

September 2012

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# VIETNAM ON THE WAY UP



■ **Vietnam has high expectations and in only a few years it aims to establish itself as an industrialised country. The main problem for the Southeast Asian country is its outdated infrastructure. It now aims to modernise this with international assistance; particular from Germany.**

Vietnam has set itself ambitious goals for the future: By 2020, the Southeast Asian country with more than 91 million inhabitants aims to be an industrialised nation. The preconditions are very good. The economy is booming. Although one of the most important constraints on the growth of the Vietnamese economy at present is the inadequately developed infrastructure. Vietnam now hopes to modernise these and has drawn up detailed plans for their development. The government in Hanoi is investing millions in new harbours and airports and is upgrading and expanding the railway network. Within the framework of development cooperation it is hoped that much will be achieved with German assistance – including software systems from Berlin.

Thinking of Vietnam, the first pictures that come to mind are the huge paddy fields, seemingly endless shorelines, and lush rain forests, but also the overcrowded cities and their chaotic road traffic. Nearly a third of all Vietnamese households own a moped. It is the main means of transport in the Southeast Asian country, which currently offers too few public transport alternatives. Only about a third of the roads are paved

and more than 600 settlements cannot be access at all by car, let alone by bus. So far only the major roads have been modernised, accounting for about a tenth of the entire road network, and these are correspondingly overcrowded. Public transport buses often find it impossible to access stops because their progress is blocked by traffic jams or road accidents. Industry is suffering badly under the current situation. Workers often turn up late or fail to arrive at all, and goods cannot be delivered.

### 30 hour rail journeys

The railway is the most important mode of public transport in Vietnam. Basically, the railway network has two main lines, the Trans-Vietnam railway line connecting Hanoi and Ho Chi Minh City, and the line from the port city of Hai Phong into Lao Cai province. The rest of the rail traffic is concentrated around the two main cities. The journey on the Trans-Vietnam line takes thirty hours – provided everything runs smoothly and none of the frequent delays are encountered. So only about a third of the official level crossings are supervised, and in addition there are more than 4,000 unofficial crossings. Steep gradients and decrepit bridges further delay progress. In addition, the train crews have to be exchanged at suitable points during these long journeys. These are only some of the challenges facing Vietnam Railways (VNR) in the course of planning and deploying 380 locomotives and 5,000 carriages every day.

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Martin Müller-Elschner, CEO

**Dear readers,  
Dear IVU clients,**

The deployment of the key resources 'vehicles' and 'personnel' is decisive for efficient and economical operations. In Europe, it is now standard to use IT systems to support the development of complex planning scenarios. But outside Europe, operators are also modernising: for example in Asia, where the steady growth of populations is leading to a corresponding growth in demand for mobility. Countries such as Vietnam or India in the Asia-Pacific area are currently facing considerable structural challenges. The opportunities for German engineering are promising, because quality 'Made in Germany' enjoys a good reputation.

Particularly in extreme situations, IVU is able to make use of the decades of experience which the company has gained with planning and dispatching software. For example, you can read how the Vienna public transport operator copes with more than three million visitors to the Danube Island Festival with the help of IVU software on page 4.

If you would like to convince yourself about the performance of our systems, then visit us at the InnoTrans in hall 2.1 at stand 128 or in our showrooms in Berlin and Aachen. We look forward to seeing you.

**I hope you enjoy reading this issue. ■**



Celebratory contract signing

### Convincing technology from Germany

Technology 'Made in Germany' has a good reputation. In order to be able to operate effectively with more reliable timetables, Vietnam Railways has now called for support from the Berlin-based IVU Traffic Technologies AG. The state railway will in future be planning and controlling its daily operations with IVU.rail – the IVU software solution developed specially for railway clients. But Vietnam Railways not only chose one component of the IVU system. VNR decided to use IVU products for all facets of its everyday operations and for passenger information services, and ordered all the components of the system.

