Bus Rapid Transit Supplement
A look at systems on the way in the UK and what should be considered when designing a network.

Metro Stations
Dmitriy Pegov, Head of Moscow Metro, explores their station modernisation priorities.

Smartcards
Tobyn Hughes, Managing Director of Nexus, explains success so far of the Pop smartcard and what the future holds.

Intelligent Transport Systems
Big data in public transport, the wider picture of open standards, plus how ITS can be an urban mobility dream.

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BRT grows and grows

In a recent UITP report, the world Bus Rapid Transit (BRT) network has nearly tripled over the past decade – a figure expected to continue growing as this mode of public transport gains even more popularity.

Considered by many as a new infrastructure solution due to its flexibility and relatively low-costs, the increased acceptance of BRT networks is setting the ground for increased public transport modal shares all over the world. This in turn indicates enormous market potential for new vehicle purchases, plus research into more sustainably-operated vehicles such as hybrids and electrics.

According to the UITP, there are currently 190 BRT systems in operation around the world carrying more than 31 million passengers per day. Figures show that Latin America currently has the most systems across 61 cities, closely followed by Europe’s 56.

To highlight the growing popularity of BRT, we have our latest Supplement on this topic starting on page 65 in this issue.

Exciting plans are in place for two new schemes in the UK – ‘Sprint’ in Birmingham and ‘MetroBus’ in the West of England.

Sprint will essentially be a ‘bus that operates like a tram’, offering faster journeys and improved reliability in and around Britain’s second largest city. Delivered by Centro – part of the West Midlands Integrated Transport Authority – sitting alongside heavy rail and Metro in the city, Sprint will be part of the wider future vision for a network of world-class public transport in the West Midlands. For an overview of the scheme, read our interview on page 66 with Centro’s Chief Executive Geoff Inskip.

And Rob Ash from the West of England Office gives a great insight into the MetroBus project on page 73 which is set to start operating at the end of 2016, transforming public transport in the region – a part of England that has seen a remarkable growth in population over the last 10 years.

To highlight how successful BRT networks can be, on page 76 Dervla McKay – General Manager at First Solent – provides an overview of Hampshire’s ‘Eclipse’ network which has now been operating for four years and carried more than six million passengers in total so far. Dervla covers how the scheme was set up plus the vehicles it operates now and in the future.

Taking a different look at BRT systems is Alberto González Pizarro – BRT, Electric and CNG Buses Project Director for Keolis – who highlights on page 70 that it is worthwhile looking at this mode of public transport from a holistic approach when designing a network – he gives his reasons why with some examples of BRT networks in France.

As always, if you would like to contribute to a future issue of Eurotransport with an end-user article or an informative news item, please do not hesitate to contact me via email at cwaters@russellpublishing.com. Please also bookmark our website at www.eurotransportmagazine.com where you can find details of past, current and future issues, conference details, plus daily industry news updates. We are also driving our Social Media activity on a daily basis, so please join our groups on LinkedIn, Twitter and Facebook – details are below.

Reference
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Please visit us on stand R20 at Busworld Kortrijk, 16-21 October
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Meeting the environmental excellence challenge

This year France will host and chair the 21st session of the Conference of Parties of the United Nations Framework Convention on Climate Change (COP21). As Alain Vidalies – French Secretary of State for Transport, Sea and Fisheries from the Ministry of Ecology, Sustainable Development and Energy – explains, France is all set to play a leading role, and will seek to meet the challenge of becoming an ‘environmental excellence’ country.

It is more necessary than ever before to pursue energy transition, and urban transportation has to contribute effectively to this evolution.

Mobility is at the core of everyday life; connecting people. Fighting congestion and developing sustainable public transportation implies facing the challenge of modal shift – switching from the use of an individual car to alternative means of transportation.

We are committed to an innovative transport policy; we must keep on improving ourselves.

First, the distribution of power between the State and local authorities needs to evolve by transferring school and intercity transportation from the department level to a regional level – to support the transition towards sustainable business models. The regions are already responsible for rail transport. Tomorrow, regions will be on the front line. The new distribution of power, introduced by the French law ‘NOTRe’, will be effective in 2016. It is about attractiveness of our territories, to make them more attractive to users, for all modes of transport.

Furthermore, we have to promote alternatives to the use of individual cars to stimulate transportation systems. The new ‘Grand Paris’ may significantly improve the quality of the transportation network of the Île-de-France region, in the east and the west, and in the heart of the French capital. The construction works regarding the extension of underground lines are well underway; for example, Line 14 towards the Saint-Ouen City Hall. As regards the launch of a €450 million call for projects in favour of collective transports and sustainable mobility, the priority has been given to diversification of the transportation system, concerning cities of all sizes throughout the territory. We are supporting buses with a high level of service, tramway lines, river shuttles and transportation by means of aerial cable. The energy transition law introduces quotas of buses with low-carbon emissions as from 2020. Public transport providers should have, in their fleet, at least 50% clean buses from 2020 and an entirely clean fleet by 2025.

I think it is crucial to provide innovative mobility with opportunities in order to offer possibilities of new services to customers. The development of Intelligent Transport Systems (ITS) has a direct effect on congestion, inter-modality and energy performance. France will stand first in line, hosting the World Congress on Intelligent Transport Systems in Bordeaux in autumn 2015. Many new projects are already underway – i.e. smart transportation devices, autonomous and electric vehicles, and the safety of travellers.

There is a need for consistent and simple solutions for citizens. Improving the quality of transportation is deeply linked to the development of sustainable and smart mobility solutions. This is the meaning of our commitment aiming at promoting active means of transportation, for example cycling and walking. We have recently initiated an ambitious national plan along five major axes: encouraging inter-modality; developing road sharing; encouraging cycling economy; deepening ties with tourism; and promoting the benefits of walking and cycling.

We have to combine mobility and environment to develop sustainable mobility and this will be down to more efficient means of transportation and more virtuous engines. It has to be based on complementary means of transport – key players in public transport and users themselves – and digital technology is a powerful lever to overcome these challenges.

Improving the quality of transportation is deeply linked to the development of sustainable and smart mobility solutions.
EIB supports modern trams for Poland

The European Investment Bank (EIB) has provided two loans totalling over PLN 320 million for the purchase of modern and energy-efficient low-floor trams for Krakow and Upper Silesia Agglomeration towns in Poland. Within the support for Silesia, the EIB will also finance the modernisation of the existing tram stock and infrastructure. Thanks to the attractive financing terms offered by the EIB, the municipal companies will enjoy the benefits of lower funding costs and a long loan repayment period. The EIB loans together with EU structural funds have made it possible to complete the financing plan and to implement the projects.

Laszló Baranyay, EIB Vice-President with responsibility for the Bank’s operations in Poland, said: “Promoting competitive and environmentally-friendly transport services is among the EIB’s operational priorities. We are therefore especially pleased that our loans will co-finance the purchase of modern, energy-efficient trams for Krakow and Upper Silesia, since these investments will both increase the safety and quality of public transport services and reduce emissions of substances harmful to the environment.”

The Krakow Municipal Transport Company (MPK S.A.) received a loan of PLN 92 million from the EIB for the purchase of 36 low-floor trams. The modern trams will be some 43m-long, with a capacity of approximately 300 passengers. They will be air-conditioned and will contain modern passenger information systems as well as ticket vending machines. In each carriage there will be luggage and bicycle accommodation spaces, plus USB ports and power points will be provided, enabling passengers to recharge their phones and other mobile electronic devices.

At the same time, an EIB loan of PLN 211 million will be used to improve Upper Silesia’s tram infrastructure and more specifically to purchase 42 low-floor trams and to modernise 95 trams which have been serving the Silesian cities for many years. Funds provided by the EIB will also finance the reconstruction of the traction system and modernisation of almost 63km of tracks. The new trams, which will travel on the upgraded tracks, will not only be faster but also quieter. The borrower for this project is Bank Pekao S.A. which, thanks to the EIB loan, was able to offer more attractive financing terms to the Silesian Tram Company, Tramwaje Śląskie, which will implement the project. The EIB finances projects not only by working directly with the implementing entity but also through local banks...

The new trams for Krakow and Silesia will be produced by PESA Bydgoszcz S.A., which will fit them with high-tech energy saving motors and with special platforms, making boarding and disembarking easier for those with reduced mobility. The trams for Silesia will also be made by Moderntrans Poznań Sp. z o.o.

Digital Wireless Communication – the central nervous system of public transport

Public transport is the heartbeat of cities like London, Frankfurt and Vienna, and digital wireless communication is fundamental to its operation and flow. Like a central nervous system, Digital Mobile Radio (DMR) operates invisibly, yet is vital to Europe’s public transport networks.

DMR delivers voice communications and real-time data, giving system dispatchers a comprehensive fleet overview at all times. Operators can map out routes ahead of time, quickly pinpoint and resolve routine problems, improve operating schedules, and efficiently coordinate service recovery during major incidents.

Managers can validate their communications investment on a daily basis and ensure all their operability targets are met, resulting in higher cost efficiency and more satisfied customers.

Fast and reliable thermal print solutions for transportation

Limit queues, reduce operating costs and downtime by increasing transaction efficiency in high-volume receipt printing applications; Fujitsu printers offer high-speed printing, easy paper replacement and high reliability. The printers are designed while taking the demands for printing in transportation applications into account such as high-speed printing for bus ticketing, retractor function for terminals and even mobile ticket printers to control fare dodging.

Fujitsu has developed its range of printers to cover printing on various paper sizes from 50mm up to 216mm. The printers are produced with the well-known die-cast frame which enhances durability and acts as a heat-sink. The Fujitsu die-cast frame improves the way the printer handles shock and vibration, and provides mounting stability and static electricity dissipation. The Fujitsu print mechanisms offer an optional cutter, various paper paths as well as an easy paper loading mechanism to facilitate quick paper roll replacement. The compact footprint makes the Fujitsu printers easy to integrate.

Looking for a thermal printing solution? Fujitsu will offer you design support.

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Major capacity boost for the Tube confirmed

Transport for London (TfL) has awarded the contract to deliver the vital modernisation of the signalling and train control system on the next four London Underground (LU) lines to global transportation systems provider Thales.

This next major phase of the Underground’s modernisation will bring faster, more frequent and more reliable journeys to millions of passengers who use the Circle, District, Metropolitan and Hammersmith & City lines. These improvements will boost capacity by an average of a third on the four lines and is vital in order to support London’s growing population. Work is expected to begin later in 2015 and the main benefits will be delivered by 2022, when the frequency of trains running during peak periods will increase to one train every two minutes with frequency increases at other times as well.

Nick Brown, Managing Director of LU, said: “Having successfully modernised three of the most heavily used lines on our network, we are ready to begin work to bring the next four lines into the modern era. This will transform the journeys of millions of our customers, significantly increasing service reliability and frequency. We have a very clear delivery plan and timetable for the work and, as we have done with the modernisation of the Northern line, we will keep London moving and growing as we do it. In parallel, we will continue to deliver a better, more reliable service every day which builds on the work over recent years to reduce delays to their lowest ever level.”

The value of the contract with Thales for the signalling and control work is £760 million. The cost per kilometre of re-signalling the four lines is 18% less than the successful modernisation of the Northern line which was around half the cost of the Jubilee and Victoria line modernisations delivered under the flawed Public Private Partnership arrangements, ended by the Mayor five years ago.

www.tfl.gov.uk

Bremen leads the way in passenger-friendly ticketing

Bremer Straßenbahn AG (BSAG) – the transport authority of Bremen, Germany – has decided on a comprehensive e-ticketing solution from INIT. It will update the INIT system implemented in 2001, which was one of the first card-based systems in Germany. The new system will also support the successful BOB scheme (“Bequem ohne Bargeld” = comfortably cashless), which gives passengers a best price guarantee on an account basis.

Even more options to purchase tickets

About 210 EVENDpdc ticket printers and 210 PROXmobil passenger terminals will be used on-board BSAG’s buses. Trams and buses are being equipped with more than 500 mobile passenger terminals for the electronic BOB ticket. More than 120 new mobile ticket machines, where passengers can buy a paper ticket and pay cash or cashless, are also being deployed in the trams. The well-tried distribution channels are being expanded to include 20 stationary ticket machines (VENDstation) at stops with higher passenger numbers. This will allow each and every BSAG passenger – whether they’re a regular customer, an occasional user or a tourist – to find the ticket purchase option that suits them best.

In addition, three customer centres and 150 private points of sale will be equipped with ticketing machines, e.g. EVENDpdc.

The new ticketing system will be managed by the MOBILEvario back-office system.

Comfortable, fast, state-of-the-art

With this system upgrade, Bremen and BSAG are once again at the forefront of technological development with respect to passenger-friendly ticketing.

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The 43rd European Transport Conference

28-30 September 2015, Frankfurt, Germany

The Association for European Transport (AET) will host the 43rd European Transport Conference, at Campus Westend, Goethe University, Frankfurt, Germany.

Connecting the worlds of research, consultancy, policy and practice in the transport industry, the conference provides a platform for different groups to pose questions to fellow professionals and to assess what is possible in terms of implementation and delivery. More than 200 papers will be presented during the multi-streamed conference.

With demands in Europe’s transport systems continuing to both increase and change, presentations will look at ways transport planners can improve infrastructure while dealing with restricted budgets and timescales. Presentations will also explore the possible threats posed by climate change; energy and infrastructure security; responses to the need to improve health and fitness; hard and soft measures to improve the safety of walking and cycling and much more.

Speaking about the conference, Hans Jeekel, board chair for AET said: “We’ve been amazed at the record number of papers we received for this year’s conference and these are currently being reviewed by our programme committee. The conference themes will explore and delve into the hottest topics affecting the transportation sector both in the UK and across Europe.”

The conference welcomes new entrants into the transport industry and hosts a young researchers’ and practitioners’ forum. This forum provides a stage for early career researchers and practitioners to showcase their work to participants at the conference. Members of the association receive a reduction on conference fees along with the ability to sit on programme committees to help influence and shape the future of the European Transport Conference.

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Alstom completes work on Nottingham tram extension

Alstom and JV partner Taylor Woodrow has completed work on the Nottingham Express Transit (NET) extension in the UK, allowing millions of Nottingham commuters to have comfortable and eco-friendly journeys into and out of the city.

The expanded network has more than doubled the existing tram line, with 17.5km of new track and 28 new stops to the South and Southwest of the city, with the extension linking directly with the existing NET Line One at Nottingham Station. The total tram network is now 32km-long, serves seven park and ride sites, and is able to cater for up to 20 million passenger journeys a year.

"Whilst not without its challenges, it has been a hugely significant project for the city, and is able to cater for up to 20 million passenger journeys a year. We set out to create a world-class tram network for Nottingham and all consortium partners are proud to have worked together to ensure we achieve that aim," said Steve Lowe, Chief Executive of Tramlink Nottingham.

The joint venture built all associated infrastructure for the project, including overhead wires, track and signalling.

Alstom also supplied 22 Citadis trams to the city which now form part of the 37-strong tram fleet serving the city, with Alstom also maintaining all of the vehicles. Alstom is also a Tramlink Nottingham consortium member, together with Keolis, Wellglade, Vinci UK, Meridiam Infrastructure and Infravia.

www.alstom.com
Arriva strengthens bus business in Slovakia

Arriva has increased its presence in Central and Eastern Europe with the acquisition of two further bus operating companies in Slovakia – SAD Liorbus Group (acquisition of 100% in Gotfri spol. s.r.o being the holding company of SAD Liorbus a.s.) and bus operator SAD Trnava Group (acquisition of 100% in Bus Partner Services s.r.o being the holding company of SAD Trnava a.s.).

SAD Liorbus Group currently operates a regional bus network in northern Slovakia, Žilina Region and city services in towns of Ružomberok, Liptovský Mikuláš and Dolný Kubín.

SAD Trnava Group operates a regional bus network in western Slovakia, Trnava Region and city services in the towns of Trnava, Piešťany, Hlohovec and Senica.

László Ivan, CEO of Arriva Slovakia, said: “We are proud to extend Arriva’s operations in northern and western Slovakia…as a leading passenger transport group, we continue to grow, develop and provide quality services to our customers and passenger transport authorities, and we are looking forward to bringing our experience and expertise to these regions to improve services for customers.”

www.arriva.co.uk

Bus route 88 has become the latest on the Transport for London (TfL) bus network to be served entirely by New Routemaster buses.

A phased conversion of the route, operated by Go Ahead, which runs between Camden Town, Mornington Crescent, Warren Street, Great Portland Street, Oxford Circus, Piccadilly Circus, Trafalgar Square, Westminster, Great Smith Street, Tate Britain, Vauxhall, Stockwell, Clapham High Street, Clapham North and Clapham Common, is underway. The 24-hours-a-day service will be running entirely with New Routemaster buses by mid-September 2015.

During peak hours, 23 of these state-of-the-art buses will be in passenger service to carry the 16,000 people who travel on the route each week day.

The route will operate with the rear platform closed when the bus is moving, with large numbers of passengers able to quickly board and alight using all three sets of doors and two staircases at bus stops.

To date, 14 bus routes in London are operating with New Routemasters (pictured). The conversion of route 88 will be another step towards the delivery of 800 New Routemasters on London’s streets by 2016, reducing CO2 emissions in the capital by around 27,500 tonnes a year.

The introduction of New Routemaster buses is part of a comprehensive programme to reduce emissions from London’s bus fleet which includes 1,700 hybrids on the street by 2016, accelerating the introduction of ultra-low emission Euro VI buses and retrofitting 1,800 older buses to reduce their NOx emissions by up to 88%.

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RATP has a green vision for the future. Head of the Bus Rolling Stock Department, Marie-Claude Dupuis, explains that in order to meet these goals by 2025, the public transport operator is hugely investing in sustainable buses that will help reduce RATP’s carbon footprint by 50%.

We have clear intentions for RATP to become a global reference in its sector in terms of sustainable development. Being a public transport operator, RATP already contributes greatly to a decrease in greenhouse gas emissions in the Paris region but we want to go even further; this is the reason why, in 2014, RATP committed to a major technological and ecological change: to have a 100% green bus fleet by 2025. This is the ‘Bus 2025 Plan’. This plan is in line with the Paris Region Urban Travel Plan to reduce greenhouse gas emissions in the Paris region by 20%.

It also coincides with the ambitions of the STIF transport authority to eliminate all diesel buses from the Paris region bus network.

The target for 2025 is to have a fleet comprising approximately 80% electric buses and 20% vehicles using renewable gas and non-fossil fuels – thus wiping out the diesel buses from the Parisian network.

Currently, manufacturers don’t yet offer electric buses that meet the operational imperatives of the Parisian bus network. So, in the meantime, we decided to stop ordering diesel buses and switched to hybrid technology.

By launching an energy transition of this magnitude, which will involve 4,500 buses, we intend to send a strong message to the vehicle manufacturers in the transport sector. Indeed, the renewal of the entire fleet offers significant prospects and should encourage investment in research and development as well as in industrial tools. We are confident that our Bus 2025 Plan will give the manufacturers the push necessary to bring their electric technology up to speed and that they’ll be ready by 2025.

As for RATP, the renewal of our entire bus fleet means radical transformations of our industrial facilities – i.e. bus depots, energy supply system etc.

The plan follows these three phases:

1. 2014: consolidation of the share of hybrid buses in the RATP bus fleet; from now on, all new tenders apply to hybrid, electrical and CNG buses

2. 2015–2017: test of all existing electrical bus technologies and recharge systems; setting-up of the programme to adapt bus depots

3. 2017–2025: launch of tenders for a mass roll-out of electric and biogas buses

Ultimately, the Bus 2025 Plan will reduce RATP’s carbon footprint by 50%.

Phase 1

In order not to wait until 2025 to start reducing our carbon footprint and to give time to the industry to meet all the requirements for electric buses, RATP and the STIF transport authority have already taken certain actions: a decision was made to put an end to diesel buses. From now on, no more diesel buses are being ordered. All new orders concern hybrid, electric and CNG buses. So far, 383 hybrid buses have been ordered and 46 hybrid buses are already in operation on the RATP network. In 2015, 200 more hybrid buses will be ordered. By mid-2016,
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energy recovery system based on ultra capacitors

State-of-the-art solution for energy recovery based on ultra capacitor banks is used in Jazz Duo - the newest low-floor LRV for Warsaw. Recuperated energy is stored in capacitor batteries then used for LRV auxiliary circuits during standstill or transferred to inverters during tramway acceleration phase. In case of emergency run, stored energy is transferred to traction inverters delivering necessary power. The advanced energy recovery system enables reduction of energy costs and CO₂ emission.

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a total of 550 hybrid buses will be acquired. This solution ensures a reduction in fuel consumption of 20% to 30% depending on the size and operating conditions of the vehicle. Hybrid buses also reduce sound pollution as well as vibrations inside the vehicle. However, the additional acquisition expense is still significant (approximately 60%).

**Phase 2**
The large-capacity electric buses technology is still in its early stages. This is why, as part of Bus 2025 Plan, we launched a major programme of experiments to test electric buses in real-life conditions (with passengers, on full-length lines). The tests will start in 2016.

Firstly, with approval from the STIF transport authority, we will run the first 100 electric standard buses on a regular line at the beginning of 2016. These buses will be manufactured by BlueBus, a subsidiary of the Bolloré group. They will charge overnight at depots and can travel up to 180km on one single charge. This was an absolute requirement, as recharge stations along the bus itinerary would cost too much in terms of infrastructures.

These 12m-long electric buses can transport 90 passengers, the same as current standard buses. Having a standard bus circulating on a full-length line will be a European first.

**RATP: a company that focuses on sustainable development as a whole**

RATP’s commitments to attenuating climate change apply to other areas than the bus fleet.

RATP intends to generally reduce its greenhouse gas emissions and energy consumption by 25% per passenger kilometre by 2020 (compared with 2004 figures). To achieve this goal, RATP is implementing action plans to ensure more effective energy usage and to improve its carbon footprint.

A good example is what the company does with rail rolling stock. Now, all purchases of new rail rolling stock (tramways, metros or interurban trans-RER) include clauses concerning energy economy and efficiency in the traction and auxiliaries. The modernisation of the rolling stock on RER Lines A and B and Metro Lines 2, 5 and 9 will reduce traction energy consumption by 25%–35%.

The driverless metro, in which the RATP Group is both a pioneer and world leader since service began on Line 14 and the automation of Paris Metro Line 1, not only ensures greater service quality, but also substantial energy savings with over 15% less energy used compared to a conventional line, as well as a significant reduction in particle emissions. The RATP Group is also on the way to becoming the world leader in tramway services (with nearly 100km of tramway lines in the Paris region), an ecological mode of transport par excellence, which is also particularly silent and releases very little CO2 into the air.

RATP also has high goals when it comes to its infrastructures; continuing the re-lamping programme in all stations to install LED lamps that will reduce lighting energy consumption by 50%. In 2016, the public transport network exploited by RATP in the Paris region will be the first network in the world to be fully-equipped with LED lighting.

