



## Mobility & City Transport Exhibition

in conjunction with the 59<sup>th</sup> UITP World Congress  
10-13 April 2011 - Dubai, United Arab Emirates



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Source: Abu Dhabi

# Spotlight on the MENA region and public transport opportunities

*The Mobility & City Transport Exhibition will be held from 10 to 13 April 2011 in Dubai, alongside UITP's 59th World Congress. With its extensive multimodal public transport, Dubai is recognized for its forward-looking and ambitious mobility policy, based on extensive city benchmarking.*

### WHO IS IN THIS EXPONEWS

ABB Railway	GAUTRAIN	Q'Straint
AEG Gesellschaft für moderne Informationssysteme mbH	GIRO Inc.	RATP
Affiliated Computer Services (ACS)	HID Global	SCANIA
ALSTOM	HÜBNER GmbH	SERCO
ARCONTIA AB	IVU Traffic Technologies AG	SMA Railway Technologies GmbH
BOMBARDIER	KENTKART	STIB
Collis BV	LOHR INDUSTRIE	TaptoPay Limited
Confidex Ltd.	MAN	VAN HOOL NV
Funkwerk Information Technologies GmbH	Mercedes-Benz	VOLVO
	NXP	
	OTN Systems	

MENA region is a on-going source of business development for the public transport sector, for example Dubai's Roads and Transport Authority (RTA) has developed a comprehensive strategic plan for 2020: 'Safe and smooth transport for all'. Originally conceived as a "car city", Dubai recognized the critical need for more sustainability as its backbone:

- Construction of a metro network with a total length of 318 km
- Construction of a tram network with a total length of 270 km
- Expansion and modernization of the bus network and services (90 new routes covering 2500 km and 2000 vehicles)

- Defining new water transport routes and increasing the network capacity (5 new routes equipped with 57 water buses and taxis)
- Development and modernisation of the taxi fleet

Dubai's strategic plan was tagged at more than USD 20 billion of which nearly half is earmarked for public transport. There are other planned investments in Algeria, Bahrain, Egypt, Iran, Morocco, Jordan, Qatar, Syria and Tunisia covering different modal systems and several billion of dollars in investments.

### MORE THAN 83% OF THE EXHIBITION SPACE HAS ALREADY BEEN SOLD!

- 25,700 m<sup>2</sup> of the exhibition space is already covered!
- More than 120 companies from over 30 countries around the world
- 16 Expo Forums with 57 presentations that introduce products development, solutions and innovations
- 7000 professional visitors expected



The MENA region, an acronym for Middle East and North Africa, covers an extensive region extending from Morocco in northwest Africa to Iran in southwest Asia. MENA is generally divided into four distinct territories or sub-regions; The Arab Middle East, Iran, the Arabian Peninsula - comprising the GCC (Gulf Cooperation Countries) - and Yemen in addition to the Arab countries in North Africa.

The Arab Middle East, comprised of Iraq, Syria, Jordan, Lebanon and Palestine, is considered to be the earliest inhabited part of MENA and the cradle of the most ancient civilisations on earth. Public transport systems and infrastructure is hardly a new concept in this area, and the legendary Hejaz rail link once brought pilgrims from Damascus to the holy city of Madinah, stretching 1,300 kilometers across mostly desert. Unfortunately, incremental evolution in this area, including in the public transport sector, has

been greatly affected by wars and a prolonged unstable political situation. Nevertheless, some of the knowledge and know-how is still there. One interesting fact about this region is that most of the public transport users are locals, which is not the case in all other MENA sub-regions. Furthermore, most countries of the Middle East lack the adequate financial resources, and major public transport infrastructure projects are therefore generally financed by the World Bank and other international institutions.

*Growth in 2010 is expected to be 4.4% regionwide*

Similarly, Iran, which speaks a different language, shares the same history with the rest of the Middle East countries. Nevertheless, knowledge and know-how in Iran in respect to public transport is quite spectacular. Despite the nation's transport sector having encountered certain difficulties over the past two decades as a result of (mismanagement and) the international sanctions, Iran has recently announced the launch of major plans

for large-scale projects. Unlike other Middle East countries, Iran, which is a major oil exporter, has abundant financial resources but is unable to utilize them properly under the sanctions. A positive outcome of the international sanctions imposed on Iran is that it has been obliged to be self-reliant in developing projects in general and public transport in particular.

Arab countries in North Africa, just like the entire African continent, which is so rich in history and resources, are now moving in tandem with the rest of the world and pursuing a neoliberal path that stimulates heavy investment in infrastructure projects. But what is keeping North Africa stronger than the rest of the continent of Africa is the interest in business relations with the Gulf Countries and Europe due to its geographic location. Though encompassing one of the world's most populated cities, the North African sub-region is quite rich in different transport operation models. This region is comprised of Algeria, Egypt, Libya, Morocco, Tunisia and Sudan.

The Arabian Peninsula is currently the most active player in respect of public transport. The Arabian Peninsula

consists of the GCC (Gulf Cooperation Countries) which include Bahrain, The Kingdom of Saudi Arabia, Kuwait, Oman, Qatar and UAE. Yemen, which constitutes part of the Arabian Peninsula, is not a member of the GCC due to its geographical location which does not overlook the Arabian Gulf. Still, Yemen is almost a virgin territory in respect to transport infrastructure development projects. What makes the Arabian Peninsula sub-region financially strong is its rich oil-producing countries, notably The Kingdom of Saudi Arabia, Kuwait, Qatar and UAE. Apart from oil, they also have the recent remarkable and pioneering story of Dubai which has created an oasis in the middle of the desert without relying on oil resources. The modern city that was developed rapidly out of the sand is something of a miracle; it has a fully integrated public transport system and the development is still forging ahead. At this point, it might be timely to say that the Arabian Peninsula is one of the most strongly emerging sub-regions in MENA and it needs to have a proper Public Transport Organising Authority to keep pace with the growth it is undergoing. According to recent research studies, the GCC countries will invest USD 119.6 billion

in infrastructure projects over the next ten years, of which rail projects account for over 90% of the investment. To encourage GCC residents to shift their heavy reliance on private vehicles, governments are allocating large amounts of their budgets towards developing sustainable public transport systems. Transport authorities are also investing heavily in public transport modes including public buses and water buses. Great future prospects for further growth in public transport projects are on the horizon as the MENA region is recovering from the financial crisis along with the global economy. Growth in 2010 is expected to be 4.4% regionwide. If the MENA countries want to achieve their socio-economic development targets, it is simple; they need metro and commuter rail systems as the backbone of advanced and reliable public transport systems.

Source: UITP MENA Office and [www.uitpdubai2011.org](http://www.uitpdubai2011.org)

## Brussels expands travellers' information tools



Source: STIB

The STIB sees considerable potential in impulse use of public transportation. Fewer and fewer travellers are indeed planning their trip in advance. That is why the Brussels public transport company is investing in technology that will

allow customers to use the metro, bus and tram for unplanned trips.

The STIB wants to optimise travel comfort for its customers. Over the past 10 years, the Brussels public transport

company has seen an 80% boom in ridership. That is why the STIB is constantly investing in new vehicles and in developing its range of transport services. Increasing comfort also means giving customers enough information. Studies have shown that perceived waiting time is reduced by half when travellers know how long they will have to wait for the next tram, bus or metro. By making public transport more pleasant, modern, attractive and accessible, the STIB also intends to attract new customers. Because fewer and fewer travellers are planning their trip by public transport in advance, they need to access information along the way: the location of the stops, the schedules ...

### GOOGLE TRANSIT

In February 2010, the STIB was one of the few European operators to launch Google Transit. This application allows Internet and smartphone users to plan their route by public transport. Aside

from the travel route, the site also provides the next three bus, metro or tram arrivals, an estimate of the travel time, alternative routes and the full schedule. During the same period, the STIB developed the smartphone-application "STIB" for real-time schedules. Smartphone users can also turn to STIB Mobile, the mobile website via [m.mobile.be](http://m.mobile.be). It indicates vehicles positioning and up-to-date waiting times, schedules, closest stop and any scheduled disruption or deviation.

### INDICATION OF WAITING TIME

In addition to the mobile applications, the STIB is also expanding the information provided to travellers at the stops: two-sided colour TFT screens display

the name of the stop, the lines and the waiting time. And MUIPs (large, two-sided panels) show waiting times of metro trains above ground, at the entrance of the metro stations.

*Over the past 10 years, the Brussels public transport company has seen an 80% boom in ridership.*

One of the great advantages is that they can also tempt car drivers stuck in traffic or passersby to use public transport.