### Software boosts performance

A special feature of this project is the variety of the rail transport operations that Vietnam Railways has to cope with on a daily basis. Rules and regulations differ considerably between passenger and goods transport, and this has to be taken into consideration in the utilised software system. A particular goal of the state railway is to expand and modernise its goods transport operations, in order to aid the long-term promotion of the nation's industries. IVU has therefore developed a special new module which provides the cargo customers of VNR with real-time information about the status of their orders via a Web interface.

Passengers should also find it much more convenient to use the rail services. In future, IVU realtime will provide information to the platforms of the main-line stations about the updated departure times of their trains, and advanced notice will be given of any delays.

In order to be able to react more quickly in the event of incidents, and to remain in constant contact with the train drivers over the entire rail network, state-of-the-art technology will also be installed for the communications between control centre and the drivers. But even when the train is travelling at the other end of the country, the control centre has to be informed rapidly about any incidents so that it is able to respond appropriately. Therefore communications between the control centre and the driver will in future be by means of 'Voice over IP over GPRS'. The data rates of this technology are much higher than conventional analogue radio systems. Voice and data transmission will be possible in parallel, and the use of public networks reduces the operating costs. The locomotives are being equipped with the necessary on-board computers by IVU.

Vietnam and also Vietnam Railways are aiming to respond in the short term to the considerable challenges they are facing. IVU will make its contribution to fulfilling this ambitious project. ■



## IVU ON CASPT12

This year saw the twelfth 'Conference on Advanced Systems for Public Transport' (CASPT). This forum for the international community of researchers, practitioners and vendors on all aspects of public transport planning and operations was held in Santiago de Chile. IVU has successfully established a presence in South America in recent years, with projects in Colombia, Chile, and Argentina. At CASPT12, the Chilean branch of IVU was present with an exhibition stand. In addition to the local co-workers, IVU sales manager Andreas Langenhan also participated and gave a lecture on 'Duty scheduling templates' which dealt in detail with the topic of optimisation in public transport.



### ■ Fresh off the presses for InnoTrans:

Get your copy of our new product brochures from: [www.ivu.com](http://www.ivu.com) or order a copy by mail to [post@ivu.de](mailto:post@ivu.de).

# COMPANY RUN

## ■ IVU makes the running once again

With a best time of 1:33:50, the IVU men's team were the winners of this year's Berlin B2RUN on 5 September in the Olympic Stadium. The team successfully defended their place on the winners' rostrum – for the best runners in the B2RUN in the capital city and as the overall winners. The IVU runners were previously successful in 2011 and are now the official 'German Company Champions' for the second time in a row. This year they finished 26 seconds ahead of the 'Stadt Dortmund' team in a narrow but deserved victory. Steffen Dittmann, Christopher Rybarz, Daniel Naumann, Martin Ahlburg, and Stefan Meissner were the proud recipients of the B2RUN Cup 2012.

Some 7,000 runners from more than 500 companies took part in Berlin this year in perfect running weather. They were able to test their running skills over a course of about 5.5 kilometres. This was the fourth time the German company run has been held, and it is becoming increasingly popular. After regional runs in Hanover, Dortmund, Düsseldorf, Karlsruhe, Munich, Nuremberg, and Hamburg, the competition in the Berlin Olympic Stadium was once again the concluding event of this year's national championship. Hundreds of excited spectators waited in the stadium and greeted the runners with enthusiastic applause. Extreme endurance athlete Joey Kelly presented the awards to the happy victors. ■



# AWARDS

## ■ IVU.suite awarded 'BEST OF 2012' predicate



For the eighth time, the Initiative Mittelstand has this year awarded its IT INNOVATION PRIZES. Under the aegis of the IT Officer of the German Federal Government and IBM Germany, the

most innovative IT solutions of medium-sized companies received prizes in 40 categories. With its new, powerful functionalities in particular for passenger information, the IVU.suite system family is among the best of a total of 2,500 IT solutions taking part in the competition. The jury of experts awarded IVU the 'BEST OF 2012' predicate in the category 'Industry Software'.