RATP is also committed to reducing energy consumption in all of its secondary buildings by 40% between 2006 and 2020. The reduction by over 60% in energy consumption at the 56,000m² Head-Office between 2007 and 2013 is one of the most significant examples of actions launched to ensure economical energy usage.

The line that will host the 20 electric standard BlueBus vehicles will be Line 341. The STIF elected this line that connects Porte de Clignancourt to Place Charles de Gaulle-Etoile, via Saint-Ouen and Clichy suburbs, because its buses are parked in a bus depot that already houses electric mini-buses (RATP operates two short electric lines, including the Montmartrobus) thus the time needed to adapt the facilities will be considerably shortened. The first electric BlueBus buses will arrive at the beginning of 2016.

This contract will amount to between €10 million €40 million, co-funded by STIF and RATP.

RATP, the STIF transport authority and the Bolloré group will present the first 100% electric standard bus to the public at the COP 21 conference, the Framework Convention on Climate Change hosted in Paris in November 2015. On a proposal from the STIF transport authority, the experiment has been selected by the European Union to participate in the ZeEUS project (Zero Emission Urban Bus System; a European programme under the UITP intended to impel the introduction of electric buses in cities).

Secondly, we want to test as many of the technologies available on the market as possible so as to secure our experience in operating and maintaining these types of vehicles and to prepare a large-scale tender that will kick-start the electrification of the RATP bus fleet. We have one requirement: all of the vehicles tested must have a battery life that can last a distance of 180km. Later on, we will ask the manufacturers to provide buses that have a battery life that can last up to 250km. The following four candidates already came forward to lend out standard buses in order for us to test them on actual routes:

- Chinese Yutong – associated with Alsace-based Dietrich Carebus and bus manufacturer world leader, claims a 340km autonomy without A/C and 250km with A/C
- Netherlands-based Ebusco announces a 300km autonomy for its buses
- Spanish Irizar with a bus that has an autonomy of 250km for a five hour charge
- Polish Solaris.
All of these manufacturers accepted to share, with RATP, the technical data gathered during this experiment.

These buses will be in operation from the second semester of 2016. Two routes, with a very different profile, have been selected: routes 21 and 147. Route 21 goes through the heart of Paris in a very dense area and route 147 is a suburb-only route that goes from Pantin to Sevran in the North of Paris.

Thanks to these experiments, we will be able to analyse precious feedback on subjects like the performance of the drive train (batteries, motors) and charging systems, the consequences of the new technology on operations (impact on drivers, passengers, etc.) and maintenance (equipment reliability, power supply of the bus depots, etc.).

In addition to those real-life tests on rolling-stock and batteries, anticipating the renewal of the bus fleet, we are getting ready to adapt its 25 bus depots and connect them to the electricity grid. Therefore, RATP and EDF (the French supplier of electricity) signed in 2014 a three-year partnership to address all connection-issues (trials on different drive trains, batteries, and charging systems) and their impact on the electric network.

We will also be able to tap into our experience in electrical energy transformation and distribution (for the tramway, metro and RER networks) and our long standing relationships with RTE and ErDF – French transmission system operators. The goal is to address connection issues with the ErDF grid and/or RATP network and to develop the electrical architecture in each bus depot to transform and distribute electrical energy to the approximate 200 buses on average in each depot.

In 2025, the rest of the bus fleet (20% of the 4,500 buses) will run on natural gas. This issue is less problematic since the gas technology is already well-developed. What we will need to do is to adapt our bus depots for gas refuelling. In order to do so, RATP and Engie (former GDF Suez), French gas supplier, have signed a partnership to imagine solutions for the supply of some of the RATP bus depots with natural gas.

Next year, some 140 vehicles will be fuelled using biogas.

**Phase 3**

After analysing what the market has to offer, and what is best suited for our network, RATP, alongside with the STIF transport authority, will launch mass tenders for electric and biogas buses. It is our belief that the critical size of our tender will allow for a decrease of the production costs. By 2025, all of our entire 4,500 bus fleet will have finished its energy transition.

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**Benchmark for Access Ramps**

**Weight! Reliability! Warranty!**

Reducing fuel consumption and increasing load capacity carrying are a prerequisite in the design and construction of the modern bus. Consequently, suppliers of components to bus builders should seek to ensure the manufacture of their product is based on **intelligent design, weight down processes and component integration** with the use of **lightweight materials**. Achieving a weight reduction, however big or small, should also strive to improve **reliability and performance.**

Engineering design, lower-mass components and systems are at the core of Compak’s CPSUG-NG all-electric, single platform, lightweight ramp where a **weight saving of 30%-34%** is achieved!

Weight savings alone have no value if the nett result doesn’t also improve reliability. Statements attesting to weight reduction are easily substantiated either by the manufacturer or an independent organisation. Not so **reliability** – which is often considered subjective! The CPSUG-NG addresses this issue by offering a **five-year warranty**!

Compak achieved weight saving and reliability by minimising the components necessary to accomplish the basic requirement of extending and retracting a ramp without compromising on quality or performance.

Incorporating components which have been tried and tested in a variety of environments worldwide for more than 15 years, to create a product which meets all the requisite safety standards and compliance with statutory regulations. Compak sets the bar high with its five-year warranty.

To augment the five-year warranty, Compak has appointed **Douglas Park**, its former Production Manager (Ramps), as **After Sales Manager** reporting directly to Lee Allen, Compak’s Managing Director.

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Marie-Claude Dupuis was appointed Head of the Bus Rolling Stock Department of RATP in January 2015. Prior to joining RATP, Marie-Claude Dupuis was Executive Director at Andra (National Agency for Radioactive Waste Management) for 10 years. She has always been very much involved in environment, safety, security and quality issues. She started her career at the Region Centre Office for Industry and Research where she was in charge of the supervision of the nuclear facilities. She then spent six years at the Ministry of Industry in the Department of Industrial Strategies, where she was in charge of the security and quality of industrial products. In 1998, she joined the Department for the Prevention of Pollution and Major Hazards within the Ministry of the Environment, where she served as Chief of the Environmental Risks Branch until 2005. Marie-Claude studied engineering at Ecole Polytechnique and Ecole des Mines.
Building on success

In 2009, Bordeaux first contracted Keolis to operate the Bordeaux public transport system. At that time, Bordeaux set a clear objective: rebalance the ridership between the trams and buses. Trams were the popular choice for most riders while buses were under-utilised and suffered from a bad image. Over the course of the contract, Keolis took significant and meaningful action to restore the attractiveness of the bus network. Without any additional vehicles, the ridership increased by 35% in five years and the global usage of the network was re-balanced.

Within the same timeframe, Keolis successfully launched the 'VCub' – a new bike self-service scheme, and boat shuttles on the Garonne River, giving the network an outstanding multimodal dimension.

When the Bordeaux Metropolitan Council (BMC) unanimously voted in October 2014 to renew Keolis' contract to operate the city's public transport network for another eight years, we knew we had to continue to innovate and deliver a high quality performance to successfully implement the Metropolitan council's public transport project. We now have a clear directive to further develop the share of public transport in Bordeaux and meet the demands of a fast growing city.

This new contract presents many high-level challenges. It has prompted the right questions needed to ensure delivery of the best of Keolis' expertise and know-how in order to maintain the local authority's trust and pursue the partnership begun in 2009.

The contract, which started on 1 January 2015, is expected to generate €1.7 billion in revenue over eight years. During this period, Keolis has committed to increase passenger numbers by 34% (compared to 2014) and passenger revenues by 52% while the kilometric offer will only increase by 7%, mainly through extension of tram lines. Additionally, Keolis will invest €54 million in the network.

Growing demand

The Bordeaux network is complex and multimodal. With €2 billion in assets, it boasts 78 bus routes, three tram lines, 1,700 self-service bicycles (VCub), two river shuttles, 18 park and rides, and nine intermodal poles. Bordeaux has 100 trams – the largest tram network in France.

Between 2009 and 2013, public transport ridership increased by 35.5% to 122.3 million passengers annually. This is credited to the increase in transport availability (tram and bus) made possible by BMC’s and Keolis’ actions and a strong marketing policy. During the same period, revenue increased by 41% due to the city’s population growth and a concerted effort to reduce fare evasion. In 2013 the system also received a 91% customer satisfaction rate.

The demand for public transport will continue to grow with the development of the Bordeaux area. The metropolitan region has a population of approximately 730,000 inhabitants and is set to reach one million by 2030. The number of trips per resident per year is expected to reach 224 in 2022 compared with 160 in 2012 – a 40% increase. This performance places Greater Bordeaux among the leading French cities.

Commitment challenges

To keep up, beginning in March 2011 and continuing over the next 10 years, Bordeaux is extending its tram network by 34km and making significant improvements to the tram, bus and intermodal networks.

The target by 2020 is to have 45% of the population living less that 500m away from the tramway, compared to 30% now.

Keolis has developed several approaches to make sure it meets its commitment under the terms of the contract while the Bordeaux Metropolitan Council is enhancing the network.

On the tram lines, the challenge will be to maintain a 10-minute departure frequency from the tramway termini while increasing tram capacity in the city centre with additional services during peak hours.

Keolis’ approach will be to run ‘sub-routes’ to absorb the load in the city centre. It will also create switchbacks so trams can return to service certain sections with a heavy passenger load. Also to be recruited will be 187 new employees. This includes 120 drivers, operations supervisors and agents for the building division, fixed facilities, industrial systems, passenger information and rolling stock.

Our plan for tram sub-routes is the first of its kind and was one of the leading reasons for the Bordeaux Metropolitan Council to choose...
Keolis. Initially, the BMC planned to make major investments by purchasing new rolling stock to better service heavy traffic areas. Keolis, however, developed an alternative plan leveraging sophisticated scheduling, signalling, and resource planning that was more effective and less costly.

In our scheme, trams operate on a headway regime, not on a timetable (except early morning and late at night). The headway regime is not uniform across the lines, but is adapted based on density. For instance, in the city centre, where demand is high, trams run with headway of 3 minutes 20 seconds whereas at the ends of the lines, where demand is lower, the trams operate at a 10 minutes frequency. In the intermediate sections, a tram runs every 6 minutes. This plan ensures that there is an appropriate level of service along the entire line keeping customer satisfaction high and the BMC’s rolling stock purchases low.

To be successful, our plan had to overcome several challenges that had impacts on safety, service, and personnel. For instance, it was critical that the new frequency schedules did not negatively impact car traffic creating gridlock. Therefore, at traffic lights where two trams intersect, the timing of the light changes has to account for both the tram priority while also allocating appropriate time for cars to cross the intersection. Developing the right solution to manage both safety and traffic flow was a top priority for Keolis.

Regarding employees, Keolis’ managers had to ensure that drivers’ schedules still included necessary physiological break time while at the same time never having a service disruption due to lack of available drivers. In order to manage this properly, the responsibilities for managing tram headway and service are managed by one team, traffic controllers, while the personnel and drivers rosters are managed by another team. By dividing the work, the system is more efficient as each team specialises in its own domain. Plus, extra drivers and spare trams are ready to jump into service as needed. This streamlined system ensures that vehicles are on the road in sufficient numbers across all routes and operating on time.

Re-designing the bus network

Keolis’ approach to the bus network is to continue to make it an attractive option. The new network launched in 2010 was a big success and led to a 35% growth in ridership, but this momentum must be maintained. On lines with a high level of service, called Lianes, traffic continues to grow by 10% each year.

To achieve these results, we have used an in-house methodology called ‘Keoscopie’ to study travel patterns and changes in way of life. In Bordeaux, some 10,000 people participated in the survey and 25,000 observations were taken. The results showed that travel patterns had changed significantly in the last decades. But the transport network still operated as though everyone worked traditional hours, providing most services at traditional morning and evening peak hours.

We also analysed the strengths and weaknesses of the network. Based on these results, recommendations were presented to the PTA, elected officials and residents during a six-month public consultation process.

As a result, the bus service was re-designed to offer more frequent service and expanded hours.

Optimising the ‘VCub’ bike sharing service

Bordeaux’s self-service bicycle hire system, VCub, is a huge success. On average, every bike is used seven times a day. At some busy interchanges, this can go up to 14 pick-ups/drops a day. The service’s popularity is supported by unique digital tools that provide users with real-time information so that they can see which stations are empty and where to pick up their bikes. Users are also encouraged to rebalance the bike network: if a customer docks a bike in an empty station, which they can locate via the VCub application, then they receive incentives in the form of free time.

Again, the objective is to maintain momentum and continue to grow the market share of cycling within Bordeaux. In order to support continued growth, we plan to create 41 new VCub stations over eight years. These new stations correspond with new facilities or the extension of existing stations at a ratio of two new stations to every tram extension. The locations have been reviewed to improve revenue and to provide a natural rebalancing of self-service bicycle returns.

Creating a bright future

As Keolis looks to the future, we continuously investigate new opportunities to further enhance the public transport offering in Bordeaux so that it evolves with the rhythm of life and the needs of the citizens of Bordeaux as well as visitors. Developing new digital tools, adapting and expanding services, and utilising intelligent methodologies to manage personnel and vehicles are the key elements which Keolis will use to stay one step ahead of the growing Bordeaux population and its increasing demand for public transport.

Frédéric Baverez is a graduate of the Mines School of Engineering in Paris. From 1988 to 1991 he worked for the Alsace region’s prefect, and then from 1991 to 1995 was Rapporteur to the Inter-Ministerial Committee for Industrial Restructuring (CIRI) at the French Ministry of Finance. After two years as Technical Adviser to the Cabinet of the French Transport Minister, in 1997 he was appointed Chairman and CEO of SITA IDF, a waste management company. He was then named Deputy Managing Director of Suez Environment, and then Director of Cost Management and Procurement for the entire Suez Group. In 2005, he became Senior Vice President of Keolis France in charge of Operations, Projects and Innovation. In 2008, he became Senior Vice President in charge of Eastern France. In 2011, he was appointed CEO of EFFIA. As of 1 January 2014, Frédéric Baverez was appointed CEO France in addition to his role as CEO of EFFIA.
Improving services by investing in vehicles, infrastructure and technology

Giuseppe Noia, Chief Communications and Public Affairs Officer of Rome’s public transport company Atac S.p.A, outlines what is currently being done to improve public transport services in the city – improvements that are necessary to secure the overall future operation of the company.

Atac is the public transport company of Rome – the Italian Capital. It works with a public road system which is very different from that of most other European capitals; its peculiar characteristic is the predominance of the surface network, served especially with buses, in comparison to the connections provided through underground lines.

The reasons for this structural layout are to be found in the historical characteristics of the city (subsoil rich in archaeological remains) and in past choices concerning public transport investment policies.

In recent years, the company has been making efforts towards establishing a more effective management process of economic resources, which are transferred from the Central Government to the Lazio Region and the Municipality of Rome to be assigned to local public transport operated by Atac.

The rationalisation of economic resources allocated to local public transport is pushing the company to pay special attention to production processes which are able to generate larger savings and produce less waste.

With more than 11,000 employees and a fleet of roughly 2,450 vehicles – buses, trams, trolleybuses, electric vehicles, subways and trains – each year Atac performs over 150 million kilometres of scheduled public transit services and is the leading mobility operator in Italy. In addition to surface, underground and rail services, Atac also
manages intermodal ‘park & ride’ facilities and metered on-street parking spaces.

Within the next five years, in line with its Business Plan 2015–2019, Atac will have to face several key challenges for the future concerning economic recovery and service improvement, in terms of both quantity and quality.

Atac invests in vehicle fleet and transport infrastructure

In terms of improving its service, the company is carrying out an investment plan to upgrade surface transit and metro trains.

After the introduction of 337 new buses between 2013 and 2014, starting from January 2016 and for the following four years, the company envisages the purchase of a further 700 new 12m and 18m Euro 5 diesel-powered buses.

These vehicles will be equipped with the most modern systems in terms of safety, technology, driving comfort and accessibility including video surveillance systems, a protected driver’s cabin with reserved access door, on-board multimedia communication systems, a satellite vehicle tracking system, manually operated wheelchair lifts, full air conditioning, plus a Next Stop Announcement system.

With reference to the metro service, during these months, 18 new latest generation CAF trains will be introduced to modernise the rolling stock of Metro Line B.

But the most important innovation concerns infrastructure, with the opening to the public of Metro Line C, the third metropolitan line of the Capital. The first section, inaugurated in late-2014, links the eastern outskirts to the city. In June 2015, a second section was opened which connects the eastern area of Rome with the City Centre.

Metro Line C, also known as the green line, is an outstanding example of technological innovation in rail transport. The line is equipped with a fully automated driverless system. Trains are controlled remotely by the central traffic control centre which is able to manage traffic on the entire line.

Future investment projects on Line C, pertaining to the Metropolitan Council and the National Government, whose final validation is still pending, envisage additional extensions of the line up to the Historic Centre of Rome and the intersection with Line B at Colosseo station and, at a later stage, also with Line A.

Atac and its commitment to sustainable development

The purchase, between 2013 and 2014, of the 337 new generation Euro 5 buses, reduced the operator’s fuel consumption by approximately 12%. The reduction in fuel consumption allowed a decrease of pollutants by 67% of carbon monoxide, by 80% of hydrocarbons and by 75% of nitrogen oxides.

There has also been a retrofit of 174 Euro 3 buses to Euro 5, thanks to the installation on the vehicles of filter systems to reduce harmful emissions.

In recent years, Atac cooperated with ENEA (the National Agency for Energy and Sustainable Economic Development) in projects aimed at reducing energy consumption in the company and at the implementation of energy supply systems based on renewable sources, such as solar panels and wind power.

Atac carries out recovery and reuse of unused materials, which in 2014 led to a 46% reduction of waste, in comparison to the previous year.

Technology at the service of sales systems

Furthermore, Atac is working to promote the use of new ticket sale technologies. At the beginning of 2015, the company completed the replacement of paper monthly passes with reloadable electronic chip cards.

Thanks to an agreement with different partners working in e-commerce, Atac launched the ‘atac.sosta’ payment service, that allows payment of park & ride facilities and the so-called ‘blue stripe’ on-street parking, managed by Atac, through an app for smartphones, tablets and computers, or even with a simple phone call.

The success of the ‘atac.sosta’ initiative is represented by the progressive increase of customers who choose the service as an alternative to old parking payment methods (with coins or prepaid cards), since it allows to pay just the actual minutes of use; a success that is pushing a growing number of technology partners – thus
far six – to develop new software solutions for the payment of parking services.

But the latest technological innovation is the BIPiù service which allows purchase and validation of tickets on buses, trams and metros, as well as the monthly subscription to Atac’s Local Public Transport service. Available for free download on mobile devices, customers have the option to purchase tickets with their smartphones just before getting on a bus or metro, without additional costs and with maximum ease.

The introduction of BIPiù aims at reducing the so-called involuntary fare evasion, in other words, the choice not to purchase public transport tickets due to the impossibility to find ticket offices nearby.

Atac’s commitment to improve safety levels for customers

In cooperation with its security unit, Atac is making an effort to guarantee the best safety standards for its passengers.

Launched in March 2014 and still running, the company’s ‘High Impact’ operation involves collaboration between Atac’s security forces and law enforcement officers in the fight against petty crime on the metro network.

Within the ‘High Impact’ operation, specifically assigned staff composed of Atac’s safety inspectors and security guards patrol the territory with local and itinerant squads and, under the coordination of the operations centre, provide logistical support to the local police forces.

Data relating to the 2014 final report of the ‘High Impact’ operation show that during the past year, from March to December, Atac’s staff has contributed to the identification of more than 2,000 people; to the expulsion of about 950 persons, including 230 well-known pickpockets; to 140 seizures of counterfeit goods; while sanctioning more than 100 illegal vendors, and pressing about 50 charges for various crimes.

During the first four months of 2015, the activities of ‘High Impact’ continued, resulting in 1,200 identifications, over 500 expulsions, of which more than 130 pickpockets, and 70 seizures of goods.

Operation ‘High Impact’ has further been enhanced, since last March by the introduction of dog support units in metro stations with the highest rates of passenger traffic, such as ‘Colosseo’, ‘Termini’ (central train station) and ‘Spagna’.

The active security operations are supported by a complex technological system for security level analysis.

More than two thousand cameras and hundreds of anti-intrusion sensors pick up everything that happens in the metro, recording and transmitting potential alerts to the Atac Operations Room in real-time.

The information flow coming from Atac’s security systems is transmitted to a single hardware and software platform, able to communicate and interoperate in real-time with the control rooms of other law enforcement agencies.

Additionally, Atac’s safety systems feature devices allowing advanced video analysis of the monitored areas.

Real-time mobility information on social networks

Since 2011, the company has an active Twitter profile¹ that soon became a touchstone for real-time mobility information in the city.

Currently, the Twitter profile has over 85,000 followers and has posted over 80,000 information Tweets.

The profile provides guidance and gives information about the lines operated by Atac. In case of parades, demonstrations and during extraordinary events, Atac’s Twitter profile offers true real-time coverage of every change in the public transport network. To ensure completeness of information, the Twitter profile also spreads information on important events occurring to networks of other operators.

Special appreciation was expressed to the Twitter profile which has been recognised as a public utility account by Twitter International – owner of the world’s most used microblogging service. The web analytics company Blogmeter has awarded, several times, the Twitter profile account as one of the fastest in providing answers to the information-request-Tweets of its followers.

The Twitter profile represents the most advanced service of the company’s new strategy designed to give customers instantaneous and reliable transport information.

Another service, still in its testing phase, is the activation of a phone number able to deliver information about public mobility in the city through the mobile messaging platform WhatsApp.

The future of Atac

The future of the capital’s public transport operator involves, on the one hand, the conclusion of its restructuring process and, on the other hand, the maintenance and, if possible, a boost to investments in transport, technologies and infrastructure.

For sure, the investment policies and the overall future of the company will very much depend on decisions that local institutions and the national government will take about the regulatory framework of public transport.

Reference

1. @InfoAtac

Giuseppe Noia has been an expert in charge of Communications and Marketing departments in public utility companies since 1996. After gaining important experience in ACEA SpA, Giuseppe has worked for ATAC SpA since 2005 where he has held various managerial positions – currently as Chief Communications and Public Affairs Officer. Over the years Giuseppe has held numerous positions in national and international organisations and Boards of Directors of companies operating in the public utility sector.
CCExpo Critical Communications Expo (CCExpo) – is now the annual neutral platform for all technologies and products for mission critical information and communications, professional mobile radio (PMR) and control rooms in all fields of critical infrastructures. No other event in Germany offers such an information density for this range of subjects. The Patron of the event is Frank Henkel – Senator of the Interior and for Sports and Mayor of Berlin.

CCExpo 2015 takes place on 6-7 October at Messe Berlin. Essentially, it is the 15th event covering this topic and the 3rd under this name after having previously organised, developed and decisively shaped PMRExpo from 2001 to 2012 as co-founder, its name giver and organiser. 2004 also saw the first Control Room Congress, also embedded within PMRExpo. This congress is now continuing as an essential component of the CCExpo concept.

