoy the summer reduction in traffic during other parts of the year

Schools and Universities were largely on holiday so traffic took their traditional profile change. Going to work was almost a pleasure but we knew this wouldn't last for long.

Recognising the journey time benefits in the summer makes me wonder if there a way we can get people to change their travel patterns at other times of the year when we, however reluctantly, accept slower, overcrowded journeys as being the norm? It's interesting that the use of Travel Demand Management (TDM) is seen as a key management tool for the recent major sporting events we have in this country such as the Olympics & Commonwealth Games. Why then can't we use Travel Demand Management as a significant tool to support the easing of congestion throughout the year leading to a gradual but permanent change in travel behaviour?

The benefits resulting from the use of a culture changing approached rather than the deployment of infrastructure may be difficult to convince the money people but we are at time in the management of journeys where we need to recognise that behavioural change must be driven forward and we need to understand how best to achieve that change, to understand better what is effective and what is not.

In many ways we don't have enough empirical data to demonstrate that TDM delivers effective and sustainable results over the longer term. My view is that we have reached the point where a major scheme should be implemented on a city wide basis to demonstrate the effectiveness (or otherwise) of TDM over a longer period?

If we identify a suitable city, instrument it initially to gather base data we will then have the data we can compare against. This base data can also be used from day 1 to better manage traffic in the city. Over time we will see the impact of the different approaches implemented as part of the TDM scheme on traveller behaviour.

Having delivered many ITS schemes in a variety of forms both at an Urban and a National level I strongly feel that the infrastructure only approach of many current ITS projects will not deliver the step change we need in travel behaviour.

To demonstrate the effectiveness of TDM as an element within a wider scheme we need to identify those groups whose travel patterns we want to see changed and to then stay changed.

To do this there will need to be serious consideration of the potential impact, the effect on business, the nature of the messages and how we will deliver the messages effectively.

We need to identify the win win solution for all parties, we can't simply create network capacity for another traveller group to then fill the released capacity to then have the same result of journey time congestion. We can't for example focus on freight alone nor can we focus on commuters alone, we need to view each group as part of the overall scheme and influence them accordingly. The content and delivery channels for these messages need careful consideration.

We will also need to engage practically with the city transport authorities, both local and national, to support activities on a wider multi-modal scale as part of the overall TDM scheme.

Given the necessary scale of such a scheme this will not be a quick scheme nor will it be a cheap scheme if we want it to deliver tangible benefits and meaningful data. It can't be

seen as an academic exercise on its own nor can it be a modelling exercise as we need to do real engaging and messaging to determine what is effective and what isn't.

The elapsed time of the project would need to be a few years to enable the before, during and long-term impact to be measured, recognising that things are changing

around us all the time and the impact of these other changes will need to be factored into the analysis of the TDM driven results. This will require some carefully thought out analysis.

With the current desire for a City to be seen as "Smart" we need to ensure that the way we support travellers making their journey choices is Smart. The time is right for us to confirm what many of us suspect, TDM should be a key element of the decision influencing process of travellers.

Cultural change should be one of the deliverables of any mobility solution these days and that is perhaps an area where the traditional "engineering" approach requested by clients and delivered by providers would benefit from embracing new ideas as part of the overall solution.

If we introduce the potential health benefits achievable and necessary given the increasing concerns about the nation's health the cost benefit analysis of delivering cultural change becomes much less of an issue. Perhaps the health issue is a topic in itself for the next edition.

“ Why can't we use Travel Demand Management to support the easing of congestion throughout the year leading to a gradual but permanent change in travel behaviour? ”



Mark Pleydell



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Leading British consultant Mark Pleydell draws our attention to a change in Government policy which may have unintended consequences

Something quite important is happening in the traffic control and ITS industry, something that may not have reached you yet and is likely to affect how you do business. In my first column for *Smart Highways* I want to raise awareness of this upheaval, and how it is being addressed and most importantly, what you as a reader, someone who makes, uses, or advises on traffic control and ITS, should do.

It started a couple of years back with a government policy change within the DfT.

Those of you who have ever designed traffic control equipment, designed junctions, procured traffic signals, implemented a UTC system, needed data from the street or wanted to display signs to drivers, will have used or understood the role of the Highways Agency specifications, the TR2500 series. These cover the key functional requirements of everything from traffic signal controllers down to tactile units for the partially sighted, and they even, importantly, cover the interfacing of one item to another.

From 1st April 2015 the DfT and HA are no longer going to support these important documents.

Were this not disruptive enough, the DfT is, at the same time, withdrawing from the process of Type Approval. No longer will manufacturers have to apply to the HA for approval, albeit that the most recent process is largely a self-certification process.

For many years this has allowed manufacturers to develop products that will fit into the existing panorama of equipment, it has provided users with the confidence that equipment that is asserted to deliver a service will do just that: that a new product can be integrated into the existing systems.

And, when this process has missed a technology change, for example in the late 1990s the interesting situation that arose when using existing signal controllers to lamp monitor the then new LED traffic signals, the echos of the disruption still affect us. Many authorities still only have partial take up of LED signals because of this specification gap 20 years ago.

These specifications, this approval process: They are going; being discontinued; they will 'cease to be'.

And yes, there are a number of European specifications that are applicable, but these do not cover the full range of equipment, and each country still has to select its preferred

national classes of operation from these. These are a foundation but they are not a complete substitute.

So when the sector first became aware of this change two parties in particular began to respond. The Traffic Systems Group (TSG) are the local authorities' forum for sharing knowledge and providing advice to Government, manufacturers and users from their user perspective. The Association for Road Traffic Safety and Management, (ARTSM) represents equipment manufacturers, the suppliers, and provide a corresponding role, offering advice and sharing knowledge with Government, users and their own membership. TSG & ARTSM agreed to set up a joint body to find a way forwards, a process that would give some continuity to the specification and approval philosophy. This was strongly supported by both the HA, who not only maintained and ran both process on behalf of the DfT, but are also equipment users in their own right,

and the DfT itself, to the extent that in the recent consultation document on the next version of TSRGD, this new specification and product monitoring process was specifically mentioned by name: TOPAS (Traffic Open Products & Standards).

By the time this column is published TOPAS should be set up. Between now and the withdrawal of the current specifications and approval process TOPAS are undertaking to set up a new set of specifications. These will be procurement specifications, and will maintain definitions of functions and interfacing, they will work to achieve a seamless transition. And as type approval fades into the distance, a new process, 'compliant product registration' will emerge, allowing manufacturers with new products to get independent confirmation that their product do what the specifications say. Existing products will be migrated into the register of compliant products. Users should reference the new specification in their procurement documents, again, allowing a relatively smooth transition and maintaining a uniformity of traffic signals & control functionality, interoperability and backward compatibility.

I have only covered the key points here, the process is obviously a bigger and more detailed one than I am making it out to be. I will try to provide updates here in future columns.

And you, what is your part? Please make yourself aware of TOPAS, and its activities, use its specifications and product registration process. Then use it.

“ Were this not disruptive enough, the DfT is, at the same time, withdrawing from the process of Type Approval ”

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Is ITS dead?

In each issue of Smart Highways, our editorial board member Lee Woodcock from Atkins will make a proposal about issue facing the ITS industry and we will speak to various experts on the subject to get their thoughts

WORDS BY **PAUL HUTTON**

Is ITS dead? That question, for someone who has been involved in the sector for many years, could be considered career suicide," says Lee, but he suggests that ITS as a sector has had a challenging few years, and argues this was in part of its own making, "we have struggled for too long to explain the benefits and outcomes that ITS can deliver," he says.

ITS is everywhere but, asks Lee Woodcock of Atkins, does the driver see the benefits?

"That said we are now seeing some growth return and technology is key to some solutions eg Smart Motorways," he says, but is this recognised across the board? "It still feels", says Lee, "that we haven't learnt the lessons from the past and we run the risk as a sector of not fully realising our potential."

Lee Woodcock insists he is passionate about ITS, but that it needs to punch its weight, be recognised for the value it can add

but that it needs to change. He argues that there needs to be a stronger connection between the role of technology as an enabler across the modes of transport and a focus on the customer experience underpinned by a discipline of formal behavioural change techniques.

There is an opportunity ahead of the ITS sector in the context of Intelligent Mobility, and whilst Intelligent Mobility is not ITS, ITS does have a key role to play.



So, with that in mind, we spoke to three other leading industry experts, consultant George Hazel, Stephen Hart of TSB and Natalia de Estevan-Ubeda at TfL.

Q Is ITS dead?

Natalia I don't think ITS is dead but I do think it has definitely changed, so much so that I am not sure the name reflects what is happening anymore in an industry that is embracing technology and innovation in very different ways. Take the case of apps for instance. Apps that are used for finding your way, looking at a timetable, travel disruption etc – are those apps “ITS” – most of us are calling this “connected mobility”, “intelligent mobility” etc... but we are effectively utilising Intelligent Transport Systems, or are we not? What is happening in my view is that the world, the ITS world, as we know it, is expanding, reaching out and tapping into completely different industries, data sources and applications. So for me, it is not a matter of pronouncing ITS dead or alive, but a time to consider if a rebranding is timely to keep up with developments and stay current and forward looking.

George This is a time of unprecedented opportunity for ITS so the response to the question is a definite “No”! Why is this? Global trends are moving transport services from the traditional operationally based to model to the world of mobility based on user focused, seamless and valued services and products. This is a model based on retailing principles and is bringing new players into transport and mobility. One of the key trends is the demand for personalized services so in the future we will all have one mobility account, shaped to our personal needs and values delivered through smart mobility. The management of this emerging system needs an understanding of retailing methods – choice models and incentivisation, gamification, co-design, back office systems and personal profiling. It also needs an understanding of data management and secure payments.

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Atkins has a proven track record of successfully planning, designing and enabling urban transport and environmental improvements across all scales of developments. Successful transport strategies examine the journeys that people need to make in all aspects of their lives and provide realistic travel options. The services provided to clients range from strategic policy advice and performance management, through all aspects of demand forecasting, behavioural analysis, to accessibility, transport for land development, streetscapes and traffic engineering design.

Atkins supports the Atkins Investigation in *Smart Highways* because the investigation, like Atkins, gets to the heart of an issue in order to understand it, and then utilise the knowledge and understanding to help its clients translate and navigate difficult issues in order for them make the right decisions safe in the knowledge they have the facts.

This is a world of retailers and data managers like Google and they are moving into this area at speed. Uber is just the start! Telco companies and energy companies are also entering the smart mobility market. Telco companies see mobility as part of the supply of lifestyle services and energy companies see mobility systems as an extension of smart grids. ICT companies see vehicles as an internet of moving things all connected and talking to each other, including the people and goods being moved. This is the new world of mobility. It is a disruptive model with many sectors colliding and the next few years will be exciting and messy.

The spectrum of smart mobility spans four main areas – smart vehicles, smart networks, smart goods and people travelling on the

Contributors in this article write on their own behalf and not on behalf of Atkins. Editorial control remains with *Smart Highways*

networks and the new emerging sector of mobility management. The latter is the key area which will shape the system and generate most of the money. In this new world ITS has a major role to play.

Stephen I need to qualify from the outset that I think there are excellent companies in the UK that offer solutions to traffic management in their own right and offer extraordinary technical and innovative solutions. The confusion falls under this overarching function of ITS (Intelligent Transport Systems), which is ill defined, or brand or value isn't clear...

Q What are your thoughts on ITS as part of enabling policy outcomes?

Natalia Policy responsive ITS or technology and comms interventions are one of the ways to reach our outcomes. The public sector is facing some challenges not only keeping up with innovation and, in some cases anticipating how new technologies may impact the business and the services offered. There is a fantastic opportunity to innovate from within, but only if we can adapt the way we deliver.

George This new world of mobility is being driven by the private sector and it will be difficult for the public sector to keep pace with developments. There is a question, therefore, as to what policy outcomes are driving the systems, who is forming them and how are they being delivered.

The key thing at this stage is for ITS providers to be aware of what's happening and to start building relationships with the key players in the private and public sectors. ITS has potentially two opportunities in this emerging market – firstly as the provider of smart networks that link into smart vehicles and users and secondly to be part of the mobility management providers at the core. It is the latter opportunity that is more difficult, non-traditional but more important in terms of being at the heart of the system.





Stephen The difficulty with this overarching function is it is not clear what the product is, if you are buying ITS what is it you are actually buying? Unlike the automotive sector for example. Some in the ITS industry would say that ITS is radar, sensors, traffic management, APNR, V2X, V2R, V2I, managed motorways and so forth, but if I wanted to buy an APNR system for example, I wouldn't go to an ITS shop or showroom I would go to ANPR camera provider wouldn't I, and even then I may never come across the term ITS or even know that some may say I'm buying ITS. Another example is that ITS would argue that Sat Navs are ITS, ok fine, but I'm sure the likes of TomTom saw a market and developed Sat Navs, not an ITS product – furthermore the messages of what ITS is varies within it depending on the level of participation, or passion that you may have within the industry.

Q ITS has often struggled to articulate the benefits it delivers, what do you think needs to change?

George In terms of articulating the benefits from ITS the industry needs to build its case on meeting the personalised lifestyle needs of users – both personal and businesses. We will need mobility systems that meet these needs and ITS is part of that so we need to show that ITS systems deliver these needs.

Natalia Well it depends what we mean by that. As with anything, the key is in defining and scoping. When we cannot articulate what ITS is then of course being specific about its benefits is going to be a challenge. However, when we frame it and scope it then it is a different matter. I would argue the question mark is perhaps not in the benefit measurement but in our ability through the years to define and scope ITS.

Stephen ITS in my mind has always struggled in identity – portraying its 'brand value' – to the bystander it is not clear what ITS is unless you are



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part of the sector, so it's a very closed and narrow community – one could almost associate it with a 'cottage industry', which could well be an issue, so to say is ITS dead is hard to clarify as not knowing what ITS is, how can you say is it dead? This is may be why policy struggles with ITS, the question has to be "what is the problem that ITS is trying to fix?" ITS offers many technical solutions and flexibility in its adaptation, but suffers with too many individual technologies and businesses pushing the ITS button onto a market that in many cases hasn't got the resource, clue or funds to see the benefit, hence the frustrations with them but also policy and regulation in that they can't see it, or get it! so it goes in the too difficult box!

Q What do you see to be the biggest opportunity ahead for the ITS sector?

Stephen The opportunity for this function is to think about the language it uses and the customers it tries to engage, for example intelligent mobility requires a number of converging industries to collaborate in the integration of a number of components into an intelligent system, ITS is a number of individual components usually bolted to infrastructure and relies on back office to make sense of the information that they provide, in many ways fragmented, and the difficulty here is calling this a system, yes, there are a number of components in a road network, but it's a stretch to call it a system, or intelligent as systems generally are inter-connected or integrated so providing intelligence within those systems, so saying Intelligent mobility is ITS is not strictly true as the intelligence bit seems to be missing, the question back has to be – what is ITS? The biggest opportunity for ITS going forward is to take stock of its capability, supply chains and to develop what can only be described as a value chain and capability analysis, to establish a market framework that gives greater visibility and clarity into the industry, to define its aims, scope and offerings



into a language that is understood not only by the ITS businesses, but to reach out to customers that can visualise the market and products to meet their requirements. I think ITS in the UK would benefit by showing how it adds value to GDP, number of employees etc, a real business case, and showcasing cost effectiveness and value to how systems within it provide solutions not only to traffic management but to other modes and sectors. It could also act as a broker into industries that are considering these types of technologies, such as rail, Intelligent mobility in automotive – intelligent cars, shipping and so on, create the economies of scale in developing a supply chains that can offer cost effective components.