The most striking new feature of the passenger information system of the IVU.suite is the huge amounts of data which the system is now able to process. Up to 10,000 vehicles can be tracked and the departure information for up to 20,000 stops can be continuously updated. Changes reported from the vehicles can be made available within two seconds at the stops, on the Internet, and via mobile phones. ■

## ■ New IVU design in the top 100



The new IVU design has received the 'Rebrand 100 Global Award 2012' as one of the best 100 relaunch projects worldwide. With the modern corporate image, IVU now projects its capabilities

and expertise for all to see. Fresh colours and a new logo represent innovation and modern engineering standards and show at a glance the key fields of activity of the system producer, with intersecting lines suggesting bus routes, railway lines, and networks. With its new company slogan 'Systems for vibrant cities' IVU communicates the forward-looking orientation of its IT solutions. Its advanced IT systems help the world's constantly growing cities to meet the logistical challenges of the future. The Berlin agency PLEX GmbH was commissioned with the design relaunch for IVU. Both companies are gratified to receive this international recognition for innovative solutions from Germany. ■

# THE DANUBE ISLAND FESTIVAL – VIENNA PUBLIC TRANSPORT OPERATING AT FULL CAPACITY



The Viennese love their nostalgic trams. For the Danube Island Festival, 50-year-old trams are put in service.

■ **Action stations for Wiener Linien: three days of non-stop music and a fairground atmosphere with three million visitors. The Danube Island Festival breaks records.**

Warning, a confused person is on the track of „line U1,“ comes the announcement from the tiny black loudspeaker of the control centre of Wiener Linien, Vienna’s public transport operator. The underground line U1 is one of the most important public transport services for Austria’s capital city. It connects the heart of Vienna, Stephansplatz, with the Opera and Karlsplatz, passing through the historical centre of the city. So there is an urgent need to respond. While one controller tries to calm the driver down and take security measures, another is already contacting the police. At the next desk the passenger information service has picked up the report and is informing passengers about the disturbance. Soon after the all-clear can be sounded: “The person is safely back in the train.” As soon as the police have also got back off the tracks, the power can be switched on and the underground train can be started again.

Events like these are everyday occurrences for the personnel of the operational control centre of Wiener Linien. In particular in extraordinary situations like the annual Danube Island Festival, the operators have to be ready at all times to cope with unexpected disturbances. Up to three million visitors are attracted to the venue on the Danube Island in the course of the three days in June. For Wiener Linien this means organising a departure every minute and coping with thousands of waiting people who all want to be taken to their destination in safety and comfort.

## Up to 40 personnel supervising one stop

The Danube Island Festival is the largest open-air event in Europe. Concerts and shows were provided this year on a total of 20 stages from 22 to 24 June. Free entrance was one reason why millions of people were attracted to Vienna. The sunny summer weather in the central European capital was certainly an added attraction. For the city’s public transport company this means three extremely busy days – and not only in the operational control centre. Every day at the start and the end of the festival, tens of thousands of people throng to the stations and squeeze themselves into the trams or subways. Seconds later the platforms are once again full to overflowing with masses of new passengers. In order to ensure the greatest possible safety, Wiener Linien ramps up its operations to the limit. The services on the feeder Line 31 are increased so that trams arrive and depart every minute. At the stops, Martin Blazsovsky deploys some 70 additional personnel to ensure safety. They guard the tram lines to ensure that these can be crossed without risk, and they assist parents with small children or wheelchair users getting on and off. No fewer than 40 personnel are deployed at the Floridsdorfer Bridge, which is the central stop offering direct access to the main stage.