Source: STIB



Source: RATP

Line 1 of the Paris Metro

## Full automation of line 1 of the Paris Métro, a service project

Since 1981, fully automatic metros have demonstrated their ability to meet the transport requirements of major cities, with adaptability of supply to demand, almost instant responsiveness, optimum traffic regularity, especially dwell time and a reduction in traffic delays. Switching-over from a driver-operated line into an entirely automatic one is the latest challenge that the transport railways authorities are faced with as they move to automation as part of their development strategy. RATP took up this service project in 2003 with the launch of the automation of line 1 of the Paris metro.

This ambitious project concerned the oldest and busiest line on the Paris network. RATP had undertaken to see it through without any major traffic interruption. The civil engineering work, the installation of the train movement automation equipment and the installation of the half-height platform screen-doors were consequently all handled at night.

The project team had to face major challenges in a complex

environment: system migration, organisational adaptation and integration of new technologies.

With the commissioning of the Operational Control Center on 30th May 2010 and the start-up of the trials on-line, the project has gotten off to a good start and the feasibility of the makeover has been demonstrated.

In June 2011, the first automatic train will be running with passengers aboard on line 1. It will subsequently be operating on a mixed traffic basis with and without drivers until December 2012, at which date it will become entirely automated.

With the automation of one of the most emblematic and complex metros to be found in major cities, RATP is ushering in a new era of urban transport.

Source: RATP

## Gautrain: bringing world class public transport to South Africa

In a country where existing public transport is in need of upgrading and traffic congestion is affecting economic mobility and growth, Gautrain brings innovative technology to South Africa and assists in providing transport solutions. The first phase of the project commenced operations on 8 June 2010, in time for the 2010 FIFA World Cup. The balance of the system is due to open in 2011. Stations are serviced by dedicated bus feeder and distributor routes.

Travelling at 160 kilometres (100 miles) per hour, Gautrain will link ten stations over an eighty kilometre (50 miles) route and three metropolitan areas. Three of these stations will be located underground, the deepest nearly 11 stories below street level.

Customisation of rolling stock to meet local conditions including gradients of 4% (compared with typically 1.5% on the lines Electrostar cars currently operate in the UK), a relatively harsh operational environment and potentially high passenger loads, the Electrostar rail cars will feature enhanced propulsion with motorisation of 75% of all axles.

Environmental considerations have been at the forefront of all aspects of the project development, including the

design and construction phases. Public participation exercises had a substantial influence on the ultimate route location. An interesting aspect was "search and rescue" exercises conducted within the demarcated rail reserve before the commencement of construction to relocate indigenous fauna and flora. Independent monitoring and verification of environmental processes and has been given high priority at all stages of project development.

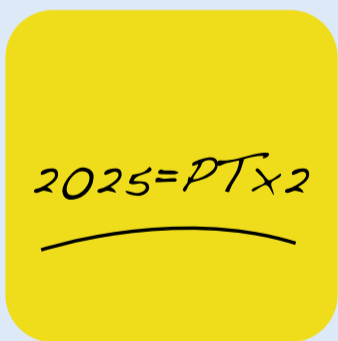
Gautrain works closely with other public transport bodies to ensure that public transport facilities, services and operations are integrated. This will allow for future effective transfer from one transport mode to the other.

As a Public Private Partnership project, the Gauteng Provincial Government is the public partner and the primary promoter of Gautrain. Gautrain's private partner is the Bombela Concession Company.

Gautrain has already made a significant impact on the welfare of South Africans. At the end of July 2010, Gautrain created or sustained an estimated total of 96 600 direct, indirect and induced jobs to date of which more than 27 600 are local direct jobs.

Source: GAUTRAIN

## Boosting business with PTx2!



Recognising public transport's role in boosting economic growth while respecting the environment, in reducing congestion and in providing mobility for everyone in ever-growing cities, in June 2009 UITP launched a worldwide strategy to double public transport market shares by 2025. The strategy identifies the key areas to be addressed by all mobility stakeholders (governments, operators, authorities, the supply industry and investors), preferably in an integrated manner, in order to achieve this ambition. The full UITP strategy is available at [www.uitp.org](http://www.uitp.org)

Dubai Exhibition will be critical in assessing the ambition of mobility stakeholders to achieve the goals of UITP strategy aiming at doubling public transport market share by 2025. Besides their innovative dimension, displayed vehicles, information technologies, equipment and services will offer the opportunity to gauge the capacity of the sector to rapidly grow. To this end, exhibitors are strongly encouraged to display innovations likely to contribute to the objectives and strategic areas of PTx2: clean and customer-oriented public transport, life style services, new business culture, innovative funding schemes, travel demand management and integrated urban policies. Display the PTx2 logo on your stand to show your commitment to PTx2 strategy. Moreover, the PTx2 Showcase and Awards will recognize the most ambitious and daring initiatives, visit [www.uitp.org/ptx2/awards](http://www.uitp.org/ptx2/awards) for information and applications.

Contact: Mohamed Mezghani, UITP Event Project Manager. E-mail: [mohamed.mezghani@uitp.org](mailto:mohamed.mezghani@uitp.org)



*The International Association of Public Transport provides the opportunity for all public transport stakeholders - the institutional authorities, transport companies and industrial partners - to meet, share their experience, highlight technological innovation and new services with a focus on a single goal: improve sustainable mobility, a source of economic growth. This is a key event for the RATP Group!*

Pierre Mongin, RATP Group Chairman



## Serco operated Dubai Metro celebrates one year of operation



Source: SERCO

Serco Group plc (Serco), the international service company, is delighted to celebrate one year since it began operating the Dubai Metro. Since its launch, over 30 million passengers have travelled on the driverless Metro system; a significant achievement for one of the world's most technologically advanced Metro systems.

The number of users of the Dubai Metro has soared since the launch in 2009, jumping from 1.8 million passengers in October 2009 to 3.3 million in August this year. The average daily usage has also recorded impressive figures, rising from 55,000 passengers in October to 116,000 in June; representing a growth rate of 212%. In 2010, a total of 40 million are expected to use the service.

Since September 2009, Serco has also successfully supported the incorporation of a further 10 stations to the service, with 21 stations now in operation. Across the system Serco is achieving very high performance levels on the system with availability at 98% and punctuality at 96% in the first half of 2010. This level of performance mirrors the 98% punctuality levels of the Serco operated Docklands Light Railway in London.

Zafar Raja, Chief Executive of Serco Middle East, said "Congratulations must go out to the Serco team operating the service, whose work plays a big part in the system's high levels of performance. Their input creates a fast moving and dynamic culture, and the Metro has become the cornerstone of the Roads and Transport Authority's (RTA) vision for an integrated public transport system for Dubai. Serco is committed to supporting the RTA through the future development of the Dubai Metro and maintaining the high performance levels achieved over the past 12 months."

Source: SERCO

## New "small" natural-gas engine a particularly eco-friendly solution for city and intercity buses



Source: MAN

At the 2011 UITP World Congress and Exhibition in Dubai, MAN Nutzfahrzeuge is presenting the new OBD II-capable MAN E0836 LOH 01 natural-gas engine. The small-volume turbocharged gas engine has a capacity of 6.9 litres. This expands MAN's range of CNG en-

gines available for city, intercity and midi buses as well as in chassis. The range now extends from the 162 kW (220 hp) of the E0836 to the 228 kW (310 hp) of the E2876. Such engines are also mounted in the MAN Lion's City Low-Floor bus, which will also be displayed at the UITP Congress. This model is made for the Emirate of Abu Dhabi from which MAN received a considerable order in 2009 for 450 city and intercity buses. Likewise, MAN Nutzfahrzeuge delivered 400 citybuses of the prestigious NEOPLAN brand to Dubai in 2007 and 2008, including 170 of the biggest doubledeckers in the world.

Source: MAN

- New, small-volume E0836 LOH CNG engine from MAN with ideal performance characteristics and high power density
- Best exhaust-gas values, significantly better than EEV even without a particle filter
- Range of outputs from 162 kW (220 hp) to 206 kW (280 hp) for installation in buses
- Perfect combination of the MAN Transport Efficiency Strategy as a series application complementing the MAN Hybrid Strategy



Source: Mercedes-Benz

## 30,000 Citaros in twelve years, a very successful urban bus

Mercedes-Benz will be presenting its best-selling vehicle, the Mercedes-Benz Citaro, at the 59th UITP World Congress and Exhibition. More than 30,000 Citaros have been sold, a number which is unique among urban buses and reflects the outstanding success of how flexible modular system is. Since its launch in 1997, the Citaro has repeatedly emerged as the trendsetter in the urban bus sector. Technical and visual enhancements have been continually introduced into the production process, which for transport operators has resulted in maximum economic efficiency and reliability,

making the vehicle an attractive means of transport for passengers. The Citaro is able to accommodate virtually any conceivable customer requirement. Today Mercedes-Benz vehicles are equipped with solutions designed to meet a variety of requirements and at the same time reduce pollutants, from the particularly economical BlueTec engines and EEV, right up to alternative drive systems such as gas, diesel-hybrid and fuel cell-hybrid systems.