In collaboration with the following national and international associations and institutions CCExpo 2015 will expand the content-related and technological offers, in order to neutrally display with their contribution, superior to the selective interest of a single association, all relevant areas of activity and business segments future-proof and also increase the attractiveness for all visitor groups:

- BODeV Bundesverband für Objektfunk in Deutschland e.V.
- Cyber-Sicherheitsrat Deutschland e.V.
- DARC Deutscher Amateur-Radio-Club e.V., Referat Not- und Katastrophenfunk
- DMR Digital Mobile Radio Association
- Fachverband Leitstellen e.V.
- Fraunhofer-Gesellschaft zur Förderung angewandter Forschung e.V.
- PSCE – Public Safety Communications Europe
- TCCA TETRA + Critical Communications Association.

CCExpo is appreciated as a technology and product show as well as an interface for the information exchange far beyond police and non-police BOS with industry and utilities, transport and logistics, specialised trade as well as planners and installers.

**Highlights of CCExpo 2015:**

- Specialised Trade Fair of the well-known providers/suppliers including a joint stand of the Federal Agency for Public Safety Digital Radio (BDBOS), Berlin Fire Brigade, Autorisierte Stelle BOS Berlin (ASBE) – (Landesstelle Digitalfunk), Koordinierende Landesstelle für den Digitalfunk BOS Berlin, DRK, LV Berliner Rotes Kreuz e.V., Johanniter-Unfall-Hilfe e. V. Regionalverband Berlin
- Communications Congress with technology and management solutions for current and future tasks
- 12th Official Control Room Congress
- Five freely accessible forums in the exhibition hall, including three new ones:
  - Bluelight Forum Broadband
  - Bluelight Forum Indoor Coverage
  - NEW: Trade Forum
  - NEW: Future Forum
  - NEW: Forum Transport & Communication
- Special presentation Interactive Patrol cars, presentation of at least three different, already introduced solutions from three German States
- BDBOS-Workshop for planners and installers of indoor radio communications systems
- BDBOS information event ‘Emergency Preparedness and Emergency management’
- Excursion to the safety lab at the Fraunhofer Institute FOKUS in Berlin
- Cyber Security as Precondition for the Operation of Critical Infrastructures in the Energy Sector, panel discussion with emphasis on target group municipal utilities
- Session of the German Cyber Security Hub Electricity (Cyber hub-E, members: power generators and municipal utilities, e.g. RWE AG and KES mbH).

CCExpo also serves as selected anchor for official and institutional events. Thus for instance the international PSRG Public Safety Radio Communication Group comprising members from European safety authorities holds a meeting upon the invitation of BDBOS parallel to CCExpo on 7-8 October. The BDBOS Federal Agency for Public Safety Digital Radio is again actively involved at CCExpo as exhibitor, coordinates a BOS-Pavilion and holds two information events.

**The venue**

Berlin is an attractive and creative hotspot which sets new impulses in Germany and abroad with anticipated further growth and offers incomparable concentration and direct access to Federal, State and municipal authorities and organisations and politicians as well as training, research and development facilities.

Apart from normal exhibition stands, there are also smaller exhibition areas that can be realised in our B2B-Area – from 4m² in the carefree package for €950 net.

For additional details and participant registrations, please log onto the event website.

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**SHOW PREVIEW**

**Date**

6-7 October 2015

**Location**

Messe Berlin, Entrance North

Ehrenhalle (Pantheon), Exhibition Hall 20, Palais am Funkturm

**Website**

www.CCExpo.com
‘Pop’ goes the Northern Powerhouse?

The launch of multi-modal travel in the North East makes Pop, and the NESTI programme that sits behind it, a potential model for a much wider area of northern England, as the government demands to see firm proposals for a ‘Northern Oyster’ by spring 2016.

Nexus has overcome the challenges of working in partnership across 12 local authority areas and multiple bus and rail operators, big and small, in an unregulated environment.

The result is a single Pay As You Go (PAYG) functionality that means a single card can be used to travel from Berwick on the Scottish border to Middlesbrough and Redcar on the Yorkshire coast – an area of several thousand square miles with a population of more than two million people.

Every bus in North East England has ticket machines equipped to read the Pop card (and already process all ENCTS concessionary travel transactions via their smart reader).

So far, about 30 bus routes accept Pop as standard with further expansion coming soon as bus companies train drivers in use of the card.

The Tyne and Wear Metro – the busiest light-rail system outside London with 38 million passenger journeys a year – also accepts Pop as standard, as does the Nexus-operated Shields Ferry across the Tyne.

Pop meets the challenge to be a ‘Northern Oyster’ and exceeds the functionality of the London smartcard in a number of key respects.

Metro passengers can top-up cash balances online and upload to...
their card from any of Metro's 60 stations, without having to nominate a collection point in advance. While users are advised to do this overnight, the fastest test transaction recorded took just 23 minutes end-to-end, from online purchase to collection.

Pop card users enjoy a daily price cap for travel on Metro, although this is not the case on bus services, where different operators in the unregulated market charge different fares, and passengers must ask the driver for a single or return ticket the price of which is then deducted from the card.

The North East Combined Authority, which Nexus works for, is in the process of introducing a franchise for bus services in and around Newcastle and Sunderland – the urban heart of the region.

This will pave the way for a single universal price structure supporting the Pop card, truly meeting the aspirations of business leaders and the findings of studies by Lord Adonis and others into regional competitiveness, which considers smart travel as key to economic growth.

The NESTI programme has, in the meantime, left open the option for any operator to move its own smart brand onto the single universal platform it has created, indicated by the ‘double smile’ logo on the corner of every compatible card.

By joining the platform a bus company can offer its customers its own products on its own branded card, while allowing them to use the same card to buy a wider range of tickets from other operators.

While none have yet done so, Newcastle University is one major institution to join the North East’s transport revolution – the university’s ID cards double as travel cards, allowing thousands of students to use them to buy and make discounted journeys on Metro.

The system and the HOPs behind it are also fully compliant with the government’s ITSO standard. As part of development, Nexus specialists have made test
purchases from ticket machines – buying Metrosaver season tickets directly onto smartcards such as Liverpool’s Walrus.

There is no question that passengers have an enormous appetite for smart ticketing and the benefit it brings them.

Almost 30,000 passengers on the Tyne and Wear Metro already use a variant of the Pop card for season ticket travel – buying online to pick up the next day or renewing at station ticket machines or Payzone outlets in local high streets.

We believe the market for PAYG will be equally significant – and early feedback from customers demonstrates this. Nexus has already had requests for Pop cards from as far afield as California, from people who come to North East England regularly but infrequently and want the convenience of immediate travel when they land at Newcastle International Airport and step onto the Metro system.

Our small number of PAYG ‘beta testers’ have been quick to ask why certain bus routes and operators are not among the services they can use – an issue that will surely be fixed as bus companies understand customer demand for a product they already have the technology to offer.

All this suggests that Pop is on the verge of transforming the public transport market in the North East, with implications for a much wider swathe of the UK.

**ITSO ticketing compliance**

ITSO is the UK Government mandated open specification for interoperable smart ticketing. The need for ITSO compliance was something that Nexus wanted to deliver at the outset, with new hardware to facilitate ticket validation and access control as well as ITSO back-office systems being required. A total of 13 key stations were earmarked for automatic ticket gates, with the remaining 47 stations to get smartcard validators. The German-owned global solutions provider Scheidt & Bachmann (S&B) won the contract to supply the technology together with Ecebs, who provided the ITSO compliant back-office, card management and online ticketing solutions. The contract commenced in 2009 and was for the design, supply, installation, commissioning and bringing into service of a complete AFC system.

**Overcoming obstacles**

We have overcome many technical obstacles to reach this point. A scheme of this size can face a number of challenges. However, previous experience with deployments of this kind meant that a planned, phased approach was taken. The introduction of Paragon software integrated with other suppliers’ technology platforms required detailed defining and running of integration tests early on to mitigate any potential risks to the project. The integration and overall deployment has been successfully completed with an ongoing managed service being provided by Ecebs.

The foundation laid by these building blocks has meant this challenging and complex transition from ‘paper to smart’ has positioned Nexus as a leading example of what can be achieved with vision, determination and the right technology partners.

*Tobyn Hughes* is the Managing Director of Nexus – the public body which delivers public transport services on behalf of the North East Combined Authority. Tobyn joined Nexus in 2007 as Head of Strategy from a senior role at British Airways, later becoming Director of Customer Services and then Deputy Director General in 2013. Over the last seven years, Tobyn has led customer focussed teams delivering services to 37 million Metro passengers a year, taken Tyne and Wear’s first ITSO compliant smartcard, the Pop card, from its creation to its wide-scale implementation, and developed a bus strategy that has the potential to transform the way bus services are managed in Tyne and Wear. Tobyn became the Managing Director of Nexus at the beginning of January 2015.
ITS & Transport Management

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Public transport and ITS: the urban mobility dream team

Urbanisation is a phenomenon that will consolidate in the coming decades. Today, around 75% of European Union inhabitants live in built-up areas and it is expected that by 2025 most of the world’s population will live in towns and cities. Human pressure increases not only the demand for land leading to an ever-growing footprint of urban settlement, but also the demand for transport infrastructure and mobility services. As Head of City Programme at ERTICO ITS Europe’ Paul Kompfner explains that at present, many cities are badly equipped to meet demands – so how can traffic be managed and mobility ensured in these human anthills?

The answer might have something to do with sustainability. The transport networks of cities need to be sustainable from an economic, environmental and social point-of-view. This means that transport in the future should no longer be responsible for as much as 40% of polluting emissions, as it is today. Transport networks should also be efficient, accessible and affordable for all citizens.

In this respect, Information and Communication Technologies (ICT) applied to transport, also called Intelligent Transport Systems (ITS), can help reduce CO₂ emissions, improve traffic flow and enhance safety. They represent an alternative to heavy investment in new infrastructure in a context where both land and economic resources are limited.

Public transport is an important driving force of urban change and...
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can become the backbone of an alternative scenario. In the digital era, ITS can potentially increase the efficiency and convenience of public transport, offering a real alternative to the use of private cars.

**OPTICITIES**

The ERTICO Partnership is working towards this direction through several activities. One example is the OPTICITIES project which aims to optimise urban mobility from a user-perspective and to advance autonomous information services.

Coordinated by Grand Lyon and gathering 25 European partners, OPTICITIES focuses on the enhancement of transport networks through trials of innovative ITS services. Addressing both passenger and freight transport, the goal is to develop and test interoperable ITS solutions in six cities able to provide urban dwellers with the best possible journey and to optimise urban logistics operations. In this vision, European cities consolidate all data available at local level and provide it to users through a standardised gateway. Service providers and industry together with public authorities can thus offer very high level mobility services.

**Viajeo Plus**

Along the same lines, the Viajeo Plus project has created a forum where stakeholders from Europe, Latin America, China and Singapore exchange good-practice and learn from each other's successes and failures.

The Viajeo Plus City Showcase held in Brazil in March, spotlighted innovative public transport solutions such as the Intermodal Public Transport and Integrated Ticketing of São Paulo. This mega-city has an excellent public transport network, including buses, trains, monorail and underground lines – all interconnected both physically and through an integrated ticketing system.

**Multimodality and Mobility as a Service**

To improve their offer, public transport operators increasingly build intermodal strategic alliances including not only metro, rail, tram and bus, but also newer transport modalities such as car-sharing schemes and bike-sharing initiatives. ITS can help bring down existing barriers between transport modes and help operators provide travellers with end-to-end, affordable, safe and fast public transport.

Finland is a frontrunner in the drive for transport innovation and sustainability. Finnish public authorities have taken an increasingly holistic approach and have gone one step beyond multimodality to develop a new concept – Mobility as a Service (MaaS). According to the Finnish model, as
presented during the last ITS European Congress in Helsinki in June 2014, MaaS establishes a new operations service company acting as broker between transport user and a multitude of suppliers. The services may include public transport and other services such as taxis or shared or fleet cars. The (company or individual) user can choose a tailored travel package which suits their lifestyle and that can be paid for through a monthly subscription.

**Single ticketing, integrated payment**

Technology also allows cities to simplify the process of buying transport tickets, making them cashless, contactless and multimodal.

ERTICO’s partner National Mobile Payment Plc. (NMP) of Hungary is a fully-state owned innovative organisation that provides access to a growing range of public services by means of mobile payments. In 2014, NMP launched a nationwide mobile payment system in Hungary, including one of the most successful mobile parking solutions in Europe.

NMP’s expansion roadmap includes several ITS projects – for example the National Fare Collection Platform Project (NEJP) which will provide comfortable, interoperable solutions for people using public transport. The idea is to make all public transport services accessible to users and to offer a country-wide platform from which all public transport services are sold at the same price wherever they are purchased.

Alongside mobile payments, digital payment for mobility and other services is also becoming widespread. The launch of ‘ApplePay’ using Near Field Communication (NFC) will soon allow users to pay with their mobile device. Also, the Oyster Card is a form of electronic ticketing used on public transport in London which functions thanks to NFC technology. It is promoted by Transport for London (TfL) and it gives access to different travel modes including the London Underground, buses, light-rail, and even river services, among others. In the UK, travellers can also pay for London public transport services using a contactless bank card, avoiding the need for a dedicated smartcard.

Martin Howell, Worldwide Marketing Communications Director at Cubic Transportation Systems explains: “In London, the success of contactless payment cards has been phenomenal; over a million journeys a day and climbing. And this is the start of a major revolution in how people travel – it is becoming easier and easier for city-dwellers and visitors alike to use the public transport network. We’ve seen the same thing happening with the success of Ventra in Chicago. In forward-thinking cities around the world, the advent of a single account for all your travel is dawning, covering every mode and rewarding those making the most responsible and environ-
mentally-friendly choices – helping the cities work more efficiently, for everyone.”

Real-time traffic information and Open Data
Martin Howell states: “It’s becoming a cliché but it is nonetheless true – the way we solve the problems of our future cities is through data. Data, used intelligently, can provide previously obscured insights, can make our roads safer, can make public transport more attractive and can help people to make environmentally and socially responsible choices.”

The data flow is bi-directional. On one hand, the spread of the smartphone and the huge amount of open data can help transport operators learn about travellers’ behaviour and provide better services. On the other hand, real-time traffic information provided by transport operators to users is a valuable resource for people to better plan their trips.

At the moment, most transport operators offer information via a dedicated app for their own mobility services. In the near future, integrated multimodal travel information (IMTI) will influence the modal choice of travellers. This implies that travellers will be able to plan a trip using any available modes of transport, jumping from metro to bike, and from taxi to train, choosing the fastest, most convenient option at the time.

Along these lines, the Traveller Information Services Association (TISA) focuses on the implementation of traffic and travel information services and products based on existing standards, including primarily RDS-TMC and TPEG™ technologies. TISA envisions a world where open traffic and travel information standards and policies increase traffic safety and travel efficiency.

TISA is currently repositioning its strategy with respect to public transport. TISA Executive Office representative, Stephanie Chaufton explains: “We are confident that TPEG will have a much stronger impact on the public transport sector as there is significant momentum is now building up among TISA members. In parallel, TISA is engaged in negotiations, for example with heavy-weights in the rail sector, which are interested in contributing to the development of TPEG.”

Driverless metro vehicles
Making the most of existing infrastructure whilst safeguarding safety and mobility will become one of the most urgent issues in our fast growing cities. These are the objectives behind the roll-out of Trainguard MT – a high-performance CBTC (communications-based train control) system from Siemens which enables automatic train protection for driverless operation of metro lines.

Driverless metro networks, like in Paris, can significantly increase the capacity of operations

Robert Sykora, Director Strategy for the Mobility Division of Siemens points out how driverless metro lines in Paris and Nuremberg are already contributing to a faster, more reliable public transport system. “Driverless operation can increase the capacity of a metro line by up to 50% because the trains can run at shorter headways. On Paris Line 1, automatic operation will achieve a service interval of 85 seconds. If passenger volume suddenly rises – during major events, for example – additional trains can be deployed. These are automatically sent into operation straight from the depot or the sidings, enabling trains to be inserted at short notice into available gaps in the service schedule.”

CityMobil2
In the research arena, the CityMobil2 project in which ERTICO is involved has also been advancing on driverless vehicles. Early this year, driverless electric mini-buses were tested in La Rochelle, France, connecting the University and the Old Port over 1.6km. This kind of vehicle could be used by public transport operators to offer ‘last-mile’ on-demand services, bringing people from the outskirts of the city to the nearest public transport station.

Finally, to effectively address the problems that cities face means taking a holistic view of the whole mobility ecosystem. Multimodality, open data, vehicle automation, V2V and V2I communications and cooperative ITS (C-ITS), seamless payment systems, etc. should all be present in the transport networks of smart, sustainable cities in the future.

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1. www.ertico.com
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3. www.viajeoplus.eu
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Paul Kompfner is Head of the Mobility as a Service Programme at ERTICO ITS Europe. He has over 20 years of experience in creation and management of European collaborative projects. He coordinates the new ITS Observatory initiative and is Secretary of the International Benefits, Evaluation and Costs (IBEC) Working Group for ITS, among other activities. A trained astrophysicist, since 1992 Paul has led ERTICO activities on cooperative ITS (C-ITS), ITS deployment for cities and for public transport, ITS system evaluation, traffic and travel information, road applications of GNSS, plus driver safety.
The start-up FourC AS makes waves in Norwegian public transport

Norwegian public transport and ITS in general have been put high on the political agenda by the government. Now, a start-up is making waves locally by identifying disruptive technologies that are challenging the business models of the established players. This is all in line with the long-term political plans of the transport ministry to improve the environment and reduce car traffic by taking ITS more actively into use.

In a short time, FourC AS has gained quite some attention by being included in ‘one to watch’ lists and have also managed to fully fund a €4 million, three-year-long R&D project involving four PTAs covering more than one fifth of the country’s total population.

Openness in the vehicle too!
The project is named OpenSP, short for ‘Open Service Platform for Public Transport’. The main idea is to take the ‘as-a-service’ concept and economy to public transport by using modern Internet of Things technologies to provide in-vehicle solutions ‘as a service’, fully managed from the cloud. Traditional in-vehicle systems have huge long-term lock-in effects to the original supplier, which means that cost for such systems will be extremely high in the long run.

By changing the mind-set of PTAs and PTOs to accept a more service-oriented approach, it is envisaged that costs for IT solutions for public transport can be dramatically reduced. Other effects are that new players can enter the market more easily and that having an open service platform available will drive innovation and create real competition since installing new services can be performed with the ‘click of a button’.

Moving Norway to an open ticketing solution
The project will demonstrate at least two services on the open platform. The first is an ID- and account-based ticketing service that can use contact or contactless payment cards as IDs or means of payment. For this part, FourC has teamed with partners Valyou and Bambora. Valyou is owned by Telenor and the majority of Norwegian banks, and provides the standard Norwegian NFC wallet app which will now be updated to include ticketing functionality. Bambora was chosen as the PSP on the backend side due to their modern and flexible open APIs which are needed to provide the full range of transport-related backend payment services.

Although NFC is a key element, the system will support ‘any’ identifier, meaning that e.g. QR codes, identity cards or biometrics could be used. As put by one of the PTAs involved in the project, conceptually any identifier should be supported, even down to ‘good old Olga’s wooden stick’ that she always carries!

Revolutionising passenger counting
The second service to be demonstrated is a revolutionary, patent pending passenger counting solution that will more than halve the extensive costs of traditional passenger counting systems based on specialised software and hardware using I/R beams or cameras. FourC’s service will instead run on standard in-vehicle computers with sensors to detect passengers. Not only able to count passengers, the service offers the additional value of tracking individual passengers anonymously throughout the full transport system. The backend part includes various functions to analyse the flow with the use of e.g. interactive maps.

FourC is seeking more partners to add even more services to the service portfolio made available to PTAs. Due to the ease of integration using a ‘no API’ approach, several third party suppliers have shown great interest in providing their services on-board. In fact, just two months after releasing information about the project, the first contract with a third party supplier was signed.

www.fourc.eu  www.opensp.eu
In 2010, 109,000 people commuted to the city of Bern in Switzerland every day – which was an increase of 16% since the year 2000. Over the same period, the number of people that commuted from Bern to other cities increased by 55% from 15,500 to 24,000 people. This accounts for a daily net growth of Bern’s population of 65%. Consequently, the number of transported passengers in the city of Bern has increased by 20% in the last 10 years from 84 million to 101 million.

If this trend continues and this increasing demand is to be satisfied, service availability and the performance of transport operators have to be enhanced. However, the finite amount of energy, of space for roads and tracks, the demands of private motorised transport and non-motorised traffic, the awareness of environmental consequences and limited financial resources, oppose these efforts.

Hence, transport operators will have to optimise their service by sharing their resources, adjust their planning processes and make good use of their own and external sources of (real-time) data. Not only is it out of reach for many transport operators to purchase and operate their own control centres and automatic vehicle location systems (AVL systems), but also, a centralisation would be an advantageous step towards an integral system designed to guide and control not only public transport but, rather, mobility in its entirety.

As more and more systems are interconnected, it is vital to standardise the planning processes and the timetable design. Only then can the transport services of bus, tramway and train operators be synchronised and passengers can expect to be guided along their journey and reach their destination with minimal delay and maximum of comfort.

In either case, data and its correct generation and interpretation are the cornerstones of all systems to work accurately. This is true for the design of timetables, for AVL systems, the computation of arrival and departure times and, most importantly, for the exchange of data between different operators. In order to make use of data in a profitable way, to optimise your own processes and to enhance the passenger experience, it is essential to understand your own data.

**Big data**

There is no universally accepted definition of big data. Often, a set of data is said to be big if conventional methods of storing and analysing fail, because either computers are too slow or algorithms are not suitable to process large amounts of unstructured data.

For example, 1,000 TB of raw data are produced in a single day at the European Organisation for Nuclear Research (CERN) in Geneva.
Facebook generates 130 TB of log files each day. A single flight of a Boeing 787 Dreamliner accounts for 0.5 TB. All the vehicles of BERNMOBIL – the local transport operator in the city of Bern, Switzerland – produce 20 TB of data – in 100 years!