This is the twelfth time that Martin Blazsovsky has been head of operations for the Danube Island Festival. With so many years of experience, his advice is not only sought by his own co-workers – the police are also glad to have his

## Departures every minute and thousands of people on the platforms

assistance. Blazsovsky knows the ins and outs of festival like the back of his hand. He can predict exactly when to expect the biggest surges of passengers and can say where extra safety measures will be needed for the stops. At all times, he is in radio contact with all the personnel and can send reinforcements wherever problems arise. He recalls one particularly tricky situation a few years ago. The Floridsdorfer Bridge was so full of people that it suddenly began to sway under the movement of thousands of feet and threatened to collapse. All the trams had to be driven off the bridge as quickly as possible and the people distributed more evenly. Faced with situations like that it is important to remain calm and collected. Once the bridge had stopped swaying it was possible to begin normal operations once again.

## Vehicle-controlled operations are unique in Europe

Behind the scenes, the personnel of Wiener Linien are also busy around the clock to ensure that everything runs smoothly for the Danube Island Festival. For example, Franz Rautner is responsible throughout the festival for regulating the necessary additional services introduced on the individual lines to cope with peak demand. Rautner has been working for Wiener Linien since 1981, and for the past 15 years he has been working as an operations controller. He coordinates the vehicle workings of the additional trams so that the arrival times of the vehicles are as evenly spaced as possible.



When the numbers wanting to get on the vehicles to and from the festival venue get too large, the personnel at the stops can start additional vehicles. This is a special feature of the system in Vienna. The decisions are not taken by the personnel in the operational control centre, which is often far removed from the situation on the ground – the task force members at the festival grounds judge when extra capacity is needed. This is essential when dealing with the masses of people attending an event like the Danube Island Festival, where every second can count. The precise times at which the additional vehicles depart from the depot are recorded and fed into the intermodal transport control system (ITCS). Franz Rautner can immediately see the additional vehicles on his monitor and can take steps to regulate operations as needed. The timings on the tram lines such as the Line 31 feeder service can be changed from the normal 4-minute headway to 1-minute intervals. Some 80 additional drivers are needed during the festival in order to be able to provide all the additional services as these become necessary. The trams constantly report their position to the ITCS. This means that not only does Franz Rautner know where the individual vehicles are at any time, but also the waiting passengers can be shown the updated departure times.

Such vehicle-controlled, demand-oriented operations without a fixed timetable are unique in Europe. The software solution was developed by IVU. Together with Wiener Linien, the demands were first specified and then these were implemented step by step. Franz Rautner is grateful for the new system. "Thanks to the vehicle-controlled operations we can now respond much better to unexpected surges in the numbers of passengers," he explains with a smile of satisfaction. "My colleagues at the festival grounds can decide when to deploy an additional vehicle. That saves a lot of time. Otherwise it would hardly be possible for us to cope with a mega-event like the Danube Island Festival."

#### ITCS as all-round solution

In order for the personnel in the operational control centre and the waiting passengers to be informed about the current location of the vehicles or the updated departure times, all the interventions in the operational process at Wiener Linien take place directly in the ITCS. For example, if Franz Rautner sees that too many trams are clustered in a section of the feeder Line 31, measures can be taken in the system to terminate following vehicles at an earlier stop.

The shortened trips of the vehicles in question will immediately be transmitted to the electronic displays at the stops. Continuous records are kept of all measures taken together with the vehicle data, because in the event of an accident it is important to have evidence of the vehicle routes and travel times.

The heart of Vienna's public transport operations beats in the control centre. This is where all the data come together. Three controllers, ten line dispatchers, each in charge of 8-10 lines, and two personnel responsible for passenger information work here side by side. Bringing together all the control personnel ensures smooth and rapid communications. Information can be exchanged between the co-workers without any delays.