Natalia In my view, there are good opportunities ahead involving cross-industry technology applications, social media and Big Data and crowd sourcing and arising from the Internet of Things (IoT).

George The single most important thing the ITS industry can do is to make sure they understand this new mobility market and the key players that are driving this market. Look at what Google are doing. Look at the strategies of all the global telco companies – all moving towards the provision of lifestyle



services, including mobility. Once you understand how this market will work, and understand that it is very different from the systems we know now, then partnerships and new business models can be developed.

Q What single thing can the ITS sector change about itself to overcome the issues of the past?

Stephen As mentioned at the beginning this about ITS as an overarching function, not the strong capabilities of the UK industries that provide world class technologies. This I feel is about making visible capability to customers that seek solutions, rather than tech push. What is for sure, in the future the UK will need some very clever stuff to unlock pinch points and limitations in network capacity. Fragmentation needs to be overcome to create greater traffic flows and ways to balance the national traffic and modal networks needs focus.

Natalia We need to move faster with times and developments. This industry is risking a feeling of

stagnation if we are not careful. There is also an issue with the branding and the meaning behind ITS which needs to be considered, again, not necessarily to be discarded, but better defined, encompassing a more diverse supply chain in addition to the traditional suppliers.

Q Do end users (ie. drivers and passengers) need to clearly see the ITS that is being used, or do they just need to benefit from it?

Natalia My answer to this is "it depends" – there may be times when telling the users about something may not lead to any benefits, for instance, updating the user community on software changes to a system interacting with road infrastructure may be pointless, however, informing them of the changes they may experience as a result may be a good thing. In some other cases, sharing innovative technology interventions maybe desirable to share a sense of excitement and the fact that we are ahead of times, forward thinkers etc... Huge consideration needs to be given to the outcome of any communication in terms of customer perception, possible behavioural changes and associated impacts.

Q Is this a particularly British issue, or something you think is applicable around the world?

Natalia My experience is that this is a wider issue around the world.

George This is happening and it is global. It is exciting, disruptive and threatening with huge implications for the ITS industry. But it also holds immense opportunities for ITS.

Stephen The opportunity for ITS in the UK is to demonstrate clarity and capability of the SMEs and supply chains in this area, but also to inject intelligence into dumb



DR GEORGE HAZEL

OBE is a fellow of the Chartered Institution of Highways and Transportation. He has extensive experience in all aspects of transport and communications, both urban and rural. He has specific expertise from around the world in strategic planning and policy development, the integration of transport with other related areas, the prioritisation of projects with respect to economic, environmental and social objectives and innovative funding of transport infrastructure. He has studied all forms of transport policy in many countries, both the successful and the unsuccessful and has gained a detailed insight into the key issues and influences. He has worked in the public, private and academic sectors at a senior level

systems through the integration of components through Smart interfaces and seek to marry capabilities from other sectors to meet the UK's future challenges in how it moves people and goods more intelligently in a way that strengthens and sustains economic growth through transport intelligence.



LEE'S SUMMARY

I think for me the views of George, Stephen and Natalia reinforce that ITS is not dead and has the potential for an exciting future ahead of it, but it does need to change if it is going to realise its potential.

We have a fantastic capability in the UK to realise this potential but it's going to require change, we are going to have to grasp emerging technology trends, maximise the data sets available to us, but focus on creating new solutions through collaborations that deliver value to customers, to people and maybe in doing so ITS will be able to articulate more effectively its proposition and benefits it delivers!

Please feel free to join the debate at <http://angles.atkinsglobal.com/opinion/is-its-dead-long-live-its>
Email lee.woodcock@atkinsglobal.com



STEPHEN HART is a specialist in innovation and technology, currently the Innovation Platform Leader in Integrated, Smart and Connected Transport at the Technology Strategy Board. He was previously the Marine industry lead and successfully launched the first ever CR&D competition for the UK Maritime and Marine sector. Prior to this he was the Innovation Platform Leader for Intelligent Transport Systems and Services, technical advisor to the Department for Transport in environmental policy and Head of Technology Programmes for the Energy Saving Trust. He has successfully delivered large scale public and private sector projects. These include the first Land Rover Freelander Diesel, Mini Tbi, Rover 800 wiring systems and the UK's first all electric delivery van whilst working with the Department for Transport on the Low Carbon Vehicle Research & Development Programme.



It's about (real) time



Real-time simulation is demonstrating the potential to transform traffic management. And the ability to forecast and simulate network conditions means that rather than simply reacting to congestion, system managers can now anticipate and alleviate problems before they even occur.

WORDS BY **MATTHEW JUCKES**

In 2010, Interstate 15 in San Diego was chosen as one of the US pilot sites for developing, implementing and operating an Integrated Corridor Management System (ICMS). The I-15 ICMS project is one of the first working examples of management integrated with prediction, which allows the anticipatory administration of an area that is very complex in terms of transport and mobility.

This project aims to operate and manage individual transport systems as a unified corridor including the highway network, toll lanes, the surrounding arterials and the public transport network in the area. The I-15 ICMS is designed to optimise capacity and efficiency, reducing delays and obtaining more reliable journey times

The I-15 around San Diego has some of the most advanced ITS infrastructure available

without the need for investment in additional infrastructure (namely, more lanes for private traffic).

The general vision of I-15 ICMS is the use of real-time tools to obtain predictions for the whole project network in order to obtain strategies for managing congestion pre-emptively. For example, combining the controls of ramp access to the highway with changes in the control plans in the arterial network to manage recurring rush hour congestion, together with route diversions, properly monitored to avoid greater disturbance in non-recurring incident situations.

The San Diego Association of Governments (SANDAG) is leading the project and works alongside the Department of Transportation (US DOT), Caltrans, the Metropolitan Transit System, the North County

Transit District and the Cities of Escondido, Poway and San Diego with Delcan Corporation as project integrator.

AWARD WINNER

Following several years of site selection and project development, the Interstate 15 Integrated Corridor Management (ICM) project went live in San Diego in March 2013. Led by the San Diego Association of Governments (SANDAG), the ICM project has now been operating successfully for a full 18 months and has won the ITS America Best of ITS award for Best New Innovative Practices in April 2013 and the CTF award for Operational Efficiency Program of the Year in May 2014.

Focusing on a 20-mile stretch of Interstate 15 between San



Diego and Escondido, the project introduces 'smart' traffic management technologies and concepts never used before in the US: the project's pioneering Decision Support System (DSS) uses strategies such as network traffic prediction, online microsimulation analysis and real-time response strategy assessment to give system managers comprehensive awareness of the current and predicted future performance of the entire corridor. Rather than reacting to traffic conditions, managers can now anticipate problems before they arise and take preventative action using ICM strategies such as responsive traffic light synchronization, coordinated ramp metering or bus priority on arterials. One of the reasons the I-15 was selected as a test bed was that the I-15 environment includes some of the most advanced ITS infrastructure available: dynamic ratio ramp metering, adaptive control on roads parallel to the interstate, reversible high occupancy vehicle (HOV) lanes and high occupancy tolls (HOT) with dynamic pricing along with systems for disseminating advance information about traffic incidents.

Core to the ICM solution is the ability to forecast and simulate congestion and capacity imbalances in real time or near real time. The DSS allows continuous predictions every 5 minutes, to monitor and anticipate congestion hot spots and launch evaluations of the available strategies to select the best response, therefore minimizing congestion and guaranteeing more accurate journey times for both drivers and users of public transport. The multimodal Decision Support System (DSS) integrates two tools: the Delcan Intelligent NETWORKS ATMS, for field device monitoring and control, centre-to-centre data fusion, event management and response plan generation, and Aimsun Online, a tool from TSS-Transport Simulation Systems. Aimsun Online uses live data feeds and simulations to dynamically

“ The DSS allows continuous predictions every five minutes ”



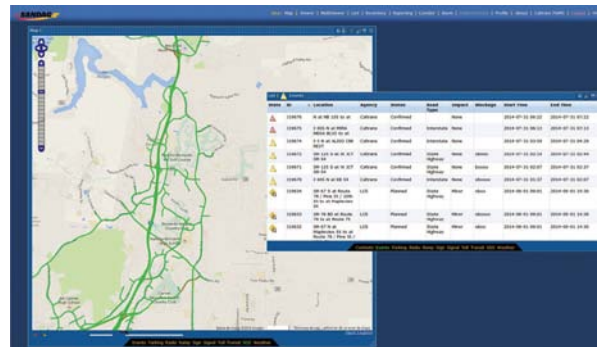
forecast traffic conditions based on the current state of the network, which helps system managers to evaluate incident response or congestion management strategies.

NEW DEVELOPMENTS

The free 511 San Diego mobile application (available for iOS and Android) is the most recent innovation to come from the ICM project. Funded by the US Department of Transportation, the app provides real-time predictions from Aimsun Online and system based advisories, letting users view predictive travel times on I-15; current traffic conditions; MTS bus routes, fares, arrival times; real-time dynamic toll rates for the I-15 Express Lanes; and it also uses text-to-speak to give users alerts for the latest incident and construction information in the region. Since its launch in May 2014 it has already had over 22,000 downloads. (Visit 511sd.com/app to learn more.)

Another recent improvement is that the system is now running in an automated stage where the system takes automatic control of signals and ramps when recommended by the simulated evaluations. This may be the first time in the US that traffic management decisions are being successfully made entirely based on automatically triggered real-time simulations of the entire multi-modal transportation network.

A future improvement that should be in place in late fall is the



Predictive traffic is now a key element of driver information

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installation of arterial way finding drum signs. The concept is that SANDAG is going to install 8 rotary drum signs along the principal arterials to help guide motorists during response plan active re-routing.

CHANGING THE FACE OF TRAFFIC MANAGEMENT

SANDAG expects the ICM project to help with the implementation of multimodal and smart growth principles, to improve safety throughout the corridor, increase traveller information mechanisms, institutional partnerships and networked transportation systems, both during recurrent and non-recurrent conditions. The USDOT's end objective is to roll out ICM nationwide, so that every large city can derive some benefit from what is being achieved in San Diego.

Alex Estrella, Senior Transportation Planner and ICM Functional Project Manager at SANDAG, says that real-time simulation has the potential to completely transform traffic management. "The San Diego ICM system is unique for incorporating both the network prediction subsystem (NPS) and real-time simulation subsystem (RTSS); now traffic management decisions are based on both current and predicted traffic conditions, a capability that has so far been missing from ATMS solutions. I believe we are creating one of the most comprehensive and intelligent decision support systems in the industry today."



Is Europe poised to lead the new era of mobility?



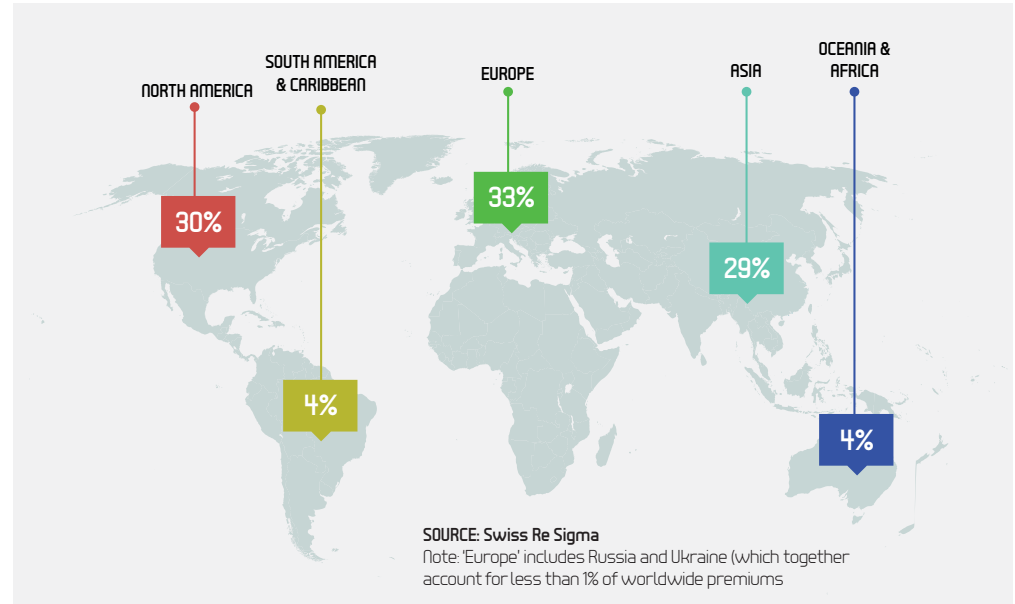


With the appearance of the Google car, and the large amount of innovation coming out of research in the American city of Ann Arbor, it's long been assumed that the US will lead the march to autonomous vehicles, but here a leading US expert suggests that it's our side of the Pond where things will really happen

WORDS BY GUY FRAKER

For nearly a decade, the United States, EU and Japan have been collaborating to accelerate the development and deployment of advanced vehicle technologies. In very general terms, this effort took on the classic structure of an innovation funnel, with the early years seeing investments being spread across a very broad horizon of capabilities. For example, this list would include intersection sensors, intersection enforcement cameras, vehicle based sensors, connected vehicle technologies, autonomous driving capabilities, hydrogen fuel cells, electric drive trains, new materials, and telematics technologies.

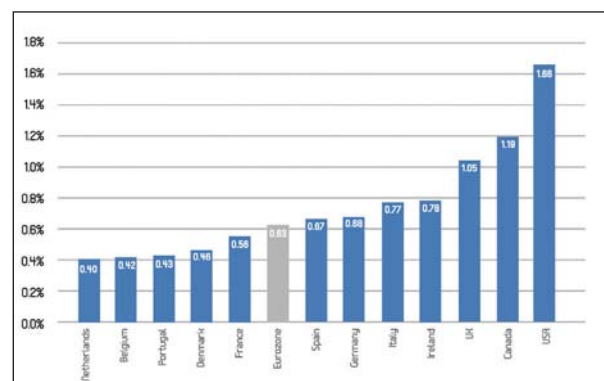
Along the way, the myriad of issues created a tremendous fog from which regulatory bodies would have to first create, then define clarity. Among the most difficult of tasks would be just prioritizing the issues. As capabilities emerged, consumers, regulators, auto manufacturers, Tier 1 & Tier 2 suppliers have engaged in a global dialogue about acceptance, privacy, liability, reliability, security, cost, timelines, etc... This somewhat chaotic conversation that is now practical, given the ubiquitous nature of our connectivity, albeit taking place largely out in the "ether" of the world wide web. Since 2008, certain issues have risen to the top, particularly in the United States and across the EU. Goals have been clarified and priorities for legislation and regulatory research seem to be taking form. All the while the simultaneous growth in technological capabilities matched by collapsing cost per unit of capability continues to create pace in this societal shift known as personal mobility. As capabilities emerged, and stakeholders responded, the dollars invested by government have also grown, and become more focused. Specific capabilities



emerged as "funded" priorities such as electric vehicle battery science and manufacturing, active (autonomous) driving safety, pedestrian safety, and connected vehicles. A 2010 report to the President from The President's Technology Investment Council labeled robotic control systems in vehicles as one the top national security priorities given the potential impact of eliminating accidents on dependencies of foreign oil. This background information can be found via countless white papers, budgets, trend analysis and demographic research documents. Again, in general terms, this information represents a synopsis from six years of direct involvement.