Source: Mercedes-Benz

## Advanced development of CNG technology provides greater drive efficiency



Source: MAN

For years MAN natural-gas engines have been synonymous with eco-friendliness of the highest level, especially due to their almost entire freedom from particulate matter. The MAN E0836 LOH 01 CNG achieves EEV exhaust values by means of a three-way catalytic converter without additives or particle filters. The new ECG4 engine control, On-Board-Diagnosis II and highly developed

when operating on fossil natural gas, the CO2 emissions are slightly lower than those of a diesel engine, this is also a result from the downsizing.

The high power density of the new E0836 natural-gas engine enables downsizing, i.e. the use of a smaller, lighter and more economical engine in the same vehicle. This brings advantages in terms of effi-

catalytic converter technology attain exhaust-gas values significantly better than EEV level. Because of its ability to run on special-purpose biogas, the MAN E0836 enables a considerable reduction in CO2 emissions. Even

ciency, assuming that the greater torque and higher output of the bigger engine are not required, for example in midi city buses or when operated on specific level topographies. Because the performance characteristics of the E0836 are ideal for use in buses, the engine is also dynamically agile in driving operation, adding to this the low noise level for which gas engines are renowned. Downsizing is a consistently efficient approach from MAN, aimed at reducing the total costs of ownership (TCO). MAN is continuing to expand the Engines and Components business unit strategically over the long term. The new CNG bus engine presented at the UITP Congress is a good example of this expansion.

Source: MAN

## Van Hool to supply 5 fuel cell buses for Oslo, Norway



Source: VAN HOOL NV

Following the order for 16 fuel cell buses for the United States, Van Hool has now won an order for 5 fuel cell buses for Oslo in Norway. The order is part of the European programme for hydrogen buses.

Van Hool, which is increasingly acquiring a reputation for using the most advanced environmental technologies in public transport, received the order for 5 fuel cell buses after responding to an international call for tenders by Ruter A/S in Oslo.

Van Hool beats off the competition

24-month trial period and 100,000 km: zero emissions (complete absence of harmful gases and CO2), greatly reduced noise and high availability. In addition, the vehicles for Oslo will be equipped with the latest technological developments in the area of fuel cells (from the Canadian company Ballard Power Systems), lithium batteries and Siemens electric motors. Bearing in mind the specific use to which they will be put in Oslo, the buses will have a stainless steel frame and paneling, three doors and 37 forward-facing seats.

with a 13 m long tri-axle vehicle developed in 2007 to meet the requirements specified by Belgian public transport company De Lijn and based on the positive results revealed upon completion of the

The bus is electrically powered. Hydrogen is converted into electricity in the fuel cell, with water vapour as the only emission, while the batteries provide backup where and when necessary. Braking energy is recovered in full, so that hydrogen consumption is minimal. Also a number of on-going demonstration projects, under coordination from WaterstofNet, involving the use of hydrogen are currently taking place in Flanders within the Interreg program. For example, in the port of Antwerp Solvay is building a 1MW electricity plant using residual hydrogen from the industrial production process. A waste product, this residual hydrogen is ideal for use as a fuel to drive buses. And WaterstofNet has recently bought a hydrogen filling station from Hydrogenics in Oevel.

The Van Hool buses will be delivered before the end of 2011.

Source: VAN HOOL NV



*The 2009 UITP exhibition in Vienna was extremely successful: the industry presented sustainable public local transport solutions and as such pointed the way towards the future.*

*I was particularly pleased to be able to meet our young Y4TP members. It's a great deal of fun working with these people and seeing the motivation which they have and how they apply themselves to developing new ideas for public local transport. I am extremely proud of them and very pleased that we - as part of the UITP - are supporting such a worthy youth project.*

Hartmut Schick, Head of Daimler Buses



# Ecolution by Scania, a sustainable transport solution for the future – here and now



Source: SCANIA

Climate change imposes an exceptional and inevitable challenge to all sectors in society. Authorities are pushing hard for reductions of CO<sub>2</sub> and other fossil greenhouse gases, setting targets for increased use of renewable energy/fuel. Also, consumers are engaging more and more in environmental issues to a larger extent and putting pressure on transportation to become greener. This naturally leads to a larger number of transport companies striving to attain a green image.

According to recent International Energy Agency figures, 97% of the growth in oil use will come from the transport

sector, while other sectors in society reduce their oil use and greenhouse gas emissions. The transport sector is more and more seen as “the bad guy” in today’s society. Given its massive dependency of oil, how should the transport sector tackle this?

In order to overcome these obstacles, it is necessary to facilitate the path for its customers to go green – not only in small test projects – but on a large scale. Now.

Scania has introduced the Ecolution by Scania concept, which is about combining well-proven, commercial solu-

tions for all types of heavy transport. Ecolution by Scania not only ensures a reduction of CO<sub>2</sub>, but also facilitates the use of renewable fuels and contributes to optimising both driver performance and the operator’s transport services.

Ecolution by Scania is a package of products and services designed to maximise energy efficiency and minimise greenhouse gas emissions.

It is about offering the most economical solution for each customer, based on their specific needs. By providing a way of transportation that reduces CO<sub>2</sub>, Scania can offer attractive public transport solutions that contribute to a better environment and that should appeal to environmentally concerned groups in society. Because the solutions are available here and now.

Source: SCANIA

# Vibrant cities facing major logistical challenges

Mobility is a topic of growing concern for the people of the 21st century. Rapidly increasing population figures and the unbroken trend towards urbanisation are giving rise all over the world of megacities with populations in excess of 10 million. These large cities face major challenges in particular when it comes to providing public transport services. The megacities are the pulsating hearts of nations with enormous population densities. Every day, many thousands of people will commute to workplaces in the cities. The increasing level of motorisation presents a considerable logistical challenge. A reliable public transport system is therefore essential in order to relieve the burden on the road network and the environment. Organising ex-

panding cities with millions of inhabitants involves bringing people safely and punctually to their destinations every day, despite having to cope with traffic snarl-ups and road works. These tasks call for highly-complex but flexible planning and control systems like the products of the IVU.suite. IVU is constantly developing to meet these growing demands. We are moving, but at the same time we remain flexible and alert – ready for the challenges and solutions of the future of public transport.

Source: IVU Traffic Technologies AG

# The IVU.suite meets the key requirements of a public transport company

With the IVU.suite IVU Traffic Technologies AG will present an integrated IT solution meeting all key requirements of a public transport operator. The IVU.suite is a family of software systems which enables the provision of well-proven solutions from a single source: from planning, dispatching, fleet management, ticketing and passenger information, to the settlement of transport agreements. IVU systems plan routes, get buses running, inform passengers, ensure connections, control traffic signals, dispatch drivers, monitor fleets, sell tickets, collect data and ensure efficiency. Whether complete solutions or individual components are deployed, the products of IVU are based on open standards and can be integrated in the most varied of system environments.

To meet the growing requirements of public transport, IVU is continually upgrading its products and developing new ones. The IVU.fleet operational control system, for example, is one of the most modern systems on the market. For the first time it allows group callings using public networks. The solution PTT/VoIP over GPRS offers all the functions of conventional analogue voice and data transmission, with excellent sound quality and widespread area coverage. IVU is the only system producer

so far to have introduced this new communications system in its products. Important further developments have also been made in passenger information. IVU.realtime can now provide information for a fleet of 10,000 vehicles and up to 20,000 stops and stations, twice as many as in the past. Large cities, in particular, benefit from this extension.

In order to fit the demands of its customers today as well as in the future, IVU constantly develops its products and ensures that they are always up to the latest standards. So use the chance to get to know our current development highlights at UITP in Dubai and exchange experience or discuss practical matters.

Source: IVU Traffic Technologies

# Volvo’s hybrid bus – one of the world’s most efficient



Source: VOLVO

Volvo’s hybrid buses reduce fuel consumption by up to 35 percent and carbon-dioxide emissions by the same amount. At the UITP Exhibition in Dubai, they are being shown for the first time in the Middle East.

Volvo has started serial production of its Volvo 7700 hybrid bus and the double-decker Volvo B5L hybrid bus. Sales of the buses are now a success in Europe.

