



THE NETWORKS OF THE CITY

Vibrant cities need functioning systems

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Berlin is one of the liveliest cities in Europe. It has a reputation the world over for its start-ups culture, its creative arts community, and the colourful night-life. At the same time, Berlin is the political capital of Germany, an important research location, and a transport hub between eastern and western Europe. As in all major cities, a variety of overlapping networks have developed – often out of sight – without which life in the city would be inconceivable. Many of the systems that keep them operable are provided by IVU.

A city cannot exist without networks. They transport people, goods and ideas, they link places together, merge knowledge, create structures, and bring order into chaos. The networks of a city consist of more than the visible traffic arteries. They also include underground supply lines or the connections between researchers in scientific institutions and innovators in companies.

A parcel delivery driver is following a clearly defined route. In a drawing, the coloured lines would form a network across the city. Retail chains carefully select locations for new branches in order to form an ideal network of branches.

And the exchange of immaterial goods like ideas and knowledge is also integrated in network structures that bring universities and research

institutions together in cooperation with companies and institutions, allowing new insights to be gained from the pooled knowledge.

All over the world, more and more people are moving into the cities, and it is predicted that by 2050 city dwellers will account for two-thirds of the world's population. This urbanisation calls for functioning support systems that will operate in the background to organise city life. This is what IVU can provide.

Berlin – a European metropolis

Some 3.4 million people live in Berlin. In addition, on any one day there may be as many as 500,000 visitors on the streets of Germany's largest city. Along with London and Paris, it is one of the most popular cities in Europe. And not without reason, because the city life here has a vibrancy that few other places can match – day and night.

Berlin is famous for its lively culture and its colourful nightlife. Clubs, cafés and bars line the streets in Friedrichshain and Kreuzberg. But fashion and design, digital agencies, and start-ups have also established themselves here. Berlin has 3,500 fashion companies and 5,800 IT companies. The city on the River Spree is a magnet for creative young people. They come here

BERLIN HAS 3,500 FASHION COMPANIES AND 5,800 IT COMPANIES.



Martin Müller-Elschner, Vorsitzender des Vorstands

**Dear reader,
Dear customers of IVU,**

The trend towards urbanisation is presenting considerable challenges for cities all over the world. According to the latest predictions, two-thirds of the world's population will be living in urban areas by 2050. In order to make the large cities of the future a place worth living in it is necessary to have efficient solutions for the key urban networks, in particular for public transport and for the supplies of energy and goods.

Today, IVU's systems are already helping cities all over the world to cope with these demands. The contributions that IVU products can make for the various networks can be shown by examples from our own city. In Berlin, our systems plan and control underground rail services, keep the buses running, and provide information for passengers. They help with mobile workforce management, the optimisation of supply networks, and the organisation of elections. We develop our IT solutions in close cooperation with scientific institutions in the region. We also provide active encouragement for young people to become next generation specialists.

You can read more about this in this issue. We also cordially invite you to our User Forum in Berlin – we would welcome the opportunity to show you just how vibrant this city is!

Best wishes

Martin Müller-Elschner

from all over the world to experience the special flair of Berlin. Students, developers, artists, musicians, and adventurers generate a climate in which new ideas and innovations thrive and which stimulates people to try out new things.

Transport – moving people

One of the reasons why Berlin has been able to develop into such a vibrant metropolis is its convenient location at the centre of Europe. Berlin is easy to reach by car, plane, train or coach. Since the fall of the Berlin Wall and the unification of Germany, the city has become an important European transport node. Transport networks link Berlin with western and eastern Europe, bringing a steady stream of people to the city. In addition, the well-developed urban and regional railway services are busy transporting people between the city and its periphery. Commuters travel into work every day, and Berliners take trips out to the Baltic Sea, the Spreewald or the surrounding countryside. Software solutions from IVU provide support for the railway companies and coach service operators and in this way contribute to the further development of the transport network.