Figure 1.
Global
distribution
of insurance
premiums, 2012

Figure 2.
Liability costs
per country as a
percent of GDP



WHERE THERE'S A CLAIM, THERE MUST BE SOMEONE TO BLAME

As priorities have emerged, and evolved, in the various jurisdictions for new models of mobility, each must face an inevitable philosophical and economic "fork" in the road over the question of efficacy. Specifically, with respect to connected vehicle technologies, and even more so with autonomous vehicles, very fundamental questions rise to the top requiring answers.

■ How great is the liability risk exposure from relying on technology, to operate a machine that has been operational exclusively at the hands of a human driver since the invention of the machine?

■ How will that risk, and liability, be allocated?

■ How much risk is reasonable, sustainable?

Historically, first in Europe, later in the United States, answers to these questions have resulted in solutions primarily comprised of both of private sector enterprises (the insurance industry) and regulatory bodies. As the second largest insurance market in the world, the United States the insurance industry has grown to a \$7.3



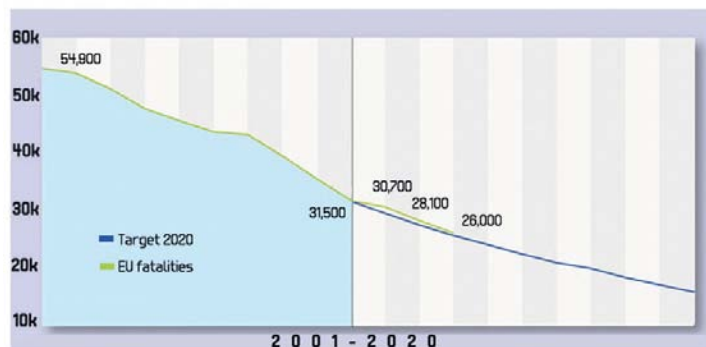


Figure 3.
Roadway
fatalities in
the EU (left)
and US (right)

trillion industry when measured by total assets, combining Property and Casualty (P&C) with Life & Health (L&H). The largest insurance market globally is of course the EU, holding approximately 33% of the total premium revenue stream. (See Figure 1 on previous page.)

This enormous economic sector is regulated in the United States by the 50 individual state jurisdictions, each with an Insurance Commissioner. Some of these are elected, while others are appointed, again based on the procedures established by each state. Each Department of Insurance participates in a national coordinating body known as the NAIC, or National Association of Insurance Commissioners. In a 2013 report produced by KPMG, the EU insurance regulatory system is overseen by Solvency II and the EIOPA, or European Insurance and Occupational Pensions Authority. Another entity does exist, which both US and EU regulators support, International Association of Insurance Supervisors (IAIS). In short, the US system is quite mature and as KPMG described, “robust”. While the EU bodies are still described as “works in progress”, the goal is a more holistic approach designed to harmonise regulation across borders. How does any of this relate to autonomous vehicles? The implications are actually quite significant. The relationship of insurance regulation to the overall transportation goals set forth by each jurisdiction, with respect to autonomous control systems and connected vehicle capabilities, is setting the pace for slower deployment in the US.

“
**The EU
approach
is to rely
on clearly
defined
rules with
a very
specific
focus to
maintain
solvency**
”

SAFE NOT SORRY?

For an auto insurer to consider making a change in their core revenue stream because a new vehicle technology is coming to market, a multitude of factors has to be considered. In grossly oversimplified terms, among these considerations, the companies must assess the cost of being wrong against the cost of “owning” the liability.

First, consider this phrase, “the cost of being wrong”. When Volvo first unveiled the XC60 and XC90 vehicle models, with the groundbreaking “CitySafe” active safety systems, global insurance leader Zurich announced a 20% discount on their motor insurance premiums for those vehicles. This announcement was the first of its kind, given the largely unknown real world efficacy of the technology and was applicable only in Europe, and not in the US. Why? KPMG describes the relatively greater degree of discretion among each of the 50 Commissioners in the US contrasted to the EU’s “more-rules-based prescriptive approach, with quantitative and qualitative checkpoints.” In other words, the EU approach is to rely on clearly defined rules with a very specific focus on maintaining solvency – i.e. more consistent rules of operation, which translates into significantly greater degree of flexibility when setting rates. If the technology doesn’t perform as advertised, the ability to correct the premiums for the actual experience is far greater in the EU than in the US where the industry faces approval by 50 individual regulatory bodies. Consumers tend to pay more attention to rate

increases than decreases, which can translate into a re-election problem for several of the US Commissioners.

The cost of “owning” the liability only magnifies the risk aversion in the US auto insurance industry. See Figure 2 (previous page) from a 2013 report prepared for the US Chamber Institute for Legal Reform on the relative cost of liability and litigation, by NERA Economic Consulting. Note in particular the quote called out in the box below. These figures clearly show how “being wrong” can become a genuine drain on capital fairly quickly for a US auto insurer, who may not be able to realise corrective steps for years following the initiation of the filing process. US insurance executives routinely articulate both the need for innovation in the core product suite, and the sound logic behind the lack of innovation given a regulatory system that can require years of effort, and millions in legal fees both to put a new product in market, then fix that product if needed. The European model actually seems to encourage innovation in motor insurance.

Finally, the EU Transportation Commission is remarkably clear when articulating both goals and pro-gress compared to the US. For any transportation-related stakeholder in the EU, the messages and goals are concise, bold, and clear.

GOAL KEEPING

In the practice of disruptive technological adoption, these are the key elements needed to create a shared sense of ownership among the stakeholders, including the



insurance industry. The goals, and the progress, may appear aspirational. In the context of vehicle technologies as we have experienced these past 100+ years, such goals would seem lofty. However, in the context of those technologies already being deployed by auto manufacturers, and supported by pioneering insurers such as Zurich, these may turn out to be conservative.

When a more innovative ecosystem is also supported by the key regulatory entities as well, then exponential results can be, and certainly have been, achieved. The results speak for themselves.

Consider for example the safety goals and statistics declared by both the US and the EU Transportation Commission. The US DOT has not formally put forth a goal for accident decline. In recent mission statements and technology forecasting, figures have been articulated as "possible",

"probable" but not as goals. The US roadway fatalities have declined by nearly 30%, or 15,000 from the peak of 1980, or over a period of 34 years. The EU has experienced a decline in fatal crashes totaling approximately 28,000, exceeding 50%, since a peak in 2001. See the comparative graphs in Figure 3, left.

This remarkable result, along with the annual goal of -8% cannot be attributed to a more adaptive, proactive insurance regulatory environment.

However, this is a shining example of what can be accomplished when both private and public stakeholders can embrace aspirational goals, and create the environment for success. Connected Vehicle technologies and Autonomous Vehicle technologies are expected to prevent 80% to 90% of all accidents by some point in the future. The liability and Tort system in the US has thus far indicated a

focus more on the 10% to 20% that cannot be prevented due to a risk aversion that has evolved over time, and is reinforced by an inflexible and expensive regulatory ecosystem. The EU appears to be more focused on the 80% to 90% of preventable crash incidents, has articulated clearly defined and credible goals, leveraging a risk management (liability management) ecosystem to reinforce achieving those goals.

The new era of mobility will bring unprecedented opportunities in the form of jobs, STEM educational priorities, artificial intelligence, robotics, networking, data, providing the necessary leadership to resolve specific global grand challenges. In the context of relying upon the rule of law to rationally manage liability exposures, the EU appears to be in that leadership position, welcoming the future of transportation innovation.

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Multi stories



UK to allow driverless cars on public roads in January

Comments (10)



The BBC's Jon Iremonger finds out how to drive a driverless car

The UK government has announced that driverless cars will be allowed on public roads from January next year.

It also invited cities to compete to host one of three trials of the tech, which would start at the same time.

Related Stories

Google to build self-driving cars

In the Western world we now take for granted that if we want to go anywhere, at any time, we can – whether we do so in our own vehicle, a shared one or one that we hire on a pay as you go basis. Driving, and being able to drive, is almost seen as a basic human right by many. Whether we enjoy driving or just see it as means to an end, there's no doubting the central role it plays in everyday life for so many. But is this all about to change?

WORDS BY IAN PATEY

If we read the technical press, and an increasing number of news items in the popular press, we could easily be excused for thinking that this way of life is about to change, no not change but be replaced. Replaced by what? The autonomous vehicle – no driving, no crashing, just simple, efficient travel from A to B, to wherever you wish to go.

Is it that simple? I am sure that the technology exists to enable autonomous vehicles to “work” and with suitable testing and integration of systems, to take us from A to B just by programming our destination into

The future is now: if we were to believe some of the press stories in recent months (such as that on BBC News, top), a world of driverless cars could be little more than a year away

the control panel. After all, agriculture and the mining industry manage to do just that and have done for some time. If we believed some of the press stories from the last few weeks and months then I think we would be saying that travel in autonomous vehicles is just a year or so away and it is only the matter of making them affordable that is keeping them from our roads right now.

Is it that simple? I think not and I don't believe that it is a matter of technology. I will use a simple example to illustrate – parking. I have a car with front and rear parking sensors which serve two purposes, one positive and the other not so

good. The positive is that I have not so much as touched or “grazed” another vehicle or a post or a wall when parking this car: the sensors tell me when I am too close and I stop. The downside is that I pay a lot less attention to how I am parking than I did without these sensors. I rely on them increasingly to warn me rather than using my own skill and judgement. One day they will malfunction and then I'll be stuck – and when I have to drive a car without them I find that my level of skill in parking has been eroded. Connecting the sensors to the brakes is not a huge technological leap and would bring further benefits, as well as



“ I have a car with front and rear parking sensors... I have not so much as touched or “grazed” another vehicle or a post or a wall when parking this car.. [but] I pay a lot less attention to how I am parking than I did ”

further problems as I will then keep my foot well away from the brake pedal, so what happens then if I need to brake? My complacency in parking is misjudged as any “bump” that results from a system fault has to be my fault. I would not be able to claim from the vehicle manufacturer, even though the car is regularly serviced by the franchised dealer. It is a simple “driver assist” function that makes a noticeable difference.

PARKING RESPONSIBILITY

Take that one step further and to those cars that are capable of parallel parking with no driver input – the steering, braking and acceleration are all controlled by a system. The parking sensors are linked to the central control system as are the brakes, steering and accelerator and it works out how to do it; an important point to note is that it does it without hitting anything. This was a significant breakthrough and there is a general assumption that the driver remains sat in their seat during this operation with the ability to step in (or step on) should anything malfunction. Again, it is a system for assisting drivers and the presence of the driver in their usual position means that responsibility for not hitting anything or anyone remains firmly with the driver. But what about those cars that can do this irrespective of whether anyone is sitting in the driver's seat? At that point we have autonomous driving and all we have done is taken away any driver input – but what about driver responsibility? I am sure that the contract for buying a car with this feature includes clauses that

state quite clearly the driver remains responsible for the vehicle at all times irrespective of “driving mode” and irrespective of whether the driver is actually sitting in the car at the time. If this were a different system, say in a factory, then several “use cases” would be devised to consider the various scenarios, what could go wrong in each of them, what the mitigations would be and a “safety case” would be developed based on those use cases and the subsequent risk analysis. Taking this approach into the realms of autonomous driving is not such a big step, but surely it is a necessary one? A quantified risk analysis approach would, no doubt, highlight where the 80:20 rule sits with regards to the issues that require most attention.

Parking is a low speed activity and hence the risks are also low – just as a human driver can push down the accelerator inadvertently during such a manoeuvre then why can't an



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autonomous system, is the fail safe mechanism robust enough to prevent that in 100% of occasions? A reliability level of 99.999% would mean one car in a hundred failing once a year, assuming the car is used almost every day and parked three times per day using these systems – a failure could mean a minor bump or scratch or the car hitting a person. When that failure occurs who is to blame? Is 99.999% achievable, affordable and are the consequences acceptable? What level of failure will be acceptable, to society, to insurance companies, to the law? The use of a quantified risk and hazard analysis along with suitable use cases is an essential tool in forming the debate in these areas, and not just in determining liabilities and mitigations but also in the dialogue with the many stakeholders involved, including “the public”.

Parking at a car park would seem a logical next step – driving to a space then getting out of the car and letting it park itself. The benefits to car park owners could be significant as cars could park closer together if there is no need to open the doors and there would be no need for marking out spaces as the cars themselves would determine how much space they needed. The benefits to the “driver”



“ The final step would be to leave the car to park itself, saving all that time driving round looking for a space as well as having to lug heavy bags back to the car ”





include savings in time as well as the elimination of those minor bumps and scratches caused by doors opening onto other cars. Use cases can be developed to consider the risks and hazards associated with this – the various “what if” scenarios – and the various systems within the car designed to work safely.

PARK AWAY

The final step in this scenario would be to arrive at the entrance to a car park and leave the car to park itself, with it returning to the same or another designated area when required – autonomous valet parking. This would save all that time driving round looking for a space as well as having to lug heavy bags back to the car after a “productive” shopping spree. For the owners of the car parks it would provide the opportunity not only to reduce the size of the car parks, by 10-15%, as the spaces would be “virtual” and smaller with no need for painting of spaces for example, or security lighting. There would also be no need for the car parks to be sited adjacent to the shopping malls – and so could be sited on nearby, cheaper, land.

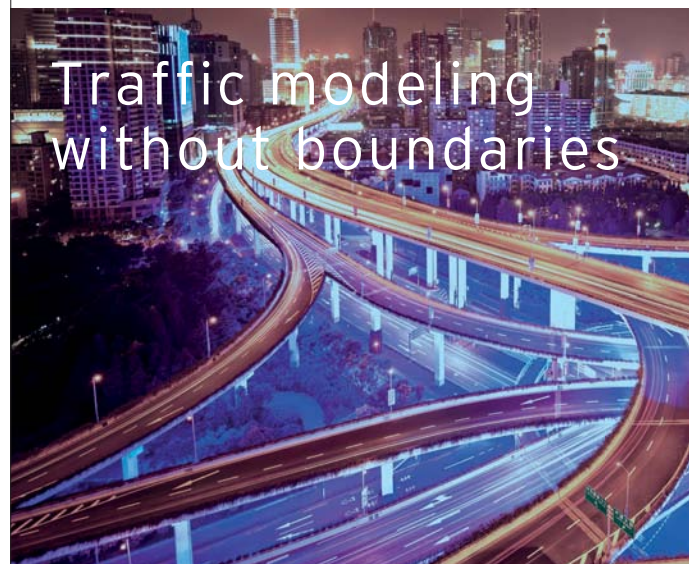
The risks and hazards in this scenario would be similar to those in previous, simpler, scenarios and a quantified risk&hazard analysis combined with use cases approach would highlight the areas that need to be designed

into the various systems within the cars.