The increasing demand for hybrid buses derives not only from Europe, but also from several other places around the world.

“Researchers currently agree that we must find methods to reduce total energy consumption,” says Edward Job-

son, Environment Manager at Volvo Buses. “Hybrid technology is the best way to achieve this in public transport. This is being recognized by an increasing number of decision-makers and Volvo can offer the most efficient solution.”

Consequently, Volvo Buses have initiated test driving of buses with Volvo hybrid technology in South America and Mexico. During 2011, test driving is planned in China, and at the UITP Exhibition in Dubai, a Volvo hybrid bus will be shown for the first time in the Middle East.

Volvo’s unique hybrid technology is a parallel hybrid in which the bus can be powered by a smaller diesel engine or

an electric motor independently, as well as by both engines simultaneously.

The brake energy is recovered by storing it in a lithium-ion battery that provides energy to the electric motor for drive power. Several of the auxiliary systems also use electricity from the battery.

Fuel consumption in a Volvo hybrid bus is reduced by up to 35% and greenhouse-gas carbon emissions are cut by an equal amount. Other emissions are also about 40-50% lower.

Volvo’s hybrid technology also contributes to a quieter city environment, since the diesel engine is switched off at bus stops. The bus starts using only the electric motor, which results in a quiet and exhaust-free environment at bus stops.

“I am convinced that hybrid buses will dominate city traffic globally in a few years’ time, and Volvo has great prospects for becoming one of the largest suppliers of such buses,” concludes Edward Jobson.

Source: VOLVO

# Lima BOT project The “Troncal” enters commercial service after less than 18 months



Source: Affiliated Computer Services (ACS)

This right-of-way BRT line has 38 stations and links the city's north and south together. To ensure that everything was operating smoothly, it was put into service gradually over a six-month timeframe. Passengers started using the southern section free of charge last May, for an introductory period. “A two-month promotional phase, without validation, to check that the infrastructure was functioning correctly,” Ralph Pollandt explains. As planned, the ticketing equipment on that section entered service and started selling tickets in July. Lastly, the northern section of the line opened early October.

Overall, ACS Peru now employs 24 people and has deployed 64 sales booths and 64 automatic vending machines, complemented by 100 retail outlets run by its partner Telefonica. The company is also in charge of maintenance, back-office operations and supervision of subcontractors: sales and service will be handled by a force of nearly 300 out-

sourced service company employees, many of whom have already been recruited.

Source: Affiliated Computer Services (ACS)

Less than a year and a half after the BOT contract was signed, articulated CNG buses are operating commercially on the “Troncal” right-of-way line crossing the Peruvian capital. We take stock with Ralph Pollandt, GM of ACS Peru.

Back in May 2009, the Lima city transport operator, Protransporte, joined forces with ACS to roll out a new-generation transport network, in the framework of an ambitious BOT (Build, Operate, Transfer) project. Since 4 October 2010, passengers have been enjoying the convenience of travelling along the famous 30 km-long “Troncal”, which is now in full commercial service.

## A TWO-MONTH PROMOTIONAL PHASE

A state-of-the-art contactless ticketing system, fleet geolocation system and passenger information system for the BRT (Bus Rapid Transit) line, all operated by a dedicated ACS subsidiary... In the span of less than 18 months, the dream has already come true. “Construction of the infrastructure and installation of the equipment (‘Build’ phase) were completed in record time,” explains Ralph Pollandt, GM of ACS Peru, the dedicated subsidiary that will run the network for a 14-year period (‘Operate’ phase). The intersecting lines feeding this first section of the “Troncal” are also in service.

### 100% CNG\*

With 312 articulated buses on the BRT and 232 buses on the intersecting and feeder lines, Lima thus has the largest fleet of 100% CNG vehicles in Latin America. “On the north side of the city, the fleet will refuel at the biggest CNG station on the continent – a huge addition to the one already in service on the south side,” Ralph Pollandt stresses.

\* Compressed Natural Gas

# Have a safe ride with Confidex Contactless Tickets What are the benefits of contactless ticket?

Why have operators throughout the world adopted a fare media that is considered by many as being more expensive? As a matter of fact, the adoption of contactless ticket must be considered as part of a business model and not as a mere replacement of a ticket by another. Transport operators can improve the satisfaction of their customers, generate extra revenues and reduce their costs, thanks to the improvement of:

- Security - Magnetic tickets are no longer suitable to fight against fraud. The introduction of sophisticated electronics in the ticketing field has considerably improved the security of tickets.
- Reliability - Contactless tickets cannot be affected by external magnetic sources and have a better immunity to flexion.
- Convenience - Contactless tickets reduce queuing and consequently eases the passengers' flow at gates thus improving Customer Satisfaction

- Maintenance cost - Contactless readers require no mechanical parts. The transaction is performed through radio waves so that there is no friction, and the reader cannot get dirty. No cleaning is needed and there is no need for preventive maintenance either.
- Pricing Policy - With the emergence of the use of chips in tickets, the size has been considerably increased, so that we can claim that there are no more limits for implementing a fare policy that meets Public Transport Operators requirements.
- Services - The chip memory can be split in such a way that each partition can be dedicated to a specific application. Thus, with a simple ticket the user can access museums, monuments and the public transport network. This is definitely the best mean of getting around a city for tourists.

Source: Confidex Ltd

Since 2006 Confidex has been supplying contactless smart tickets in all continents. The uncompromised quality of the products combined with volume supply capability has made Confidex the trusted partner for the contactless system suppliers and transit agencies. In 2009 Confidex introduced “Confidex Saferide”, a contactless high security ticket that is the world's first low cost contactless ticket equipped with standardized open crypto IC, Mifare Ultralight C. In 2009, Confidex was also chosen to supply Dubai Metro with 11 million Contactless tickets (see related image).

Source: Confidex Ltd



# Modern simulation training systems for smooth and safe railway operations



Source: Funkwerk Information Technologies GmbH

The state-of-the-art Operations and Interlocking Simulation BEST from Funkwerk IT enables railway and public transport operators to achieve maximum safety on the network. BEST offers a realistic learning environment in which the operational staff gains practical experience with the system and the operations. By providing a wide range of functions BEST enhances both the training of safety-relevant actions and the handling of unusual circumstances and dangerous situations. The result is an

improved handling confidence of staff and a reduced risk of human error. Additionally, training periods can be shortened and improved by using a simulator.

The main benefit of the BEST simulator is the enhanced quality of the training sessions. For each training session of either basic, start-up or refresher training a defined training scenario can be loaded into the simulator and each situation can be repeated as often as required. Additionally the “training-only” environment

differs significantly from training in operational control centres where trainees and trainers are often distracted by the current operation and ad-hoc problems.

Used for training within several metro organisations (e.g. Hamburg, Berlin, Stuttgart, Munich), BEST is designed to train different roles in railway operation, including dispatchers, traffic controllers or local signalmen. The BEST system can also be connected to other training systems. At Berlin Metro for example, the integration of a driving simulator into BEST is used for joint training of drivers and traffic controllers.

Due to its flexible configuration the BEST simulator can be adapted to the different requirements of each rail-bound transport operator – this has been proven within the last 20 years by delivering BEST simulation systems and training concepts to different metro and railway organisations worldwide.

Source: Funkwerk Information Technologies GmbH



## Green technology for passenger information systems

At the 59<sup>th</sup> UITP World Congress and Exhibition in Dubai, the AEG MIS will present the newest products of their "Green System" Line. Green Systems is the name given to a new generation of display systems constructed on the basis of bistable cholesteric LCD technology. No electricity is required in order to display the information, and power is only needed when entering the details that will subsequently appear on the screen. The highlights of these systems include the stand-alone solutions using solar technol-

ogy such as the new information steles for bus stations and tram stops which have been designed for external use in public transport. The solar-powered ChLCD steles from AEG MIS provide you with the opportunity to display information in places where a traditional power supply is not available. Because of the integrated bistable display technology, the stele merely needs power when information is being updated, which is ensured by means of a solar panel. This makes the display system extremely eco-

nomical in energy use and therefore an environmentally-friendly display medium. The bistable ChLCDs reflective operating mode provides an optimal readability of the information displayed on the columns under all lighting conditions - whether in direct sunlight or in twilight, using ambient illumination such as, for example, street lights.