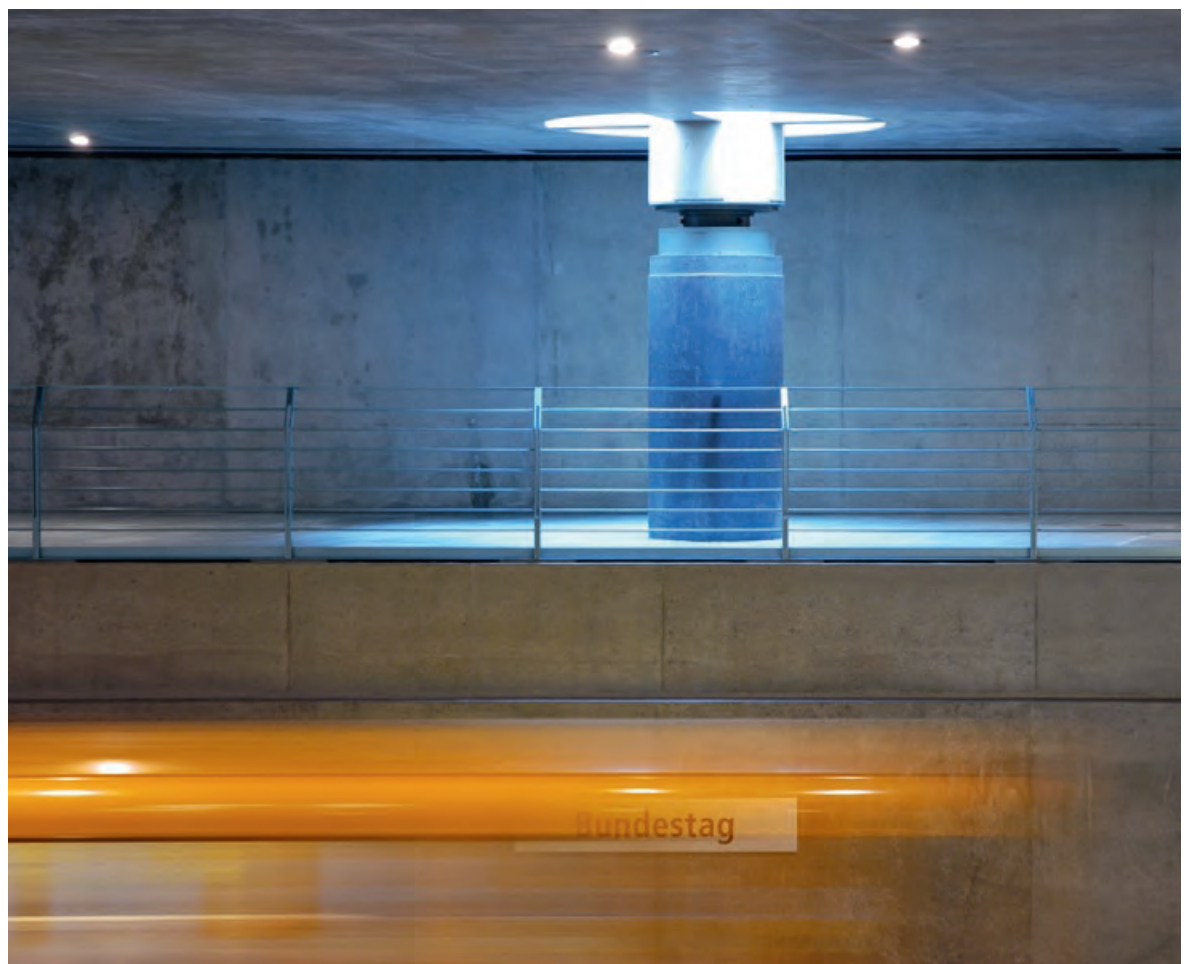
While tens of thousands of passengers come into Berlin or leave the city from the railway stations and coach stops, the main burden for public transport within the city is shared between the public transport company BVG and the urban rail service (S-Bahn). BVG is one of the five largest employers in Berlin, which gives some idea of the work involved in maintaining mobility in

the capital city. With its underground trains, buses, trams and ferries, BVG ensures that its passengers can reach their destination at any time of the day or night – an important contribution to the pulsating nightlife in the city. For many years, BVG has been using modules of the IVU.suite in order to plan vehicle and personnel schedules and to provide information for passengers waiting for trams and buses.

Logistics – supplying cities

Equally important for life in a city like Berlin are its ubiquitous, but mostly inconspicuous supply networks. They deliver electricity for the tools of modern life – for the smartphones and laptops of developers and designers, the coffee machines in the hip cafés where the creative ideas are born, and the charging station for the electric vehicles with which the environmentally-aware young families do their shopping. The kitchens of the restaurants are as dependent on the reliable flow of natural gas as tenants looking forward to returning home to a warm flat on a cold winter evening. In order to guarantee the dependability of supplies, technicians are out working on behalf of the network operators throughout the year. They check pipelines and connections, record details of any damage they find, and organise the necessary repairs. IVU has supplied its IVU.workforce to provide the necessary support for the organisation of the workforce and the conclusion of assignments.