This progression in terms of “driverless parking” provides a useful flow from a simple driver assist function to an autonomous mode. The approach described provides a framework for analysing and understanding the risks and hazards in a quantified manner which can inform discussions on the significant non-technical issues and potential barriers such as liabilities, levels of acceptable risk public acceptance. It lends itself to the creation of a significant knowledge base and answers to the plethora of questions being, and about to be, asked. Just over a decade ago a Minister announced that “people will be able to drive on the hard shoulder in busy periods” and that too was met with derision, “It’ll never happen” and fears of carnage – the adoption of a quantified risk and hazard analysis approach enabled it to happen and now it is a common and accepted practice.

The first cars had to follow a man waving a red flag and it took a lot of persuasion before that man could step aside. There’s a real risk that autonomous vehicles will end up with something similar until a level of confidence is established... unless the issues of liability and acceptable risk are grasped and addressed. “Trust us, we’re engineers” won’t be enough.

Autonomous vehicles will need to establish a level of confidence... as cars once did



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How autonomous vehicles will change **EVERYTHING**

A leading American technology blogger gives his view on just how important the self-driving car will be to the world

WORDS BY **SETH GODIN**

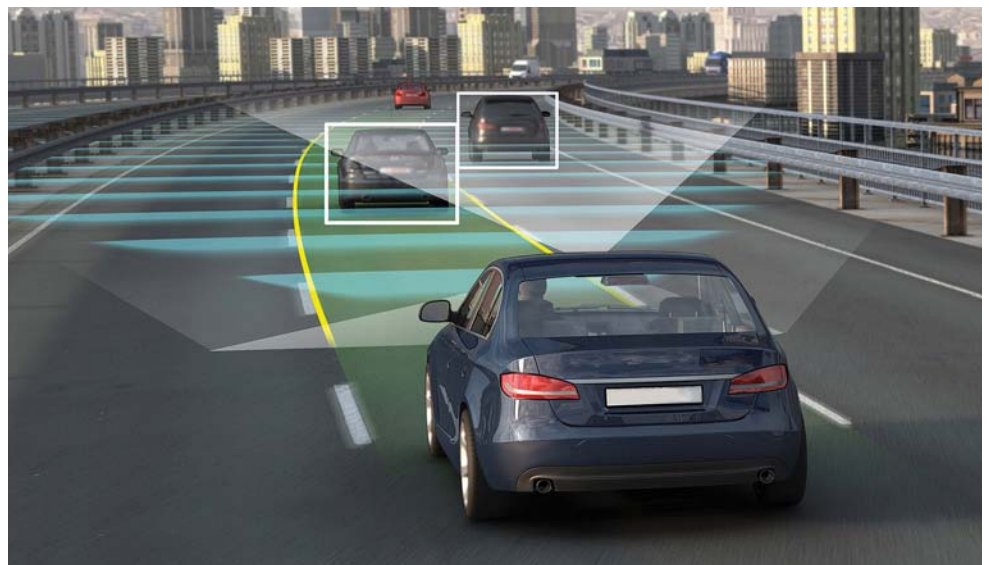
Self-driving cars are going to be a huge transformational disruption, and they're probably going to happen faster than most people expect.

Starting in cities, starting with car-sharing, the economics and safety implications are too big to avoid:

- Few traffic jams – cars will have a slower top speed, but rarely stop
- No traffic lights – cars talk to each other
- Dramatically less pollution
- Pedestrians are far safer, bicycling becomes fun again
- No parking issues – the car drives away and returns when you need it
- Lower costs and more access for more people more often
- Instant and efficient carpooling, since the car knows who is travelling where.

Most of the physical world around us is organised around traditional cars. Not just roads, but the priority they get, the roadside malls, fast food restaurants, the fact that in many cities, more space is devoted to parking lots than just about anything else. It's pervasive and accepted, so much that we notice with amazement the rare places that aren't built around them.

Understand, for example, that the suburb exists because of the car, as does the big amusement park and the motel. All of them were built by people who saw the changes private mobility would cause. The



self-driving car benefits from Moore's Law, which explains that computers get dramatically cheaper over time, and Metcalfe's Law, which describes the increasing power of networks as they get bigger and more connected. Both of these laws are now at work on one of the biggest expenses and most powerful forces in our world: transportation.

Like all innovations, the death of the non-autonomous vehicle is not all upside. The car industry gets mostly commodified, jobs are shifted and disruptions occur. Privacy for teenagers, ordinary citizens and bank-robbers-making-an-escape disappears. The suburbs become even less attractive to some people.

But just as you can't imagine a city scene where just about everyone isn't looking at their smartphone and swarming in the virtual cloud, it's going to be a whole new cityscape once cars retreat from their spot at the top of the attention/command chain.



SETH GODIN is the author of 17 books that have been bestsellers around the world and have been translated into more than 35 languages. He writes about the post-industrial revolution, the way ideas spread, marketing, quitting, leadership and most of all, changing everything. This article first appeared on his blog and is reproduced with permission sethgodin.typepad.com

One way this might happen: Certain models will be labeled as Uber-compatible (or whatever network is in place). Buy that car and with a few clicks, the car starts earning its keep. When you're at work or asleep or otherwise engaged, it moonlights and drives other folks around. The combination of security cameras in your car and rider registration pretty much guarantees that your car isn't going to come back wrecked. It's not hard to imagine organizations building fleets to profit from this (a medallion replacement) but it also becomes economically irresistible to the individual as well.

This is a bigger shift than the smartphone, and it might happen nearly as fast.

Near my house, there's a parkway that was built so that owners of private cars would have a place to go where they could drive them without endangering everyone else. I wonder how long before that's what it will be used for again.



SPECS saver

An average speed safety camera scheme in Nottingham, awarded through the GPS Traffic Management Technology Framework, has delivered noticeable benefits already

WORDS BY **GEOFF COLLINS**

In January 2012, Nottinghamshire County Council ordered a SPECS3 average speed enforcement solution for the A614, in order to address the serious collision and casualty history seen along a 21km section of road.

Whilst Nottinghamshire had considerable experience in the effective use of SPECS cameras, this was the first time that the Government Procurement Service or GPS (now called Crown Commercial Services) Traffic Management Technology (TMT) framework was used to procure such a solution.

Using the TMT framework made the tendering and evaluation procedure substantially simpler, faster and more cost effective for Nottinghamshire, allowing the road safety benefits to be delivered to users of the A614 in a shorter timescale.

SPECS3 installation along a stretch of the A614 in Nottinghamshire

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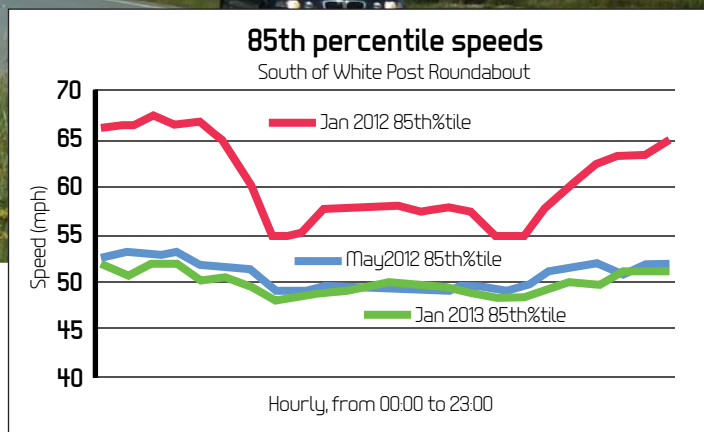
The A614 is a former trunk road linking Nottingham with the A1. It is maintained to a high standard and features a wide, single carriageway with several central right turn features into local side roads. The route has many bends and hills with no footway for most of its length and is one of the busiest non-trunk roads in Nottinghamshire. Before the SPECS cameras were installed, the A614 had a significant casualty history with 289 people killed or injured in a five-year period. Nottinghamshire County Council undertook a programme to address this unfortunate record with the support of Mike Penning (then the road safety minister), the local MP and senior county councillors.

The proposed solution was to reduce the speed limit from 60mph to 50mph (which took place in 2011) before installing SPECS3 cameras in early 2012. These two measures have had a beneficial effect on casualties

and collisions, with early indications suggesting a significant reduction in the KSI rate and no fatalities since the cameras were first installed.

SPECS cameras have proved themselves to be highly effective in reducing casualties and improving traffic flows, wherever they have been installed around the UK. The cameras are so effective because they create a visible deterrent that beneficially changes driver behaviour. Through a reduction in the number of speeding vehicles and a harmonisation of speed between all road users, the traffic flows more uniformly and collisions occur less frequently. This is clearly shown in the chart opposite which plots the 85th percentile vehicle speeds measured at a loop site on the A614. Data is shown during the following month long, 24/7 periods:

JANUARY 2012, when the speed limit was 50mph and before the cameras were installed.



MAY 2012, shortly after all of the camera columns were installed JANUARY 2013, one year after the first data set

The chart above clearly shows how the 85th percentile speed (the speed at or below which 85 per cent of vehicles travel) has significantly changed, dropping by up to 15mph. This is particularly marked between 21:00 and 04:00, when traffic volumes are low and speed variability was considerable.

Sonya Hurt is the Casualty Reduction Manager for Nottinghamshire County Council. She said, "Our average speed installations are proving year on year to be a known and effective method of reducing casualties. Where these cameras have been used elsewhere in Nottinghamshire, there has been an 80% reduction in the number of people killed or seriously injured".

The A614 project was procured through Lot 4 of the Crown Commercial Services TMT framework. This approach reduces the complexity, cost and timescales associated with the purchase of traffic technology. Because all companies represented on the framework have been through a formal and rigorous pre-approval process, Local and National government agencies can bypass the formal OJEU process, thus saving time, effort and money. Of the TMT framework, Sonya commented, "This was the very first contract to be let through the Crown Commercial Services 'Traffic Management Technology' framework. Nottinghamshire County Council found the framework easy to use, reducing the timescale and complexity of the procurement process and enabling a more efficient delivery of the project.

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Learning through review

A new training course for ambulance drivers in Sweden is making journeys safer, thanks to in-vehicle recording technology which drivers use to assess their own performance. The UK managing director of Fältcom UK explains how it all works.

WORDS BY KRISTINA HAGSTRÖM



Ambulance drivers in Sweden have become better at adapting their speed when on turn-outs and now overtake more safely. Among other things, the training course includes new technical support where cameras register the ambulances' journeys.

"There are some 9,000 ambulance turn-outs in Västerbotten every year and safe transportation is important," says project leader Pontus Albertsson, who is a physician at the Swedish Centre for Acute and Disaster Medicine (AKMC) in Umeå.

Västerbotten was the first region to test the course but several other Swedish councils are interested in holding programmes

"The technology to train ambulance drivers can of course be used by other professional drivers ..."

The course is a collaboration between the AKMC, Västerbotten's ambulance service, technology company Fält Communications, the Department of Computer Science and the Department of Applied Educational Science/ Department of Educational Measurement (BVM) at Umeå University.

It is based on two ambulances that have been equipped with instruments and cameras that

register everything that happens during a turn-out. The cameras show the ambulances' position and route and the permitted speed on different parts of the route. Data from the journeys is collected and sent to the newly developed Driver Access Recording Tool (DART) service. The drivers can later use the service to review the turn-out and see what went well and what was less satisfactory.



"The aim is to make call-outs safer for both the drivers and other road users", says driving instructor Folke Renström. "By reviewing their driving step by step with the focus on safe behaviour, the drivers' overtaking manoeuvres have become less provocative and they have reduced the speed they drive at".

CHANGES IN DRIVING BEHAVIOUR AFTER THE COURSE

DART and the new course that goes with it were developed alongside each other. A behavioural study has also been made of some 70 ambulance drivers in Umeå and Skellefteå, where the behaviour of the participating drivers was studied before and after the course and also compared with drivers who had driven with cameras but not taken the course. The results are quite clear.

"The drivers with training adapt their speed better and overtake more safely", says Pontus Albertsson.

"The course has helped me drive more safely," says ambulance driver Christer Bergenholtz. "By studying my own turn-outs I have developed as a driver and changed my driving behaviour".

A MORE REALISTIC VIEW OF THEIR SKILLS

Previous courses for ambulance drivers have focused on proficiency, which entails a risk that the drivers will develop a kind of over-confidence in their own ability. This had led them to increase their speed.

"Our course is based on knowledge, which has given the drivers a more realistic view of their skills and better prerequisites to be able to discuss their driving on turn-outs objectively", says Pontus Albertsson.

The course can be used in day-to-day operations in two ways: train both experienced and less experienced drivers and progress dialogues where drivers and instructors discuss turn-outs based on what they see in the videos.

"In our project we have used the technology to train ambulance drivers but it can of course be used by other professional drivers who



"The drivers with training adapt their speed better and overtake more safely"

would like an opportunity to reflect about how they drive", he goes on.

A ROBUST TECHNICAL SOLUTION IN A TOUGH ENVIRONMENT

The camera that is used to film the turn-outs is mounted inside the ambulance, beside the rear view mirror. It is connected to Fält Communications' MIIPS platform, which handles the collection and presentation of the data.

The platform is designed to work in vehicles and is already in use as a communication hub in tough environments in many places around the world, for example in forestry machinery.

"It's hot inside the ambulance and it's a very bumpy ride. We need a technical platform that can cope with the tough environment and that can function without breaking down even under difficult circumstances", Pontus Albertsson explains.

The actual recording of the trip is done by the driver activating a tag in his or her pocket that is connected with the platform. The tag also identifies the driver. The whole trip is then logged against that person. When the turn-out is over, everything is packaged and transmitted to a web-based service where every driver has a personal account. Drivers can



Above left:
Pontus Albertsson of the Swedish Centre for Acute and Disaster Medicine (AKMC) in Umeå
PHOTO: Jim Johansson

Above right:
on-board cameras are used to record ambulance turn-outs and so help reduce the number of accidents
PHOTO: Fält Communications

then access their page and view their trips at any time.

"An interesting and fun development project where we have collaborated with the AKMC", project manager Tomas Lundgren says. "It's stimulating that the course resulted in drivers changing their behaviour and that we have contributed to increasing road safety on turn-outs".

PREHOSPITAL CARE PRIZE

The new turn-out drivers' course has been recognised from several quarters. For example, the Swedish Centre for Acute and Disaster Medicine won the 2012 prehospital care prize for the new training course. The prize is awarded jointly by Falck ambulans, Dagens Medicin magazine, the Swedish Municipal Workers' Union and the Swedish Association of Health Professionals. In their citation, the judges said, "Pontus Albertsson and his colleagues have initiated research and method development in a highly important area of road and patient safety in prehospital nursing. The work of devising a knowledge-based training course for safer ambulance transportation has demanded both innovation, great commitment and a long-term approach."

"It's naturally very satisfying that our work has been recognised all over the country", Pontus Albertsson goes on. Västerbotten were first to test the course but I know that several other county councils in Sweden are now interested in holding programmes of the own.

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*Please note diary is for illustration purposes only - the full agenda for both Wednesday 19 and Thursday 20 November will be confirmed closer to the event

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Radar above

The Highways Agency aims to make roads a safer environment for workers by eliminating the need for workers to be in or near active traffic flows. The ultimate goal? Zero fatalities. Technology plays a key role in this. Wavetronix has developed the first radar certified to be as good as loops, and this has a major bearing on roadworker safety...

WORDS BY **MICHAEL JENSEN**



Removing the need for in-road technology significantly reduces road worker risk

Imagine going to work each day in an environment that makes serious risk an inherent part of your job description. Imagine trying to fulfill the responsibilities entrusted to you while large objects pass at high speed mere inches away from your body. Such are the dangers faced daily by approximately 4,000 men and women who work to build and maintain Britain's roads, and protecting their safety has become a major priority.