Source: AEG Gesellschaft für moderne Informationssysteme mbH

## Belgrade upgrades its ticketing system with Kentkart



Source: KENTKART

*Kentkart delivers contactless and integrated Automated Fare Collection, Vehicle Tracking and Passenger Information Systems by the end of 2011 to Belgrade, the fourth largest city in Southeastern Europe, after Istanbul, Athens and Bucharest.*

### TICKETING

Belgrade City Council from Republic of Serbia signed a contract of Automated Fare Collection, Vehicle Tracking and Passenger Information System on the 20th of September 2010, with consortium of Lanus (Serbia) and Kentkart (Turkey) through JV Company Apex Solution Technology - (Serbia). The new system will serve as an intermodal ticketing system in GSP (City Buses), SP Lasta (Suburban Bus network), private bus transport companies, Beovoz (City Trains), trams and trolley buses for a total of 1,851 vehicles and 465 lines.

The new system will enable passengers to get on board from any door. Later on it is planned to introduce a remote-based fare system on suburban lines, which means that passengers will have to check/out once they get off. Around 8,000 validators will be installed in order to provide this fare tariff system to Belgrade citizens. Tickets will be inspected by controllers via PDA. Faulty situations can be penalized by the controllers with this equipment.

### VEHICLE TRACKING

New smartcard readers will determine vehicle position via GPS and wirelessly (GPRS) send this information to vehicle tracking control center. In the vehicle, tracking control center data will be processed and stored. Each dispatcher will monitor and manage the movement of 200 vehicles on average. Emergency calls (ambulance, fire department, accident, public safety, etc.) and alarms will be directed to responsible departments of the City. By doing so lead time to emergency calls will be reduced and life standards of passengers will be increased.

### PASSENGER INFORMATION SYSTEM

Kentkart will provide passengers with an information system along with real time vehicle tracking system at 10 major bus stops located in the city. Through the passenger information displays passengers will follow arrival time of approaching buses along with destination name and number. Passengers will also get information via SMS text messages and internet.

Source: KENTKART

## NFC for Public Transport

Collis would like to demonstrate phones with NFC for Public Transport in Dubai. This phone will have the same functionality as the NOL cards, which are used to check-in and check-out on Metro, Bus, Water Bus and to pay for parking tickets. The difference is that the NOL card has been replaced by a NOL application, allowing the user to check the balance of the card and the last transactions. In addition, the user will

be able to perform top-up transactions over-the-air, without the need to queue for a Ticket Office or Ticket Vending Machine. The Mobile Ticketing solution for RTA's NOL card is based on the current security requirements, has all the current functionality but offers a wide range of new features as the NOL card is now implemented in the mobile phone. Part of our demo will be to demonstrate the download of the applica-

tion to the phone. And part of our demo will be to demonstrate the usage of the application to perform transactions, using a front end device to perform a reload and a check-in or check-out transaction.

Source: Collis BV

## Collis as Test Authority

The Roads and Transport Authority (RTA) of Dubai is currently introducing an electronic ticketing system for all public transport in Dubai. On behalf of RTA, Collis acts as the Test Authority for the complete scheme. This involves: Testing & Certification: certifying all equipment and systems delivered by several manufacturers, based on RTA's UAFC specifications. Certification consists of conformance testing of individual Metro, Bus and Marine systems, integration testing of the equipment chain from traveller cards to the back-end system and interoperability testing.

Consultancy: delivering consultancy in the area of the UAFC specifications, UAFC implementation and Change & Release Management, all aimed at a constant process of improving their completeness, clarity and correctness.

Test Tools: developing tailored test tools for the RTA-system, such as a Personalisation Validation Tool suited to test all issued cards against the specifications. Offering a tool for the validation of the Equipment Operating Data.

Services: offering test services to ensure trust in the technology to be installed in the production environment.

Collis is extremely pleased to have received recognition by the RTA in Dubai in the form of an Award of Appreciation. This Award is in recognition of dedicated service, devotion and support in implementing the UAFC system for the RTA in Dubai.

Source: Collis BV

## Arcontia offers fast and convenient ticket validation

With an international market presence since 1996, Arcontia designs and develops contactless smart card products for cashless ticketing and payment. At the UITP 2011 World Congress in Dubai, Arcontia will show its latest terminal for e-ticketing and e-payment.

The ARC3300<sup>TS</sup> Terminal offers fast and convenient ticket validation, smart card reload and contactless payments across public transport. The terminal incorporates the different technologies required in e-ticketing and cashless payments, including a mag-stripe reader and 2D barcode imager, as well as supporting ISO14443 A/B, ISO 18092 and EMV contactless.



Source: ARCONTIA AB

ARC3300<sup>TS</sup> is designed to be easily integrated into a number of smart card applications in both open and closed systems, operating either as a stand alone validator for optimized ticket transactions, or as a slave validator for multi-applications connected to other fare collection devices. For increased user functionality and convenience, the terminal includes a 5.7" touch display, four physical buttons, four colour LEDs and an audio buzzer for EMV compliance. The terminal not only combines design, quality and functionality, but with its integrated technology, it bridges the gap between ticketing and cashless payment.

## OTN Systems' new multi service communication network guarantees smooth operations and excellent passenger services

OTN Systems, worldwide supplier of fiber optic communication networks for metro and rail, is proud to present the brand new N50 and N70 product families at the UITP Mobility & City Transport Exhibition in Dubai.

The new N50 and N70 nodes are optimised to handle the increasing amount of Ethernet and IP traffic from different applications on a single backbone in a reliable and easy way. Operational telephony, Public Address, SCADA, Train Control, Passenger Information Systems, CCTV and other applications can easily and securely be combined on a redundant high capacity



Source: OTN Systems

backbone of 2.5Gbps or 10Gbps. Furthermore, a dedicated amount of bandwidth is allocated to each individual application. This guarantees that all applications can operate at full load simultaneously, even in worst case conditions.

The N50 and N70 network nodes provide 24 or 48 Gigabit Ethernet ports for the different applications. The applications connect to the N50 and N70 nodes via copper or fiber optic cable. Thanks to Power over Ethernet (PoE), applications such as IP cameras, Wifi access

points or VoIP phones can be powered via the N50 and N70 node's redundant power supply.

The new N50 and N70 nodes are compatible with the OTN-X3M product family which is in use at transport authorities around the world. This means that also non-IP applications (e.g. analog telephony, analog cameras or serial data) can be seamlessly connected to the OTN backbone, protecting investments in existing track side equipment.

Because transport system operators should be able to focus on their customers rather than on the technology that makes it all happen, the OTN networks are easy to install, operate and maintain. The results are happier customers and lower operational costs.

Source: OTN Systems

## Innovative Q'Straint QM3 wheelchair securement system debuts at UITP 2011

On Stand 5A550 at UITP Exhibition, Q'Straint, the world-leading wheelchair passenger safety specialist, will be showcasing for the first time in The Middle East, its new adaptable QM3 range for securing wheelchairs and occupants in transit.

Q'Straint based in the UK, is renowned internationally for innovation in universal worldwide wheelchair passenger safety solutions and this latest addition to its portfolio reflects this continued commitment. The QM3 range currently includes Standard, Deluxe and Max versions,

which provide flexible and efficient securement systems for wheelchairs and powerchairs on low floor city buses, trams and trains. They are easy to operate, quick to use and have been specifically designed to be compatible with virtually all wheelchairs, powerchairs and scooters. QM3 from Q'Straint meets all the design requirements of PSVAR 2000 (Public Service Vehicles Accessibility Regulations 2000) and 2001/85/EC (Bus Directive), which results in straightforward compliance with all worldwide regulatory bodies.

The new QM3 range comprises of a wheelchair backrest mounted on an innovatively designed and durable, nickel-plated tubular steel frame and varying levels of restraint depending on the version selected. This in turn is securely fastened to the vehicle floor via four x M12 bolts and under floor fixing plates. The backrest can be installed as a backward facing solution in low floor city buses or in either direction within a train or tram. All upholstery and backrest materials conform to fire retardancy standards and every QM3 unit is foam filled for shock absorbance.

To ensure even contact with the wheelchair in transit, the QM3 backrest is angled at 60 and has been engineered with a narrow width so that restraining compatibility is maximised. This flexibility is further enhanced by ample clearance space at floor level that is ideal for accommodating wheelchairs with rear-mounted powerpacks.

Source: Q'Straint



Source: Q'Straint

## Innovative HID Global veriCLASS™ Payment and Ticketing Embedded Reader Platform Enables Interoperable and Optimised Public Transit Systems

GLOBALLY CERTIFIED READERS SPAN EVERY MAJOR CONTACTLESS TECHNOLOGY, PROTOCOL AND PAYMENT SCHEME

HID Global, trusted worldwide leader in solutions for the delivery of secure identity, launched the veriCLASS™ Payment and Ticketing Embedded Reader Platform October 6, 2010, the first comprehensive and scalable solution that supports both closed and open-loop payment schemes plus all major contactless technologies and protocols in one system. The platform is based on universally adaptable contactless reader technology, and includes a broad range of integration tools, support, and global

product approvals and technology certifications.

