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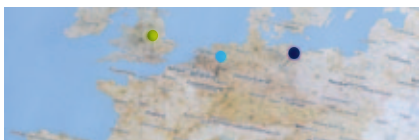
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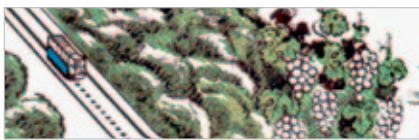
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We are celebrating

MEGACITIES

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 to megacities with populations in excess of 10 million. These large cities face major challenges in particular when it comes to providing public transport services. Currently, the world population is about 6.9 billion. Through until 2015 this figure will increase by some 79 million annually according to the estimates issued by the UN. In 2007 it was announced that the numbers of people living in cities exceeded the world's rural population. By 2030, the UN reckons that 60% of the world's population will be city dwellers, and by 2050 this figure will have increased to more than 70%. The traffic levels generated as a result of this massive population increase will require cities to make considerable investments to ensure that they have viable transport systems for the future. It has become more important than ever to give thought to mobility of tomorrow.

Cities are becoming increasingly important as working and living spaces for millions of people, and they are important centres of national economic activity. They are the focal point for industry and commerce, as well as for cultural life. The megacities are the pulsating hearts of nations with enormous population densities. And 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. In Germany alone, the use of buses and railways instead of road vehicles reduces emissions by approximately 15 million tonnes CO₂ per annum. This corresponds roughly to the total CO₂-emissions from all the households, factories, and traffic of a city such as Hamburg. Public transport not only moves people but also makes a key contribution to maintaining and improving the quality of life in the metropolises.

'Vibrant cities' and 'mobility' are a concern for the entire transport and logistics sector, but also for urban planners. Internationally, the development of the transport systems of the future is inseparable from detailed infrastructural and geopolitical urban planning. More and more cities are developing comprehensive general strategies. It is no longer possible for traffic to be controlled by dispatchers with clipboards. Organising expanding 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.

Our new corporate identity is an indication that we too are 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.



IN COTTBUS THE COMPLETE IVU.SUITE IS NOW IN USE

Whether for planning, scheduling or for the operational control of its public transport services – in future Cottbusverkehr GmbH will be using the entire IVU.suite. With an order for 70 on-board computers and the associated IVU.cockpit software, the German transport company now has the complete IVU system family in use. IVU.suite will in future control all 38 of the Brandenburg company's bus and tram lines, carrying some 11 million passengers annually. The systems of the IVU.suite were also able to convince the Cottbus public transport company (Cottbusverkehr GmbH) with regard to personnel dispatching. Currently, the new graphical automated personnel dispatching (PDI) is being introduced, which provides the dispatching personnel with a modern, functional duty sign-on list.

With an uncluttered presentation and colour coding, the new PDI offers a rapid overview of drivers currently signing on for duty. Intuitive user interfaces and the option for the electronic registration of driving hours will make it even easier in future for dispatchers to plan duty schedules. With modern on-board computers, functional software for speech and data communications and control of the vehicle IT, as well as the new graphic personnel dispatching, Cottbusverkehr GmbH is once again adding to its system solutions from the IVU.suite. And their decision is based on good experience, because for years the public transport company has been successfully using IVU.plan, IVU.fleet and IVU.realtime to plan, control and optimise its operations.



Martin Müller-Elschner, CEO

Dear Readers,
Dear Customers of IVU,

Our customer newsletter is now called 'IVU News' – and it is presented in a new layout. We have revised our entire corporate image, including the IVU logo, which now reflects the focus of our activities. It was not easy for us to replace the 'three bars' which have been associated with IVU since it was founded in 1976. But just as our systems are constantly growing to meet the demands of our customers, so our company has also evolved over this period.

Though we have not changed completely, the increased numbers of new customers from all over the world in recent years mean that we have grown and become more international. Our slogan 'Systems for vibrant cities' describes our increased responsibility, which very often extends well beyond the delivery of software modules. You can renew your acquaintance with us by visiting our website or our stand at InnoTrans (Hall 2.1, Stand 122), and of course in this issue of 'IVU News'.

As the name promises, we have brought together interesting news about us and our projects in this issue. Take a look in on the Aachen workshop, or read about the use of our systems in Schwerin, Zurich or Buenos Aires. An article about our User Groups demonstrates the importance we attach to the needs of our customers. Perhaps you might also be interested in making a contribution to future developments?

I hope you enjoy reading this issue.

IVU NEWS – A MAKEOVER FOR OUR CUSTOMER NEWSLETTER

Our customer newsletter has not only been given a different layout – a number of changes have been made when it comes to the contents, too. In the five new sections you will find interesting articles relating to our work as well as to broader topics.