Many Berliners appreciate the fact that most important places are usually only a short distance





away. In particular in the inner-city districts, doctors, banks, restaurants, bars and shops can usually be found only a few minutes from the front door. And if the desired product is not available in the shop then it can always be ordered quickly and easily for delivery to your home, in some cases even with same-day delivery. This requires extensive background analyses and IVU.locate is the tool for the job. It can not only be used to calculate the most efficient way to deliver parcels to customers, but can also be used by companies to develop complex networks with which to identify the optimum locations for new branches, or to ensure that advertising messages reach the right recipients.

Knowledge – networking information

Knowledge is one of the most important modern resources. It comes together in large amounts in cities and networks develop for intense information exchange, for example in the field of politics. All aspects of national politics come together in Germany's capital city, and right in the middle is IVU. Since 2002, the Federal Returning Officer has been using IVU.elect for the organisation of

THE MOST IMPORTANT KNOWLEDGE NETWORK IN BERLIN AND BRANDENBURG IS THE TRANSPORT, MOBILITY AND LOGISTICS CLUSTER

general elections for the Bundestag and for determining the results. Around the German parliament and the federal ministries, hundreds of agencies and interest groups have set up offices. For example, the Association of German Transport Companies (VDV) and Allianz pro Schiene bring together the knowledge of the interest groups and present this on their behalf to policy-makers and government officials.

Nodes for specialist knowledge develop in particular in research institutions. Berlin has 39 universities and colleges, many with an excellent international reputation. In addition there are also numerous scientific institutes that are carrying out cutting-edge research. Every year, some EUR 1.8 billion of public funding is invested in science and research in Berlin, making the city one of the leading research regions in Germany.

The most important knowledge network in Berlin and Brandenburg is the Transport, Mobility and Logistics cluster. Where Werner von Siemens presented the first electric locomotive to the world in 1879, today some 400 manufacturers and more than 100 research institutions

in the field of transport system technology employ a total of 54,000 personnel. New trams and components for trains are produced here, innovative applications are developed, and the future of transport is planned. IVU is also a part of this cluster. Together with its scientific partners it implements the insights gained through research to develop practical solutions for its customers.

IVU – Systems for vibrant cities

With its products, IVU provides an important element of the networks which keep the cities of the world in motion. Its solutions help to transport people and goods by supporting transport companies with the planning, scheduling and deployment of personnel and vehicles. IVU's solutions secure the energy supplies in the city when they are used by network operators to coordinate their fieldworkers. And they bring goods reliably to customers by supplying important data to retail chains and parcel delivery services for the planning of branch locations or the optimisation of delivery routes. In this way, the systems from IVU make sure that cities remain vibrant and dynamic places. ■

LIFEBLOOD MOBILITY

Major cities depend on mobility. Without freely flowing traffic and a functional transport network, cities like Berlin would sink into chaos. Every day, hundreds of thousands of people commute to and from work or make trips within the city – and the demand for mobility is growing. But faced with the rising costs of owning a car and highly congested road networks,

increasing numbers of city dwellers prefer to rely on public transport. In Germany, there has also been a recent boom in inter-city coach services which has also presented new challenges for public transport companies. The systems from IVU help cope with these demands. They ensure that services operate in an orderly fashion and that cities can remain on the move.

THE RHYTHM OF THE CITY

A city like Berlin is in constant motion. All round the clock, there are people on the streets looking to travel from A to B and back again. Berlin never sleeps. And that means that public transport services cannot take a break either. The 24-hour operations of Berlin's public transport company BVG ensure that night owls can reach their destinations just as reliably as commuters on their way to or from work, or tourists on their sightseeing trips. BVG transports some 950 million passengers with its metros, buses, trams and ferries every year. City residents and visitors are equally reliant on the services the company provides. Without them, Berlin would surely collapse.

A lot of work goes into ensuring that everything runs smoothly. More than 1,300 buses and 360 trams operate day and night on the various lines. In addition, more than 1,200 underground train units wind their way through the city from station to station. These form the most

important element of Berlin's public transport services. The underground network has a total length of more than 140 kilometres, and its ten lines account for more than half of the four billion person-kilometres travelled by BVG passengers every year. They determine the rhythm of the vibrant city.

If you spend some time at the Warschauer Strasse underground station you soon get a feeling of just how important the 'U-Bahn' is for Berlin. This is the end station of the U1 Line, situated near to the Oberbaumbruecke connecting Friedrichshain and Kreuzberg. During the day it is an important interchange station for commuters, but at night it becomes a key destination for young party-goers. At short intervals, trains enter the station and release masses of passengers, and fill up again with passengers for the return journey. Then everything is quiet for a few minutes until the next underground train comes and the procedure is repeated.