The Highways Agency has embarked on an aggressive campaign that aims to "eliminate all fatalities, serious injuries and long-term ill health to road workers" maintaining the Agency's road network. The Aiming for Zero Road Worker Safety Strategy seeks to improve worker safety by raising driver awareness and by eliminating the need for workers to be on live carriageways. To accomplish this, HA officials have evaluated existing vehicle detection technologies and have determined that it is necessary to update from loop detectors embedded in the road to non-intrusive detection.

Finding a replacement for loops that brings detection out of the road and offers consistent accuracy and long-term reliability is not an easy task. Like many countries, the UK has relied on loops for decades, and its traffic management systems are built around loop detection – the Motorway Incident Detection and Automatic

Signaling (MIDAS) system, for example, relies on loops to provide queue protection and traffic monitoring on more than a thousand kilometers of motorway throughout England. MIDAS works very well and does not warrant replacement, so in addition to verifying a detector's performance, the HA must also verify that a detector is compatible with MIDAS.

AIMING FOR ZERO

The live carriageway of any highway is an extremely dangerous place to be. Between 2005 and 2011, 15 road workers were killed and 150 others seriously injured, according to HA records. These statistics are part of the reason an Oxford University study named road works among the most dangerous occupations in the UK. HA officials say these numbers are unacceptable.

"The people who work on our roads are at significant risk," says Paul Mitchell, HA's head of health and safety. In a 7 September 2012 article in the Telegraph, Mitchell said, "The roads are their place of work. Their safety is something we take very seriously indeed."

This commitment to safety was one of the driving factors behind Aiming for Zero. Now in its fifth year, Aiming for Zero tries to address all aspects of the roadway environment, from the drivers using the road to the workers who maintain it. From the driver's perspective, the HA says it is a matter of respecting road workers, obeying traffic laws and being aware





of roadway conditions. To help raise awareness, the HA has utilised roadside technologies in combination with mass and social media, including a film called "A Lot Can Happen in Five Seconds" that dramatically illustrates the consequences of poor driving decisions. Of course, influencing driver behaviour is always challenging, and Mitchell acknowledges that it is not always effective.

"Unfortunately, there is not much we can do with those who are going to break the law," Mitchell told the Telegraph. "We are trying everything, such as speed cameras, better warning signs and overhead gantry messages, but still there will always be a motorist who ignores it all."

As a result, it is necessary to also address safety from the worker's perspective. Getting workers out of the road, and consequently out of harm's way, is a primary focus of the Aiming for Zero program. In an Aiming for Zero executive summary published in 2010, HA chief executive Graham Dalton wrote, "A key part of delivering our vision will be reducing the need for road workers to be on foot on a live carriageway where they are most at risk."

Accomplishing this goal necessitates a shift from loops to non-intrusive detection. From a safety perspective, loops increase the amount of time that staff spends in the road or at roadside – installation and maintenance of loops place workers in the road, often for several hours, and the longer a worker has to be in the road, the more danger he faces. In contrast, non-intrusive detection devices, including radar, install above the ground at the side of the road. Radar detects vehicles by directing a beam across all lanes of traffic. They're quicker to install and can reduce the amount of time that workers need to be near the carriageway.

Wavetronix is very proud that, after extensive testing, officials certified a viable radar contender to loops – its SmartSensor HD sensor.

As well as all the benefits listed above, such technology brings additional rewards. Loops are known to have a high failure rate, and the costs to maintain, repair or replace loops over

time can be quite significant. When you factor in the number of loops required for most ITS applications, the total costs quickly add up. SmartSensor HD requires far less maintenance and has a much lower failure rate than loops, resulting in significantly lower total costs of ownership over the life of the sensor. This is a huge benefit for HA, which, like many public agencies, strives to be lean and efficient by maximising the money it invests in ITS technologies. And SmartSensor HD can be remotely managed, so if a sensor needs to be reconfigured for any reason, it can be done without sending any workers out to the road at all.

LOOPS VS. RADAR

Still, there is a reason why loops have been the standard for ITS vehicle detection for such a long time. Well-calibrated loops are accurate and can provide a wealth of information, from vehicle presence and speed to classification. For most agencies, loops are the baseline for performance, so it's little wonder that so many agencies are reluctant to replace them, despite their shortcomings.

Which makes SmartSensor HD's position as a viable option for loop replacement all the more remarkable. HD not only provides all of the benefits of non-intrusive detection, but the performance of its high definition radar has been proven to meet or exceed that of loops. "Wavetronix' SmartSensors are radar-based devices which deliver traffic counts – speeds, lengths and classifications – across multiple lanes," writes ITS expert and Smart Highways columnist David Bonn. "They are simple to install and offer powerful integration and remote management."

Bonn supports the safety and mobility benefits of above-ground detection. SmartSensor HD, he says, "significantly reduces the time that staff spend roadside, both in overall duration and, in particular, for the placing and removal of temporary traffic management." Many HD installations don't require lane closures, and Bonn says this leads to a consequential benefit of increased road space availability and reduced vehicle

“ Between 2005 and 2011, 15 road workers were killed and 150 others seriously injured ”

delays. "HDs are ideal for monitoring traffic flow in roadworks, or in any temporarily changed layouts – this is not possible with loops."

MIDAS TOUCH

Of course, none of this matters if SmartSensor HD doesn't perform as well as loops, or if the sensor is incompatible with HA's MIDAS system. Luckily, extensive testing of HD has shown the sensor to be acceptable in both areas. HD was the first non-intrusive detection device of its kind to be certified as a viable alternative to loops. Successful completion of the four-step MCH-1529 test process, overseen by the HA's ITS Research Group, means that HD is an acceptable alternative to loops and that it can be used at any MIDAS station in the HA's network.

The benefits of SmartSensor HD are already being realised in parts of the UK. The HA's Area 4 network, which encompasses roads in Kent, Sussex, and parts of Surrey and Hampshire, has deployed permanent and trailer-mounted HD stations to monitor traffic flow for real-time traffic operations. Active installations can now be found along sections of the M25 and M42 motorways as part of several Smart Motorways schemes designed to reduce traffic congestion in a more cost-effective way.

Ensuring the safety of road workers is no easy task. Identifying detection devices, like SmartSensor HD, that satisfy accuracy and reliability requirements while simultaneously eliminating the need to place workers in danger, is helping HA meet what it calls "an unambiguous goal" for the health and safety of its people.

SmartSensor HD effectively replaces loops without compromising the HA's detection standards, and also effectively reduces workers' exposure to the dangers that exist on live carriageways. As a result, the HA is positioned to meet its goals for improved worker safety over the next few years and beyond.

MICHAEL JENSEN is
co-founder and chief
technical officer at
Wavetronix

SCRIM and save

A unique piece of British engineering, which has helped revolutionise the approach to road safety around the world over the last four decades, has been linked with the latest information technology to help save hundreds of lives

WORDS BY JON DAY

S

ince the mid 1970s highway authorities worldwide have used

the Sideway-force Coefficient Routine Investigation Machine (SCRIM) manufactured by Bristol-based WDM to monitor road networks in order to identify where the skid resistance is below satisfactory levels.

This was initially a mechanical device, which involves lowering

SCRIM on deployment in New Zealand, where manufacturer WDM also has a base

a freely rotating wheel on to the road surface at an angle to measure surface roughness. More recently, however, the addition of sophisticated technology has helped transform the SCRIM into a multi-purpose, life-saving measurement system.

The long term use of SCRIM has enabled authorities to create standards for investigatory levels – based on over 30 years of research – which have been shown to correlate strongly with the excessive risk of wet road skidding accidents.

Recent studies in England, Scotland, Wales and New Zealand confirm the current standards, published in 2004, are highly cost effective as well as appropriate

to current traffic flows, road conditions and materials.

Regular SCRIM surveys, together with a skid policy based on the current standards, are proven to help authorities achieve and maintain reductions in road casualty rates.

WDM is the sole licensed manufacturer worldwide of the SCRIM, working under license to the UK Transport Research Laboratory (TRL). Its manufacture complies with current British Standard BS 7941-1:2006 and it is ideal for network skidding resistance surveys with a daily capacity of 200-300km, depending on road type.



GLOBAL SAFETY

There are currently 17 SCRIMs operating in the UK, and more than 30 SCRIMs operating abroad covering Italy, Spain, Belgium, France, Portugal, Slovenia, New Zealand, Australia, Canada, China, Argentina and Chile.

WDM also has a base in New Zealand where it has been surveying the road network since 1995. This unique partnership between WDM and the New Zealand Transport Agency has helped deliver remarkable reductions in road casualty rates and led directly to the further development of SCRIM through the addition of the latest in ITS programming.

A major revision of New Zealand's state highway skid resistance policy occurred in 1997 with the issuing of a skid resistance management specification, the T10 specification for skid resistance.

It followed the 1997/98 high speed data collection (HSDC) survey of the entire state highway network, which involved simultaneous measurement of road condition and road geometry.

The specification aimed to improve the safety of road users by equalising, across the state highway network, the risk of having a skidding crash. This is achieved by assigning investigatory skid resistance levels for different site categories, which are related to different friction demands.

As a consequence, skid resistance considerations are now a major factor in the choice of aggregate used for surfacing and the benefit – cost ratio of the policy has been assessed to lie between 13 and 35, indicating that the policy has been a very efficient and effective safety strategy.

Skid resistance of road surfaces is one of the primary factors that determine the safety of roads and the wet skid injury crash rate on road sections with “low” skid resistance is 4.5 to nine times greater than that for all roads.

“ Overall, since SCRIM surveys were introduced, the number of skid related fatalities has fallen by nearly 40% ”



The SCRIM wheel is lowered on to the road surface at an angle of 20°

Results of crash site analysis indicated that a 0.1 increase in skid resistance (measured in terms of Mean Summer SCRIM Coefficient, MSSC) causes a reduction in injury crashes of 30 per cent on wet roads and 20 per cent on dry roads for the New Zealand state highway network. Overall, since SCRIM surveys were introduced, the number of skid related fatalities has fallen by nearly 40 per cent.

ECONOMIC BENEFITS

The social costs of crashes recorded in the NZTA Economic Evaluation Manual (2010) are: rural fatal \$3.881m, rural serious injury \$680,000, rural minor injury \$83,000. By preventing 250 crashes the monetary benefits have been \$159.5m.

WDM survey the entire New Zealand network annually – a length of 22,000 lane km – and over the past 18 years have streamlined the operation to deliver greater efficiencies, incorporating greater levels of technology.

As well as producing SCRIM Coefficients or, validated equivalent, in both wheel paths, the survey also measures both the air and road surface temperature: MPD texture, rut depth and IRI roughness in both wheel paths; and the gradient, crossfall and horizontal radius of curvature.

GPS coordinates provide accurate and precisely located measurements,

as well as recording elapse distances with specified event codes.

Since 2003/4 the SCRIM has been equipped with forward facing cameras to provide right-of-way video images. The benefits of this were quickly realised by NZTA, who requested larger and higher quality images.

INNOVATION

ITS and lasers have enabled WDM to introduce new measurements during the survey contracts, which have included:

- Three new measures of MPD texture
- Measures of roughness, limited by wavelength – has been shown to be linked to truck ride indicators
- Measurements of texture – shown to be a good indicator of flushing
- Measurements of bumps and edge deterioration.

The long-term benefits of the partnership between WDM and NZTA are many – only one vehicle is now used for surveying, with the highest levels of emission control, while a new water control device for skid testing means less water is used.

In addition, global mapping technology has led to more effective and efficient route management, less fuel being used, with even fewer emissions and less interference with other road users.

The partnership has encouraged research and development, which in turn has led to the incorporation of real time operating systems and FPGAs (Field Programmable Gate Arrays).

Survey under way with the NZ Transport Agency





This development, with the addition of lasers to measure cracking, rutting and macro-texture, has resulted in a world leading sophisticated surface measuring device.

So how does a SCRIM work? In the UK a SCRIM survey can be undertaken between 25 and 85km/h and normalised to 50km/h. Skid resistance data is recorded continuously and averaged over five, 10 and 20m sections of road.

Test wheels are mounted mid-vehicle at an angle of 20 degrees to the direction of travel and can be either single-sided, or in both the nearside and offside wheel paths. The test wheel, which is fitted with a smooth pneumatic tyre of standardised resilience and hardness, freely rotates and is applied to the road surface under a dynamically monitored load.

A controlled flow of water wets the road surface immediately in front of the test wheel and when the vehicle moves forward, the test wheel slides in a sideways direction on the wet surface.

The force generated by this action is related to the wet skidding resistance of the road surface. This provides data to determine the micro-texture of the surface. SCRIMTEX is a development of

Above: mini SCRIM developed by WDM for surveying in towns and cities

Right: the wide-angle view from SCRIM forward facing camera in New Zealand



the SCRIM and supplements the wet road skidding resistance by measuring, simultaneously, the surface macro-texture in front of the test wheel.

This can be achieved in both wheel tracks of a double-sided SCRIM device and provides, in conjunction with air and surface temperature, the ultimate requirement for assessment of road surface condition monitoring for network surveys.

Within the past decade poor skid resistance has been blamed for fatal road accidents in both Norway and Sweden, which could set legal precedents in Europe and throughout the world.

In Sweden the Transport Administration was reported following a motorcyclist's death on the highway E4; in Norway the National Rail Administration was accused of failing to act on complaints of a slippery surface – one person died and six were injured in an accident on a bridge.

LIABILITY

These types of cases could result in official bodies or engineering firms being found liable. Ignorance is no defence in these matters, so it is vitally important skid resistance surveys are carried out.

Richard Dal Lago, Head of Electro-Mechanical Development at WDM, says the Sideway-force Coefficient method delivers both repeatable and reproducible results and a consistency of measurement where friction issues need to be addressed, such as on horizontal curves and at junctions, where friction demand is greater.

This in turn helps highway authorities develop skid policies, which help save lives, as demonstrated in both New Zealand and the UK.

"SCRIM has been tried and tested over more than four decades and has helped save thousands of lives.

"During that time WDM has continued to fine tune its operation, both on the engineering side and through the harnessing of new technology, which has enabled us to offer clients an even wider range of data collection options, all of which have been developed to help deliver safer roads and save lives," he said.

JON DAY is a manager at WDM Ltd
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ENFORCEMENT OF:
BANNED TURN
BUS LANE
KEEP CLEAR
NO-ENTRY
ONE WAY
WEIGHT RESTRICTION
WIDTH RESTRICTION
YELLOW BOX JUNCTION

Zenco Intelligent Technology.

Effective, efficient traffic enforcement and compliance monitoring.

LANEWATCH. THE UK'S LEADING TRAFFIC ENFORCEMENT CAMERA.

Zenco Systems are the UK's leading provider of civil traffic and parking enforcement technology. The ZenGrab Digital Enforcement Suite of products automates the process of traffic and parking contravention enforcement.