### All changes to ongoing operations are made directly through the ITCS and passed on to the passenger information service

Eight monitors are available for each member of the operational control centre. Four of these display the ITCS from IVU, two

more show the line network and the camera images from the relevant stops, and in addition there is a monitor for documentation purposes and one screen showing the entire underground rail network. Each co-worker can choose the display mask which is best suited for the job in hand, and can then configure the monitor display individually. In particular during a mega-event like the Danube Island Festival, the close cooperation and smooth communications between the personnel at the control centre provides the foundation for trouble-free operations. If there are any disturbances, like the case of the distur-



This is the twelfth time Martin Blazsovsky has been head of operations for the Danube Island Festival.

bed individual on the tracks, then the information can be passed on directly to the incident management and the passenger information service. In addition, the line dispatcher can switch the relevant screen display onto a central video wall for all to see.

The control centre is occupied round the clock, and from 5 am to 9 pm the IVU Hotline is also on call in case technical support is needed. In order to make the work in the control room as pleasant

as possible, attention was not only paid to ergonomic furnishings, but thermal and acoustic burdens were also minimised. The computers of the control centre are all located in a separate server room, which has the additional benefit of making it much simpler to carry out servicing work.



Franz Rautner has been working in the control centre of Wiener Linien for 15 years. But the Danube Island Festival, with its three million visitors represents a new challenge every year.

#### In-house developments with IVU data

The current positions and departure times of the vehicles are collected, prepared and presented by Wiener Linien using the passenger information system IVU.realtime. On the basis of this, the company has also developed in-house solutions, which are tailored to meet its own special needs. Developer Thomas Dejmek is particularly proud of the so-called 'Advance notice display'. For example, if a section of line has to be closed temporarily due to construction work, passengers will have to disembark at the station before the line closure and continue their journey from another platform. In order to avoid confusion, the passengers are informed about which platform to transfer to on the 'Advance notice display' before arriving at the station. As Thomas Dejmek explains: "In particular at events such as the Danube Island Festival, when the lines can become overcrowded within seconds due to the masses of visitors, the proactive control of passenger flows is particularly important. Otherwise chaotic situations can quickly develop at the stops. And that would be very dangerous."

In the operational control centre, at the stops or during their trips – the passengers in Vienna are constantly encountering state-of-the-art technologies and reliable personnel, and for the twelfth year these have ensured that all the visitors arrived at the Danube Island Festival and then got back home again safe and sound. ■



# AUTOMATIC PLANNING OF MAINTENANCE WORK



■ **Operating one of the largest gas distribution networks is no easy task. Servicing and maintenance work has to be carefully planned and documented. But software support is available here too.**

A gas pipeline network with a total length of some 12,000 kilometres serving more than 800,000 customers in the Berlin-Brandenburg region requires regular inspections and maintenance. In order to be able to ensure that the energy supply network operates as smoothly as possible, the local Network Berlin-Brandenburg (NBB) uses the workforce management system from IVU. This allows automated assignment allocation and duty planning for all the personnel involved with monitoring and quality supervision functions, as well as for the personnel of relevant service providers. The upkeep of one of the largest local gas distribution networks also requires a large number of qualified personnel and considerable resources.

IVU.workforce not only helps NBB to optimise its own assignments, but it can also be used as a decentralised solution by the companies providing services for the network operator. Individual

maintenance orders are placed with specific service companies, which then organise the deployment of their own workforce using the IVU system in their operations centre. This is done by working through flexible checklists covering the order processes. A single maintenance task can involve a number of checklist points which have to be completed, documented and archived. The checklist only displays the relevant tasks, depending on the state of the object undergoing maintenance and the data which has already been registered. For example it may be necessary to scan a barcode, take photographs, or to enter measurements. The order processing is possible using a variety of end devices, according to the wishes of each company. These could include PDAs, Windows laptops or tablet PCs. In addition various hardware peripherals can also be integrated, such as a barcode scanner, a camera, or a GPS device.