For decades BVG has relied on IVU when it comes to meeting the challenge of deploying vehicles and personnel efficiently in order to provide services which

In addition to the drivers, this also includes ticket controllers and the stationary personnel working in call centres or maintenance workshops.

BVG also uses IVU solutions for its passenger information service. With IVU.pool it brings together the planning data for the various modes of transport. And with IVU.realtime, BVG provides passengers at bus and tram stations via the Internet and on the dynamic passenger information displays with real time information about the next departure times.

The IVU systems help BVG to ensure that Berlin remains vibrant. Round the clock and right through the year. ■

24-HOUR OPERATIONS
950 M PASSENGERS / YEAR
1,300 BUSES, 360 TRAMS
MORE THAN 1,200
UNDERGROUND TRAIN UNITS
140 KM UNDERGROUND NETWORK
MORE THAN 13,000 EMPLOYEES

are free from interruptions. Over the years, the two companies have worked together to develop solutions for planning and dispatching. Today, BVG makes

use of IVU.plan, IVU.vehicle and IVU.crew. The systems not only allow the integrated planning of vehicles and personnel, but also use intelligent algorithms to support the optimisation of timetables and duty schedules. BVG uses IVU.crew for planning, scheduling and settlement for more than a thousand personnel.



NEW MARKET FOR COACH TRAVEL

Things are busy around Berlin's Südkreuz railway station, which is hardly surprising because this is an intersection where the networks of the city's various public transport systems meet – BVG buses, inter-city and regional trains, urban rail services, and now also coach services. Although the coach stop in front of the railway station has only been in operation since 2014, the operator is expecting to register up to 25,000 stops for 2015

– and Südkreuz is only one of a number of new coach stations in Berlin. The existing central coach station (ZOB) located close to the 'Funkturn' has already been operating at full capacity for many months. And with demand remaining high, there is a growing need for suitable arrival and departure points.

Since the liberalisation of the market in Germany in 2013, the network of towns and cities linked by coach companies has been steadily growing. In many cases, travellers have a choice of various new operators, one of which is ADAC Postbus, the coach service subsidiary of Deutsche Post.

FOR 2015 UP TO 25,000 STOPS ARE EXPECTED AT STATION BERLIN SÜDKREUZ

ADAC Postbus already offers its passengers the greatest possible flexibility for ticket purchases using IVU.ticket.shop. This newly developed system offers customers the opportunity to buy a ticket from the online shop, from post office outlets, via a call centre, or directly from the driver. Operating in the background, IVU.fare.inventory carries out a dynamic calculation of the appropriate fare for each ticket sold, depending

on the market situation. This makes it possible for ADAC Postbus to respond appropriately to demand.

With their bright yellow livery, there is no missing the coaches of ADAC Postbus on the forecourt of Südkreuz station. A queue of passengers forms in front of a coach where the driver is scanning in the passengers' tickets using his smartphone. During the journey, the IVU.cockpit.app continually transmits the current position to the company's central server. IVU.realtime calculates the expected time of arrival and passes this on to the control centre. The timetable information on the website is also updated in real-time, so that the passengers always know exactly how the current traffic situation will affect their travel plans. ■

WATERWAYS

Berlin is a city of lakes, rivers and canals, which cover an area of nearly 60 square kilometres or 6.6 percent of the total area of the city. Berlin has more than 600 bridges, so that the surface waters do not normally hinder mobility. In addition, Berlin's public transport company BVG operates five ferry services.

The ferries are an important part of the transport mix of the city. In particular they offer pedestrians and cyclists a convenient way to cross bodies of water and avoid long detours. While at the weekends it is mainly day-trippers who enjoy the boat trips, the services are mainly used during the week by commuters travelling to and from work.

Last year, environmentally-friendly solar powered boats were introduced on some of the routes – a world premiere. As with all its other services, BVG plans the schedules and personnel duty rosters for its ferries using modules of the IVU.suite. ■

VBB – TRANSPORT FOR BERLIN AND BRANDENBURG

Passengers using public transport in Berlin only need one ticket for all modes of transport – whichever company is providing the service. In central parts of the city this is usually either BVG or S-Bahn. But a trip beyond the city boundaries could easily involve three or more different public transport providers. The Berlin-Brandenburg Public Transport Association (VBB) ensures that passengers do not have to buy a new ticket based on a different tariff at every change.