For more information on the LaneWatch camera range and the ZenGrab Digital Enforcement Suite of products or to arrange a free, no obligation trial, please call Adrian Ford on **+44 (0) 843 289 1826** or mobile **+44 (0) 797 479 5476**. Alternatively, email ade@zencosys.com

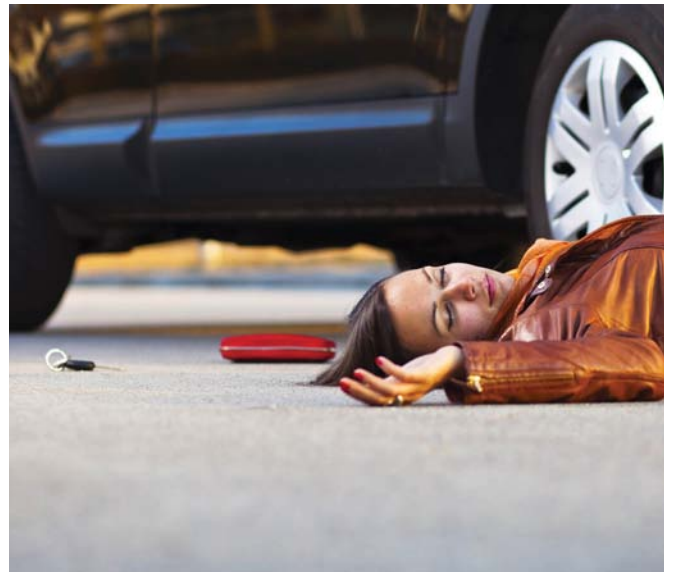




Road safety requires

A pot and its lid, tar and sulphur, Sherlock Holmes and Dr. Watson – there are some things that obviously belong together. Others, by contrast, are only inseparable on second glance: political unrest and the Dax, education and affluence, mobility and climate change. Transport planning and road safety also belong in this category

WORDS BY **SONJA KOESLING**



Every day, 3,651 people are killed on roads around the world. This amounts to 1.3 fully-booked AIDAblu cruise ships, 6.8 full Airbus A380s or 44.5 of London's Routemaster buses. Approximately 90 percent of fatal traffic accidents occur in developing countries even though only half of the world's registered vehicles are on the roads there. The question is why is the difference between developing countries and industrialised nations so great? Or, asked another way: what are the industrialised nations doing better when it comes to road safety work?

"In the developing world, a good road is usually interpreted as that presenting a pavement in good condition", writes Luis Antonio Lindau, President and Director of EMBARQ Brazil, in the white paper "Road Safety – How can you bring your Vision Zero to life?" which was recently published by the PTV Group. Safety standards

The White Paper argues that safety must be designed into roads and not added as an afterthought

for roads are not common practice, efforts to reduce the number of road accidents should start with road safety education. Not taken into account here is that improvements in the road environment condition drivers' behaviour.

CROSSING BOUNDARIES

"Too often, road safety is considered as an afterthought", says Michael Replogle, co-founder of the Institute for Transportation and Development Policy. Frequently, too little attention is devoted to the topic of road safety in the guidelines for traffic infrastructure design. This to the detriment of more-endangered road users, namely pedestrians and cyclists. Pro-active nations such as Sweden, which pursue a holistic approach to increasing traffic safety, could provide the right impulses for a re-thinking. "They are helping to re-shape our thinking such that safety is implemented at the earliest stages of infrastructure development and does

more to protect vulnerable road users in particular", says Michael Replogle, expressing his opinion in favour of breaking up institutional structures and encouraging cooperation between traffic safety and traffic planning experts.

In the UK too, the pro-active approach has resulted in increased road safety. This June, the Department for Transport published the most positive figures since the recording of such figures was started in 1926: as compared to the average values from 2005 to 2009, the number of traffic deaths had been reduced by 39 percent by 2013. Between 2012 and 2013 alone, the number of traffic deaths was reduced by two percentage points, and the safety of severely-endangered road users increased especially sharply. Thus, the number of pedestrians killed was reduced by five percent to 398 deaths, while the number of cyclists killed was reduced by eight percent to 109.



a paradigm change

"I think one of the key reasons for this has been the success of the road safety audit process which sees infrastructure design and road safety teams working together during the design process", says Neil Thorpe, Lecturer in Transport Studies at Newcastle University. "This is a pro-active approach, where we try and design hazards out of new infrastructure before implementation, rather than being reactive to safety issues when sadly it is too late for someone who has been killed or seriously injured." Great Britain regards road safety as a task that must be approached in an interdisciplinary manner. Therefore, experts from various areas are working across the nation to improve safety on the roads now and in the future. "As society changes, this throws up new road safety challenges – for example the growth in drug-related collisions, more elderly car drivers – and so we need easy access to the necessary skills and expertise to be able to tackle them sooner rather than later", says Neil Thorpe.

GREATER SAFETY THANKS TO STRATEGIC GUIDELINES

Something that will pay off in the future for Great Britain are clear guidelines for road safety. While experts around the world are calling for these, the United Kingdom has already specified a strategic framework for road safety and has today one of the best road safety records in the world. But what advantages does this strategic framework actually offer? "For me, the two strong themes that emerge from the framework are flexibility and innovation", explains Neil Thorpe. "We know that there is no 'one size fits all' solution to road safety and so by devolving powers to the local level and freeing decision-makers from the constraints of a more centralized approach, it is likely that local road safety partnerships will have the flexibility to be able to deliver the right solution for the

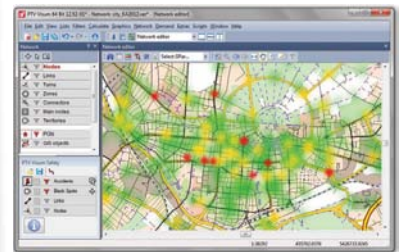


right problems that emerge. This can be in new ways of delivering road safety solutions, for example through local voluntary organisations, the adoption of emerging technology to help elderly drivers stay safe on our roads, or using legislation in new and different ways to enforce laws and regulations." In addition, attitudes have changed positively due to the strategic framework: while traffic victims were previously regarded as collateral damage in an ever more mobile world, today politicians are considering this issue seriously and providing appropriate resources to increase traffic safety. And new technologies are also playing a role.

"It is abundantly clear from the UK's strategic framework that the delivery of road safety schemes is going to have to be done against backdrop of tighter financial controls", says Neil Thorpe. "This situation is not unique to the UK, but applies equally throughout the world – in the developed as well as developing countries – where resources are scarce." Road Safety Impact Assessment (RIA) is a key that can be used to deploy the means available as effectively as possible. The risk of existing and future infrastructure can be assessed with RIA. PTV Visum Safety is a tool that can master this task.

FROM VISUALISATION TO ANALYSIS

Even today, in their traffic models, traffic planners are examining the



Above right: a heat map feature of PTV's Visum Safety

Above

The white paper "Road Safety – How can you bring your Vision Zero to life?" provides figures and facts relating to all aspects of traffic safety. In addition, international experts from the OECD, the World Bank and others share their thoughts on this topic and provide solution approaches. The white paper is available at <http://your.visum.ptvgroup.com/WhitePaper-RoadSafety> for free download

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www.ptvgroup.com

economic and environmental effects of planning variants in their infrastructure projects. With PTV Visum Safety's RIA feature they can expand their examinations to include questions of traffic safety. On the tool side, simple crash prediction models for different road types are incorporated into PTV Visum Safety. By blending these with traffic volumes from the transport model, traffic planners can take stock of the predicted crash occurrence for individual streets or the complete network and examine as well as compare various scenarios.

Newcastle is among the first universities using PTV Visum Safety for its research work. "PTV Visum Safety can play a critical role in two very clear areas: the first is using casualty and collision data to identify where real road safety hotspots exist and what are the likely causes of the safety problem. This will help guarantee that resources are targeted effectively at the right locations and at the right problems. Failure to do can result in resources being used inefficiently and not to their full potential." The second area where the software can give support is in evaluating the performance of road safety interventions in reducing casualties.

"This may not always be popular – it may reveal that the desired effect has not been achieved – but it is crucial to developing our knowledge and understanding of road safety measures to ensure that resources can be deployed more effectively next time around", says Neil Thorpe. Because only somebody who understands can make changes and will someday succeed in achieving Vision Zero.



**Tuesday 21st October 2014
Lancaster London W2**



NEW LOOK, NEW VENUE

MARY NIGHTINGALE IN THE SPOTLIGHT

**HIGHWAYS MAGAZINE
EXCELLENCE
AWARDS 2014**

Announcing Mary Nightingale as the Highways Magazine Excellence Awards 2014 celebrity host

We are excited to announce that your celebrity host for this year's 11th Highways Magazine Excellence Awards is twice-named ITV Newscaster of the Year - Mary Nightingale. Mary has also presented several budget and election night specials as well as her own show, *Dreaming Aloud*, on Classic FM. Away from business and current affairs, Mary has presented *Wish You Were Here*, reported from the World Skiing Championships and the Rugby World Cup. Other credits include *The Girl Who Would be Queen*, for which Mary was given exclusive access to the Royal Family's home movie collection.



Dana Skelley
*Director of asset management
at Transport for London (TfL)*

And we are delighted to confirm this year's guest speaker as Transport for London's Dana Skelley

2014 marks 100 years of women working in transport, and Dana will talk about the role of women in the highways sector.

Book your table now at www.hmea.co.uk



Recognising the young and the old(er!)

ITS (UK) enjoyed its annual gala dinner and awards ceremony in London in July. Hosted by President Steven Norris, the evening saw two people collect a prestigious ITS UK Award. Here are the citations

YOUNG ITS PROFESSIONAL OF THE YEAR

Tom Grahamslaw, Mouchel



For his continued personal development and contribution to the smart motorways programme.

Tom is highly capable, motivated and ambitious developing his knowledge, skills and competencies whilst undertaking the role of workstream leader (safety) on M1 smart motorways schemes.

He has continually developed his technical skills providing him with the opportunity to undertake a lead author role on the high profile update of the safety documentation associated with Interim Advice Note 161 and lead on discrete tasks within the managed roads operational development (MROD) contract.

Tom has developed advanced management consultancy skills as demonstrated through his presentations to senior managers in the HA. He has further developed his writing, presenting and facilitation skills: specifically supporting his MROD role, as well associated key meetings.

He quickly and accurately identifies who within his network of contacts can assist in any given situations allowing him to collate accurate information to solve problems or

assist others in finding an expert to help with a challenge. Tom has a good understanding of relationship building techniques with clients, partners and colleagues, which he develops further into collaborations, especially under tasks on the MROD contract. Tom is confident in adapting his behaviours and communication style to suit situations. He demonstrates a professional and formal manner at client meetings whilst maintaining a more informal, yet structured approach to undertaking a role as mentor.

Tom has gained the respect of senior members of the HA, Delivery Partners and other consultancy organisations through his professionalism, his integrity and capabilities which exceed that expected by someone of his age.

NEVILLE REES AND PETER HILLS AWARD FOR OUTSTANDING PERSONAL CONTRIBUTION

Keith Keen



Keith is widely recognised for his work over 17 years at the European Commission managing ITS research and development programmes that have paved the way for ITS deployments. Keith played a key role in the DRIVE programme, the subsequent research framework

“ Tom is highly capable, motivated and ambitious ”

“ For many Keith was the “voice of reason” on ITS within the EC ”

Don't forget – ITS (UK) are supporting the Highways Magazine Excellence Awards this year, with the award for Best Use of Technology in the Highways Industry. The awards take place on 21st October. See page 54 for more details

programmes and the later deployment programmes on transport telematics and ITS.

Keith's career started at the GLC (urban motorway construction: demand management controls and traffic analysis), before his 17 years in consultancy, with Atkins (highway planning studies, prediction models, M11 extension) and WoottonJeffreys (traffic control implementation, the first UK Motorway ramp control project, motorway traffic management studies including ITS).

In 1990 Keith joined the EC and helped shape the future of transport in Europe and beyond. Keith was the project officer for many significant EC projects in ITS. He worked closely with the road authorities in the UK and Ireland in the ITS deployment project STREETWISE and was very influential in establishing the subsequent EasyWay programme.

For many Keith was the “voice of reason” on ITS within the EC. His integrity, knowledge, insight, understanding and approachability resulted in, freely given, sound impartial advice on project proposals, policy directions and implementation aspects. Many around Europe benefitted from his advice, which is still much in demand, but especially those involved in European research from the UK.

He is a founder member, supporter and past Chairman of IBEC; helped develop the University of Kingston MSc course on ITS; contributed to the ITS(UK) Practitioner's Guide to Europe; leads our new Vision for ITS(UK) Task Force; and is Assistant Editor for the PIARC Road Network Operations and ITS Handbook

His contribution to ITS and the reputation of the UK is immense.



Euros hectic

A round-up from a busy ITS European Congress which took place in Helsinki in June

WORDS BY **PROFESSOR ERIC SAMPSON**

The Helsinki Congress was a popular success with more than 2,500 attendees from 65 different countries

coming together for discussion, debate and networking. Reflecting the headline slogan "ITS in your Pocket – proven solutions driving user services" there were three key messages from papers and sessions.

First, the strong focus on deployment rather than trials or research. Second the extensive user involvement in all parts of the ITS service value chain has changed and expanded the role of users from being just receivers of services to being actuators, content providers and service integrators by compiling their own personalised service portfolio from

The Helsinki Messukeskus Centre, venue for the 10th ITS European Congress

the app stores. And third, while Big Data and Open Data are key and fast-moving initiatives neither will provide effortless solutions to problems.

Business cases for the use of open data will not be possible without frameworks and standards which are adopted by all member states of the EU. There is still much debate on who owns data and who should pay, and how much, for use. New entrants into the mobility supply chain are pressing for the opening-up of data resources where availability is currently limited. However some member states are uncomfortable with this derestricted world, despite the Digital Agenda for Europe and the European Transport Policy, which both promote Open Data, and seek to apply conditions on data provision for unspecified

policy requirements. This is creating a paradox – the best way to achieve a deregulated environment may well be agreement on some form of institutional framework.

The need for clear thinking on standards and regulation was demonstrated by a paper which discussed the uptake of electric two-wheelers in China. Legislation was initially an enabler at the growing phase but then became a barrier to the uptake of electric two-wheelers when drivers became unsure about whether or not new standards were going to be implemented and enforced.

In many ways Helsinki represented a tipping point – the occasion when it became clear that there had been a major shift of emphasis and attitudes. Congresses have passed through a



series of changes. Initially they were driven by research and what might be possible one day; then they were driven by suppliers offering good, but for the most part single function, solutions. However the users had bigger, more complex, problems and they needed bigger, integrated, solutions which began to appear as a result of a number of small but vital trends:

- Everything started to become instrumented and digital
- Everything and everyone started to be interconnected
- Open Data began transforming transport markets
- The huge increase in smartphone/tablet ownership has meant permanently connected travellers
- Consequently everything is becoming intelligent

These trends built the framework for the major shift seen in Helsinki. We have changed from an ITS market essentially planned and managed by what suppliers wanted to offer to one where products and services are driven by what users want

It was clear from discussions that there is still work to finish before we have proven solutions for some problems as they are the very complex ones such as Smarter cities with transport, energy, water and waste systems working together; connected vehicles and infrastructure; and Mobility rather than transport.

Two sessions and Stakeholder Workshops addressed important areas of people resources – training and retaining younger experts and Women in ITS and the new problem of refreshing the skills of a workforce likely to retire at 70 not 60. The ITS industry experiences the same issue as many other technology-focused professions: a shortage of women or fresh graduates attracted to a career in intelligent transport systems.