Based on these figures, clearly we are not dealing with big sets of data in public transport. However, advances to survey big amounts of data promoted new ways to analyse data, which led to an evolution of analytics from being descriptive, diagnostic, predictive, and finally prescriptive:

1. Descriptive: what happened? “Yesterday, connections from vehicles of bus line 1 to bus line 2 were interrupted”
2. Diagnostic: why did it happen? “Yesterday, because of an accident which caused delays on bus line 1, connections from vehicles of bus line 1 to bus line 2 were interrupted”
3. Predictive: what will happen? “Tomorrow, due to heavy rainstorms, bus line 1 will face large delays and connections between line 1 and line 2 will be interrupted”
4. Prescriptive: what should you do? “Tomorrow, instead of using lines 1 and 2, it is recommended to use lines 3 and 4 to reach your destination”

The degree to which the answers to the aforementioned questions are generated by machines in an automated process, steadily increases from 1 to 4 while the degree of human intervention decreases. An obvious precondition for automation is that the data has to be machine-readable. Favourably, the data is highly structured and the access barrier is low. These characteristics lead to another approach to classify sets of data which might be more constructive than classification by its sheer size: the differentiation of sets of data by identifying if they are generated in your own company or externally and if they are structured or unstructured (see Figure 2 on page 32). Examination of your own AVL data typically is the easiest and most important step, since they are readily available and provide a profound insight into

Go for intelligent eco-efficient operation of your train or metro system!

Experience and studies show that there are good opportunities by applying eco-efficient driving, often referred to as C-DAS, to suburban and metro operations and independent of their grade of automation (GoA 1-4). The CATO system developed by Transrail will give you:

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some of the core tasks of a control system, e.g. the
generation of real-time data for passenger
information systems. The next step could be the
integration of AVL data from other transport
operators into the analysis. Finally, external sources
like weather reports or the positioning data of mobile
phone users could be taken into account. This would
allow not only making better predictions of future
traffic conditions, but also to analyse and optimise
timetable design.

Open Data – Open Service
The public transport sector is subsidised to a large
extent. Consequently, various private and
governmental institutions demand transport data,
including real-time data, to be available for the
public. In the context of public transport, examples of sets of data that
are referred to as open data are AVL data, GIS data (geographic
information system data), references and names of bus, tram and rail
stops or timetables. The characteristics of open data include: data
should be raw and complete, machine-readable, based on open
standards, highly available and free-of-charge. Unfortunately, many
transport operators still hold on to their data out of fear, that it could be
misinterpreted: a passenger that gets wrong routing information via his
mobile application typically blames the transport operator and not
the application programmer, even if the cause is a misinterpretation
of the raw data by the application. Although there is some truth to
this argument, it should not be used as a justification to restrain
data. Even more, since big players like Google will get hold of
the data anyway.

But there might be an elegant way out of this dilemma, which is the
concept of open services (instead of open data): application
programming interfaces (API’s) for mobile applications or web services,
GIS-based routing information, information about disrupted service and
about arrivals and departures of vehicles are all examples of open
services. Instead of providing raw data, an API can be designed to
answer specific questions: when is the next departure from my current
location A to destination B? What is the fastest/cheapest/most
direct/most comfortable route from A to B? What is the occupancy rate
of the selected vehicle?

Transport operators could gain a lot if they concentrated on their
core business: designing timetables and operating and controlling
traffic. Only if the source data (e.g. GPS coordinates of stops, distances
and travel times between stops, stop times) are of high quality, the
potential of an AVL system can be fully exploited. With these
preconditions, the generation of sets of data (e.g. estimates of arrival
and departure times) of high quality can be
looked at as a by-product of a modern AVL
system. This data can be used by third party
developers to do what they do best:

designing, building and operating mobile
applications, websites or other means of
internet-based information services.

BERNMOBIL’s contribution
BERNMOBIL has put a lot of effort to
the interconnection of various transport
operators in Switzerland (see Figure 3). The
data hub 3.0 connects the federal railway
system of Switzerland with nine local
transport operators and two other data hubs
– one of which is based in Germany. Six other
transport operators will join the network in
the near future. This allows providing
passengers with real-time information
regardless of where they are along their
journey and with which operator they travel
at a particular moment.

Furthermore, control centres are able to
ensure that connections from one vehicle

Figure 3: The data hub 3.0 and its connections to various AVL systems and other data hubs.
CUS = data hub of the federal railway of Switzerland; FIS-Z = data hub in central Switzerland,
NVBW and DEFAS = data hubs in Germany; RIS DB = data hub of the German railway system
to another take place even if a feeder line is behind schedule by automatically instructing the second vehicle to wait for the arrival of the first one.

To guarantee the extensibility, ease of access and operation of the hub, it was developed consistently using the open VDV (Verband Deutscher Verkehrsunternehmen) standards, which were also the basis for the development of the European standard SIRI (Service Interface for Real Time Information).

So far, the data hub 3.0 is accessible only to transport operators and companies within the transport sector. In the not so far future, as open data and open government data initiatives will be put into effect, transport operators might be forced to make their real-time data available to the public. Until then, time should be used to design APIs and open services that meet the demand of passengers and third party developers of modern real-time passenger information systems.

Open services would allow transport operators to lower their costs to some extent while still having full control over their data. Third party developers could promote innovations by using open services and combining them with other sources of data. Ultimately, the national economy would profit and passengers would benefit by having improved service and better real-time information.

Conclusion

To meet the future challenges of growing demand and limited resources, transport operators have to further optimise their operational processes and share common systems and operating procedures with other companies. Understanding its own data and integrating data from external sources is most vital to stay competitive in an ever-more cross-linked world. It is not the sheer size of data, but rather its structure and its origin that determines if it is useful to accomplish these tasks. Open services are suited to meet the demands of third party developers and will lead to a better user experience while maintaining the transport operator’s control over their operational processes and their data.

References

6. Author’s own calculation: each day 48 tramways and 140 buses are in operation at BERNMOBIL.
7. In this context raw data refers to the real-time data that is exchanged over the VDV interfaces and to the data that is generated by vehicles.

Domink Groeger studied Experimental Physics at the University of Zurich and wrote his Master’s thesis on the detection of antimatter at the European Organisation for Nuclear Research (CERN) in Geneva. After working for a few years in IT and web design, Dominik wrote his PhD on voltage gated ion channels at the University of Zurich. Since 2010, he has been working as Head of Engineering at BERNMOBIL where he is responsible for the development and implementation of real-time passenger information systems.

Electronic bus fare collection system

A city in Latin America is rolling out a new bus fare collection system to better serve residents and tourists which serves multiple purposes: protecting passengers and drivers, enforcing driver and rider regulations, and helping fix responsibility after an event. These systems also help reduce, or dispatch, frivolous claims. The Fare Collection System (FCS) also makes more efficient management possible; the system can integrate payment, video surveillance, passenger information, bus tracking, and infotainment. Passengers like the convenience of the FCS and are encouraging its wider deployment throughout the city.

The vehicular environment is beset by electrical variations, shock and vibration, dust, and sometimes temperature extremes. To ensure safety and reliability, in-vehicle computers require special designs that combat these evils which distinguish them from standard IT products. For wireless communication, the system needs to support diverse wireless communications, plus a GPS receiver for route tracking purposes.

Advantech provided a mobile NVR solution, ARK-2121V, which included a vehicle-grade fanless system, 7” open frame touch monitor, and megapixel IP cameras. The fanless system features an on-board MCU to handle power ignition management; the system unit can be powered on and shut down automatically, triggered by either ignition signal or car battery health; the four built-in PoE ports provide for simple and easy IP camera connections through just one RJ-45 cat.5e cable per camera. Advantech SUSIAccess software provides a well-developed SDK and APIs that let system integrators develop their own remote monitoring and control functions, vehicle ignition management, and peripheral connection management such as PoE status, GPS, and G-sensor.

www.advantech.eu
Understanding the wider picture of open standards

Simon Beasley, Transport Network Manager at Reading Borough Council in the UK, explores a range of activities to facilitate the exchange and sharing of knowledge and experience on how to develop, implement and maintain open specifications and standards for ITS and traffic management.

Intelligent transport systems – or ITS – are widely implemented in cities and regions to support a variety of policies: to manage traffic and to influence travel behaviour, through systems such as real-time travel information, bus priority at traffic lights and smartcard ticketing. They are complex systems and the supply market is diverse and rapidly developing. As a result, ITS have largely been implemented in an un-coordinated and piecemeal way. Compounding the problem is the multitude of local agencies procuring ITS, the absence of a common set of open ITS standards and specifications, and the prevalence of closed, proprietary systems.

To tackle this situation, interoperability frameworks began to emerge in the late-1990s. Two of the most successful have been UTMC...
in the UK and OCIT/OTS in the German-speaking part of Europe – both of which offer open specifications and standards (OSS) for urban ITS and these are now widely adopted by local authorities and suppliers throughout their native territories, and increasingly beyond.

Procuring a system designed according to OSS means that a transport authority is no longer tied to one particular vendor. There is evidence that adopting OSS can reduce customer costs, promote innovation and generate economic benefits (new companies entering the market place). Surprisingly this can also be beneficial to systems companies which no longer have to develop everything from scratch, and no longer have to support and maintain many customer-specific implementations.

At a Polis' meeting in 2010, Polis members (city and regional authorities) from around Europe expressed interest in learning more about OSS, and particularly how to go about setting up a framework like UTMC or OCIT/OTS. This expression of interest led to the European co-funded project POSSE\(^2\), which brought the existing frameworks together with a number of cities in Europe interested in learning more about the benefits of open specifications and standards. These cities were Burgos (Spain), Pisa and La Spezia (Italy), Klaipeda (Lithuania), NPRA/Trondheim (Norway) and CDV/Brno (Czech Republic). Reading Borough Council (UK) coordinated the project, and Polis led European-level dissemination and communication activities.

**Open specifications in real cities**

The origins of both UTMC and OCIT/OTS lie in traffic management, focusing on urban traffic control systems and traffic signal controllers. However, from the outset it became clear that this was too narrow a scope, and UTMC in particular now offers open specifications for a wide variety of relevant systems such as variable message signs (VMS), air quality monitoring systems, car park guidance, barriers, CCTV, and automated number plate recognition (ANPR).

Actual implementations are even more diverse. For instance, Reading's UTMC system acts as a kind of integrated mobility data hub: it draws in public transport information (allowing services like bus priority at traffic lights), collates information on neighbouring authorities' networks, and acts as a source for publication of both traveller services (such as journey planning and real-time information) and 'open data' publications to these parties.

The philosophy of OSS has been crucial in this development, and Reading is not alone. Under POSSE, a set of case studies was collected from both UTMC and OCIT/OTS regions; these case studies formed a crucial baseline to explore with POSSE partner cities the real potential of using OSS in practical contexts – in particular, the fact that the same OSS framework can benefit cities of very different shapes and sizes. The POSSE case studies are freely available publicly via the POSSE website\(^1\). From this basis, each of the POSSE partner cities was able to explore the potential for OSS in its own environment. The first step was to consider the very different local ITS...
contexts, and analyse the optimal next steps – and then to establish how OSS might help deliver these steps better.

Trondheim, for instance, is a leading site in the development of cooperative ITS, and was keen to establish how to standardise the specification of a roadside C-ITS station for services such as tolling and bus priority. Klaipeda had much less existing ITS, and wanted to improve coordination of its standalone traffic signals to deliver green waves – again, with public transport prioritised.

The Spanish and Italian partners took a very different perspective. Their political priorities were to deliver open data platforms: in Spain, through a broad-based (not just transport) initiative coordinated by the national government (under the red.es programme), and in Italy through local systems but with regional interest.

Pisamo SpA, an in-house company of the Pisa municipality, is developing an integrated data platform for the entire city’s ITS and GIS system. Open data specifications and communication protocols have been defined and adopted to ensure that data coming from the city’s systems, irrespective of supplier, can feed into the platform without any additional cost for the administration. In the first instance, the integrated data platform will enable the city to monitor and manage urban mobility in a more effective way. In the medium-term, Pisa plans to implement an incentive system to use sustainable transport modes, called Greenhaviour. Number plate recognition cameras, connected to the data platform, will be installed at the six P&R sites around the city to detect those commuters leaving their car and travelling onwards by high-frequency bus.

In Spain, the city of Burgos developed an open data strategy for the city, as well as preparing a national guide for open data and ITS standardisation. The city’s open data strategy covers all systems; there is a particular focus on public transport, since this is the first type of data to be opened. The national guide takes stock of the open data activities already underway in Spain, which range from cities already publishing via their own open data portals, to cities not yet engaged at all in publishing data. The guide identifies recommended data formats, and proposes mechanisms to interconnect existing open data initiatives in order to create a common platform.

Even Reading was able, through the course of POSSE, to develop plans for extending its UTMC infrastructure. As well as developing its open data platform, it also supported the creation of new UTMC specifications for travel monitoring systems based on tracking Bluetooth or Wi-Fi signals from travellers’ mobile devices (with due regard to data protection and privacy issues).

The future of open specifications
POSSE has taken only a few small steps towards an open European ITS world: it has focused on two proven – but independent – national frameworks, half a dozen individual European cities and a relatively limited set of ITS functions. There is a lot more than can be done.

Clearly one angle is to reach more holistically across Europe (and potentially beyond). The work of POSSE has been warmly received by the European Commission, and POSSE (and its core partners) is cited specifically in the draft Urban ITS Standards Mandate to the European standards organisation CEN. A second angle is to continue to build strong links at working level, between the OSS frameworks and the cities and systems suppliers they exist to support. To be technically and commercially practical, open standards need to build on real world systems design experience. International standards are great to have but they can be too all-encompassing for immediate use.

Finally, we still need to ensure that the whole travel and transport sector is coordinated into a coherent OSS framework environment. Today, there remains a wide gulf between public transport standards like SIRI and road network standards like DATEX; areas like smartcards, C-ITS and broadcast travel information are evolving yet other, quite independent, OSS. While this is understandable from the historical context in which ITS have developed, these divisions are a brake on how quickly, cheaply and effectively cities can develop true intelligent mobility solutions.

This challenge is being addressed at several levels. At the policy level, both the European Commission and its member states are increasingly recognising this system’s unity as a fundamental barrier, and are using the various available instruments to address it: funding through the Connecting Europe Facility, research through Horizon 2020, a technical framework through the Urban ITS Standards Mandate to CEN, and knowledge exchange through Interreg Europe. At a local level, forward-thinking cities are breaking down organisational barriers, creating and supporting systems skills, and engaging with the public on holistic transport requirements. And in industry, companies both large and small are looking beyond their traditional product offerings to create propositions that enable real transport integration.

It benefits all of us to do our best to narrow this gulf, using opportunities given by standardised modern technology. Reading, and its core POSSE partners UTMC, OCA and Polis, are exploring our potential role in this, and working closely with the EC and industry to ensure that it is not just a solution on paper. Public finances may be challenged at the moment, but we would strongly encourage every other European city to play its part too.

References
1. Polis is the European network of city and regional authorities promoting innovation in transport – www.polisnetwork.eu
2. www.posse-opensi.eu/en

Simon Beasley has over 27 years of experience working in both the public and private sector delivering Intelligent Transport Systems (ITS) for cities and regions in the UK. Simon leads on the continued development of Universal Traffic Management and Control (UTMC) and open data for Reading, UK. His role as Transport Network Manager at Reading Borough Council includes responsibilities for daily traffic management whilst developing strategies for longer-term road management solutions within the context of EU and UK legislation. Reading continues to be at the forefront of ITS development within the UK where Simon has been involved in the delivery of various UK and EC-funded transport related projects. Simon was one of 25 experts who formed the Urban ITS Expert Group working for the European Commission on the ITS Action Plan. Simon has also provided expert evidence to the UK government Transport Select Committee on urban traffic management. Simon is also the current Chair of the UTMC Development Group.
Maximum wireless network availability for transportation Applications

The AeroLink Protection™ on Moxa’s new AWK-3131A automatically restores communications within 300ms of connection failure to help industrial wireless networks in transportation applications avoid interruptions. In mission-critical industrial networking applications, such as train-to-ground communications in the railway industry, a reliable wireless bridge is essential to minimise system downtime and maximise availability. Otherwise the lives of passengers and staff could be endangered.

Moxa’s new AWK-3131A wireless AP/bridge/client delivers exceptionally fast, ultra-reliable wireless performance in industrial settings by supporting IEEE 802.11n technology with a maximum net data rate of 300 Mbps, plus AeroLink Protection™ redundancy to prevent a single point of failure from bringing down an entire network.

With AeroLink Protection™, a network has two or more protected wireless client nodes connected to a single access point. One serves as the active node, while the others are passive backup nodes. If the active node stops sending or receiving data for any reason, AeroLink Protection™ completely restores the communication link within 300ms (milliseconds) by bringing backup nodes online.

In a nutshell, AeroLink Protection™ constantly monitors each device’s status. If the active node is disabled by a local power failure or hardware fault, the backup nodes will automatically take over to keep the data moving.

Due to overcrowding on the 2.4 GHz frequency band and the introduction of 802.11ac, many industrial networks have already begun migrating to 5 GHz. Engineered for flexible deployment, the AWK-3131A can operate on either the 2.4 or 5 GHz bands and is backwards-compatible with existing 802.11a/b/g applications to future-proof wireless investments. Seamless roaming offered by the AWK-3131A’s Turbo Roaming technology reduces handover time to the millisecond level and provides the benefits of seamless transmission and control. To avoid packet loss, the AWK-3131A actively searches for APs with a stronger signal without waiting for a complete disconnection. Turbo Roaming is especially useful for the control and monitoring of mobile vehicles such as the unmanned AGVs and shuttles commonly implemented in factory automation.

Power and radio frequency disturbances are the two most common causes of wireless communications failure in industrial computing applications. The AWK-3131A is designed with integrated dual isolation protection to mitigate both. First, Integrated RF Isolation provides 500-V insulation protection and level 4 ESD protection without loss of the RF signal. Next, Integrated Power Isolation provides 500-V insulation protection and stabilises system voltage.

The AWK-3131A is compliant with industrial standards and approvals covering operating temperature, power input voltage, surge, ESD, and vibration to assure performance in harsh industrial environments such as oil refineries, water treatment centers and offshore platforms.

Optimise overall WLAN performance with the right antenna

Moxa’s Antenna series is specially designed for outdoor wireless networking under extreme conditions. Using the right antenna system and knowing where to place it can greatly enhance transmission power and coverage area to optimise the overall performance of a wireless LAN.

Moxa’s WLAN calculator tool helps to determine data rates, transmission range, and antenna gain settings for access point configuration. With the calculator, customers can make informed decisions when selecting antennas and devices for wireless applications. The updated WLAN calculator, called Moxa WLAN Link Budget Calculator, easily calculates whether a given combination of wireless devices can achieve the desired transmission distance. It is available at http://iwcalculator.moxa.com

Discover Moxa’s solutions for improved transportation network reliability at the ITS-World Congress 2015 – Stand B5.

www.moxa.com/its
ERTICO – ITS Europe is a leader in the ITS industry in Europe. With its mission – to ‘develop, promote and deploy intelligent transport systems and services which needs multi-stakeholder engagement’ – it aims to bring multi-sector industry experts including public authorities, private industry companies, infrastructure operators, users, academia, and international ITS stakeholders together to bring ‘Intelligence into Mobility. ERTICO works closely with its partners to develop complex transport and technology strategies to increase deployment of intelligent transport systems throughout Europe.

The 22nd ITS World Congress will host the world’s best and brightest leaders in the intelligent transport industry and will bring together more than 10,000 experts and professionals from academia, public authorities, and the industry sector from over 100 countries around the world. It will also be an opportunity to directly explore state-of-the art ITS products and solutions spread across 25,000m² of exhibition space. The Congress will provide a multitude of opportunities to experience outstanding demonstrations with cutting edge solutions, as well as an extensive networking and social programme.

The ITS World Congress is the longest running and largest international conference in its field in the world and has been running since 1994, when the first World Congress took place in Paris. The 2015 ITS World Congress is returning to France for the second time and will showcase the stunning advances that have taken place within the industry over the past 21 years.

The Congress is hosted by TOPOS Aquitaine on behalf of the City of Bordeaux, Bordeaux Metropolis, the Gironde County Council and the Aquitaine Regional Council and with the strong support of the French Ministry of Transport, ATEC – ITS France, CEREMA and IFSTTAR.

Location is everything

Many recognise Bordeaux, France, as the wine capital of the world, but the vibrant port city boasts more than rich culture; it is also home to a complex, unique and innovative transit network that provides residents and visitors, alike, a multitude of mobility choices and solutions. The medieval architecture and the cobblestone streets juxtaposed with the TBC, Bordeaux’s public transport network, is a fascinating contrast that demonstrates hundreds of years of advancements and innovations in the transport technology industry that has been realised throughout the city.

As a smart city, Bordeaux is a leader in sustainable transport. The city has designed its system to encourage the widespread use...
of public transport. Here, buses, bicycles, trams and trains replace cars, promoting sustainable transport throughout the region. Providing consumers with realistic and efficient options that outweigh the benefits of driving personal cars is absolutely essential in achieving sustainable and intelligent mobility, managing traffic, reducing congestion and delivering a positive impact on society overall.

The Bordeaux transport network serves over 28 municipalities and 720,000 people and sees over 23 million passengers yearly on 65 bus lines, three tram lines, 1,700 shared bicycles at 149 VCub self-service stations, 18 Park & Rides, and a transport service for reduced mobility passengers. Bordeaux’s mobility service even extends to its waterway on the Garonne River with its two river bus lines, the Boats BatCub. With the multitude of mobility options and its light-rail system heading towards becoming the largest light-rail system in France, Bordeaux is truly a leader in sustainable, safe, efficient, and innovative mobility.

When you join the 10,000 participants in Bordeaux for the 22nd ITS World Congress, you surely will not have any issue getting around!

There is a session for you!
To promote information sharing and enhance learning among and beyond the ITS community, the congress will host over 200 technical programme sessions with over 1,000 international and local speakers from all corners of the ITS industry. The large number of sessions and high quality speakers accurately represent the complexity, depth and exponential growth of the ITS Industry.

This year, the World Congress has implemented Thematic Days for each day of the conference. Each day will be dedicated to sessions, workshops, and events related to the theme of the day. Be sure to follow along to take advantage of these unique learning opportunities.

Schedule of Thematic Days
- Tuesday 6 October – Connected and Automated Driving
- Wednesday 7 October – Freight and Logistics
- Thursday 8 October – Sustainable Urban Mobility with Public Afternoon.

Included within the programme is the newly introduced category, ‘Space Technologies and Services for ITS’. This timely topic will facilitate exciting discussions about the benefits that Global Navigation Satellite Systems, mapping, and satellite technology can deliver to the ITS industry.

The full list of programme topics include: Space Technologies and Services for ITS; Cooperative ITS Deployment Challenges; Multimodal Transport for People and Goods; Urban Trends Driving ITS Changes; Solutions for Sustainable Mobility; Automated Roads; Automated Management; Automated Driving; Are Big Data and Open Data Transport’s “Silver Bullets”; and Cross Cutting sessions.