Organising services over an area in excess of 30,000 square kilometres, VBB is one of the largest public transport associations in Europe. It has 40 member companies which together provide more than 1.32 billion passenger trips every year. In addition to the development of a uniform tariff, one of the most important tasks of the Association is to plan the services that are provided. The timetables of the member companies must be harmonised with one another as well as possible – so that nobody has to wait too long for their connection.

VBB is also responsible for providing timetable information throughout the Association. This

makes it easier for customers to plan journeys involving various companies and different means of transport. To provide this service, VBB makes use of IVU.pool. The data management system stores the timetable data for all 40 member companies. Regular revisions ensure that the information is kept up to date.

As an association of contracting companies, VBB is responsible for providing accounts of the transport services provided by its members to the local and regional authorities that have ordered them. How many cancellations were there over the past year? Where and when was it necessary to provide alternative bus services? What delays were there? Information like this is required in particular for local and regional rail services. The controlling system IVU.control makes it possible for VBB to evaluate deviations from the plans on the basis of parameters derived from the transport contract and to produce reliable performance reports. The findings can also flow into the quality management of the Association and in this way help to improve the services it provides for its customers. ■

AREA OF 30,000 SQ KM 40 MEMBER COMPANIES 1.32 B PASSENGERS/YEAR

THE NETWORKS OF THE CITY

Berlin is one of the liveliest cities in Europe. Various networks shape life in the German capital: transport, logistics, knowledge. This is, where IVU is at home.



TRANSPORT



KNOW-
LEDGE

LOGISTICS

SAFE SUPPLIES

Life in cities requires efficient organisation. Every day, millions of people have to be supplied with foodstuffs and consumer articles to meet their everyday needs. And under the city streets are a maze of supply networks that ensure that electricity, water and gas can reach every resident. All this involves complicated logistical processes. Pipes and cables have to

be checked and maintained, and in order for the right goods to be available for the right customers, retailers have to carefully plan the locations for branch outlets. IVU provides logistics solutions that support companies with the deployment of their workforce and the evaluation of information.

GAS – WARMTH IN THE WINTER

Winter in Berlin often means sludge on the road, slippery pavements, and icy winds blowing round the street corners. When it is cold, people prefer to stay at home. In order to keep everybody warm, Network Berlin-Brandenburg (NBB) is busy all year round to keep the gas network in working order.

NBB has a pipeline network with a total length of more than 13,600 kilometres stretching from Berlin across large parts of Brandenburg to Saxony and Saxony-Anhalt and serving some 800,000 customers. This makes it one of the largest regional supply network operators in Germany. Every day, dozens of technicians are underway in Berlin and the regions, checking that pipes, connections and fittings are fully functional. Legal regulations specify the intervals at which checks have to be carried out and NBB, a subsidiary of the Berlin gas supplier GASAG, is responsible for ensuring compliance with these requirements. Individual maintenance assignments are carried out by various service companies.

Automatic planning

NBB uses IVU.workforce as its central system for assignment allocation and duty planning. The software makes it possible for external contractors to plan the assignment times of their field personnel directly in the NBB system. With its

numerous intelligent functions, the IVU solution supports the workforce planners in their work. Drawing on deadlines and assignment data stored in SAP-PM, IVU.workforce can automatically produce deployment plans for the personnel of the maintenance service company. The system compares the requirements for each assignment with the qualifications of the field workers available in the relevant time slots and allocates these efficiently to the various locations.

Mobile documentation

The mobile client IVU.workforce.mobile is used for assignment processing in the field. The field workers log measurements, enter test results, and document the current state of progress. Photographs, barcode scans and other data can be transferred directly from the respective device. In addition, the field worker has access at all

times to important information and relevant documents. Conversely, the NBB dispatchers can see in real-time how work on an assignment is progressing. If necessary, it is then possible to make short-term adjustments and to dynamically adapt the plans for other measures in accordance with the developments.

Up-to-date settlement

“IVU.workforce ensures efficient work processes”, says Ulf Altmann, Managing Director of NBB. “Thanks to the uniform process chain, all the information is available at any time – from the order being placed through to invoicing.” Paperless documentation means that all the relevant data are immediately stored in the system. IVU.workforce passes these on directly to the connected SAP system, so that orders can automatically be settled with the service provider. This makes the order settlement fully transparent. ■

13,600 KM PIPELINE NETWORK
800,000 CUSTOMERS

ELECTION MANAGEMENT

Election day in Germany and millions of people go to the polling stations to cast their votes. But already months earlier, the electoral authorities had begun their preparations for this day. Polling stations have to be organised, election assistants recruited, candidates and parties registered, ballot papers printed, and the voter documentation sent out. Then at the end of the day the correct result has to be determined and published in the various media. All these steps are supported by IVU.elect, which has been developed since 2002 in cooperation with Germany’s Federal Returning Officer and has meanwhile been employed for more than 1,000 elections.