The veriCLASS platform can be embedded into a broad range of payment and ticketing equipment including handheld, point-of-sale (POS) and retail payment terminals, enabling applications such as AFC and ticketing, cashless payment, banking/ATM, vending and loyalty solutions. It includes a reader core, reader board and enhanced reader board.

The open veriCLASS platform supports all popular card technologies including MIFARE®, DESFire® and iCLASS®, a broad range of protocols and payment schemes including FeliCa, EMVCo, Calypso®, MasterCard® PayPass™, Visa® payWave and American Express® ex-

presspay™, and all major operating systems including Windows® and Windows CE. Linux® and Mac® will be supported by early 2011.

The scalable veriCLASS platform is designed for current contactless technologies and will accommodate contact cards as well as future payment technologies and functional requirements. The platform includes CE and FCC modular approvals, enabling system integrators and manufacturers of cashless payment and ticketing systems to accelerate certification of their finished solutions.

The veriCLASS platform has been recognized as one of only four finalists in the identification/ID card category of the SESAME awards competition,

recognising the industry's most innovative card-related products.

Source: HID Global



Source: HID Global

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*The UITP Exhibition in Vienna was an excellent opportunity to meet new and existing customers. The interesting discussions with a broad range of industry professionals inspire the innovative solutions of tomorrow.*

**Frank Van Campenhout,**  
Industry Manager Public  
Transport of OTN  
Systems

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# NXP's MIFARE Plus Chosen to Power the Ground Transportation Ticketing Systems in Sochi, Russia in preparation for the 2014 Winter Olympics



Source: NXP

NXP Semiconductors N.V. announced that its contactless microcontroller, MIFARE Plus™, has been chosen by the Russian city of Sochi – host of the 2014 Winter Olympics – to power the Automatic Fare Collection (AFC) system of its ground transportation network. This will be the first rollout of MIFARE Plus in Russia and the Commonwealth of Independent States. Working with partners including the solution provider and equipment manufacturer Strikh-M, inlay manufacturer SMARTRAC and card manufacturer Novacard, the project, which is currently in the pilot phase, will offer all the benefits associated with a contactless AFC to both

passenger and transport operators alike.

Since its launch in 2009, NXP's MIFARE Plus has brought new standards of security and privacy to contactless smartcard systems. Designed to offer a smooth upgrade path from earlier products such as MIFARE Classic™, NXP's latest MIFARE contactless IC enables system integrators to add new security features and functionality into existing MIFARE infrastructures.

Serving Sochi's population of 500,000 residents and one million tourists annually, the MIFARE Plus-based systems will help improve the overall passenger experience

and drive operational efficiencies. Eliminating the need for cash, passengers will be able to purchase and fill up contactless travel cards and season tickets at the automatic smart-card payment terminals, speeding up passenger embarkation.

"This is a significant project for NXP, Strikh-M and the other partners involved in this project and serves as a role model for other similar projects in the region. We are confident that all residents of Sochi will benefit from this contactless solution and that it will enable the city to prepare for the upcoming Olympics," said Henri Ardevol, general manager of secure transactions, NXP Semiconductors. "At NXP we are seeing a growing demand for contactless technology in Russia and the other CIS states. Major operators such as the Moscow Metro already use our technology, and the MIFARE portfolio of products provides system integrators with the flexibility to create an AFC system based on the individual needs of the customer, while offering a clear upgrade path to help increase levels of security when required." The project is an essential part of Sochi's preparation for building a highly secure AFC system for the Olympic Games. At present, the city expects to receive about 400,000 additional visitors to the city dur-

ing February 2014, and the MIFARE Plus-based AFC system will enable the local transport operator to scale up for the larger number of passengers it will be required to carry.

"Moving to a contactless based AFC system offers a huge number of benefits. Offering a 100 percent contactless system eliminates the need for our passengers to search through pockets for change, as the fare will be automatically deducted from their smartcard. In addition, the contactless AFC will allow the city government to better manage regular and discounted fares, while also eliminating potential misuse and unapproved tariff changes. As a result, the quality of transportation service will increase, the time spent queuing to board the bus is reduced and the overall passenger experience is improved," said Alexey Smaglyuk, director of the transport and communication department, Sochi City Administration. "We're incredibly proud to be hosting the Olympic Games in 2014, and this project will be vital to the success of the games and provide an efficient transportation service for all visitors to the city."

MIFARE Plus, designed specifically for contactless applications which require additional layers of security such as pub-

lic transport ticket schemes, road tolling, loyalty cards, closed loop micro payments and in access management in both the public and private sectors, features 128-bit Advanced Encryption Standard (AES) and supports migration from existing MIFARE Classic implementations. The contactless microcontroller IC offers an upgrade path for system integrators and operators wishing to implement additional layers of security to their automatic fare collection, access management and micro-payment installations. In addition, the product has received Common Criteria EAL 4+ certification by the German Federal Office for Information Security, and has undergone thorough security and privacy assessment by the Universities of Bochum and Leuven.

Source: NXP

## Sharing the UITP doubling strategy: High quality products for public transport of the future

Sustainable development in the transport sector - a worldwide key issue of the last decade - is self-evident for the business of HÜBNER. For 60 years, HÜBNER Group has manufactured key components for the public transportation industry. Folding bellows, vehicle articulation systems, flexible gangway systems and for approx. 10 years entrance systems such as manual and electrical ramps as well as lift systems for buses and trains are best-known products of HÜBNER.

Professional experience in product design, the permanent development of particular materials, close collaboration

with the vehicle manufacturers and excellent service are leading to high quality public transportation modes which is based on long-term environmental sustainability, economic aspects and the needs of operators and end-users. HÜBNER Group provides advice for the particular demand of transport operators worldwide, especially in the fast growing so called "Megacities".

HÜBNER products are being used in means of public transport of all major cities in the Middle East. Modern tramways and buses are equipped with attractive bellows and high quality dura-

ble articulations. Buses in Dubai i.e. are furnished with ramps or lifts made by HÜBNER Transportation GmbH for the special needs of people with restricted mobility. For the Dubai-Metro - a prestigious project which was put into service on 2009-09-09 - HÜBNER provided the complete gangway systems. Buses, tramways, metros and trains: HÜBNER is participating in public transport systems throughout the world.

All recent developments by HÜBNER like the Compact Universal Articulation for trams which saves space and weight, the new bus articulation HNG 21 which is focused on basic technical characteristics for the specific requirements of growing markets and the electrical ramp SKADI which contributes to making travelling a care free experience for handicapped people and makes service and repair an easy task, make for various contributions to doubling the public transport market share. Environmentally sound materials for folding and corrugated bellows complete the road for a sustainable development in the public transport sector.

Source: HÜBNER GmbH

## Innovative product

One of the innovations GIRO will be showcasing at the 59<sup>th</sup> UITP World Congress & Exhibition is the PlanOpt algorithm.

PlanOpt (an option available with the HASTUS-DailyCrew module) is used to optimise the assignment of open work to available employees on a day-to-day basis. This powerful optimiser efficiently generates the highest-quality solution at the lowest cost, in accordance with company objectives and regulations and taking into account employee preferences. As such, PlanOpt is designed to function in contexts where a balanced distribution of work among employees must be achieved over a given period. The algorithm is currently installed at Qbuzz in the Netherlands and at multiple client sites in France, including Nantes, Strasbourg, Montpellier, and Orléans.

Flexible rules management  
The rules management feature in PlanOpt allows users to define hard and soft rules and assign a value and penalty to each rule, which the algorithm takes into account during automatic assignment. Users can also define the relative importance of each criterion they wish to balance. Examples of rules that can be applied to ensure well-balanced schedules that comply with collective agreement stipulations include: minimum rest time, total hours worked per week, total hours worked in a given period, overtime hours, and employee qualifications. Sets of rules can also be created for specific schedules such as holidays and weekends.

Predefined rule sets require no modification, which facilitates a user-friendly and efficient work assignment process.

Employee preferences  
Accounting for employee preferences in the work assignment process may represent a paradigm shift for some public transport companies, as it is often thought to be more costly. This is not true in all cases. Several GIRO customers see this as a valuable means of attracting and keeping employees and have already begun integrating preferences into their assignment process. Support for preferences makes it possible to generate solutions that both satisfy employees and meet company objectives at no additional expense, which is an ideal scenario for daily work assignment.