This is worrying as it might mean that the needs of women are overlooked in product design, so the services produced might not suit women's needs. And it is surely a waste of resource if a high percentage of trained engineers and technicians are not available for whatever reasons but especially where there has been a maternity break in their career.

The "Women in ITS" session explored both sets of problems and some possible solutions.

The field of connected systems was very popular last year in Dublin and Tokyo and as expected it featured strongly in Helsinki beginning with a multi-national Executive Session. There were examples from the full range of technologies – driver operating independently, driver advice, driver assistance, partial automation, high automation. Special Sessions and technical papers discussed the possibilities for full automation or autonomous vehicles: the ones with no driver intervention

Highlights from the summer's event – and next it's off to Glasgow in 2016 for the 11th Congress

PROFESSOR ERIC SAMPSON CBE is a Visiting Professor at Newcastle University and City University London. He is the President of the International ITS Benefits and Evaluation and Costs Group (IBEC) and also a Fellow of the Transport Research Foundation.
eric.sampson1@btinternet.com

at all. This topic is moving rapidly worldwide. We will see some new developments at the World Congress in Detroit in September and the subject will feature prominently next year when the World Congress returns to Europe, specifically Bordeaux.

The phrase "Mobility as a Service" was heard frequently. This is a key concept as it is a further step towards seamless transport. It envisages a world where we don't necessarily own our own vehicles – two-wheeled, four-wheeled – and we don't necessarily have monthly or yearly contracts with transport operators or service providers. Instead we purchase a commodity called 'mobility' as and when and how we need it depending on our location, preferences, specific requirements, time budgets, money budgets etc. The Ministerial Round Table discussions and Joint Statement record the progress we have made in this difficult but key area and point towards the next top level discussions in Bordeaux next year. An intriguing point came up at the MRT – generating the extensive connectivity that this concept requires may require relaxation of EU Competition Policy.

The Helsinki slogan was manifestly true and we really did see ITS in our pockets – a range of user services like any other mature consumer product: readily available, effective, efficient, affordable, reliable. And as always with an ITS Congress we were given a glimpse of what is coming very soon.



Seeing really is believing

I am delighted to be attending Seeing is Believing 2014. It offers a great opportunity for local authorities to find out about the latest developments and products which can help improve the safety of the highway network. With the government making an investment of £10 billion into the highways industry in 2015, we see shows like this as playing an important part in educating the sector."

So says Robert Goodwill MP, Roads Minister about the UK's most innovative highways and ITS show which takes place in Leicestershire this November.

Because unlike other shows where people can only tell you how good their product is, at Seeing Is Believing you can experience it for real on the outdoor demonstration track, which complements the traditional exhibition stands in the inside hall.

The event takes place deliberately in November to take advantage of the early sunset, allowing visitors to see outdoor displays in daylight, dusk and



Turning night into day – exhibitors can demonstrate their products in daylight, dusk and nighttime conditions



full darkness without having to stay late into the evening.

A wide range of exhibitors are booked to take advantage of the unique presentation format showing products services and demonstrating new legislative techniques too.

Whilst there is a charge for exhibiting – to attend as a visitor is FREE so local authorities, consulting engineers and all manner of contractors are expected to descend on the event.

The organisers have secured some massive highlights for 2014 – principally



the Roads Minister coming along to show support, but also the Highways Agency and TRL (Transport Research Laboratory) have collaborated to provide a digital simulation of Smart Motorways, there is a Dutch style roundabout for traffic engineers to assess – The TMCA (Traffic Management Contractors Association) will be demonstrating ways of eliminating carriageway crossings as part of its "Aiming for Zero" initiative as the Highways Agency and HSE have targeted to remove carriageway crossings by the end of 2014.

"The Highways Agency supports Seeing is Believing in its aims to encourage awareness and understanding of the innovative products, technology and methodologies that maximise safety and free-flowing traffic on motorways and roads effectively and efficiently"

Gill Stevens, head of communications - Highways Agency





“ Seeing is Believing is held in November in order to take advantage of the early dusk, meaning exhibitors can demonstrate their products in daylight, twilight and darkness without having to keep visitors at the site long into the evening ”



Also it's rumoured there will be a demonstration of the effectiveness of road markings and how they interact with cars that 'read the roads', which in light of recent legislation changes should prove to be very interesting for all in the Highways and ITS Sectors.

"We deliberately run the show every two years to avoid clashing with any other national shows and to allow things to evolve in the middle year" said Neil Levett, managing director of the show's organisers Alad Ltd (which also publishes *Smart Highways*). "I'd be lying if I said the time of year is ideal, as the weather can be changeable, but to provide the entire lighting spectrum of light to dark we need to do it at this time of year - or else we'd be there until 11pm in July" he continued, "last year the visitors admitted that whilst they got wet at times, they do so in their day jobs so a little bit of rain only helped them to appreciate the exhibits in real conditions. Although I do think they were pleased to have the indoor exhibition hall as well!"

Richard Hayes of the Institute of Highway Engineers believes the

“ At a time when financial pressures and fast paced developments in technology present ever more challenges, events like Seeing is Believing provide the ideal way to network and learn from experts and suppliers which will help all of us involved in road design, maintenance and operations meet these challenges head on. ”

Graham Edmond, head of network maintenance, Transport Scotland

innovative ideas behind Seeing is Believing make it something special. He said: "Seeing is Believing has established a unique and professional way of developing the links between the supply sector and highway and traffic practitioners. By creating real situations and hands on access to new products it permits the maximum benefits to be demonstrated. The event provides one of the best opportunities for collaboration and networking."

Exhibition stands are almost sold out, so companies thinking of taking part should consider coming to the exhibitor preview at Bruntingthorpe on 23rd September between 11am and 2pm. You can register your interest by emailing Gavin Harrison - gavin@aladltd.co.uk.

INSIDE, OUTSIDE: WHERE TO GO AT SIB

OUTDOOR

- Outside track plot demos
- **NEW** LIVE trials with our test partner TRL - testing luminance, reflectivity and more...
- **NEW** Cars that read the road - demonstrations
- **NEW** The UK's first demo of INROADS active road studs
- **NEW** Demos by TMCA (Traffic Management Contractors Association) to eliminate carriageway crossings, in readiness for the Highways Agency's target date of end 2014 for zero crossings.
- **NEW** Walk-through urban street
- **NEW** Drive-through rural road
- **NEW** 'Motorway' section
- Tours supported by full narrated commentaries

INDOOR

- MiniDigiSim at the TRL Trial Zone - simulating smart motorways and latest cycle safety initiatives, inc. Dutch-style roundabouts
- **NEW** 'Fast Chat' showcasing the latest products/services
- Specialised workshops on key issues facing local authorities and highways contractors
- Network with likeminded industry professionals



Products on show from the exhibitors: ITS, variable message signs, lighting products, reflective sheeting, road markings and much more.

SEEING IS BELIEVING When?

19th and 20th November 2014

Where?

Bruntingthorpe Proving Ground, Lutterworth, Leicestershire

Web?

www.sibuk.net





Shortlist announced for the new ITS Award



The four contenders to be the first winners of the ITS-related award at the prestigious Highways Excellence

Awards, which take place in London this October, have been named. The award is for best use of new technology in the Highways Industry and is given to an organisation or local authority which can demonstrate they have or are making a significant improvement to road safety, congestion and/or the environment through the implementation of new technology.



HMEA AWARDS 2014

When?
Tuesday 21st October 2014

Where?
Lancaster Hotel,
London W2 2TY (near
Lancaster Gate Tube)
Web
www.hmea.co.uk

1. JACOBS UK LTD

For development of origin-destination matrices using mobile phone data for the M25 J30/Lower Thames crossing Transport Model

2. SCOTLAND TRANSERV & FHOSS TECHNOLOGY

For Fhoss powered light safety wear

3. TRANSPORT FOR LONDON (ASSET MANAGEMENT DIRECTORATE)

For Pedestrian Countdown at Traffic Signals (PCaTS)

4. CATSURVEYS GROUP LTD

For Mobile Ground Penetrating Radar (MGPR)

The Awards, now in their 11th year, bill themselves as a night of celebration to recognise those who have put in extra effort and creativity to bring safer, better and more advanced systems and products onto our roads.

The black-tie event takes place at the Lancaster Hotel, London, and is hosted by TV presenter Mary Nightingale, with the guest speaker Dana Skelley of Transport for London.

A full list of all the awards nominations can be seen on the opposite page.



CO/AUTHORITY	SCHEME/PROJECT
Most Innovative Local Authority Project / Scheme	
North Somerset Council, Highways Agency, Costain Ltd, CH2M Hill	Junction 21 Combined Improvements
Department for Regional Development (Northern Ireland)	'Belfast on the Move' Traffic Management Master
Nottinghamshire County Council, The ILC and Advanced LEDs Ltd	Converting to energy efficient LEDs
Connect Plus, Connect Plus Services on behalf of the H. Agency	Maurer Joint Replacement Scheme
The Imtech Site Safety Initiative Award	
Balfour Beatty	'Zone In' Plant Person Interface Training
BAM Morgan Sindall M1 J39 - J42 Smart Motorway, Asset International, Chevron Traffic Management, Highway Resource, Morelock Sign and WJ Roadmarkings	10 Steps to Zero Exposure
Balfour Beatty Mott MacDonald on behalf of the Highways Agency	Near Miss Reporting App
A-one+ Integrated Highway Services	Cultural Behavioural Safety Programme
The WJLinkline Group Highway Partnership Award	
Connect Plus Services and the Prince's Trust	Get Into Highways Training Programme
LTS Infrastructure (Luton Traded Services, Luton Borough Council & VolkerHighways)	LTS Infrastructure
Aggregate Industries UK Ltd, Kier, Surrey County Council and Marshall Surfacing	Project Horizon Partnership
Transport for London, EM Highway Services Ltd, CVU, Conway Aecom and Ringway Jacobs	London Highways Alliance Contracts
The RSMA Road Marking Project of the Year	
East Ayrshire Council & Rennicks (UK) Ltd.	A719, Use of Solar Active Road Stud Technology
Bellstan Ltd, Ennis-Flint and City and County of Swansea	The Boulevard Dura Therm Crosswalk Project
WJ Linkline Group Ltd, Costain, Carillion and the Highways Agency	M1 Junc 10 - 13 High Performance Markings Project
IHE Team of the Year	
A-one+ Integrated Highway Services	Programme Delivery Team
EM Highway Services Ltd	Croydon Flood Response Team
Costain	Highways Improvement Team (HIT)
The Shell Bitumen Highway Industry Product of the Year	
Connect Plus on behalf of the Highways Agency	Rapid Cure Concrete
Habanero, HMEP, Midlands Highway Alliance and URS	HMEP LEAN Toolkit for Highway Services
Aggregate Industries	Non Tipping Trucks
The Total Bitumen Award for Environmental Sustainability in the Highways Sector	
Ringway Infrastructure Services	Wet Waste Reception Station
Jacobs UK Ltd, Devon County Council and Travel Devon	Devon Sustainable Travel Planning
WJ Linkline Group Ltd, Amey Highways and Derbyshire County Council	WJ Hydroblast Ultra High Pressure Water Removal System
BEAR Scotland Limited and Jacobs UK	M876 J1 Embankment Repair
The Balfour Beatty Road Safety Scheme or Project of the Year	
JPCS & Warrington Borough Council	20mph Programme With a Twist - An Innovative Partnership Approach
Nottinghamshire County Council	A614 Casualty Reduction Scheme
Walsall Council with Rosehill Highways	Walstead Road Local Safety Scheme
The EM Highway Services Congestion Reduction Scheme of the Year	
North Somerset Council, Highways Agency, CH2M HILL and Persimmon Homes	M5 Junction 19 Improvements
Aecom, Doncaster MBC & SYPTE	Optimisation of Traffic Signal Systems: A638 Bawtry Road, Doncaster
Major Project Award	
Costain Carillion JV on behalf of the Highways Agency	M1 Junc 10 - 13 Improvement Scheme
Portsmouth City Council	Northern Road Bridge Replacement
Portsmouth City Council	Tipner Junction and Park & Ride
New Technology Award	
Jacobs UK Ltd	Use of mobile phone data for M25, J30 scheme assessment
Scotland Transerv & Fhoss Technology	Fhoss powered light safety wear
Transport for London (Asset Management Directorate)	Pedestrian Countdown at Traffic Signals (PCaTS)
CATSURVEYS Group Ltd	Mobile Ground Penetrating Radar (MGPR)

INTRODUCING OUR GUEST SPEAKER AND HOST

DANA SKELLEY - Guest Speaker

Dana Skelley is Director of Asset Management at Transport for London. She is a Chartered Civil Engineer with an MBA and 25 years contribution to the highways and transportation sector inspiring people, stakeholders and partners through continuous improvement and change.



Dana's responsibilities at TfL cover investment planning and delivery of maintenance, management and improvement of highway, bus and traffic infrastructure. This includes major structures such as flyovers, tunnels and heritage Thames crossings, and the biggest urban 'invest to save' CMS and LED urban lighting programme.

Dana is a keen sponsor, mentor and career enabler of apprentices and graduates in civil engineering and infrastructure management.

Dana Chairs the UK Lighting Board, is a member of the UKRLG and HMEP Board. Heading up the Transforming London Highway Management programme, a key component of which is the ground breaking pan London Highways Alliance Contracts, Dana has initiated unprecedented collaboration in highways delivery across London and is a firm advocate of maximising efficiency whilst bettering the customer experience through joined up and sustainable approaches.

MARY NIGHTINGALE - Event Host



Mary Nightingale has twice been named Newscaster of the Year as anchor of ITV's evening news. She has also presented several budget and election night specials as well as her own show, Dreaming Aloud, on Classic FM. After starting out as a Eurobond dealer, Mary reported for TV Tokyo and fronted financial programmes for Reuters.

She wrote and presented BBC's World Business Report, interviewing analysts and economists, before moving on to the commercial network on London Tonight with Alastair Stewart.

Away from business and current affairs, Mary has presented Wish You Were Here, reported from the World Skiing Championships and the Rugby World Cup. Other credits include The Girl Who Would be Queen, for which Mary was given exclusive access to the Royal Family's home movie collection.



View from the Chairman

How much is **knowledge** worth?

Over the last few weeks I have seen two advertisements for non-executive directors for "Quangos" operating in the knowledge / transport / technology sector. One of which was paid and one was on a voluntary basis. At the same time I was involved in a discussion that arose about how not to employ the "usual suspects". This made me think - why did one of the Quangos think it was necessary to pay for the time and knowledge of its NEDs while the other did not?

It is a fact of economic life that people who can afford to give their time for free are probably at the older end of the age range - certainly this makes them experienced, but in a field dealing with new technology and innovation surely a balanced mix of skills and experience is required and therefore not remunerating individuals for their time excludes those from applying who are not

"I'm not recommending a gravy train of free loaders, but let's make our industry boards more democratic and open to people who have skills and expertise to offer and not just a decent bank balance!"



of independent means or who's employer is unable to subsidise their participation.

Many, many organisations, ITS UK included, could not function without their members giving their time for free and it is this selflessness that makes the organisation such a success and gives it its worldwide reputation. But surely Government should be different, if it wants boards and committees to offer advice to UK Plc they should be prepared to pay for it to ensure they get the best talent available and to widen the pool of individuals able to take

up such posts and not rely on volunteers.