OPTIMISING DISTRIBUTION NETWORKS

Whether in a city like Berlin or in a rural area, a company always has to go through a process of strategic deliberations and calculations before it decides to open a new branch. Each single location decision influences the structure of the entire network of branches. To be successful, a new location must meet the requirements for a range of factors such as infrastructure, customer base, target group potential, and the competition situation.

Deutsche Post operates one of the largest branch networks in Germany. With some 29,000 sales outlets – post offices, sales points, and DHL parcel shops – it is represented in virtually every city, town and village. It is legally obliged to ensure that all residents have access to postal services no more than two kilometres from their home.

In order to be able to operate so many sales outlets and to gainfully employ so many personnel it is important to have a profound understanding of customer interests, the branch environments, and the local expectations. Already in 1996, Deutsche Post took the decision to use IVU.locate for the management of all these logistical processes in order to be able to meet the challenges they presented.

A sound basis for taking decisions

The solution provided by IVU combines micro-geographical data and data provided by Deutsche Post with external market and consumer data. The system also integrates information from local authorities, such as lists of vacant properties, as well as photographs and maps from a range

of sources – either commercial services or open source platforms. Taken together, all this information helps Deutsche Post to establish a sound basis on which to decide where new branches should be opened, or if necessary which branches should be closed.

For companies with networks of branches, information about locations can be important for their future prospects. Conditions are constantly changing – people move away from an area and others move in; student lodgings may soon house a family with children; new interests become fashionable while old ones disappear. All these changes influence demand. Only if companies know about such processes and adapt to them they will be able to maintain a successful network of branches in the future. ■

TARGETED ADVERTISING

Advertising is spread throughout towns and cities. Billboards, posters at bus stops, and digital infoscreens can be found in virtually every street, promoting new products and special offers. But if advertising is to be effective and reach the appropriate target groups, careful analysis has to be carried out in advance.

BILLBOARDS, POSTERS AT BUS STOPS, AND DIGITAL INFOSCREENS PROMOTE NEW PRODUCTS AND SPECIAL OFFERS.

Before the advertisers of Jost von Brandis recommend a new campaign for their customers,

they first decide who they want to reach. Then they use IVU.locate to generate an overview of precisely where the relevant target groups live. For example, if a retailer wants to promote special offers within a roughly defined area, the specialists can make use of the latest market data in order to exactly identify residential areas for the potential customers. Posters can then be located to target the relevant consumer groups.

In addition to market data, IVU.locate can also process spatial data, maps, and complex analytical material within one system – right down to the level of neighbourhoods and individual city blocks. By carrying out these high-resolution investigations, it is possible to characterise individual catchment areas and in this way determine the potential market for a given product. ■

LINKED KNOWLEDGE

Cities have always been centres of innovation and gathering points for scientific elites. The research carried out at universities, institutes and companies is essential in order to meet the challenges of the cities of tomorrow. Exchanges lead to new ideas being generated, solutions are found, and the foundations are laid for new

technological developments. IVU is also able to benefit from this. Located at the heart of Berlin, it cooperates closely with the most important institutions in order to continually improve its systems. In return, IVU supports research projects and promotes young scientists as an active contribution to this key centre of scientific activity.

BLIND IN THE CITY KNOWLEDGE CLUSTERS

When sighted people move about in a city like Berlin, they make use of all sorts of visual information, like street names, road signs, traffic lights, and road markings. But this is not an option for people with impaired vision. It is not even sufficient for them to know where they are. They need detailed information about their surroundings if they are to be able to proceed safely.

The m4guide research project has set itself the goal of making this information available. With funding from the German Federal Ministry of Economics and Technology, a route planning and navigation system is being developed for people with impaired vision which takes hazards and difficult sections of the route into account as well as short-term obstacles such as construction works. In addition, the system will offer precise positioning in public buildings, and allow multimodal routing which includes public transport.

IVU is contributing its technical expertise to the project in the fields of routing and navigation. For further information, visit the project website: www.m4guide.de. ■

With 39 public and private universities and colleges and more than 70 research institutions, Berlin has a unique science infrastructure. Tens of thousands of people work here every day on technological innovations and future-oriented developments. Particularly promising idea clusters have developed for the transport sector in Berlin – addressing all the problems faced by large modern cities.