Here are some programme highlights:
- Three Plenary sessions which will host high-level speakers, from both the public and private sectors, from around the world to discuss their personal views on key issues:
  - ITS delivering societal changes
  - Space for intelligent mobility
  - From personal connectivity to connected mobility
- 14 Executive sessions that will highlight high-level speakers and exciting keynotes
- Two High-Level Technology Summits aimed at Chief Technology or Information Officers who represent a global range of technology experts and will address a variety of global technology questions;

Improved network reliability for video and wireless communication in smart transportation applications

With Moxa’s V-On ‘Video Always On’ video stream recovery technology on Moxa’s latest Ethernet switches, video streams are now able to resume almost as quickly as transportation networks themselves. It can take several seconds for a video stream to resume after a network interruption even if the network itself recovers immediately. V-On provides 50ms redundancy for multicast video streams when used with Moxa’s Turbo Ring or Turbo Chain topologies. This way, it helps to ensure the highest level of real-time reliability for mission-critical video surveillance applications.

For fleet operators who are incorporating smart IP-based connectivity into their existing vehicles, Moxa’s WDR-3124A, a combo Wi-Fi and cellular router designed to enable extremely rugged and reliable remote access to critical vehicle and passenger data, is the right choice. It consolidates IP-based communications between various on-board devices, sensors, and cameras, and the built-in cellular interface transmits critical live data while in transit.

When the vehicle is back at the lot or service centre, the built-in Wi-Fi interface connects directly with the control centre to share all accumulated on-board data.

Next stop: Moxa transportation solutions

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- Reliable networking solutions with high-performance IP connectivity
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- www.moxa.com/ITS
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As an integrated module of the ATRON system solution ATRIES, WebTick stores and maintains relevant data in only one location. With WebTick, transport operators reduce their administrative expenses as well as their investment and operating costs.

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Three General Public sessions that will give access to the general public and will facilitate an interactive discussion on Autonomous Vehicles, Big Data, and Enhancing Mobility;

- 69 Special Interest sessions that will focus on specific industry topics using an interactive ‘debate’ format

99 Technical and Scientific sessions that will highlight over 700 papers highlighting the work, studies, and conclusions produced by researchers and academics on the state of the industry today and solutions for the future

- 14 Interactive sessions in organised in a two stag, workshop-style format to enable presenters to reach and exchange with appropriate audiences

- Five International Benefits, Evaluation, and Costs sessions that will serve as a forum for information exchange on best ITS practices

- And many more!

The ITS World Congress will build on the success of the Helsinki Congress in 2014 by hosting a Commercial Theatre in the exhibition area. The theatre will give speakers a chance to pitch ideas, products, and services for the market to a wide range of delegates, exhibitors, and sponsors through Industry Insight Sessions and Commercial Paper Sessions.

In addition to the technical programme, this year’s ITS World Congress will also be host to a number of exciting events. The 24 Hours of Innovation Student Competition will showcase students working together in teams and brainstorming on ITS subjects over 24 hours to develop creative and innovative ITS solutions. The ITS Bordeaux Hackathon will target academics and start-up companies and task participants to develop innovative services or applications using the MOBiNET platform. Lastly, the B2B Meeting Facility will provide companies the opportunity to arrange meetings with new potential customers and business partners at the congress.

**The next generation traffic light priority systems**

For over a decade, the KAR system has been ensuring traffic flow for public transport service in the Netherlands. The KAR system specifies the communication interface for Traffic Light Priority (TLP) to public transport. The TLP system uses data radio communication on UHF frequencies for transmitting priority requests between the vehicle and traffic light controller. The nationwide system comprises of over 13,000 installed data radios in buses and intersection cabinets.

Now, SATEL introduces the next generation radio solution in TLP for public transport and emergency services – the SATELLINE-M3-TR4 OA module. This radio module operates in the UHF frequencies and is also compatible with the Open Air protocol specified in the Netherlands for the public transport traffic light priority systems.

The module measures just 57mm x 36mm x 6.7 mm, weighs 18g and is type-approved in several countries all over the world. The privacy of the data transfer network can be encrypted if necessary with an AES128 bit encryption.

SATELLINE-M3-TR4 OA is easy to integrate to different devices and to add to existing systems. The mechanical fastening, interface and antenna connector types can be customised upon request. It is compatible with SATELLINE-3AS and –EASy modems from which the EASy Pro 35W is an ideal solution as base station.

The SATELLINE-M3-TR-module is also available for the European license-free frequencies (869MHz) in the above form factor.

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**Be the buzz on the exhibit floor**

The exhibition hall will welcome more than 300 companies dedicated to ITS technologies and services, as well as local and European public authorities. The hall will feature a French Avenue, designated for French-based companies; an Aerospace Area that will demonstrate the wide range of innovative solutions that this sector can bring to ITS, and an Innovation Pavilion that will offer app developers, SME’s, and start-ups the opportunity to reveal their innovative concepts and forward thinking business models to the larger ITS community.

Used as the main meeting place for many attendees, the exhibition area provides a great opportunity for delegates, sponsors, suppliers, and other exhibitors to network, build partnerships, and share ideas with each other. The exhibition area will be open on Monday 5 October 2015 with a welcome reception and close on Friday 9 October 2015.

**Watch and learn**

The technology is here – come and see how innovative ITS technologies are implemented in real-life through the Congress’s 30+ live technology demonstrations that will take place during the Congress.
Demonstrations will take place on both closed demonstration areas as well as on urban or inter-urban roads in real traffic condition and will feature innovative technologies and mobility solutions.

If you wish to experience a demonstration by being on-board the innovative vehicles, registration is mandatory.

Let’s talk tech
Technical visits will take place throughout the week of the Congress and will give participants an opportunity to explore local transport, ITS management, and research centres throughout the region. Examples of tours include visits to Bordeaux Harbourmaster’s Office – Grand Port Maritime de Bordeaux; Keolis Bordeaux Métropole, Operator of the Public Transport Network of the City of Bordeaux – PC Tram; Thales Aircraft Cockpit Technologies – Thales; The Chaban-Delmas Vertical Lift Bridge; and IT Traffic Management Centre of the City of Bordeaux – Gertrude. Download the preliminary programme to view the full listing, dates, and times of the World Congress’s technical visits.

Who said networking couldn’t be fun?
It won’t be all work and no play at the 22nd ITS World Congress. With a complete social programme, you will enjoy yourself as much as you will find yourself learning. Take advantage of the many opportunities to make connections and meet new people at starting at the Welcome Reception in the exhibition area on Monday 5 October 2015. On Tuesday 6 October 2015, enjoy tastings of world class Bordeaux and Aquitaine wines paired with local cheese and delicatessen at the Bordeaux Wine Feria. Continue your exploration of Bordeaux wines at the Gala Dinner on Wednesday 7 October 2015, where you will be taken to charming Château Lafitte to experience French cuisine, various Bordeaux wines, good music, fun, and unforgettable surprises.

Take a tour
There will be various tours offered during the week of the World Congress that will explore the local regions of Bordeaux, showcase the city’s best shopping areas and culinary offerings, and allow delegates to truly immerse themselves in the vibrant culture of Bordeaux. Don’t miss out on these exciting opportunities; be sure to book your tour today on the World Congress website.

Get more info
For more information on sessions, exhibition opening hours, demonstration reservations, and tickets to the Bordeaux Wine Feria and Gala Dinner, please visit the congress website.

There is definitely enough taking place at the 22nd ITS World Congress to keep you busy, take a look at our preliminary programme, to help manage your itinerary and keep track of can’t miss events!

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**Eurotransport is pleased to be Media Partner for the 22nd ITS World Congress**

**Date** 6-7 October 2015

**Location** Messe Berlin, Entrance North Ehrenhalle (Pantheon), Exhibition Hall 20, Palais am Funkturm

**Website** [www.CCExpo.com](http://www.CCExpo.com)
Speakers will include:

- David Lynch, CIO, FirstGroup Plc
- Jenni Borg, Head of Smart & Integrated Ticketing, Department for Transport
- Matthew Hudson, Head of Business Development, Transport for London
- Robert Montgomery, Managing Director, Stagecoach UK Bus
- John Henkel, Acting Director of Transport, West Yorkshire Combined Authority
- Richard Allan, Commercial Director, Northern Rail
- Erik Kolbjørnsen, Product Manager - Tickets, Ruter
- Gordon Hanning, Head of Concessionary Travel and Integrated Ticketing, Transport Scotland

Topics will include:

- ID-Based Ticketing Solutions
- E-Ticketing for Seamless Mobility
- Assessing Open Ticketing Standards
- Combining Ticketing with Real-Time Information
- Smart Ticketing for Modal Shift
- Optimum Fare Collection Strategy
- Smart Ticketing and Smart Cities: New Directions for UK Local Transport
Speakers will include:

Louise Davies, Customer Experience Lead, South East Flexible Ticketing (SEFT), a DfT Smart Ticketing Programme

Silke Elvery, Strategy and Planning Manager, Transport for London

Arja Aalto, Specialist, Passenger Traffic, Transport and Land Use Unit, Finnish Transport Agency

David Sidebottom, Passenger Team Director, Transport Focus

Jason Durk, Head of Customer Information: National Rail Enquiries, Association of Train Operating Companies (ATOC)

Carol Schweiger, Chair, ITS Massachusetts

Christian Schang, Major Projects Director, Engineering and Projects, SNCF

Nick Phillips, Accessibility Team Leader, Borough of Poole

Topics will include:

- Successfully Implementing an RTPI System
- Assessment of RTPI Systems
- Open Data Protocol
- Strategies to Leverage Trends in Social Media
- The Development of Data for Dissemination to Smart Phones and Tablets
- Integration of Passenger Information Systems with Social Media Platforms
- How the Delivery of Personalised Passenger Information through Social Media Platforms can be a Targeted Marketing Opportunity

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A toolbox to support transport interchange performance

Interchanges play a key role in the integration of urban mobility systems and in enabling good intermodal solutions. Their efficiency is therefore essential to achieve sustainable transport objectives in Europe. The European co-funded project NODES (New Tools for Design and Operation of Urban Transport Interchanges) has developed a Toolbox to allow practitioners to assess and benchmark their new or upgraded interchange and to improve its performance. On the verge of the project’s close – the Final Conference’ of the project will be held in Brussels on 22 September 2015 – what are the main outcomes that can be expected? NODES Project Coordinator Caroline Hoogendoorn takes a look.

NODES is a three-year collaborative research project co-funded by the Seventh Framework Programme. Coordinated by the International Association of Public Transport (UITP), it brings together 17 partners representing local government administrations, public transport operators, as well as research centres and European associations.

Measuring the performance of a transport interchange
How would passenger intermodality ideally look like in 2020? And what will be the role of intermodal interchanges then? These are some of the questions that have been discussed during the first year of the NODES project so that future user needs and system requirements could be defined. In addition, 18 EU co-financed research projects, 10 policy frameworks and design guidelines and over 30 best-practices have been analysed within the NODES ‘State-of-the-Art’. The aim was to identify possible interchange typologies, criteria and performance indicators.

These indicators – which were clustered into key performance indicators – enable practitioners to better understand the performance of their transport interchange. First in the format of an Excel table, these indicators were further worked on in order to develop the online so-called ‘NODES Benchmark tool’. In order for a practitioner to use this, they first need to give a number of main figures related to their interchange. They are then directed to a list of questions which will allow the performance evaluation. This tool will be online at the end of the project. The partners who were at the forefront of this tool’s development were in particular The West Midlands Integrated Transport Executive and DTV consultants.
Improving performance thanks to the NODES Toolbox

Once a practitioner obtains the strong and weak points of their interchange, they are pointed towards a list of tools which will allow them to improve its performance. These tools are based on the most advanced practices in urban transport and are of various natures (software, methods, techniques, models, regulations, materials, etc.). All tools have been grouped together in a so-called ‘NODES Toolbox’ which will be accessible online at the end of the project. Each tool is described in a standard way and was classified following, in particular, the type of interchange it applies to, the type of practitioner which uses it and the objective it aims for.

The indicators as well as the tools cover the following five key areas related to transport interchanges:
1. Strategies for integrated land use planning with urban passenger infrastructure planning (land use and infrastructure)
2. Innovative approaches relating to the design of new or upgraded efficient transport interchanges (design)
3. Intermodal operations and information provision (intermodality and ICT)
4. Management and business models: the interchange as a business case for the local economy and itself (management and business models)
5. Energy efficient and environmentally-friendly interchanges (energy and environment).

In order to validate the efficiency of the tools that were identified, they were tested in nine reference sites distributed around Europe, all engaged in substantial development and upgrading activities: Reading (UK); Birmingham (UK); Rouen (FR); Toulouse (FR); Osnabrück (DE); Budapest (HU); Rome (IT); Thessaloniki (EL); and the stations of Rotterdam, Utrecht and ‘s-Hertogenbosch, all considered as one NODES site in The Netherlands (see Figure 1). The tools and the results of their testing phase were then evaluated following a strict evaluation framework.

Examples of NODES tools

The Madrid NODES partner Consorcio Regional de Transportes de Madrid (CRTM) developed a tool which aims at identifying the design stakes and facility requirements in an interchange. Called ‘Interchange Typology Diagrammatic Representation’, this tool consists of a simple diagram which displays each transport mode’s importance (demand level) and accessibility at an interchange. It thereby becomes easy to compare interchanges, but also simply to better understand an interchange thanks to a visual representation.

Another example of a NODES tool is the ‘Station Experience Monitor’ which was developed by the Dutch partner Nederlandse Spoorwegen (NS). Initially used in the Netherlands by NS, it was turned into a European tool thanks to the involvement of the NODES partners. This instrument supports station designers in helping them not to stop at functionality and to look into passenger stations experience. It was found that often very simple low-cost interventions can already have a large impact on the waiting and travel experiences of the interchange users.

References
1. www.nodes-interchanges.eu
2. Twitter: @transportnodes
3. Facebook: www.facebook.com/Nodestransport
4. The NODES Final Conference will take place in Brussels on 22 September 2015. Participation is free-of-charge but registration is compulsory. For more information contact Caroline Hoogendoorn via email at caroline.hoogendoorn@uitp.org

Caroline Hoogendoorn is in charge of several urban mobility related projects at the International Association of Public Transport (UITP). Since 2012, she has been coordinating the European project, NODES.
Passenger comfort is a priority for Moscow Metro

The modernisation of stations and passenger comfort have become priority guidelines of Moscow Metro over recent months. During this time several big infrastructure projects have commenced and will soon be finished. Head of Moscow Metro Dmitriy Pegov guides us through the important work that has been carried out for the improvement of providing quality passenger services.

At the beginning of the 1990s, our metro seemed to have forgotten about its passengers. More than two decades have now passed and of course it is very difficult to change the system and satisfy the requirements of time, but passenger comfort has become a priority for us.

Renovation and beautification of stations

For many passengers, the first thing they think about of Moscow Metro is its stations. Moscow Metro started the realisation of an ambitious transformation programme in 2014 in order to make stations more comfortable and secure. In the framework of this project, front of station buildings were renovated, escalators were repaired, entrance halls enhanced and underground crosswalks improved. During 2015, remedial works will take place at 96 Moscow Metro stations.

The infrastructure of the underground crosswalks is also being renovated for passenger comfort. They will be entirely altered; wall coverings will be changed, utility systems will be replaced, plus waterproofing systems and navigation elements will be upgraded. Furthermore, anti-parking systems in the shape of concrete semi-spheres will be installed at station entrances.

Shops, shopping malls and automated trading zones will be organised in underground crosswalks after the reconstruction.
A civilised trading environment will be created near metro stations and other transport modes which will help people to feel more comfortable in the city.

Baumanskaya Station
The most ambitious works (replacement of escalators) is currently being carried out at Baumanskaya Station. Until recently, passengers at this station had to use the oldest escalators in the world. These escalators were installed at the beginning of the 1940s and have completely exhausted their performance potential. In recent years, specialists have had to spend time carrying out maintenance works in order to increase their efficiency. Baumanskaya Station is currently closed for 11 months so that major repairs can be carried out; during which time full replacement of the escalator system will be achieved with four modern escalators replacing the three old escalators. The carrying capacity will be increased to 7,500 passengers per hour.

Alongside the installation of modern escalators with stainless balustrades and better technical specifications at Baumanskaya Station, major repairs to the entrance hall will take place, with the installation of new ticket windows as well as the renovation of all security systems, utility facilities, cables, sanitary and ventilation systems, plus the cosmetic repair of the above-ground entrance hall.

Moscow Metro network expansion
Regarding Moscow Metro’s development, I want to highlight that we will practically double the number of kilometres on our network up to 2020. The metro extension project commenced in 2011, and by 2020 the plan is to construct 160km of lines with 78 new stations – 14 stations have already opened.

Kotelniki Station
Soon to open is Kotelniki Station, which will be the second to open after Myakinino Station situated within the Moscow region. This station will be used by citizens of towns in the Moscow-area such as Kotelniki, Luberzi, Dzerzhinskiy, who currently need to use surface transport in order to reach Zhulebino Vikhino stations.

MIFARE Plus
The TROIKA project was NXP’s next step into the evolution of automatic fare collection systems in Moscow, providing passengers with a multi-functional transport card combining all types of urban transport with suburban trains and other services such as parking and bike rental based on MIFARE Plus.

This combination of multiple services together with NFC-enabled services, over-the-air top-ups or remote card management, demands a high level of security and data integrity.

As MIFARE Plus is supported by the biggest contactless infrastructure of more than 150 million MIFARE Classic reader ICs, it represents an obvious and proven choice to upgrade existing MIFARE® Classic installations to benchmark 128-bit AES security. Due to its comparable, fixed memory structure, it represents an easy and proven upgrade path for MIFARE Classic installations.

The MIFARE Plus product family offers a broad portfolio supporting different customer needs. Starting from the entry level product MIFARE Plus SE (1K EEPROM, including MIFARE Classic value block command support) based on the common criteria certified MIFARE Plus product family, to the MIFARE Plus X versions with full 128-bit AES data encryption, proximity check and enhanced NFC support for over the air card management.

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Kotelniki Station will be part of the big transport interchange hub – the square of which will be approximately 450,000m². Alongside this new station, the transport interchange hub will also include two commuter parking lots, a bus terminal, plus commercial, administrative and business areas.

Kotelniki Station will become the lightest station of Moscow Metro. Red marble and granite produced in Russia were used in its design. Improved conditions for passengers with reduced mobility will also be evident at the station with new navigation and tactile panels for people with visual impairment, plus the installation of ramps to help people with limited mobility. A so-called ‘thermal envelope’ will be installed at the station’s stairs for passenger convenience which includes a heating system that will prevent the build-up of ice on the stairs in winter.

Furthermore, a new cashless ticketing system will be installed at Kotelniki Station, as well as free Wi-Fi connection within the station and entrance hall.

**Moscow Circular Railway and Moscow Metro**

Many Moscow Metro stations currently suffer with full-capacity. In order to decrease pressure on the Circle Line and some radial line stations, several projects in collaboration with the Department of Transport and Road Infrastructure Development of Moscow are planned.

The Moscow Circular Railway that will be integrated into the public transit network of Moscow is currently being built. The new Circular Railway will connect Moscow Metro, public transport, shuttle trains, railway terminals and parking zones.

Moscow Circular Railway stations will be located near Moscow Metro stations, with some of them being connected by heated underground and above-ground walkways. On average, it will take passengers 3-5 minutes to make the transfer from one type of transport to another.

A unified ticket tariff system will be used for the Moscow Metro and Moscow Circular Railway, including the ‘Troika’ card. The same ticket windows and terminals will be used for ticket purchases and card top-ups. The price for a trip on the Moscow Circular Railway will be equal to the price of a Moscow Metro ticket, and during transfer from one to the other, passengers will not be required to buy tickets again. In addition, all types of payment privileges that exist in the Moscow transport system will be included with the Moscow Circular Railway.

A new model of noiseless and eco-friendly electric train cars were manufactured for the Moscow Circular Railway which will also increase passenger comfort and security. By passenger request these trains will be equipped with climate control systems, updated hand-rails and side benches, bio toilets and free Wi-Fi.

**Development of passenger services**

Another important direction for Moscow Metro is to increase the level of passenger
comfort. Currently, Moscow Metro is integrating a new, modernised navigation system. This innovation will contribute to comfortable passenger transportation. This updated navigation system is already used at 75 stations. Along with information about nearest streets, the signs also show the number of exits. Special ‘information-blocks’ showing Moscow Metro maps and city streets appear in entrance halls.

In the near future we plan to install special desks at platforms where passengers will have the opportunity to look at maps and plans of the surrounding areas, the exits to the nearest places of interest as well as information about bus and tram routes.

Moscow Metro is also developing the system of its reference and information services. In December 2014, the first informational desk ‘Live Communication’ was installed at Komsomolskaya Station. This desk has a special interactive panel which passengers can now use to send their claims and suggestions directly to Moscow Metro executives. Such panels will be installed at all 11 Circle Line stations.

Since 1 January 2015, free Wi-Fi access has been in place on all lines of the Moscow Metro – a very popular service among passengers. Every day more than one million passengers use this service. The amount of connections has succeeded all expectations. That’s why we had to increase network capacity from 10GB to 17GB. Every train has connection with the network at the speed of 100MB. It is a unique commercial project which was realised without government financing. Pay back was achieved via advertising that is shown to Wi-Fi users.

In 2013, the Passenger Mobility Centre was opened, available on 87 stations. Since then, 240 specialists have helped more than 300,000 passengers with their queries of support by phone and the Internet. All services are free.

‘We take care of you’
Moscow Metro takes care of its passengers health. In 2015, a special programme of passenger support during hot days has been carried out. If the temperature at stations reaches 38 degrees or more, Moscow Metro staff will distribute free drinking water, wet towel wipes and hand fans. The label on the bottle of water has the Moscow Metro logo and slogan, ‘We take care of you’.

Today Moscow Metro is the most beautiful, secure and intensively developed transport organisation in the world. However, works to make it even better don’t stop – not even for a minute.

Dmitriy Pegov began to work on the railroad in 1994, and for over 20 years has been promoted from a Train Assistant driver to the General Manager of the Directorate for High-Speed Operation – a branch of Russian Railways – where his responsibilities included the organisation of passenger speed and high-speed services in Russia, the operation and maintenance of high-speed trains, the operation and maintenance of staff training and the implementation of activities aimed to reduce the cost of passenger transit. Dmitriy supervised the launch of the first high-speed ‘Sapsan’ train service between Moscow and St. Petersburg, the Allegro train service between St. Petersburg and Helsinki, and the launch of the electric train ‘Lastochka’ service in a number of directions throughout Russia. Dmitriy holds two higher education degrees. In 1997, he graduated from St. Petersburg State Transport University as an engineer-electrician for locomotives. In 2013, he graduated as a Lawyer from the State University – Higher School of Economics with a Science of Law degree. Furthermore, Dmitriy has diplomas in qualification improvement and retraining for managers and specialists under the program ‘Public Transport and Operational Safety’ and also holds a MBA degree from the St. Petersburg State Transport University. On 22 July 2014, Dmitriy Pegov was appointed the Head of Moscow Metro.