This is also a matter of management and governance - managing volunteers can sometimes be like herding cats, the committee is reliant on the individual's good will and it can be difficult to enforce deadlines or vie for priority in their time schedule (I cite myself as an example here, meeting minutes I have taken for a charity committee sometimes get written the night before the next meeting... and don't ask Jennie and Neal how often they have to "remind me" of something...)

I'm not recommending a gravy train of free loaders, but let's make our industry boards more democratic and open to people who have skills and expertise to offer and not just a decent bank balance!

SHARON KINDLEYSIDES is Chairman of ITS UK and is Managing Director of Kapsch TrafficCom Ltd

INTEREST GROUP **ROUND-UP** SUMMER 2014

■ The large and lively ITS (UK) Road User Charging Interest Group held its annual conference in May, hosted by CGI near Kings Cross in London. This is always an international gathering, and this year the UK contingent was joined by professionals from Germany, Hungary, Ireland, France and the European Commission in Brussels.

■ There were some interesting UK updates, notably from the Department for Transport on how the first six weeks of the new UK HGV Levy had worked out. The carefully planned information campaign for hauliers all over Europe seemed to have been successful and there had been surprisingly few examples of lorry drivers either unaware of the new levy, or thinking they might get away with ignoring it. The RUCIG intends to

revisit this in spring 2015 when the levy will have been in for a year and some interesting results should be available.

■ The small but growing Maritime ITS Interest Group held a meeting and visit at the Port of Liverpool in July. This Group looks at how ports can be integrated with the surrounding infrastructure using ITS, to enable the most efficient movement of both passengers and freight. It is ably championed by AECOM who have plenty of expertise in both the marine and freight sectors. The audience heard some interesting talks on environmental aspects of shipping, port planning, and the resurgence of both the Manchester Ship Canal and the Port of Liverpool. They were also able to take a coach tour of the port and see the systems in action.

■ The Driver and Vehicle Licensing Agency (DVLA) spoke about their new integrated enquiry platform service, another UK initiative of great interest to the audience. Any form of tolling above the most basic coin-in-a-bucket operation relies on accurate records of vehicle keepers and drivers, and any activity by DVLA to reduce the number of false information it keeps is always welcome. If it becomes simpler for the well meaning motorist to register correctly with the DVLA, one can hope that more resources can be made available to tackle those who deliberately falsify their records.

■ ITS (UK) joined with DfT in May to organise an information day on ITS for Local Authority staff. Attendees were treated to quickfire presentations (pictured) and to a selection

View from an SME

Are industry events always cost-effective?

Every week, my inbox and voicemail fills up with notifications from eager sales people trying to buy into in the next big event to hit the industry that we have been 'specially selected' to participate in. Some are indeed well thought out and well marketed, but the majority are sadly just a carbon copy of so many already out there, just creating additional noise and diluting the perceived value of events as a whole.

And when you look at the content, you find that the speaker programme is filled with the same big name companies often using the same presentations over and over again and not really providing any new insight.

At a branding level, some of these events are key to extending your reach and establishing or maintaining your brand presence in a given space, but all often these programmes try to cram so much sponsored speaker content in that they do not allow enough time during the breaks for attendees to properly network and wonder around the exhibitions and actually get a sense for what solutions are out there and make fresh contacts.

The exhibitors and even the attendees have paid a fair chunk of money to be there, and particularly as an SME, you have to strongly question the real Return On Investment case for these events. So you have to ask yourself whether there are other solutions that will enable you to get your message out to your target audience in a more focused way.

That's why we are engaging our target audience much more via our social media channels, our website and our blog (pictured) and then back this up with running our own dedicated regional road shows and webinars that strive to deliver fresh, relevant issue-based content to a specific audience, with our emphasis very clearly on quality rather than quantity and on substance over style.

WAYNE STANT is Head of Product & Marketing at Clearview Traffic Group Limited



ITS adds clarity with Blue Guides



ITS (UK), the Intelligent Transport Society for the United Kingdom, has issued a new edition of its guide to deployment, business cases and funding of Intelligent Transport Systems (ITS) for

Local Authorities. The "Blue Guide" for Local Authorities is aimed at transport professionals who do not have detailed ITS knowledge and experience. It explains what can be a jargon and acronym infested topic clearly and comprehensively. There is also a "Blue Guide" from ITS (UK) on European Institutions and more Guides are planned.

Matthew Williams of ITS (UK) Members Dorset County Council, introducing the Guide, said "Authorities are facing similar pressures to manage their highways by warning and informing the travelling public, reducing car use and promoting sustainable transport, whilst demonstrating increased efficiency from reduced budgets. ITS can help meet these aims, but can at first appear daunting."



of market-stall style information points where they could chat informally with the experts present. The event "sold out" to the extent that a free event can do so, and the feedback was very positive. "I found all the talks of interest. Even though some did not relate directly to my own area of work, it has helped me to brief colleagues on diverse ITS developments" said one attendee.

ITS UK calendar 2014

Thursday 10th July	Joint: Enforcement Interest Group & Road User Charging Meeting - Atkins, Birmingham
Tuesday 15th July	Smart Environment Interest Group - Noise Webinar
Wednesday 16th July	ITS (UK) President's Dinner - London, EC3
Wednesday 16th July	Members' Workshop re collaboration with TSB, London E1
Thursday 17th July	Council Meeting - Transport for London
Thursday 31 July	Members' Workshop re collaboration with TSB, London E1
Thursday 4th September	Local Authority / Urban Interest Group, Glasgow hosted by Mott MacDonald and Imtech Traffic & Infra
Wednesday 10th September	Freight Interest Group Meeting, AECOM, London
Tuesday 23rd September	Council Meeting - Glasgow
Thursday 25th September	Joint Communications / Local Authority & Urban Interest Group meeting: the Cloud for ITS - Thales, London
Friday 26th September	IG Plenary Meeting, ITS (UK) Offices, London, EC1
Thursday 2nd October	Women in ITS Interest Group - Manchester (tbc)
Monday/Tues 6-7 October	RTIC Conference joint with the IET - London
Tuesday 21st October	Transport Scotland / Smart Environment Interest Group joint Event at Traffic Control Centre, South Queensferry
Thursday 30th October	Enforcement Interest Group Conference - London
Tuesday 18 November	Security & Resilience Interest Group, London
Wednesday 26th November	Road User Charging Meeting Interest Group Meeting- Location tbc



How Prague's drivers are informed

How integration and prediction are essential to influence driver behaviour

WORDS BY ROMAN SRP, VICE PRESIDENT, CZECH AND SLOVAK ITS&S ASSOCIATION

A timely delivery of information about the state of traffic situation to drivers and passengers prevents traffic congestion and accidents, reduces costs, negative environmental impact and contributes to a free flow of traffic and road safety. Last year, the traffic management system of Prague, capital of the Czech Republic, was enhanced with the provision of traffic information to drivers through information portals and variable message signs. The implemented telematic solution fulfills its function well and the implementation project was recently awarded in the national competition "Czech Transport Construction and Technology 2013".

The basis of the project titled "Solution to the provision of traffic information in Prague" was modernization and renewal of the existing traffic information provision system alongside with delivery, installation and commissioning of 51 information portals and variable message signs (VMS). The service provider is TSK Praha – the road administrator in the capital city of Prague. The general contractor of the project was a Czech company VARS BRNO a.s., who prepared a customized software solution based on its product SMARTIC to control all VMS in Prague. The uniqueness of the solution lies in the integration of all traffic management components into one system remotely operated from the Main Traffic Management Centre of Prague (HDRU).

DATA SOURCES

Real-time information on the traffic situation is acquired both from external and internal sources. External sources of information include the police, fire department, emergency

An example of Prague's information portals displaying real-time traffic information



medical services, central register of road closures, car park administrators, call centres, and Floating Car Data providers. Internal information sources are generated directly by telematic infrastructure operated by the municipal road administrator. This includes vehicle detectors, video surveillance systems, tunnels, weigh-in-motion systems and road weather stations. The data are processed in a uniform manner, evaluated and through the predefined scenarios used for traffic management and control in Prague.

MODERN LED VMS

In addition to traffic lights, variable message signs are now also used for Prague traffic management and control. Through them the drivers receive timely information on the state of tunnels, road accidents, traffic levels, travel times and delays, weather conditions, traffic restrictions or closures. These are modern, mostly full-matrix and full-colour RGB VMS providing excellent visibility even under adverse conditions.

Thanks to the full-colour full-matrix design with high density of display points, a high variability in display of traffic information is ensured – for example, in addition to the standard text information and graphic symbols, real-time schematic traffic level maps are now being displayed.

MANAGEMENT SCENARIOS

Essential for the correct function of the Prague VMS system are high quality traffic management scenarios.

These correspond to the foreseeable traffic conditions at the VMS locations. By continuous evaluation of the traffic data, the so-called "traffic status" is defined. It is essential for initiation of a particular scenario by means of accepting a traffic measure and informing drivers through the VMS. The possible conditions include traffic density levels, accidents, icy roads, reduced visibility, closures or restrictions, etc. Such situations are automatically compared with the predefined scenarios for traffic management and control, and when predetermined conditions (a combination of states) are met, a particular scenario is initiated.

The VMS management system in Prague is highly sophisticated. As a situation may arise, when the conditions comply with multiple scenarios, it was necessary to set priorities and prevent the initiation of multiple conflicting scenarios.

Scenarios automatically set the weight (importance) of information to the particular traffic event based on the predefined areas of interest of individual VMS, the distance from the particular board as well as the type of traffic event (accident, road closure, etc.). Scenarios can be initiated either manually by a HDRU operator or automatically based on the real-time traffic information.

BENEFITS FOR DRIVERS

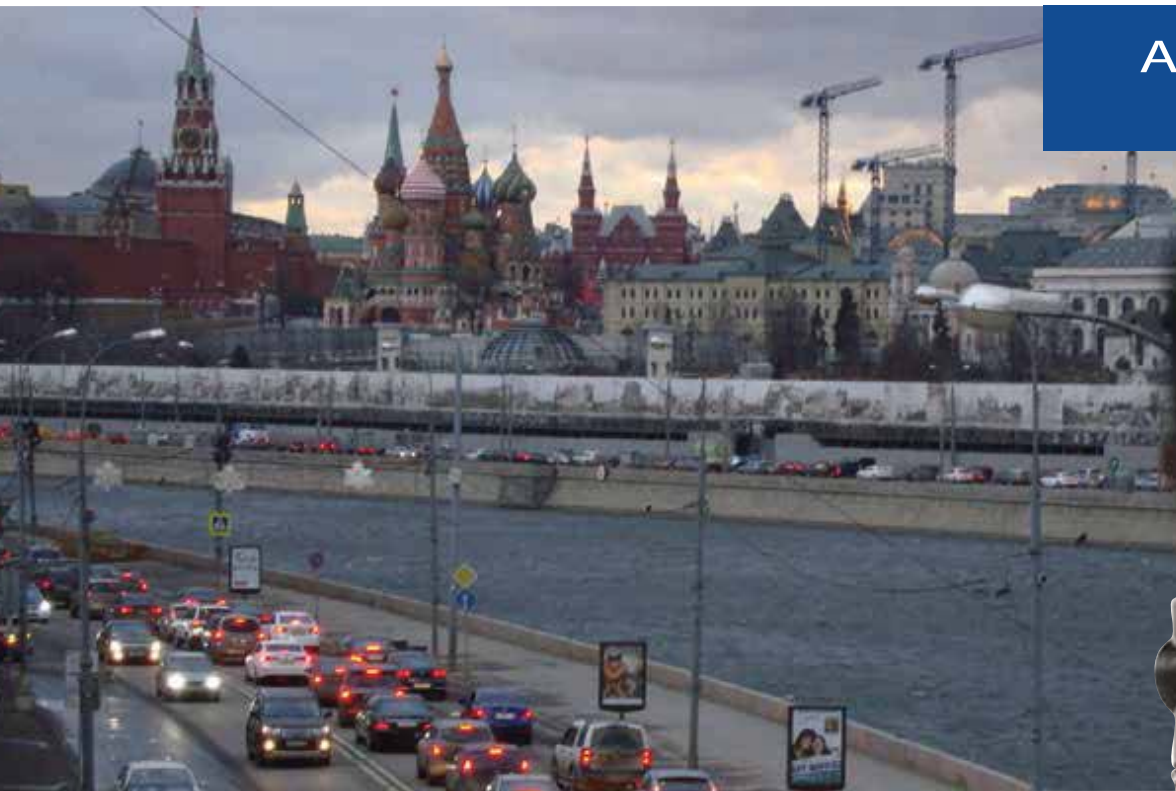
Thanks to the information displayed on the VMS as text or graphic symbols, the driver is able to respond to the current traffic situation and to avoid, for example, traffic jams or other unforeseen events. In particular, very positively perceived are informations about travel times and delays which have replaced traffic levels information, allowing drivers to create a better view of the extent of their delay or to reevaluate their route.



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APPLICATION STORY



The Traficam x-stream vehicle presence sensor combines a CMOS camera and video detector in one single unit.

Smart traffic sensors help alleviate city congestion in Moscow, Russia

Traficam x-stream vehicle presence sensors enable efficient operation of traffic lights.

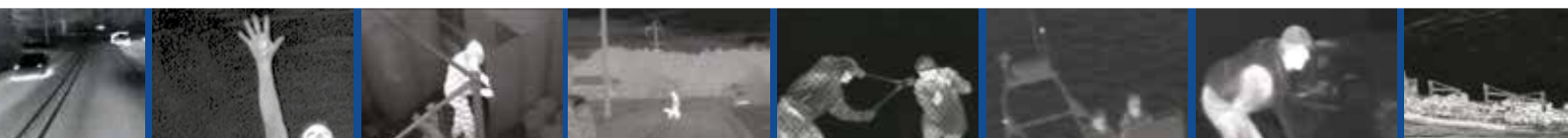
Traffic jam statistics for the city of Moscow are not very encouraging, to say the least. In order to tackle its heavy traffic congestion problem, the city of Moscow recently started with the development of an Intelligent Transportation System. To smoothen the traffic flows along signalized intersections, Moscow called upon the expertise of FLIR Systems. Over 3,000 Traficam x-stream vehicle presence sensors will make sure traffic signal cycles are adapted to the actual traffic.

Moscow is among the largest urban centers in Europe, with up to 16 million people during the day, and a large number of cars, about 6 million, which is also growing rapidly. This results in very high traffic density. Recently, the city of Moscow has been ranked number one in a congestion index of the world's major cities. The average time it takes to get from one point to another during rush hour is not only increasing, Moscow also has the highest percentage of delays versus other cities, with Istanbul, Warsaw and Marseille being the three other most congested towns after Russia's capital.

In order to tackle this problem, Moscow city authorities mandated the creation of ITS Moscow, a joint project between the federal government and city officials aimed at fighting Moscow traffic jams. Approximately 200 million euros is planned for investment in ITS as part of the project, which is expected to last through 2015. ITS Moscow includes the development and maintenance of an Intelligent Transport System (ITS) which should reduce major transport problems and traffic jams in Moscow. Officials hope the system will reduce traffic by more than 20 per cent.



More than 3,000 Traficam x-stream vehicle presence sensors will be installed at various busy road junctions controlled by traffic signals.





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