With a long tradition dating back to its foundation in 1849, the Chair for Track and Railway Operations at the Technische Universität Berlin (TU) is today one of the university's most successful chairs in terms of its acquisition of third-party funding. As a mediator between research and business it plays an important role in the further development of rail transport. In numerous research projects, the scientists contribute to optimisation and the development of important solutions for public transport. The chair's Railway Operation and Testing Field (EBuEf) is a powerful tool for the realistic simulation of railway operations with IVU systems and for the training of future operational controllers.

A knowledge cluster of a special kind can be found at the EUREF Campus in Berlin-Schoeneberg. The European Energy Forum brings together offices, start-ups and think tanks with names like InnoZ, ubitricity, or Plugsurfing which are working on ideas for the cities of the future. These include

new transport concepts in addition to safe and reliable energy supplies. TU Berlin, the WZB Berlin Social Sciences Centre, and companies such as GE, DB, GASAG, Philips and many more contribute to the special innovative quality of the Campus.

An important source of impulses for software systems in public transport is the Zuse Institute Berlin (ZIB) an interdisciplinary research institute for applied mathematics and high-performance computing. The scientists there are working on the mathematical algorithms needed for the planning and optimisation of duty rosters and vehicle workings. The results of this work flow directly into the IVU systems, so that IVU customers benefit directly from the developments produced by Berlin's science network. ■

HEUREKA FOUNDATION

The Berlin Heureka Foundation works to promote sustainable, environmentally-friendly mobility. It supports individuals and research projects involved in planning processes and methods for transport planning. It awards prizes and supports conferences and meetings. A key aspect of the work of the Foundation is the Heureka Congress. Held every three years, this addresses topics relating to optimisation processes for transport and mobility systems.

INNOTRANS – LEADING TRADE FAIR FOR TRANSPORT

Transport and Berlin belong together. Not only because Berlin has such a well-developed public transport system, but also because more than 220 transport engineering companies are based here. Then in addition, there is the geographic location of the city with links to eastern and western Europe, and the numerous institutions from the fields of politics and science. All this makes Germany's capital the ideal location for an international trade fair which brings together representatives of the transport sector.

**2,700 EXHIBITORS AND
140,000 SPECIALIST VISITORS
FROM 100 COUNTRIES IN 2014**

Since 1996, InnoTrans has attracted companies from all over the world every two years to a show of the latest developments in freight and passenger transport, public transport, and logistics. Over the years it has developed into the more important international trade fair of its kind. Today, InnoTrans is a definite must in the business diary of everybody in the sector interested in identifying new opportunities and extending their network of contacts.

"With InnoTrans, we have the world's most important event in this sector directly on our doorstep. This is not only our home trade fair, but also a platform for personal exchanges", says IVU Executive Board member Dr Helmut Bergstein. "We can meet our customer and partners, conclude deals, and gain a feeling for current trends in the sector."

The Tenth InnoTrans held in September 2014 once again broke all records. More than 2,700 exhibitors and almost 140,000 specialist visitors from more than 100 countries underlined the continuing importance of the trade fair for the international transport sector. For IVU. Last year was also the most successful InnoTrans since its inception. Interested visitors from all over the world came to the IVU stand to find out more about the IT solutions offered for buses and trains. In addition to welcoming company representatives from Germany, IVU also received international guests from a variety of countries including Vietnam, Finland, and Turkey. ■



PROMOTING TOMORROW'S EXPERTS

The future of mobility depends on the experts who will plan it. In order to cope with the increasing complexity of the changing demands on mobility, there is a need for highly-qualified specialists. Transport scientists, sociologists, mathematicians and software engineers can all contribute towards finding innovative solutions for current and future challenges. In order to attract the best talents, it is important to interest young people in the topic of traffic and transport at an early stage. Therefore IVU participates in a range of initiatives and cooperates closely with universities and colleges.

The beneficiaries of IVU involvement include students of the Technische Universität Berlin (TU). Thanks to IVU's financial and technical support, the university's Railway Operation and Testing Field makes it possible for students to gain hands-on experience in controlling railway operations. IVU also provides financial support for student excursions to public transport companies.

IVU takes part in the national Girls' Day, which offers schoolgirls an opportunity to develop an interest in technical occupations and to find out more about career opportunities offered by the natural sciences, engineering and the IT sector. Every year, girls visit IVU to talk with female employees about their experience working as software and project engineers. Because there is still a shortage of computer scientists in Germany, IVU also supports the initiative "Study Computer Science!" of the Ernst Denert Foundation for Software Engineering. This work helps to ensure that there will be sufficient numbers of experts to develop the systems with which transport companies will be able to provide efficient services for the cities of the future. ■

USING KNOWLEDGE

Berlin is the political centre of Germany. Nowhere else in the country are there such close ties between politics, business, and science. Numerous associations take advantage of the potential of this knowledge network in order to promote their interests. These include many representatives of the transport sector.