Launching automatic distribution  
Once rules have been defined, the optimiser can be launched with a simple click, and results of the optimisation can be previewed before the Assign command is selected. Automatic assignment is then completed within minutes: no fine-tuning or manual intervention necessary. Automation helps ensure daily work assignment is performed accurately, fairly, and in compliance with company objectives and collective agreement stipulations.

Key benefits of PlanOpt include:

- Cost savings
- Well-balanced schedules
- Employee satisfaction
- Time savings

Source: GIRO

“For more than 30 years, GIRO has been helping transport authorities and operators improve efficiency, reduce costs, and deliver the best service possible. Our collaboration with customers and research groups worldwide ensures HASTUS delivers excellent results and continues to bring innovation to public transport. We have been showcasing HASTUS at UITP events for more than two decades and are proud to have past and future host cities such as Helsinki, Vienna, and Geneva among our esteemed clientele.”

Alain Martinais, Director of Marketing of GIRO

# Automatic fare collection system makes PUBLIC TRANSPORT TIMES TWO “PTx2”



Source: TaptoPay Limited

Public transportation is one of the key public infrastructures in a city. Better public transport utilisation brings more efficient energy usage, convenience and less carbon dioxide emissions which together improve the development and image of the city. That is why UITP has launched an ambitious doubling strategy “PTx2” to “rethink the way we live and travel”.

There are many ways to promote the public transportation usage, like better resource allocation, attractive sales promotion, connection of different public transportation means, etc. To achieve the above objectives and ultimate goal,

Automatic Fare Collection (AFC) system is the solution.

## AUTOMATIC FARE COLLECTION SYSTEM

The AFC system is a stored value-based contactless smart card application designed for public transportation and micro-payment operations. The system supports offline transaction and batch upload followed by backend processing. Commuters go to reloading stations to buy and load the cards. Then they can pay their fare at validators by using the electronic money in the card. Transport operators extract the data from the vali-

dators and upload the transaction to the Backend host which performs the transaction validation, card audit and clearing and settlement. Transport operators view reports and analysis at the management workstation to check daily settlement and review business performance.

## LOWER OPERATION COST

To the transport operator, accepting electronic money as payment reduces the risk of cash pilferage and counterfeit money. The AFC system minimizes the frequency of cash payment to the reloading stations only. The cost of cash handling and transaction time are greatly reduced. The operation flow is smoothened, overhead costs can be minimized, and thus, a lower operation cost is achieved.

## EFFICIENT RESOURCE PLANNING

In the Backend system, every card and transaction are recorded. With the detailed and comprehensive transaction records and analyses, the transport operator can monitor the level of service more easily and improve the overall infrastructure by analysing the service performance and efficiency. The transport operator can have more efficient re-

source planning, e.g. bus allocation, bus route planning, fare promotion, etc.

## CONVENIENCE AND BENEFITS TO COMMUTERS

The AFC system brings convenience to commuters because of the shortened transaction time and reduced cash handling through multi-application cards. There is no need to queue in order to buy the tickets and inevitably have to pay more due to lack of exact change. It is easier for the commuter to get the rebates during transfers. Besides, it is also cheaper to use a card than to use cash since the operator is able to offer discounted fares and benefits through loyalty programs due to better operation planning and cash handling.

## EFFICIENT PUBLIC TRANSPORT POLICY

The AFC system enables common payment and rebate programs between different transportation means. As the card in the AFC system can be extended to multi-application, e.g. bus, metro, ferry, taxi, etc, it enhances the inter-operability of the public transportation. The government can define better strategic transport policy on how to increase the public transportation usage by providing the

one-stop transportation service and attractive rebates system.

## WHY TAPTOPAY® FOR AFC SOLUTIONS PROFESSIONAL AND EXPERIENCED SMART CARD INDUSTRY VETERAN

TaptoPay® is a subsidiary of Advanced Card Systems Ltd. (ACS) – Asia Pacific’s No. 1 Supplier of PC-linked smart card readers (Source: Frost & Sullivan).

## EXPERT IN SECURITY MANAGEMENT

Security is our top priority. We possess technical know-how in security systems, owing to accumulated years of intensive experience in smart card security protection.

## COST-EFFECTIVE SOLUTION FOR AFC

With our Zero Infrastructure Cost (ZIC) scheme, clients can first choose to have TaptoPay® bear the full costs of the system including hardware, backend host, key management systems, etc., and later on, pay us with a percentage of transaction fees after the solution has been installed and becomes fully operational.

Source: TaptoPay Limited

# At the UITP Dubai 2011 SMA Railway Technology GmbH presents the next generation of its product families SMARTconverter, SMARTcharger und SMARTview

The tried and tested auxiliary power converter SMARTconverter are characterised by high energy efficiency, low weight and an improved service concept. With the battery chargers SMARTcharger, weight and space concept have been optimised. And with the new service and diagnosis instrument SMARTview, the view inside SMA products will be even easier in future.

## SMARTconverter: Light and highly efficient auxiliary power converters.

The auxiliary power converters of the product family SMARTconverter are based on the MEENT-platform and are characterised by their low weight but high efficiency at the same time. Therefore they considerably increase the energy efficiency of the rail car. We have

succeeded in reducing the weight of the system by 10% while simultaneously raising the power at the DC output by 25%. Through an improved design, the maintenance of the device has been simplified and service times have been reduced by up to 50%.

## SMARTcharger: Compact battery chargers for all applications

In modern rail cars the demands placed on on-board electrical systems have increased, especially in the DC field. The battery chargers employed also need to constantly keep pace, becoming ever more powerful, while ideally maintaining their size and weight. The design of the new SMARTcharger is not only light and compact, the device also achieves a high performance rating of up to 40 kW.

## SMARTview: Modular, browser based diagnosis and service instrument.

The serial interface frequently employed on power electronics devices in the rolling stock sector is now only available as standard on a minority of PCs. For this reason, with SMARTview the data is transmitted to the PC via an Ethernet interface and can be read using a conventional browser. There is no need for the installation of specific software. SMARTview collects and transmits the most important operational data, is available as a separate module and can be connected to individual modules or complex systems via a range of interfaces.

## Visit us in Dubai, stand 3C30

Source: SMA Railway Technologies GmbH



Source: SMA Railway Technologies GmbH



# Wipost - Translohr without catenary



Wipost provides a simple and sustainable solution to eliminate the Translohr overhead electrical installations (catenaries) and their aerial visual pollution whilst reducing energy consumption and retaining access to the facades of buildings, thus contributing to the preservation of urban environment.

The principle of the Wipost is to combine the LOHR technology called "inverted catenary" with an onboard energy storage device. Current injection points are located along the Translohr line so that they come in contact with the conductor strip installed in the roof of the tramway as it passes, feeding the tram traction and auxiliary equipment and charging the energy storage device.

The current injection points are located on posts implemented along the trackway in station areas. In this way street lighting and the fixed equipment of the Wipost system can be ideally combined.

The power supply arms, 3.3 meters above ground, are out of reach from the users. On the rest of the route, the tram travels using Translohr Ultracaps Technology.

Translohr Ultracaps Technology: an energy storage device using Ultracaps technology is installed on the Translohr roof to enable to cross over the distance between station areas in full autonomy and to reduce the energy consumption by storing the braking energy.

Wipost technology is easily adaptable to market public lighting posts: the posts ideally combining public lighting and power supply for the tramway are implemented in station areas. The arms may be lifted in exceptional cases to free the track completely.

Advantages of Wipost: suppression of the OCL on all or part of the route (pan-tographs and conducting strips on the roof can be combined); optimization of electric consumption, storage of braking energy; use of public lighting posts for fixed Wipost equipment; no modification on ground guiding installations; designed to operate under extreme conditions (temperature, humidity, snow, sand, salt sprays); reduced costs and simple maintenance and limited equipment on the rolling stock and safety of pedestrians and road users.

Source: LOHR INDUSTRIE

Source: LOHR INDUSTRIE

# INNOVIA Monorail 300 system: Next generation fully automated and driverless technology



Source: BOMBARDIER

Rendering of the BOMBARDIER INNOVIA Monorail 300 system for the King Abdullah Financial District in Riyadh, Kingdom of Saudi Arabia

At the UITP Mobility & City Transport Exhibition, Bombardier will showcase its new INNOVIA Monorail 300 system which combines service-proven driverless technology with the latest in aerodynamically styled and passenger friendly monorail trains. This evolution in monorail technology permits smaller, less obtrusive and easier-to-construct aerial guideway structures and incorporates the operational features required for rigorous mass transit service. Futuristic aesthetics, spacious interiors and a smooth ride experience add to the comfort of passengers. The BOMBARDIER CITYFLO 650 automatic train control technology ensures safe driverless operation.