Complete documentation and authorization are particularly important when outsourcing maintenance and repair work. Using IVU.workforce, NBB is able to restrict access to data. The network company can determine in advance which information in the system can be viewed by each

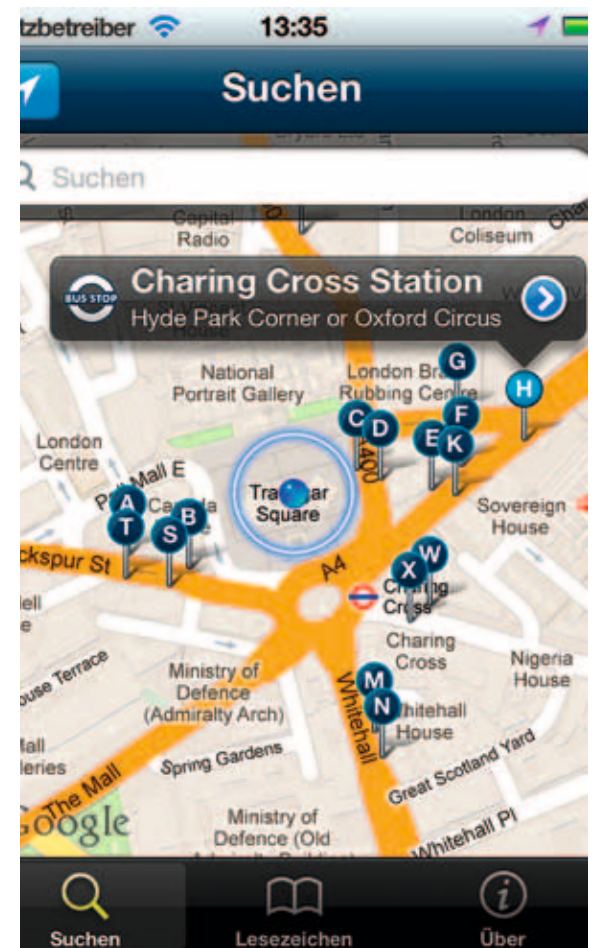
service provider. Full details of all orders are recorded by continuous paper-free documentation. The transparency of the order data considerably improves the subsequent evaluation.

A highlight of the system is also the possibility to integrate map material for routing purposes and also to link up with the company's in-house geo-information system. It is then possible to show access routes to assignments directly on the map, along with the estimated arrival time. The position of the gas pipelines can be visualised in the operations centre and on the mobile end devices.

IVU.workforce has been in productive use at NBB since the start of the year. Before the installation there had been an eighteen month phase of agile software development. During the extended test phase, interim versions were regularly made available to NBB reflecting on-going developments. The test systems made it possible for the customer to try out the system thoroughly before its completion and also to critically review its own demands and to adapt these where appropriate. ■



# LONDON BUS LIVE DEPARTURES ON NEW IPHONE APP



## ■ Updated departure times for 8,500 buses from 19,000 stops direct to the smartphone.

Coinciding with the start of this year's Olympic Games in London, the 'London Bus Live Departures' iPhone app developed by IVU Traffic Technologies AG was released, offering a choice of eight languages. Users can now inform themselves by smartphone about the updated departure times of 8,500 buses from some 19,000 stops in the metropolis. The data come directly from the passenger information system IVU.realtime installed by the operator Transport for London (TfL). As the central data hub, IVU.realtime collects and processes all the departure information and makes this available for the app by means of cloud technology. The passengers receive all the relevant information reliably from one system. Since the 18 July 2012, 'London Bus Live Departures' has been available free of charge from the Apple App Store.

Users can choose from various options when it comes searching for the departure times from stops in their vicinity. They can select the desired stop on a map displayed on their smartphone, or enter the name of a stop or its text code.

A word prediction function speeds up the entry. The Google Maps API also makes it possible to filter for places of interest or specific addresses. All the stops close to the search object are then displayed on a map. A setting can be chosen which corresponds to the user's location and the direction they are looking in, which makes it quick and easy to navigate to the next destination. GPS localisation is also possible.