**'ALLIANZ PRO SCHIENE' –
21 NON-PROFIT BODIES AND
MORE THAN 120 COMPANIES
FROM THROUGHOUT THE
RAILWAY SECTOR.**

Since it was founded in 1908, the German Association of Transport Sciences (DVWG) has been engaged in promoting interdisciplinary exchanges on all forms of transport and discussions between representatives of science, business and policy-making. The Association now has some 2,700 members, including IVU.

An important role is also played by the associations of the individual transport sectors. They provide a platform for exchanges between members as well as lobbying for the interests of the sector with policy-makers. IVU is a member of the German Railway Industry Association (VDB) and is a supporting member of the Association of German Transport Companies (VDV), which is also represented with an office in Berlin.

Founded as a political lobbying alliance, 'Allianz pro Schiene' represents 21 non-profit bodies and more than 120 companies from throughout the railway sector. The declared goal is to achieve a significant increase in the rail sector's share of the transport market in Germany. IVU shares this goal and therefore it joined the alliance in 2014. ■



BERLIN AND ITS TRANSPORT NETWORKS UNTIL 2030

Guest article by **Prof Jürgen Siegmann**, Chair of Track and Railway Operations Institute of Land and Sea Transport Systems, Technische Universität Berlin

Berlin is fortunate to have a well-developed network for road, rail and waterways which has been further improved in recent years. Nevertheless, work remains to be done if the city's networks are to be fit for the transport needs of 2030.

Road network

Berlin already has a good road network with the semi-circular A100 city autobahn and radials accessing the centre. However, the capacity of the roads in the city is often limited by double parking, which Berliners mostly seem to tolerate. In order to promote intermodal traffic through until 2030, the network of cycleways should be completed – the situation in Berlin is favourable for this. The bus lanes are also already good, although their potential cannot be fully realised because they too are frequently obstructed by parked vehicles and cyclists. It would be helpful if the coordination strategy for traffic lights could be augmented so that 'green wave' switching was not only provided for motor vehicles but also for cyclists and pedestrians. The car drivers of the future will benefit from a much better parking situation. There will be increased controls, a clamp-down on double parking, and in general there will be greater respect for the rules of the road.

Rail network

By 2030, the transport axes of the Trans-European Network will lead to more rail freight traffic. In order to cope with this, the inner and outer rail rings around Berlin will have been upgraded. The trend towards urbanisation will not have left Berlin unaffected and the public transport system will face new challenges. The conversion of the urban railway system (S-Bahn) to alternating current must no longer be regarded as a taboo topic (Berlin and Hamburg are the only cities where DC systems are still in use). An additional

'SX' system could be introduced as a rapid regional train service operating with short headways like the urban rail trains. An urban rail service on the eastern outer ring could also prove beneficial. As a result of measures to improve the reliability of the existing network, with new rolling stock and new control systems, Berlin's S-Bahn urban railway will have established itself by 2030 as an outstanding public transport system. The VBB tariff system has proved its value and is a model for other regions.

Travellers coming from the eastern parts of Berlin in 2030 will hopefully be able to travel on the U5 underground line via Alexanderplatz and Brandenburger Tor to Turmstrasse in the west and later also on to Tegel. From Hauptbahnhof railway station, a tram will provide a link to the former airport. In general, Berlin's tram system should be extended in the western city districts. For example, Kreuzberg and Potsdamer Platz could then be integrated into the existing network.

Ship transport

Berlin has a well-developed network of waterways. The docks in the Berlin region will therefore still be in use in 2030 for the transport of bulk freight (e.g. demolition waste and construction materials) from and to construction sites in the inner city. Tourist boats on the River Spree will be more attractive for tourists and residents of Berlin, and a waterbus will be operating seasonally on a circular route along the River Spree and Landwehr canal.

The concept of freight villages (GVZ) in Grossbeeren and Wustermark on the periphery of Berlin has proved successful and will be promoted further. In addition to these two locations, Berlin's Westhafen docks will also have been converted into a city freight centre by 2030.

With these new measures, among others, Berlin will be able to prepare its transport network for the future. But the existing systems also have reserve capacities which can be exploited by modern management and control. ■

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