Critical communication made easy
Think big, start small and scale fast with the DAMM open decentralized architecture, that is easy to design, commission and expand. DAMM TetraFlex® Solutions have been deployed for a wide range of projects within the transport and logistics sector, including Moscow Metro.
Now that Rotala PLC has taken over the running of Preston Bus and Diamond Bus North West in the UK, Regional Operations Manager John Asquith highlights how the organisation has grown, the challenges it has overcome, the work that it still needs to concentrate on in the years ahead, and ultimately the determination it has to succeed as efficient and effective public transport operators for the long-run.

Preston Bus (PBL) has a long history, with transport activities dating back before the turn of the 20th Century. Electric trams began operating from the present Deepdale Road headquarters in Preston from 1904. The first bus services began in the early-1920s. Since then the company has progressed from a substantial period of local authority ownership, to employee ownership following bus deregulation in 1986, to ownership by other bus operators. In January 2009, following two years of intense competition, PBL was sold to Stagecoach. The takeover proved a catalyst for essential changes within the company. Though some work had been done during the period preceding takeover, there was an urgent need for modernisation – especially in the day-to-day running of the company. Consequently management was restructured, processes and working practices were updated, and the depot workforce was streamlined.

However, the Stagecoach takeover was extremely controversial. A subsequent investigation into the sale by the Office of Fair Trading forced Stagecoach to run PBL as a separate entity with neutral management. The culmination of the investigation was a Competition Commission ruling that the deal had adversely affected competition in the area, and Stagecoach was forced to sell PBL after two years. There was interest from a number of companies, including a possible worker buy-out, but ultimately the Rotala Group was announced as preferred bidder, and the sale was completed in January 2011 with Bob Dunn becoming Managing Director of Preston Bus.

Since Rotala took ownership, Preston Bus Managing Director Bob Dunn has implemented a development programme including ongoing investment in the fleet. Substantial investment was made in new hybrid diesel electric buses and conventionally aspirated vehicles. Electronic ticket machines, back-office systems and IT have also been updated. EcoManager and Actia fuel efficiency and telematics systems were installed. Training, mentoring and staff development were prioritised; including successful apprenticeship schemes and NVQ qualification courses for drivers and engineers.

In the years of Rotala ownership, PBL has achieved a number of awards including the Lancashire Be Inspired Business Awards (BIBAs) Green Business of the Year 2012, Leadership Team of the Year 2013, and Service Business of the Year 2014. It also took top prize at the Lancashire Evening Post sponsored Lancashire Green Awards in 2013. Apprentices and engineers took top honours at the IRTE Challenge Awards in 2014, the first year of entry for PBL.

Parent Company Rotala PLC is AIM listed, with expanding interests in bus, coach and transport management services in the West Midlands, South West and South East of England. The North West was new territory, with Preston a hub for growth. During 2014, Preston Bus set-up an outstation in Blackpool and successfully gained several school contracts in the Fylde and Wyre coast area, enhanced by the award of a contract on behalf of Blackpool & Fylde College. The structure of Preston Bus, and the experience contained within the company, opened up the opportunity of growth in the Manchester area.

Growth
There had been tentative enquiries in the past, but any deal needs a willing seller, willing buyer and appropriate price. Meanwhile, PBL applied for and was accepted on the Transport for Greater Manchester (TfGM) supplier list – although the contracts that became available were thinly spread, and did not allow an adequately sized operating base to become established.

An opportunity arose to acquire Green Triangle Buses – operating as South Lancs Travel (SLT) – owned by Julian Peddle and David Reeves, both familiar to the directors of Rotala as a result of their long-established involvement in the bus industry.

On the 1 March 2015, the sale of SLT – based in Atherton, Greater Manchester – was completed, giving Rotala access to the Manchester market.

Prior to acquisition it was determined that the trading name should be rebranded. SLT became Diamond Bus North West (DBNW), complementing Rotala’s Diamond Bus brand in the West Midlands, and at the same time recognising that PBL already had a strong brand in its own area.
Rotala’s aim is that DBNW continues to be managed by a local team. Day-to-day responsibility for safety, compliance and reliability resides at Atherton, with supervision and support from the established management team at Preston Bus. Bob Dunn, Managing Director of PBL and now also DBNW, coordinates his time in between Preston, Atherton and the Midlands.

On take over, there were a number of priorities – not least those centred around engineering performance and compliance. Initially it was important that core policies and procedures were quickly and uniformly implemented. A number of systems were introduced immediately, and all employees were issued with driver and employment manuals, which are updated annually. These set the standards everyone works to, and ensure that safety and legal compliance is not compromised.

It was quickly acknowledged that reliability and the fleet profile were major issues and approximately 30% of the fleet was upgraded within the first four months. Additionally, PBL loaned vehicles to DBNW to ease pressure on the fleet. It was also advised prior to takeover that there was an engineering skills shortage in the Atherton area, and despite various initiatives recruitment in the engineering department proved difficult. That said, progress is being made and DBNW has recently secured the services of several experienced fitters, a vehicle inspector, and a workshop manager. To help safeguard against a future shortage of expertise, Manchester College is to undertake a skill assessment of all engineering staff based at the Atherton depot to determine training requirements.

To achieve brand consistency the fleet is being repainted in DBNW livery – dark blue with DBNW logo. Dark blue reflects the Rotala Diamond corporate colours in the Midlands, and the DBNW identity is differentiated by the green Diamond incorporated in the new logo. The repainting process is ongoing and is likely to take the remainder of the year to complete. As part of the new DBNW brand image, the high profile service 635 has been route branded. The 635 operates from Wigan to Wrightington Hospital via Shevington and Appley Bridge.

Additionally, new corporate Rotala uniforms were introduced in June with the company dress-code phased in. This has made a real difference in the public face of DBNW. To meet a short-term commitment uniform was sourced in the UK.

The challenges of Greater Manchester

As with any takeover, there was an element of apprehension about the future amongst staff at Atherton. However, such times also offer opportunity and hope, and there are always individuals that shine and progress through their willingness to embrace change, develop and ensure that standards and quality improve.

The terms and conditions at DBNW are competitive and will continue to be so because of the nature of the contracts it operates. It remains an aspiration of the company, however, to improve revenue streams and afford a pay rise early in the New Year. Since the takeover in March new contracts were acquired in April and July requiring a 20% increase in driver numbers. Filling this demand quickly has proved challenging, but it has allowed for new employees to be put through a thorough recruitment and induction process. Since Rotala ownership, the PBL programme of driver training and mentoring has shown positive results, a culture change focusing on customer service and bringing new blood into the industry. As a consequence, and to guarantee long-term driver requirements, DBNW recently began advertising for trainee bus driver candidates. Successful applicants will be trained through Lancaster Training Services.

Basic improvements to the DBNW depot provided a better working environment for everyone. The upgraded facilities included additional and improved lighting, transfer of supervisory staff from into the main building, moving and upgrading driver rest room facilities, re-surfacing a large area of the depot yard, and introduction of clearly marked safe walkways.

Regrettably the inherited fleet at DBNW presented operational complications, and it became a challenge to meet the strict contractual compliance regulations of Transport for Greater Manchester (TfGM). The initial performance of DBNW was unsatisfactory, and in the short-term this compromised punctuality and reliability and meant TfGM and customer expectations were not met. In essence, DBNW did not immediately satisfy its own aspirations of quality service. However, since June there has been a huge turnaround in performance, and lost mileage on the tendered network currently stands around 0.2% – which given the operating area of DBNW meets expectations. It was also considered essential to provide a supervisory presence and spare vehicle at local interchanges on the outskirts of the operational area to ensure better communication and cooperation and ultimately an improved customer experience.

The DBNW Operational structure has been reviewed and additional management and supervisory skills have been brought in to complement local knowledge. This means the organisation will deliver a consistent approach and values across the business, with PBL and DBNW developing a common platform for growth in the North West.

Rotala and Diamond Bus North West are in the Greater Manchester market for the long-term, and have met the challenges presented since March. There is still a great deal to do, but as an organisation there is a determination to succeed as quality operators for the long-term, by ensuring a focus on a positive, can-do attitude and culture.

Until March 2015, John Asquith was Operations Manager at Preston Bus. He is now Regional Operations Manager with responsibility for Preston Bus and Diamond Bus North West. Originally from Yorkshire, John has extensive experience in the public transport industry, with the last 13 years spent at Preston Bus.
Stalatube offers a comprehensive stainless steel solution made from Lean Duplex (1.4062 / 1.4162). It provides 50% stronger pillars and higher strength for the whole body structure.

By welding Lean Duplex together with different weldable stainless steel materials, you can use the Lean Duplex only where higher strength is really needed.

The new safety regulations for bus body frames in 2017 require more strength from the materials used in their bus body frames.
Welcome to Eurotransport’s Show Preview of:

busworld®
kortrijk 2015

16-21 OCT 2015
KORTRIJK EUROPE
www.busworld.org

Eurotransport is pleased to support the following Busworld Kortrijk 2015 exhibitors:
Busworld Kortrijk is the biggest B2B bus and coach exhibition in the world and started in 1971 at Kortrijk Xpo in Belgium. It is dedicated to buses and coaches only – no other commercial vehicles are allowed – which makes this exhibition one of a kind. Vehicle manufacturers and industry suppliers will showcase their latest products and services over six days from 16-21 October 2015.

Worldwide
In 2013, Busworld Kortrijk welcomed 390 exhibitors, coming from 34 countries, and there were more than 32,000 visitors from 116 countries.

Still growing
Busworld Kortrijk 2015 will have more space than ever before. Mieke Glorieux, Director of Busworld Kortrijk, advises that the large temporary pavilions that form Halls 8 and 9 will be extended, giving through-access to Halls 1 and 2 as usual, and to Hall 3 for the first time. This will give even better circulation for visitors.

The temporary pavilions are hard-standing and are fully-serviced. Many visitors arrive at the North main entrance which takes them straight into Hall 9, then through into Hall 8, and thereafter to the permanent halls of the Busworld Xpo site.

This additional space has already been booked by exhibitors so Busworld Kortrijk 2015 is set to be larger than ever before.

Exhibitors
Busworld Kortrijk has yet again attracted the attention of the biggest industry players, with confirmed exhibitors including (among many others): Stalatube oy; Koni B.V.; Franz Kiel GmbH; Allison Transmission B.V.; MAN Bus & Truck AG; Alfo Transflor Ltd; Thermo King; Iveco Bus; VDL Bus & Coach B.V.; Solaris Bus & Coach SA; Cummins Ltd; Hübner GmbH & CO. KG; Hanover Displays Ltd; Lantal Textiles AG; Daimler Buses; Volth Bus Corporation; Voith Turbo GmbH & CO. KG; Van Hool; Scania CV AB; Camira Fabrics; Teknoware Oy; Firetrace; Atlas Bus S.L.; Siemens AG; Q’Straint; and Vossloh Kiepe GmbH.

For a full list of exhibitors, go to the main exhibition website where you can also view a floorplan and familiarise yourself with the event layout.

Positive signs
Exhibitors have every reason to be more optimistic about the industry. Registrations of buses and coaches above 3.5 tonnes gross in the first four months of this year were running more than 17% ahead of the same four months in 2014, according to the European Automobile Manufacturers’ Association.

The challenge of Euro 6
Euro 6 represented the most significant technology challenge to date for the commercial vehicle industry. The EU’s focus on real-world vehicle emissions and air quality improvements has driven considerably lower emissions limits for manufacturers to meet. NOx is reduced by 75% compared to current Euro 5 limits (0.46 grams-per kilowatt-hour). Particulate Matter (PM) is reduced to 0.01 gm/kWh – a further 66% drop compared to Euro 5. However, with the introduction of a new ‘particle number limit’ measure as part of the legislation, the actual overall reduction in the permissible levels of PM will be closer to 95%. In total, vehicle emissions have been reduced by 99% since legislation began with Euro 1.

Cummins has achieved Euro 6 successfully, with engines operating well and delivering impressive results in performance and efficiency for both standard and hybrid installations. The 4-cylinder ISB4.5 engine is available up to 210 ps, with the 6-cylinder 6.7 litre ISB engine extending up to 300 ps for buses and 320 ps for coaches. The ISL 8.9 litre diesel is available up to 380 ps. The natural gas version of the 8.9 litre engine, the ISL G is available from 250 to 320 ps for alternative fuel bus use.

Visit Cummins at Busworld Kortrijk 2015 in Booth 407
www.cumminsengines.com
Italy and Spain are showing good signs of recovery while the three largest markets, France, Germany and the United Kingdom, all showed good increases.

Part of the reason can be attributed to growth in demand for inter-city express coaches in a number of markets, particularly Germany, following deregulation. This has created a noticeable increase in demand for high capacity coaches, including double-deckers and vehicles built to a maximum length of up to 15m.

**European Coach and Bus Week**

Right before the exhibition, a competition is organised between the participating vehicles of Busworld Kortrijk. The competition goes by the name of ‘European Coach and Bus Week’ (ECW). During one field test day, on Saturday 10 October, these buses and coaches are tested and evaluated on the following four different levels:

- Ecology
- Safety
- Comfort & Ergonomics
- Styling & Design.

Two years ago, the focus of ECW was changed by the Board. They wanted to provide insights into technological developments within the bus and coach industry and their possible impact on travel, in the widest sense. The Board wanted to reach out to all the different parties, such as policy-makers, bus and coach buyers, plus the customers who travel on the vehicles. They wanted to highlight the innovative character of the industry that does not always get the attention and praise that it deserves.

**Grand Awards and Best of Category**

As in previous years, there will be a Grand Award Coach and a Grand Award Bus – because buses and coaches are designed for different functions and therefore have different levels and needs of safety, comfort, ecology and design.

In addition to the Grand Awards, ECW can grant Best of Category labels in the following categories:

- Ecology
- Safety
- Comfort & Ergonomics
- Styling & Design.

The Board feels very strongly that these awards have to be earned – therefore, ECW can grant a maximum of eight awards – four to the players in the coach industry and four to the players in the bus industry, and a minimum of none!
The following manufacturers have confirmed their participation to ECW:
- VDL Bus
- Van Hool
- Volvo
- MAN Truck & Bus
- Daimler (Setra)
- Ebusco
- Temsa
- Anadolu Isuzu
- Kutsenits
- Yutong
- BYD.

In 2013, for the first time, ECW was also opened to exhibitors that do not manufacture vehicles. This proved very popular and will be repeated again in 2015. The judges were looking for genuine new product innovations, as distinct from improvements and refinements to existing designs. Six companies received an ECW Innovation award in 2013 and they were very proud to be winners.

Busworld Academy Congress from 16 to 21 October 2015
During the exhibition, Busworld Academy – Busworld’s worldwide knowledge platform of the bus and coach industry – together with its partner, the IRU (International Road Transport Union), are hosting a series of interesting seminars and debates.

Roundtable debates for industry associations
On Friday 16 October, the IRU will Chair a ‘Roundtable for Industry Associations’ to further improve the image of the sector, with learnings and best-cases from the different participants.

A major problem bus and coach companies face, is linked to the perception of the (potential) customer. Coach services and coach

A host of seminars and expert talks will take place during Busworld Kortrijk.
Charity Director trials first fully automatic wheelchair securement system, QUANTUM

QUANTAUM is the transportation industry’s first fully automatic rear-facing wheelchair securement station designed for virtually any bus or rail car. Q’Straint’s QUANTAUM (pictured) has been officially launched and is available for sale. Systems are already installed in the USA and the UK is following suit; in early-March 2015, QUANTAUM was successfully installed for the first time in a UK application into a Wrightbus Gemini double-decker at East Yorkshire Motor Services (EYMS).

On the 5 August 2015, Q’Straint invited Helen Dolphin MBE, Director of Policy and Campaigns for the Charity Disabled Motoring UK to trial the QUANTAUM in situ on an actual bus route. Being an occasional wheelchair user herself, Helen was able to give an insight into the issues that wheelchair users face when using public transport as well as share her thoughts and feelings on the QUANTAUM.

Helen knows only too well that an extremely important issue for disabled people travelling on a bus is safety: “I have often found myself nearly tipping over in my manual wheelchair when a bus has taken a corner a bit sharpish, I was therefore delighted when Q’Straint invited me to try out a new piece of equipment designed to secure wheelchairs and scooters on the bus.”

Along with representatives from Q’Straint and some members of the press, Helen took a journey through Hull on the EYMS double-decker. The journey began with Helen seamlessly boarding the bus, backing into the wheelchair space and securing herself by ‘pressing a large flashing green button’, within 20 seconds, two arms were securely holding her wheelchair in place.

Helen reported: “I tried my best to escape from the arms securing me but my wheelchair did not budge. This bus could have driven a slalom course and I would have remained exactly where I was locked in. I felt completely safe and secure.”

Q’Straint is in discussion with many major European bus manufacturers and operators and they are very excited by the reception QUANTAUM has received. A representative says: “We’re now at the stage where we are discussing detailed installations – most definitely a leap in the right direction.”

Visit Q’Straint at Busworld Kortrijk 2015 in Booth R20

www.qstraint.com

Continues overleaf...

tourism are too often seen as ‘slow’, ‘not sexy’, ‘for old people’, or as ‘low-budget travel’, etc.

Too many of the potential customers are not acquainted with all the possibilities, tools and travel concepts that the sector has to offer. This perception makes it difficult to attract new customers – such as families with children, business customers, high-quality seekers, etc. This goes for public transport companies too.

Schunk offers its customers tailored solutions for charging battery-operated vehicles (electric buses, harbors, airports etc.). Both systems enable high power transmission with short charging times. Our systems also fulfill the latest safety requirements regarding 4-pin contact designs and mandatory contact-sequence compliance. This ensures trouble-free communication with the charging station using standardized protocols (Mode 4/CCS). Our systems offer comparatively high vehicle parking tolerances and kneeling during the entire charging process. The newly developed inverted current collector also features an open interface allowing customers to arrange contacts according to their specific needs.
The Right Momentum
At Cummins, our 95 years of engineering expertise has enabled us to deliver a range of Euro 6 products with the optimum balance of performance and low emissions.

We don’t stop there though, we are working with customers to tailor these engines in their installations for improved fuel efficiency, reduced CO₂ emissions and lowest total cost of operation. This is Smart Efficiency; developing future-proof solutions that take Cummins and our customers beyond Euro 6.

To stay informed on Cummins latest developments follow us @cumminseurope or visit us at cumminsengines.com.

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The time is now!
Several industry associations and bigger transport companies have come to the same conclusion: the time is now! But how? Is it an image campaign, is it an innovation process, or is it something else? Some have already started to take action, the Busfan image campaign was launched in Belgium in January 2013 (www.busfan.be).

With the main purpose to learn from each other’s initiatives and experiences in this field, the Busworld Academy and the IRU are organising these roundtable debates on the first day of Busworld Kortrijk 2015.

Industry Associations that have taken initiatives are invited to take part in the roundtable and present their activities and learnings. Other

Non-Touch protection on bus doors
At Busworld Kortrijk 2015, Mayser will present for the first time its capacitive protection system ‘Non-Touch Detection’ for bus doors (pictured). An additional innovation presented in conjunction with proven Mayser Obstacle Detection Systems is the Mayser RoadFR – a flame retardant cable specially developed for bus applications.

With its innovative safety systems that minimise the risk of accidents and injuries caused by power-operated vehicle doors, Mayser is a long-established supplier of reliable Obstacle Detection and Drag Detection systems. Tactile sensors such as electric Safety Edges for door edges react to touch or pressure. They are used in buses and trains worldwide and the number of vehicles equipped with Mayser sensors is continuously increasing.

With the innovative Non-Touch Detection System, the expert in vehicle door safety now also offers a non-contact protection system. If a passenger or another conductive object approaches the active zone of the sensor, its electrical field changes. The movement of the door is stopped by a corresponding signal to the door control before the door can touch the passenger. Neither rain nor snow, leaves that blow into the vehicle or bags placed in the way can influence the reliable function of the Non-Touch Detection System.

The certified safety of Mayser products now also extends to fire protection: in compliance with the requirements of ECE R118 relating to fire behaviour of materials and components in commercial vehicles, Mayser developed a flame retardant cable designated Mayser RoadFR. The cable is optionally available in a version suitable for cable carriers.

Visit Mayser at Busworld Kortrijk 2015 in Booth 109C
www.mayser.com

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Industry Associations that have taken initiatives are invited to take part in the roundtable and present their activities and learnings. Other
associations that are interested are most welcome to join in and listen. Registration is obliged and can be booked by contacting the following email address: academy@busworld.org.

Confirmed participants at the time of writing this article include:
- United Motorcoach Association (USA)
- American Bus Association (USA)
- KNV Bus (The Netherlands)
- The Association of State Road Transport Undertakings (India)
- Purple (India)
- Global Passengers Network (Worldwide),
- BDO (Germany)
- FBAA (Belgium)
- BAAV (Belgium).

**The High Level Debates for Operators, Manufacturers and Authorities: the future of passenger transport by bus and coach, scoop 2030**

Introductions will be given by Jacqueline Galant, Belgian Minister for Mobility; Ben Weyts, Flemish Minister for Mobility; Magda Kopczynska, Head of Unit Innovative and Sustainable Mobility, DG MOVE and Jose Fernandez-Garcia, Policy Officer Clean Transport and Sustainable Urban Mobility, European Commission.

The objective is to have very interactive debates between all stakeholders about the future of bus and coach transport. To inspire the debates, introductory Keynote Speeches are given by 3iBS, ZeEUS & EBSF2, who will be presenting their European Projects. Representatives from VITO, the Flemish Institute for Technological Research, will also give a presentation about their view on the future.

What will the future of bus and coach look like? And do the opinions of the manufacturers, the operators and the organising authorities correspond or do they differ? What power trains and energy sources are preferred by each of the stakeholder groups? Is there a viable business model without subsidies? Are there links with other transport modes? These topics and many more will be discussed, each time from the perspective of one of the three main stakeholder groups: manufacturers, authorities and operators.

The High Level Debate for Operators is Chaired by the IRU on 19 October. Confirmed participants include: Paul Cremers (Global Passenger Network); Prasanna Patwardhan (Chairman & Managing Director, Purple, India); Roger Kesteloot (CEO, De Lijn, Belgium), Keolis; Victor S. Parra (President & CEO, United Motorcoach Association, United States) and Peter Pantuso (President & CEO, American Bus Association).

The High Level Debate for Manufacturers is Chaired by Busworld Academy (Doug Jack). Confirmed participants include: Jessica Sandström of Volvo (Senior Vice President City Mobility); Andreas Strecker of Solaris (CEO); Sven Somers of Van Hool (Manager Engineering, CAD, Homologation & Documentation Department); Peter Wouters of VDL Bus (General Director) and Philippe Grand of Iveco Bus (Institutional Relations Director).

The High Level Debate for Authorities is Chaired by POLIS,
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MAHLE understands the complex requirements for efficient driver and passenger air conditioning, as well as for the cooling of diesel, natural gas, hybrid, and electric powertrains. This is why we always look at the entire system in order to design the best technical and economical cooling and air conditioning solutions for these types of vehicles. In this way, we develop and produce demand-based, application-specific and not least, innovative cooling and air conditioning systems and components with the highest levels of efficiency and reliability. It is no wonder that MAHLE, with its outstanding development expertise and comprehensive portfolio and services, is the partner of all leading vehicle manufacturers.