During the search, a bookmark function stores key bus services or bus stops so that the user will have rapid access to these the next time. Convenient filter functions personalise each entry as required and also facilitate the search for the appropriate lines and departure times. For example, the line filter can be used to eliminate certain services from the list of departure times when these are not relevant for the user. If the stop has been bookmarked, then the filter settings are stored for use in the next search.

When the user has chosen a specific stop, the app shows the updated departure times for all the relevant buses together with any additional information or messages. When the user selects a specific bus from the list, a map opens showing

the details of the route with all the stops and the relevant departure times.

All the information has been continuously updated to take into account the current traffic situation, and factors such as congestion, rush hour traffic, or construction works. ■

## OLYMPIC VICTORIES IN REAL-TIME

Passengers in London during the Olympic Games were not only informed about the updated departure times but also about the results in the competitions. On 2,500 electronic displays, TfL reported all the medals won by British competitors. The Olympic news was presented in ticker-tape messages scrolling under the departure times. It took only 2 seconds to announce the good news on all displays.

# INDIA – NEW CHALLENGES

■ **India is constantly growing and so is the country's demand for mobility. A trip with an economic delegation led by Berlin's Governing Mayor in March gave IVU's CEO an opportunity to assess the challenges facing India.**

With a population of more than 1.2 billion, India is the second largest nation in the world. Most people still live in rural areas, but the migration to the towns and cities means that the urban population is increasing annually by about 1 per cent. The country already has some forty

But after successful projects in South America and in the Arab region it was a good time to gain a first-hand impression."

In his opening address in Delhi, Berlin's Governing Mayor Wowereit drew attention to the many opportunities – particularly relating to future infrastructure projects. With more than 63,000 km of track, India has the largest rail network worldwide, transporting an average of 17 million passengers every day. There is great demand for technologies which can increase operational efficiency and help to meet the trans-



cities with more than 1 million inhabitants. The steady increase in mobility requirements can hardly be met with the existing infrastructure. In order to find out more about the situation in the public transport sector and the associated business opportunities, the CEO of IVU, Martin Müller-Elschner, took part in an official trip to Delhi and Mumbai for an infrastructure dialogue.

Berlin's Governing Mayor Klaus Wowereit was accompanied in March by representatives of 12 Berlin companies from the fields of IT, architecture, transport, energy, and water management. The first stop was Delhi, where the delegation members met with Indian entrepreneurs for an exchange of experience. "I was not expecting too much when I flew to India," comments Martin Müller-Elschner. "India always seemed much too large - a tough nut to crack for a highly specialised medium-sized company such as IVU.

port needs of the growing population. Most public transport in the major cities is still provided by buses and there are well-developed networks, but most of the vehicles are outdated and are operating at far above their capacity limits.

However, India has recognised the problem and is investing in its infrastructure. Urban railway systems are being developed in many Indian cities. Martin Müller-Elschner saw the progress himself: "I was impressed by the country and very positively surprised by the efforts being made. The highlight for me was the railway station in Mumbai. In spite of the amazing numbers of people, the organisation was efficient and friendly. The budgets and the will to modernise are there," summarised IVU's CEO. "I see good opportunities in India for software solutions from Germany. Initial contacts have been established, and the task now is to build on these." ■

## SAVE THE DATE

### IVU Italia - User Meeting

27. – 28.9.2012, Rome

### BEKA – itcs – Data sources for high-quality customer information

24. – 25.10.2012, Frankfurt / Main

### Real-Time Passenger Information Conference 2012

6.11.2012, London

### Night of the Companies

7.11.2012, Aachen

### DDS Data Days 2012

7. – 8.11.2012, Karlsruhe

### German Equity Forum 2012

12.11.2012, Frankfurt / Main

### IVU User Forum 2013

18. – 19.2.2013, Berlin

### UITP World Congress 2013

26. – 30.5.2013, Geneva

## IMPRINT

### Publisher

IVU Traffic Technologies AG  
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### Editorial

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### Concept and Design

www.plexgroup.com

### Print

Ruksaldruck, Berlin

### Picture credits

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