In May 2010, Bombardier signed a contract with Saudi Oger Limited., a leading Saudi Arabian construction company, for the supply, installation, operation and maintenance of its INNOVIA Mono-

rail 300 system for the King Abdullah Financial District, the new financial and business centre under development in Riyadh, Kingdom of Saudi Arabia. The completion of the 3.6-km system with six INNOVIA Monorail 300 trains (12 cars) is scheduled for 2012, with operation and maintenance services to commence at the start of revenue service.

Very recently, on September 27, 2010, Companhia do Metropolitano de São Paulo (CMSP / São Paulo Metro) was the second operator this year to select Bombardier's new INNOVIA Monorail 300 system for its new Expresso Tiradentes mass transit line in São Paulo, Brazil. The 24 kilometer system will serve 17 stations and its 54 seven-car trains will provide the capacity to transport over 40,000 passengers per hour per direction. Phase One of the system is expected to open for passenger services by 2014.

Source: BOMBARDIER

# Alstom's HESOP provides an answer to concerns about energy saving on urban and suburban transport networks

The tramway is perceived as a clean means of transport since a person traveling by car emits on average 55g of CO<sup>2</sup> per kilometer, compared to 5,7g when he or she travels by tramway. However, the electricity consumption of a tramway is intense at start up and when braking. That is why the most advanced works of Alstom Transport on the matter of optimisation of energy use concern local transport since it presents many acceleration and deceleration phases due to the reduced intervals between stations. One of the ways to reduce electricity consumption of the trains is to recover the energy gener-

ated by the engines during the braking phases. With a traditional tramway system powered by catenaries, the energy recovered by a train while braking can be confused by another train in traction and in vicinity. However, when no train can recover this energy, it is lost. The rate of energy loss on a network can thus be as high as 15%.

This is the reason why Alstom conducted the HESOP (Harmonic & Energy Saving Optimiser) project, concerning the electrical sub-stations of a reversible tramway. Its objective is to return to the electric network almost all of the brak-

ing energy of the tramways. The HESOP substation's novelty lies in its added inverter that, in traction phase, optimises power use, and during braking, captures at least 99% of recoverable energy and re-infuses it upstream into the grid. Advantages include: 15% power savings on urban networks; compatibility with direct current 600V to 3kV fed lines. Additionally, HESOP was eco-designed with clean and recyclable materials for minimal environmental impact.

Source: ALSTOM

# ABB LRV converters: Powering customer attraction

At the UITP Mobility & City Transport Exhibition, DUBAI 2011, ABB will display a BORDLINE® CC400 Compact Converter for LRVs. It is the most versatile and integrated traction converter for 600 or 750 VDC input voltage in the world. Every feature was designed by ABB with the complete value chain for the public transport passenger in mind.

## HIGH VERSATILITY

A characteristic of the global LRV segment is the great variety of designs and typically rather small order volumes. Transport operators favor a strong local touch and feel of their vehicles. In traditional LRV cities, infrastructures have evolved over decades and impose certain constraints on the vehicle design such as maximum vehicle dimensions, floor level, line voltage, power requirements etc. Offering a versatile traction converter and fostering component standardization helps to reduce cost which in the end has to be paid by passengers and authorities. The BORDLINE® CC400 Compact Converter of ABB fits many different LRV designs due to its small dimensions, light weight, flexible cooling, mounting and connection concept, as well as adaptive software. For instance, some transport operators use the same standard version of this converter both installed on the roof of one LRV type and under the floor of another. This reduces complexity, training

requirements and spare parts.

## HIGH INTEGRATION

In BORDLINE® CC400, CC stands for Compact Converter. All power electronics on the vehicle are integrated in one box, one robust IP 65 protected aluminum enclosure. The converter can drive and brake two motors independently, it contains a battery charger and in addition provides a variable frequency three-phase AC-output for blowers and a three-phase 50 Hz output for the onboard power supply network. The system is controlled by a very powerful module, based on the famous AC PEC800 control of ABB for cross-industry applications. The compact and lightweight design yields more freedom for the vehicle design and more space for the transit passengers.

Source: ABB Railway



Source: ABB Railway



Tram equipped with BOMBARDIER PRIMOVE technology for contactless and catenary-free operation on the pilot line in Augsburg, Germany

# PRIMOVE Catenary-free System: Safe Inductive Power Transfer for Trams

Source: BOMBARDIER

Bombardier invites visitors attending the UITP Mobility & City Transport Exhibition in Dubai to learn about the unique BOMBARDIER PRIMOVE system for contactless and catenary-free power transfer for trams and light rail vehicles. The innovative technology offers city planners new options for integrated transport systems thanks to the absence of overhead lines and poles. Currently, the PRIMOVE tech-

nology is undergoing extensive testing in a pilot project in the city of Augsburg, Germany.

Advantages of the PRIMOVE system include the inductive power supply allowing continuous catenary-free operation, the reliable performance even under adverse weather and ground conditions as well as the easy installation on both new

and existing lines. In addition, the contactless energy transfer reduces wear on parts and presents zero risk of physical contact with any electricity for passengers and pedestrians. When combined with the new BOMBARDIER MITRAC Energy Saver technology, the PRIMOVE system can also reduce energy consumption significantly.

Source: BOMBARDIER

## 1<sup>st</sup> ExpoCityTrans and UITP EURASIA Congress The success of Public Transport as a tool for the economic growth of cities

From 6 to 8 September, some 300 Congress participants and 2,000 Exhibition visitors gathered in Moscow, Russian Federation, to attend

Within the framework of the 1st UITP Eurasian Congress, under the motto "Public transport – as a tool for the economic growth", on 8th

man of the UITP Eurasian Executive Committee, CEO of Mosgortrans Peter Ivanov .

In the declaration, the delegates of 1st Eurasian Congress urged governments of all levels, the decisions of which depends the provision of the citizen's mobility, to do everything possible to preserve and develop public transport routes. According to the delegates, it must be done now, not shifting these problems onto the shoulders of future generations".

Meanwhile, on the 6,000 sqm exhibition floor, some 40 exhibitors from Eurasia and beyond showcased their latest technical developments. Some of the highlights were the rail vehicles on display, including a suburban train, a metro and a tram car. Many buses, trolleybuses and minibuses produced by Eurasian and Chinese manufacturers were also on show in the Exhibition, which presented many fruitful business opportunities for the exhibitors present.

One of the big highlights of the event was the signing on September 7 by



the first edition of the Eurasian Congress and Expocitytrans Exhibition. The event, the largest ever to be held by UITP in the Eurasia region, was organised with the support of UITP Vice President Dmitry Gaev, Head of Moscow Metro, and Peter Ivanov, General Director of Mosgortrans, in cooperation with Crocus Expo, the largest exhibition centre in Moscow. The Congress and the Exhibition took place in parallel in the Crocus Expo venues.

September UITP adopted the Moscow Declaration which calls upon national and local policy makers to raise awareness of the importance of public transport for livable cities. To view the full text of the Declaration, see [www.uitp.org/eurasia](http://www.uitp.org/eurasia) The declaration was signed by: - UITP Secretary General Hans Rat, UITP Vice-President, head of the Moscow Metro Dmitry Gaev and the Chair-

Dmitri Gaev and Transmash Holding CEO Andrei Andreev of a contract covering the delivery of new rolling stock and refurbishment of existing vehicles during 2011. The signing ceremony was held during the event, where the prototype Type 81-760 car recently developed for Moscow metro by Transmash subsidiary Metrovagonmash was on display.

Under the deal, Metrovagonmash will supply 67 Type 81-740.4/741.2 'Rusich' metro cars, plus an eight-car train of the 81-760/761 design. The company will also refurbish 124 older Type 81-717/714 vehicles during the coming year. The total value of the contract is put at 5.6bn roubles, which will be funded from the metro's own resources. The Moscow city authority is also expected to fund the purchase of an additional 80 cars for the metro during 2011. The overwhelming success of this events 1st edition will undoubtedly set for an even more successful second edition when Expocitytrans returns, two years from now.



The Congress included three plenary and four parallel sessions, featuring top-level speakers from Eurasia and further afield, such as Tehran Metro CEO Moshen Hashemi, Hendrik Plougman Olsen, Head of Copenhagen Metro, and General Director of Istanbul Ulasim AS Ömer Yıldız. Topics covered included demand and mobility management, worldwide trends in intermodality and the development of transport infrastructure and technical developments in urban rail, IT and other areas.

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