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With performance, precision, and passion.
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MAHLE INDUSTRIAL THERMAL SYSTEMS

Show Preview

Busworld Kortrijk gives industry suppliers the platform to showcase their products.

the European network for cities and regions. Confirmed participants include: Karin Genoe, (CEO of BIVV/BRSI – Belgian Road Safety Institute); Mike Weston (Director of Buses, Transport for London); Sergio Fernández Balaguér (EMT Madrid, Head of European and Mobility Projects); Julio Ortiz (Director of Fleet and Facility Maintenance, Metropolitan Transit System San Diego), Flanders Region; Howard Hartley (Transport for Greater Manchester), Tisseo Toulouse and BKK Budapest.

Special interest sessions
Chaired by different organisations

Next to the High Level Debates, some specialised sessions are being organised: WINTEX Smart Textiles in Automotive, Chaired by Ghent University; Automation, Chaired by POLIS and Intelligent Transport Systems, Chaired by ERTICO. More detailed information can be found on the website www.busworldacademy.org.

The entrance to the Busworld Academy Congress is free-of-charge for visitors of Busworld Kortrijk. However, registration is obligated and seats are limited, so it is necessary to reserve your seat as soon as possible at the Busworld Academy website: www.busworldacademy.org.

The Busworld App

Delegates are advised to optimise their visit by downloading the free Busworld App which will allow you to search exhibitor information, help navigate your way around the exhibition, and get seminar and event details. You’ll find a link to download the app via the main exhibition website.

Demonstrations and test drives with innovative vehicles

To make the future more tangible, there will be the possibility to experience the vehicles of the future in a series of test drives. All you have to do is register and take your pick of which vehicles you would like to try.

Subscribe online at www.eurotransportmagazine.com

Busworld Kortrijk gives industry suppliers the platform to showcase their products.

Show Preview
Miss & Mister Busworld
Since 2005, Busworld have been running its very own new tradition: Miss & Mister Busworld. One woman and one man are given this title during the exhibition due to their year-long special performance. If you want to nominate one of your colleagues, please visit the main event website and tell us why your chosen person deserves this very special prize.

Reaching Busworld Kortrijk 2015
Reaching Kortrijk Xpo – the trade fair centre where Busworld Kortrijk 2015 takes place – can be easily done by train or car.

Busworld and Kortrijk Xpo are situated right at exit No. 2: Kortrijk Zuid (South) off the E17 highway (Antwerp-Lille-Paris). Signs for ‘Kortrijk-Zuid/Expo’ will guide you to the expo centre.

Note: ‘Kortrijk Expo’ and ‘Kortrijk Xpo’ are the same. In the French speaking parts of Belgium you will see Kortrijk referred to as ‘Courtrai’ (the French name), just as you will see Bruxelles, Bruges and Gand instead of ‘Brussel’, ‘Brugge’ and ‘Gent’ (Brussels, Bruges, and Ghent, respectively). In the Dutch speaking part of the country, on the other hand, you will see ‘Rijssel’ instead of ‘Lille’.

By car from Brussels
Follow highway E40 to Ghent. Take the E17 to Kortrijk from there. After 39km, take exit No. 2: Kortrijk Zuid (South).

By car from Antwerp
Follow highway E17 through Ghent to Kortrijk; take exit No. 2: Kortrijk Zuid (South).

By car from Mons/Tournai
Follow highway E403 to where it intersects with E17; from there take E17 in the direction of Ghent. Exit after 3.5km at exit No. 2: Kortrijk Zuid (South).

On-trend sustainable modules from Thermo King
The Athenia™ E-Series air-conditioning modules from Thermo King are specifically designed for hybrid and electric buses to align with the latest sustainability trends and comply with regulatory directives.

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Follow A10 until it becomes E40 at Jabbeke and exit at Bruges (at the junction with A17/E403) by taking A17/E403 to Kortrijk. After 43km, at the junction with E17 near Kortrijk, take E17 in the direction of Ghent. Exit after 3.5km at exit No. 2: Kortrijk Zuid (South).

By car from Calais
Follow E40 in the direction of Ostend/Brussels until the junction with A17 at Bruges; from there, take A17 to Kortrijk. After 43km, at the junction with E17 near Kortrijk, take E17 in the direction of Ghent. Exit after 3.5km at exit No. 2: Kortrijk Zuid (South).

By car from Paris/Lille
Take the A1 in the direction of Roubaix-Tourcoing. At the Belgian border, follow E17 in the direction of Ghent. Exit after 8km at exit No. 2: Kortrijk Zuid (South). If you got on A27 at Lille, you will arrive at Tournai. There, at the junction with E403, take E403 in the direction of Bruges. Exit E403 at the junction with E17 by taking E17 in the direction of Ghent. Exit after 3.5km at exit No. 2: Kortrijk Zuid (South).

Car parks
The car parks 2 – 7, near to the Xpo, are reserved for exhibitors.

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By train from Germany
Take the Aachen-Brussels-Ghent-Ostend train and change trains either at Brussels or at Ghent for Kortrijk.

By train from France
You can catch the high-speed train from Charles de Gaulle, Paris or any other big city in France to Lille-Flandres, then take the train to Kortrijk/Courtrai.

By plane /regular flights
Brussels Airlines is pleased to be the Preferred Carrier for Busworld Kortrijk 2015 and extends a 10% discount on available return economy fares from Europe, Tel Aviv & Moscow to Brussels (excluding check & go and business fares).

The tickets can be booked online and paid with credit or debit card. The promocode is BUSWORLD.

The international airports of Brussels (Zaventem), Ostend, Paris (Charles de Gaulle) and Lille (Lesquin) offer the best possibilities.

To get from Zaventem Airport to Kortrijk
At Zaventem-Airport, take the train to Brussels-North (every 20 minutes) and from there take the train to Kortrijk.

To get from Ostend Airport to Kortrijk
Take a taxi to Ostend-Station and from there take the train to Kortrijk.

To get from Charles de Gaulle Airport to Kortrijk
Take the high-speed train (tgv) to Lille and from there take the train to Courtrai (Kortrijk).

To get from Lesquin Airport to Kortrijk
Take a taxi to Lille-Flandre station and from there take the train to Courtrai (Kortrijk).

MiX Telematics launches innovative MyMiX platform to engage drivers

MiX Telematics, a leading global provider of fleet and mobile asset management solutions, is strengthening its MiX Fleet Manager solutions with the addition of MyMiX – an innovative driver engagement platform that further enables its customers to run safer and more efficient fleet operations. MyMiX provides professional drivers with easy 24-hour access, via the web or a mobile device, to key information about their performance – no matter the industry in which they operate. Driver scoring is the first module available on MyMiX, which boasts a sleek, engaging and user-friendly interface accessible from iOS or Android mobile devices.

“For successful fleet operators, it’s no secret: engaged drivers means better business. MyMiX is yet another way we’re helping our customers cultivate a culture of safer driving, which ultimately leads to more efficient fleet operations,” says Catherine Lewis, Executive Vice President of Technology at MiX Telematics. MyMiX is available to customers subscribing to MiX Fleet Manager and provides drivers with daily and weekly scores as well as six-month trends. Drivers can also drill down and view significant driving events on a map – such as harsh braking or speeding incidents. The app also allows drivers to see how they rank compared to site and organisation averages, while being able to view data and scores across all the vehicles they have used.

The MyMiX platform will be on display at both Coach and Bus Live, stand T4 and also Busworld, stand 114A so visit MiX Telematics at either show to find out more.
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‘Sprint’ rapid transit system on its way to Birmingham

Britain’s second largest city is preparing itself for the arrival of its first bus-based rapid transit system. In an interview for Eurotransport, Geoff Inskip, Chief Executive at Centro – the transport authority for the West Midlands – details how work is well underway for the arrival of ‘Sprint’ on the streets of Birmingham in what will be a first in the UK.

Other bus rapid-transit road systems in Britain – such as in Cambridge and York – use conventional buses; Sprint will boast bespoke vehicles.

The make and model of the vehicles to be used for Sprint is still being finalised with the Department for Transport (DfT), so is a date for their introduction, but the organisation behind the scheme is wasting no time in getting things ready for their arrival.

Sprint is being introduced by Centro, the transport delivery arm for the West Midlands Integrated Transport Authority, and Sprint is the next stage in the organisation’s mission to deliver a world-class public transport system to the West Midlands.

A 0.8 mile (1.2km) extension to the Midland Metro tram system from Birmingham’s Snow Hill Station down to New Street Station is due to open by the end of 2015, and Geoff Inskip says Sprint would essentially be ‘Metro’s little sister’.

“The concept of Sprint – a bus that operates like a tram – is a new one to this region but it has so much to offer,” explains Geoff. “It means faster journeys, improved reliability and easier access to transport and our communities. It is going to be key in improving the journey experience for people living, working and visiting here.”

Certainly a public consultation exercise held last year was
overwhelmingly in favour of the idea, and the scheme is integral in both Centro’s ‘Towards a World Class Integrated Transport Network’ prospectus and Birmingham City Council’s ‘Birmingham Mobility Action Plan’.

The scheme will cost in the region of £15 million and is funded through Centro and by the government via the Greater Birmingham and Solihull Local Enterprise Partnership (GBSLEP).

Sprint will follow the No 9 bus route from central Birmingham to Quinton, serving the city’s entertainment quarter in Broad Street, then along the A456 Hagley Road – a distance of approximately 5.7 miles (9.1km).

Following consultation and funding approval, Centro will tender for the build of the Sprint vehicles, and for an operator to run them on Centro’s behalf. Sprint will be a fleet of up to nine diesel/electric vehicles whose features will include:

- On-board real-time information and ‘next stop’ announcements
- Low-level flooring and multi-door boarding for easy access
- On-board Wi-Fi
- Low emission/hybrid engines
- Multiple double-width doors with boarding and alighting at all doors.

It is envisaged that daytime services will operate every 10 minutes, but these would be increased at times of peak demand such as major sporting or entertainment events.

Once approved, Centro believes Sprint could go live within 18 months.

More than £50 million has also been earmarked to implement a Sprint route to the airport by 2021. This second route will link the centre of Birmingham with the airport (via the A45 Coventry Road). It will also serve the region’s second HS2 station which is proposed for land near to the airport, the National Exhibition Centre and the existing Birmingham International railway station.

Numerous routes across the Midlands were studied by Centro for the pilot. Broad Street/Hagley Road was chosen because it currently has only two means of transport to Quinton from the city centre – bus or car. Sprint would integrate with the existing bus network. Other factors were:

- Expected passenger demand
- Deliverability
- Potential for economic development
- Less impact on the environment.

There will be 16 new stops along the route from Colmore Row in the city centre to Ridgeway Avenue/Hagley Road West in Quinton. They will feature real-time passenger information, CCTV, and help points along with off-board ticketing machines and smartcard top-up points wherever possible.
Fares would be aligned with those charged on local bus services, subject to multi-operator ticketing protocols. Other key features will include:

- Payment systems and tariffs to encourage cashless payment
- The Swift smartcard system as a minimum but payment by debit card, mobile phone app and other emerging technologies to be pursued.

Sprint will see road widening and a new bus lane installed in Hagley Road and traffic light reconfiguration to give priority to Sprint vehicles.

The reduced road capacity resulting from the new bus lanes is expected to further constrain traffic on what is already one of the city’s busiest roads.

Geoff adds: “Increased delays for general traffic are, effectively, accepted as part of the trade-off of providing an enhanced public transport system. But highway priority for Sprint will be essential to ensure rapid and reliable journeys.”

He continues: “However, the reallocation of roadspace to Sprint can be done in conjunction with the implementation of Park and Ride facilities. Free Park and Ride is something that has been very successful for us on heavy rail and Metro, so we will review the possibility of its introduction for Swift.

Geoff says he believes Sprint will become recognised as a benchmark for high quality rapid transit. He says that together with heavy rail and Metro, it would form a high-capacity rapid transport network linking key metropolitan centres to their travel-to-work areas and underpin regeneration of key corridors.

“The passenger experience of the Sprint network will be very different to that of a bus in service today,” he said.

He continued: “Off-vehicle ticketing, conductors and multi-door boarding, coupled with highway priority will help to reduce journey times to be more competitive with the private car. Sprint will offer a ‘turn-up-and-go’ timetables with journey times and comfort levels based on light-rail systems while maximising the flexibility and lower costs associated with bus technology.”

A key element of the project would be the involvement of operators in terms of investment in vehicles and staff.

“We want, and will expect, exceptional standards,” declares Geoff. “Vehicles will always be clean and damage-free, passenger-facing staff will be informative and project a positive image of public transport and a rigorous customer charter will clearly set out expectations of all parties.”

Geoff adds: "Passengers deserve no less. We have worked hard over the years to raise the bar for public transport in the West Midlands and Sprint is going to be a standard bearer for that."

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**Geoff Inskip** has 25 years of experience in the finance, rail and public transport sectors. Alongside his current role at Centro, he is also Chair of UKTram and Vice President of UITP. A qualified Chartered Accountant, Geoff began working as a management consultant before moving on to work for a merchant bank in Manchester. In 1988 GMPTE asked him to look at the private sector options for delivering Manchester’s Metrolink under a PPP and as Commercial Director he went on to successfully deliver the project. In 1992 Geoff became Director of Finance of Greater Manchester’s Transport Authority and in 1996 as the Project Director for the Salford Quays extension of Manchester’s Metrolink. After being appointed Deputy Director General in 1999, Geoff successfully delivered the approvals for the Refurbishment and Phase 3A of Manchester Metrolink in 2006. Geoff’s contribution to the industry was recognised in being awarded the ‘Campaigner of the Year’ at the national Light Rail Awards. During the past five years Geoff has been a driving force in setting up and getting the go-ahead to deliver a £1.3 billion transport package for the West Midlands which has seen the introduction of the ‘Swift’ smartcard with over 2,000 buses equipped with smart ticketing equipment. Through partnership working, Geoff has also led the transformation of the bus network which is showing improved performance and customer satisfaction.
Combining batteries with electric drivetrains maximises performance and reduces integration work

Limited energy resources and the increasing demand for transportation have raised the interest in alternative powertrain technologies to provide sustainable energy-saving solutions. Hybridisation and electrification of vehicle powertrains has the potential to significantly decrease fuel consumption and reduce emissions. This development is about to see a boom in city buses as many major cities are now setting incentives to cut local emissions, especially for diesel-powered vehicles.

An electric and hybrid drivetrain comprise electric motors, control inverters and auxiliary drives combined with an energy storage system which is usually an electrochemical battery. The battery works as an energy buffer in hybrid vehicles, and as a single energy source in full electric vehicles. Besides the drivetrain components – electric motors, inverters and batteries – performance and efficiency of the drivetrain is determined by optimisation and integration of the battery management and the traction control systems.

The battery is controlled by a Battery Management System (BMS), an embedded control system whose primary function is to ensure that the battery works within a safe operation area. In addition, it provides information about the status of the battery to the linked interfaces. Adapting the traction control system to the inherent characteristics of the battery cell can result in remarkable improvements in system performance and driveability compared with a solution where the components are purchased in a disjointed manner from various suppliers.

Thanks to a recently formed worldwide strategic alliance between Visedo Oy of Finland and Leclanché S.A of Switzerland, the companies are able to provide a complete drivetrain solution for any electrically powered vehicle. All the components are based on the same control platform and hence result in a comprehensive solution with compatible interfaces. This unique partnership means that the companies can provide a turnkey solution which reduces significantly the integration work and effort required from the vehicle manufacturer.

The concept has already been validated in a commercial bus fleet and proven to have an amazingly low energy consumption of level of just 0.7 kWh per kilometre. An integrated Visedo-Leclanché drivetrain is over 30% more efficient when compared to conventional solutions in the marketplace today where separate components are integrated by the vehicle manufacture or fleet user. This means in effect that the investment in the battery required is 30% less or the range available for the battery is 30% longer.

The combination of Visedo drivetrain components and Leclanché batteries into one system forms a complete European manufactured and designed solution that is unique in the market today. In addition to superior technical performance, the companies also offer extended warranty terms and financing solutions to serve both bus manufacturers and fleet operators allowing them to further optimise their products and reduce their operating costs. Visedo and Leclanché are confident that this strategic alliance will provide a new and novel offering to the market replacing diesel power trains at an increasing pace in transportation and other customer segments.

You can meet us at the Busworld Expo in Kortrijk, Belgium (16-21 October 2015) on stand 979.
BRT: a holistic system approach

As the worldwide popularity of Bus Rapid Transit (BRT) networks continues to grow, Alberto González Pizarro – BRT, Electric and CNG Buses Project Director for Keolis – highlights that it is worthwhile looking at this mode of public transport from a holistic approach when designing a network, as the role of each component has an impact on the overall performance of a BRT system.

In France, Bus Rapid Transit (BRT) has been inspired by tramways and adapted to the urban context. This innovative service improves the image and performance of the bus on a public transport network. BRT adds value to a city at a low-cost which makes it a vital asset and a complement to other modes of transport. Flexible and adaptable, BRT is a solution that fits the needs of urban areas of any size and is being adopted by a growing number of cities around the world.

The main purpose of a BRT project is to deliver a high performing service. Both passengers and the public transport authority expect reliability, accessibility, increased capacity and safety. Having an overall vision of the network including prioritisation of the lines, patronage growth and economic performance can be a challenge even for experienced operators. A commitment to delivering a premium-quality service with a team of results-oriented managers and drivers is critical to the success of the project.

Productivity metrics and prioritisation considerations for a BRT launch demand certain key competences from the operator. Keolis, for example, brings together its experience with data from Intelligent Transport Systems and sophisticated passenger surveys to propose pragmatic solutions for dedicated routes, transit signal priorities at intersections and station and platform layouts. Additionally, Keolis is constantly looking to improve the commercial speed of BRT vehicles and reduce the dwell time at stations. Combining empirical data with experience brings positive results which can be easily measured: reduced operating expenses, environmental benefits, and increased popularity of the service. A well-designed BRT system that meets the needs of local communities can boost ridership by 20% when the new service is introduced.

Keolis has gained experience implementing these key success factors while working in partnership with various transport authorities around the world, including ‘Metz Métropole’ for the METTIS project. In Metz, having a dedicated lane combined with transit signal priority was an essential feature in order to reduce travel time. Approximately 80% of the line runs on a dedicated lane, more than 90 intersections are equipped with transit signal priority, and all drivers have attended specific BRT training sessions. All of these measures were combined in order to optimise travel time and ensure that the headway remains at a predictable five minutes on the two shared lines, thereby guaranteeing customer satisfaction.

BRT accessible for all

Another important differentiator for BRT is its accessibility, especially for citizens with reduced mobility. This is a key issue for a public transport authority. BRT’s flexible design means it can be adapted to its environment while meeting the public transport authority’s accessibility objectives in every way including the vehicles (which can be expanded with guided systems), the stations (geometry and positioning) and the design and the integration of all related equipment.

For instance, Keolis has worked on a project in which 35cm-long electric ramps were installed on the vehicles and deployed on 24cm-high platform stations. Keolis experts noticed that this would affect accessibility because the platform level at the station resulted in a
non-optimal slope of the ramp once it was deployed from the vehicle. The public transport authority, based on Keolis’ recommendation, is currently moving forward with an initiative to improve the accessibility of the BRT. Together, Keolis and the transport authority are studying longer electric ramps (70cm-long) which will result in an accessible slope. This change significantly reduces the vehicle’s dwell time at the stations as, even though the deployment time of the 70cm ramp is four seconds longer compared to the 35cm ramp, the access is easier and it takes less time to get on and off the bus for a person in a wheelchair. In short, Keolis’ on-the-ground observations and recommendations to the public transport authority result in a reduction in the dwell time at the station, increased safety and accessibility as well as improved reliability.

As you can see from this example, taking a holistic approach to designing a BRT network is essential because the design and role of each element of the system has an impact on the overall performance. In order to help public transport authorities take a global view to introducing a BRT network, Keolis works in partnership with authorities planning these implementations and brings its expertise to all areas from design to operations: the procurement of vehicles, driver training, testing and commissioning and finally the inauguration of the line. Throughout all of these stages, Keolis ensures optimal integration of all components, in order to deliver a high performing system.

Looking ahead
At Keolis we are constantly striving for continuous improvement. In the case of BRT networks, one area for further enhancement is in fuel diversification – in particular environmentally-friendly and fossil-free fuel options. We are studying all of the propulsion technologies including electric with opportunity charging, overnight charging, hybrid and fuel cell buses and different types of batteries. But electricity is not the only alternative form of power that we are testing. In fact, we are operating more than 1,500 Compressed Natural Gas (CNG) buses on networks around the globe. We are staying ahead of the curve by following the development of the bio-CNG industry in Sweden.

By combining innovation, expertise and experience, Keolis can provide useful public transport advice to each of our partner cities and help them make the best choices for their chain of mobility.

In conclusion
A BRT project makes it possible to implement a comprehensive and cohesive transport policy as part of an Urban Development Plan. BRT is a viable alternative to the car that easily absorbs increases of urban transport use, and can play an essential role in an integrated transport system for the benefit of an entire city. An improved bus network is a key instrument when designing a public transport system that aims to achieve high ridership numbers and high customer satisfaction levels, with a constrained budget. Introducing a new BRT line is also an opportunity to re-examine an entire public transport network design, in line with its current and future urban development. Transport authorities and Keolis are fully aligned on their objective: to make public transport relevant and an attractive alternative for travel.

Approximately 80% of the Metz BRT line runs on a dedicated lane

Alberto González Pizarro is Project Director at Keolis Conseil et Projets and an expert consultant with a wide range of experience in BRT project management. He was a key contributor to the development of BRT projects in Las Vegas, where he prepared, tested and evaluated the first North American use of the Civis technology. He also worked on the first BRT project in Castellón – a trolleybus with an optical guidance system in Spain. Alberto has deep knowledge of the functionalities of a BRT system and how to optimise it from an operational perspective. He was the BRT Project Manager for METTIS between 2012 and 2014, transferring Keolis’ expertise and know-how in the preparation, testing and operational phases. Currently, Alberto is Keolis’ expert in BRT, electric and CNG Bus projects. He understands every feature of the systems and applies a whole-of-lifecycle approach in order to optimise operational performance and long-term maintenance. Throughout all phases of the project, he conducts rigorous engineering analysis.
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Visit us on stand T4 at Coach & Bus Live or stand 114a at Busworld to find out more.
MetroBus – a new express bus service for the West of England region

After 10 years in development, construction finally started on the West of England’s MetroBus network in early-2015. For Eurotransport, Rob Ash from the West of England Office and involved in the MetroBus project, explains that passengers don’t have too long to wait; the first services are due to start operating at the end of 2016.

The West of England region is a growing and prosperous area. In 10 years, its population has grown faster than the UK average to 1.1 million people. The region’s councils and their Local Enterprise Partnership are acutely aware that further growth will put increased pressure on an already strained transport system.

MetroBus is a £200 million Bus Rapid Transit (BRT) scheme and a joint project between Bristol City Council, North Somerset Council and South Gloucestershire Council. It’s also an integral part of their programme of sustainable transport improvements that will support economic growth, reduce car dependency and improve air quality.

Other improvements planned by the councils include investment in walking and cycling and an additional £100 million for improving local rail services.

MetroBus is arguably the more high profile intervention that will serve more communities and carry more passengers. The councils forecast that 25,000 passengers a day will use MetroBus services when the network is completed from summer 2017.

Building on previous investment
MetroBus builds on recent improvements to key bus corridors. The Greater Bristol Bus Network (GBBN) – a partnership between the councils and local bus operator First – spent £91 million on improving 10 strategic routes across the region.

GBBN was a great success; passenger satisfaction increased from 46% in 2007 to 73% in 2011/12 and passenger numbers grew by 17.6% on the GBBN corridors in the same period. The councils are confident MetroBus will increase bus passenger numbers further.

A gateway to opportunity
The MetroBus network is approximately 50km-long. Its three routes have been designed to fit in between local bus and rail travel, providing passengers with rapid and reliable journeys to destinations not easily reached by rail.

Areas of south Bristol served by MetroBus are within the most deprived 10% in the UK. Many neighbourhoods suffer from high levels of unemployment and residents have fewer opportunities to access work, education and training.

MetroBus will connect parts of Bristol poorly served by public transport, making it easier for more people to access education and job opportunities which were previously difficult to travel to.

Unemployed people aren’t the only people MetroBus will help. North Bristol SusCom is a group of major employers who promote
sustainable commuting and business travel to their 40,000 employees and 30,000 students. North Bristol SusCom believes public transport can play a significant role in getting people out of their cars but think there are significant barriers that prevent more people from travelling by local bus.

“We currently suffer from a complete lack of services in some locations or services that try to serve too many locations and therefore take far too long to get from A to B,” explains Ann O’Driscol from North Bristol SusCom.

Ann believes MetroBus is a key component of the wider group of measures being implemented to integrate and improve the region’s existing transport network. “MetroBus addresses some existing gaps in bus services by providing rapid and direct links to key employment sites. It’ll also improve connectivity at key transport interchanges, such as the University of the West of England and Bristol Parkway railway station.”

Encouraging investment

Matt Cross is Head of Investment at Invest Bristol & Bath; his role is to help the West of England Local Enterprise Partnership create 95,000 jobs in the region by 2030. Matt sees that poor perceptions of connectivity and traffic congestion on the road network “have a negative influence on business in the area”.

He adds: “a few years ago a report by the UK’s largest commercial property advisers quoted a property agent who said our transport network is one of the biggest drawbacks of Bristol.”

Matt thinks this will change. He continues: “MetroBus will transform our region. It’ll make us a more attractive investment proposition for international and national companies. With its direct routes, MetroBus will make travel simpler by helping our workforce get to their destination in a single bus journey.”

Destination Bristol

MetroBus has also been designed for visitors to Bristol. The network will serve a number of tourist attractions including Brunel’s ss Great Britain, an historic harbourside area and the Cribbs Causeway and Cabot Circus shopping complexes.

Bristol is currently building a new 12,000 capacity arena located close to the city’s main railway station. Parking has been limited to encourage gig-goers to travel sustainably and MetroBus plays a major role in the arena’s transport strategy.

Destination Bristol is an organisation that promotes the area as a leisure travel destination and work with local attractions to promote the area. They are looking forward to the first MetroBus services and are keen to promote MetroBus to visitors as a more sustainable and stress-free alternative to travelling to the area by car.

Rapid and reliable

The main draw for passengers is that MetroBus services will be quicker and more reliable than existing bus services. Predicted journey time savings start at 10 minutes to an impressive 90 minutes a day for a round trip.

The time savings will be achieved by a combination of new significant bus infrastructure (including 2.5km of guided busway and a bus-only junction over the M32), bus lanes, bus priority at signals and significant bus infrastructure (including 2.5km of guided busway and a bus-only junction over the M32), bus lanes, bus priority at signals and smart ticketing.

Operator’s manual

MetroBus will be operated as commercial services registered with operators. The councils have signed development agreements with five operators and are using a Quality Partnership Scheme to define the minimum operating standards for MetroBus services.

The councils are aware that their aspirations need to be balanced against commercial constraints. Jen Pritchard, MetroBus Integration Manager, explains: “Our vehicles will be bought and maintained by the operators. We don’t envisage the councils providing any significant revenue support. This means the MetroBus vehicle must be commercially affordable for the operators.”

The councils have decided that the minimum specification for the MetroBus vehicle will be a hybrid drive, twin-door vehicle. The vehicle must also have at least 25% less carbon emissions and fuel consumption than a standard bus.

A high-specification vehicle will be the main way of distinguishing MetroBus from the regular bus services in the region. Jen explains:
“having one type of vehicle, rather than a mix of different vehicle types, will help passenger recognition of MetroBus services. We’re asking operators to provide a specific MetroBus vehicle livery which will be consistent with our stop, interchange and information branding.”

Jen adds: “The vehicles will have a level of passenger quality and comfort that is a clear uplift from regular bus services. Our distinctive high quality buses will form an integral part of the MetroBus branding and how we market our services to passengers.”

Despite the hilly topography, cycling is big in Bristol. In 10 years the number of people cycling has doubled and in 2008 the government named it England’s first Cycle City. With such a high take up of cycling in Bristol it’s fitting that all MetroBus vehicles will carry an innovative cyclist sensor alert system. Attached to the side of the vehicle, radar and camera sensors will alert the driver to cyclists in potentially dangerous situations close to the bus.

Transforming public transport
There are 90 bus stops across the MetroBus network. The councils view the stops as one of the key ways the network will transform both public and sustainable transport in the West of England.

On-street information totems called iPoints will be provided at MetroBus stops, distinguishing services from the background bus network. Jen explains: “The iPoints are a robust, secure and weather-proofed state-of-the-art structure. They’ll display live bus arrival times and information about onward journeys on foot or via other bus services.”

The hi-tech iPoints are intended to create a striking landmark that will aid pedestrian wayfinding. Jen adds: “The iPoints will make travelling by public transport more accessible by giving passengers up-to-date and clear travel information, making it easier for people to choose the best route and onward route for their journey.”

The MetroBus stops will function as key interchanges between bus and rail services and facilitate multi-modal journeys. Cycle stands will be provided at all stops.

Off-bus ticketing on MetroBus services is another way the councils intend to provide a step-change in service for passengers; they believe it will remove some of those barriers to using public transport mentioned by North Bristol SusCom. Jen explains: “Off-bus ticketing will reduce dwell time at stops, encourage speedy boarding and reduce those all-important journey times.”

The future
The clear benefits of a flexible, road-based public transport system with in-built priority means new housing and office developments are already incorporating MetroBus into their proposals.

The councils are so confident about MetroBus that an extension to the network is already being planned before services have started operating. South Gloucestershire Council are currently drawing up plans for a MetroBus extension to serve a new development of 5,700 houses and around 50 hectares of employment land in the north of the city.

This confidence is good news for MetroBus and demonstrates the councils are keen to transform the region’s public transport not just for today but for future generations who wish to live, work and visit Bristol.

References
1. www.travelwest.info/metrobus
2. metrobus@westofengland.org

Rob Ash has worked for MetroBus since 2012. He manages strategic and tactical communications for MetroBus with overall responsibility for the Ashton Vale to Temple Meads and South Bristol Link schemes. One of Rob’s main responsibilities is ensuring the three MetroBus projects follow a consistent network approach. Rob has managed consultations for MetroBus, helping its projects achieve their necessary planning permissions, and was a member of the MetroBus Procurement Working Group. Rob is currently overseeing contractor communications and community engagement. Another project is the production of a series of short videos explaining the benefits of the MetroBus network.
Offering speedy solutions to south Hampshire traffic issues

A pioneering partnership forged between First Hampshire and Hampshire County Council in the UK is successfully encouraging increasing numbers of people to make the shift from using the car to public transport in a particularly congested part of the county. Dervla McKay, General Manager of First’s business in Fareham and Portsmouth, explains how the ‘Eclipse’ system works.

A Bus Rapid Transit (BRT) scheme that was created to connect the busy towns of Fareham and Gosport in south Hampshire by transforming a disused railway line into 3.4km of dedicated busway is now in its fourth year.

During this time, the iconic purple Eclipse buses that First operates on Services E1 and E2 along the routes, have carried more than six million passengers. In tandem with these figures, customer research carried out by Hampshire County Council shows there has been a 14% shift in usage from car to bus since Eclipse started; and this number continues to grow apace.

This story demonstrates how bus operators like First can work successfully in partnership with local authorities to devise imaginative schemes through ‘recycling’ redundant transport systems and redeveloping their use to reflect the needs of the local communities they serve.

Not only does this involve the re-use of existing transport infrastructure, it also provides an ideal opportunity to use state-of-the-art, environmentally-friendly vehicles to showcase the tremendous strides that have been achieved in making public transport an effective and attractive alternative to using the private car.

Currently, there are 17 exclusively branded vehicles running up to every six minutes during peak times on Eclipse’s two routes. The services are all timed to link up with Fareham’s busy rail network to the north of the route and the Gosport Ferry to Portsmouth at the southern end.

This ensures that full use is made of the area’s other public transport connections to give local residents, commuters and shoppers an even better choice and greater flexibility in the ways that they travel.

Again, this is another big step forward in the common objective of reducing car usage, while at the same time alleviating congestion, air and noise pollution in a primarily residential area.

Scheme delivery

The BRT scheme was developed by Transport for South Hampshire (TfSH), a partnership between Hampshire County Council, Portsmouth City Council and Southampton City Council, to improve transport across south Hampshire. TfSH is now Solent Transport and includes the Isle of Wight.

With the help of a £20 million Government grant through the Homes and Communities Agency and with £5 million from the Local...
Transport Plan, the busway was constructed along the former railway line between Redlands Lane and Tichborne Way that had been closed in 1953.

This existing corridor enables the buses to bypass normal routes, including the ever-busy A32 between Fareham and Gosport. It offers quick and easy travel through a particularly congested part of Hampshire, where further industrial development has now been earmarked.

The high-spec buses chosen to run on the routes are equipped with 7-litre Euro V engines and are designed to mimic the effect of travelling in a private car.

This is due to them all having leather seats, LED lighting, under-seat lighting and wood effect flooring. They offer free Wi-Fi, BBC News and audio-visual next stop bus information, all of which are helping to transform our customers’ experience and perception of bus travel.

The vehicles are also fitted with ‘DriveGreen’ units, which provide instant feedback to our drivers about their style of driving and enable them to make smarter, safer driving decisions on the road.

Because the busway is located in a densely populated, residential area, the 14 Eclipse branded bus stops along the route are designed to blend in with their surroundings. A further 21 new high quality waiting shelters are now in the process of being installed on the BRT route in Gosport. All have enhanced facilities for customers that include large shelters, comfortable seating, ample lighting, real-time information screens, CCTV and additional measures to improve accessibility for disabled bus users.

Roadside publicity for Eclipse has been significantly improved and at the same time simplified to meet the standards set by the UK Association for Accessible Formats (UKAAF). This is the organisation which campaigns for best-practice in providing information for people with print (sight) impairments.

**Part of a wider network**

Being part of a wider public transport network has many advantages in a tight knit area such as the Gosport peninsula.

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**Emission upgrades up to EURO VI are possible with retrofitting**

PROVENTIA EMISSION CONTROL enables emission upgrades from EURO IV and even from EURO III up to EURO VI level. Meeting ever-tighter emission limits can be an expensive process; renewing older fleets takes time and money. By retrofitting buses with effective emission control devices, clean buses and better air quality become affordable. Around 20 older buses can be retrofitted for the cost of just one new bus.

Proventia’s NOxBUSTER® DPF+SCR retrofit system produces top results in terms of NOx and PM reductions. The equipment is perfect for buses; it has already been successfully installed in over 1,000 buses in London, Scandinavia and Hong Kong, among others. In normal urban driving, EURO IV and even EURO III city buses equipped with NOxBUSTER® have reached the emission limits required for EURO VI buses. This increases the service life of older buses as they can operate in low-emission zones.

Proventia’s fleet management tools for its retrofit clients include the Proventia PROCARE™ drive emission tracking solution, which monitors e.g. the locations of buses, and DPF and SCR performance online with GPS and 3G wireless technology, enabling quick and easy emission reporting for bus operators or authorities.
Through-ticketing combining a weekly ticket for Eclipse and the Gosport Ferry is already available while the FirstWeek Eclipse offers unlimited travel on the E1 and E2 routes, as well as First’s other local bus services, within defined fare zone boundaries.

With redevelopment of The Hard public transport interchange at Portsmouth Harbour about to start, this could provide greater opportunities to develop an even wider range of through-ticketing, incorporating Eclipse and other services on First’s local network.

Economically, Eclipse is playing its part in helping local commuters get to their places of work by providing a fast route through to Gosport. There, connections can be made with other bus services that call at the Daedalus Airfield Enterprise Zone. This is a rapidly expanding development area on the site of a former Royal Naval Air Station, where several high-tech industries and education facilities now have their bases.

Again, this illustrates how existing facilities are being recycled to meet the needs of providing local jobs for local people. In the past, the area’s severe traffic congestion had deterred many employers from locating there. However, the services being provided by Eclipse are helping to improve the perception of public transport as being an attractive and reliable way for local employees to commute to work.

Key successes
From an operational perspective, the project’s revenues have exceeded forecasts. A risk-sharing agreement was set up whereby operator contributions are linked to the financial performance of the operator along the BRT route.

The agreement has meant that Hampshire County Council has benefitted financially from the increase in patronage and commercial success of the project, which has in turn allowed further investment in the BRT scheme.

A key factor in the success of the project delivery was the focus on the customer and public transport objectives. This was achieved thanks partly to the creation of a steering group made up of public transport representatives, whose main objective was to maintain the right focus. A good example of how this focus was used was the way in which the project was branded and marketed – all of it based on customer research.

Challenges ahead
However, the BRT scheme has not been without its challenges. For example, there were delays to the construction of the busway that were caused by a legal dispute started by local residents and wildlife campaigners which ended up in the Supreme Court. Originally, the intention was to complete the busway by April 2011, but as a result of the court case, it was delayed by a year and was officially opened by the then Transport Minister Norman Baker in April 2012.

The busway itself is only used by Eclipse vehicles and cyclists, with special dispensations too for other essential services such as breakdown trucks and statutory services.

We are faced with ongoing issues such as traffic congestion along other parts of the route, especially around Fareham town centre. Here, improvements have been made including traffic light priority for buses, a bus lane, the opening of a dedicated bus gate which allows buses to avoid traffic which builds up at Quay Street roundabout and the construction of a new junction on the A27 Western Way.

The future
The future objectives will be all about further enhancements to Eclipse’s services by extending them southwards to Military Road in Gosport. Though planning permission has been granted for this development, funding has yet to be secured for the proposed extension and all avenues continue to be explored to find a satisfactory solution.

In 2016 we will see the arrival of a new fleet of vehicles for Eclipse’s services. This honours First’s original commitment to always operate buses less than five years old on the routes.

This again highlights our continuing commitment to customers using Eclipse in delivering a first-class service which makes full use of the most modern, environmentally-friendly vehicles available on the market.

Dervla McKay is the General Manager for First Solent with 10 years of experience in the public transport industry. She started off her career in the industry by joining the FirstGroup graduate scheme and has spent time in various operational and project roles. Dervla graduated from the University of Ulster with a BA Hons Business Studies with HR and more recently completed a MBA through the Open University. She is passionate about driving improvements and delivering the best possible service to her customers.
Momentum is building for passenger transport professionals. Coach & Bus Live 2015, at the NEC, Birmingham in September, is the essential date for your diary.

For busy public transport specialists, this year’s Coach & Bus Live 2015 exhibition offers an unrivalled opportunity to meet with suppliers from all sectors of the bus, coach and minibus sectors, under one roof at the NEC, Birmingham.

The event covers everything needed to successfully operate a fleet of passenger vehicles – including buses, coaches and mini-vehicles, technology, workshop equipment, insurance services, finance advice and training and development.

Held every two years, this trade-only exhibition brings together industry buyers and leading exhibitors for two days of highly-focused business networking.

With pre-registration now live, the organisers are confident that Coach & Bus Live 2015 will connect over 6,000 key industry buyers and decision-makers with 200 sector leading exhibitors.

The event’s breadth of appeal is demonstrated by the incredible range of products, services, technologies and equipment on show for 2015. Building on the success of its last edition, which enjoyed a wealth of positive feedback, exhibition space has been selling at a record rate – with the autumn show now sold out. Event organiser, Diversified Communications UK, says that the strong exhibitor uptake paints an encouraging picture of growing market confidence in the public transport and fleet sectors.

Confirmed exhibiting vehicle companies include: Alexander Dennis; The Wright Group; Volvo; Irizar UK; Mercedes-Benz; Arriva Bus and Coach; Optare Group; BASE; Connaught PSV; The Moseley Group; Minis to Midis; Dawsonrentals; Unvi Bus and Coach; and Yutong. The full 2015 exhibitor list is available to view online.

“The support from the industry this year, as always, has been phenomenal,” says Event Director Helen Conway. “From exciting new show features to an exhibitor list which reads like a who’s who of the today’s top suppliers, our 2015 line-up has already generated a lot of positive feedback from pre-registered visitors. With many predicting that it’s going to be our best show yet, we’re certainly looking forward to a busy and productive two days!”

For 2015 the show’s miniPLUS Zone – ‘Accessible Solutions supported by Rescroft’ – features leading names like: EVM; Passenger Lift Services; Unwin Safety Systems; Euromotive Kent; GM Coachwork; London Hire; Mellor Coachcraft; NMI Safety Systems; Nu-Track; O & H Vehicle Conversions; Taxi & Bus Conversions; and Rescroft. They’ll be unveiling the latest developments in the mini, midi and accessible vehicle sector – from bespoke luxury builds and community transport vehicles, to safety and access equipment. It is set to be the first port of call for fleet managers, local authority planners, operators, stakeholders and community transport providers looking to refresh their offering and provide improved passenger facilities.

Following on from the success of Euro Bus Expo
The coach travel experience: Phil Hitchen, Belle Vue Manchester

The association experience: ATCO.

The bus technology experience: Martijn Gilbert, Reading Buses

The passenger technology experience: John Clarfelt, Ticketer

The supplier experience: Andy Cozens, GreenRoad Sales Director

Companies exhibiting in the Technology Zone include: INIT; Icomera; and Zeta Automotive.

2014, Neil Widdowfield, Rescroft’s Sales Director, says: “Accessible Solutions at Coach & Bus Live 2015 will be a bigger and better event for visitors. We have increased the size of the zone to accommodate a wider range of specialist vehicles and equipment.”

Rescroft is bringing together its wealth of experience in the accessibility sector, gained from their Ambulex and Accessible Solutions brands, which combine patient transport (PTS), accessible, community, local authority, special needs and mobility transport solutions.

Back by popular demand, the Skills Test Area (supported by Mercedes-Benz) will give visiting drivers the opportunity to test their skills behind the wheel of a range of the latest Mercedes-Benz products, including many with accessibility features.

The Mercedes-Benz team will be on hand to give support, advice and information on their latest products in the Skills Test Area, located in the outside area alongside the main hall, where refreshments will also be available. Visitors looking for vehicles for providing improved passenger facilities will be able to see models with wheelchair access, as the show also has a dedicated focus on accessibility products for the community transport sector.

Marcus Watts, Sales Director at Mercedes-Benz Buses & Coaches, says: “We are delighted about bringing our product range to Coach & Bus Live this year. Visitors will be able to come along and drive some of our latest vehicles, which they could not otherwise do in an exhibition environment. Our coach and minibus range will have huge appeal to those coming to the show and we plan to offer something exciting for those who want to try out their skills whilst visiting our stand.”

Mercedes-Benz will also be supporting the prestigious RouteONE Awards, which takes place on the first night of the show in the Monarch Suite at the Hilton Birmingham Metropole Hotel. The market leading gala evening has a long line of supporting companies across its categories.

Coach & Bus Live’s Group Sales Manager, Martin Laverton comments: “It’s great to have the team from Mercedes-Benz at the show. The interest from mini and midi vehicle exhibitors has been extremely strong since we opened stand sales last year. So, clearly, there is a growing demand for access.”

Other returning show features include the Technology Zone – promoting tomorrow’s solutions today with its biggest ever display of smart technology, telematics, vehicle tracking and ticketing product providers. The Technology Zone at Coach & Bus Live is a one-stop-shop for coach and bus industry buyers, allowing them to see what’s on offer, compare different products and services, and get to grips with how technology can help in business.

It is the ultimate opportunity for coach and bus industry professionals to touch and feel the future, getting close to new technology, questioning the experts, finding out how it works, and understanding the practical applications available.

Companies exhibiting in the Technology Zone include: INIT; 21st Century Technology; Ticketer; Mix Telematics; MiniCasp; Parkeon Travel; Icomera; and Zeta Automotive.

Whilst new vehicles and technologies remain a practical draw for many visitors to the show, the comprehensive, free Master Class and Workshop Live Theatres will provide a broad spectrum of perspectives on the key issues and challenges affecting today’s public transport community. For the Master Class sessions a line-up of renowned and respected leading industry figures will take to the stage – on both days – to share best-practice and give tips on how to improve your business. The overall theme for both days is ‘Customer is King – How to Gear Up for Improving Support to Customers’. Each day will incorporate the overall theme and then focus on a specific element within each session. The sessions will be 30 minutes each with two speakers, plus Q&A sessions. The punchy nature of the presentations means that visitors will get the maximum benefit from their attendance, and still be able to see the rest of the show. It is a unique opportunity to hear – for free – what some of the industry’s prime players are doing and how your business can benefit from their experience. In the Master Class sessions, speakers will look at examples of what their company has done over the last five years to retain and build customer support. Getting through the recession over the last few years for the coach, bus and minibus sectors have seen some inspirational and innovative ideas put into place, and visitors will be able to learn from the speakers’ successes.

The speaker line-up includes:

- The coach travel experience: Phil Hitchen, Belle Vue Manchester
- The bus technology experience: Martijn Gilbert, Reading Buses CEO and Mark Yexley, former Arriva UK Bus Operations and Commercial Director
- The passenger technology experience: John Clarfelt, Ticketer Director and Jens Mullak, INIT MD
- The supplier experience: Andy Cozens, GreenRoad Sales Director and John Daly, MiniCasp MD
- The association experience: ATCO.

Coach & Bus Live gives key players in the industry a platform to showcase their latest vehicles and solutions.
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