Under the headings Development and Projects we will regularly be taking a look at the work that is going on behind the scenes at IVU. We will also be presenting our latest projects, further developments, and new customers. The Panorama section offers a wider view of distant countries and cultures, unusual transport technologies, and other interesting items from all over the world. Topics relating to logistical challenges and solutions can be found in the Logistics section. And if you would like to know more about our team, under the heading Insight you will find reports about IVU activities away from the keyboards and source code.

Any tips, comments and suggestions for future topics from our readers are of course very welcome. Just send an e-mail to madlen.dietrich@ivu.de.

ARGENTINA

POPULOUS TRADING CENTRE AND LAND OF THE TANGO



Buenos Aires

Covering some 2.8 million km², the Republic of Argentina is the second largest country in Southern America. In terms of population it is the third largest on the continent. The capital city of Buenos Aires is one of the world's leading cultural centres and at the same time the largest agglomeration in South America. The city and the province of Gran Buenos Aires have a total of some 13 million inhabitants. The next-largest provinces of Córdoba and Santa Fé each have some 3 million inhabitants, so that more than 60% of the population of Argentina live in these three central areas. The other parts of the country, which are often very arid, are only sparsely populated.

The name Buenos Aires is derived from the patron saint of seafarers, Santa Maria del Buen Ayre (Saint Mary of the Fair Winds). The name was chosen by sailors in gratitude for the favourable weather conditions which aided their safe journey there. Buenos Aires remains Argentina's most important sea port and the centre of the country's trade. All the most important national institutions are to be found there and the city and its surrounding areas are the home of more than a third of all Argentines. Often called the "Paris of South America", the culture of the capital city is very European in character. There are numerous museums, art collections, libraries, a zoo, botanical gardens and architecturally impressive churches and religious buildings. It was from here

that Tango began to spread all over the world.

With some 1 million inhabitants, Rosario is the third-largest city in Argentina after Buenos Aires and Córdoba and it is a very important industrial centre. Situated 300 km north-west of Buenos Aires, on the western bank of the River Paraná, Rosario lies at the heart of the country's key industrial corridor. In particular, products from the north of the country and from Bolivia are shipped downriver from here.

The large sea ports, trade and industry, a high population density and the tourist attractions make the cities of Argentina into pulsating agglomerations for which efficient public transport is vitally important.

Planning with IVU now also in Argentina

Following on after transport companies in Chile and Colombia, RosarioBus in Argentina has now also chosen in favour of the software of IVU Traffic Technologies AG. In future, bus services in Rosario and Buenos Aires will be planned and optimised using the IVU.suite. The RosarioBus Holding, which is responsible for public transport in this region, has placed an order with IVU for IVU.plan and the accompanying optimisation tools.

RosarioBus will be using IVU.plan in place of its self-developed planning software in order to be prepared for future expansion. In a first step, the



operation in Buenos Aires with more than 200 buses is to be equipped with the new software. In all, the company operates a total of 1,100 buses, and this number is due to be increased in the near future after winning additional concessions. In order to be able to deploy so many buses efficiently in all the regions, it is important to have powerful planning software which above all has proven reliability.

Also in Argentina IVU's software engineers have faced special country-specific challenges. For example, the numerous legal restrictions allow local bus operators little scope for flexibility and often make the route planning very difficult. In order to make the best possible use of the cost-intensive resources, a planning system was needed which is capable of meeting all the legal requirements and which fulfils specific operational needs, but which nevertheless ensures efficient duty scheduling and timetable planning. The solution is called IVU.plan.

"With modern technology and worldwide experience we now have also convinced customers in Argentina," commented a pleased Dr. Helmut Bergstein, Member of the Executive Board with responsibility for the South American business. "We are proud that with our software and our knowledge we can contribute to the advancement of public transport in the major cities of the world."

WHAT'S HAPPENING AT IVU?

Evolution rather than revolution –
Head of Development Dik Lokhorst and his team rely on flexibility and value retention

The speed with which the IVU.suite became reality was mainly due to Dik Lokhorst and his group of architects in Aachen und Berlin. As founder and head of the architects group, Dik Lokhorst ensures that the products of the IVU.suite operate together smoothly and efficiently. In order to achieve this, the systems of the IVU.suite are broken down into their individual components, which can then be assembled to provide customised solutions in accordance with customer requirements. The right solution can be provided for every company – whether large or small. And this development philosophy is applied in all the IVU systems.

The flexibility of the IVU products is demonstrated in particular in the case of fleet management. Currently some 3000 vehicles can be controlled using IVU.fleet, and the aim is to double this number in the coming year. But despite the increasing complexity of the systems, Dik Lokhorst and his team make sure that the IVU solutions remain attractive for smaller fleets, and for vehicles which are not in continuous operation. This is achieved by combining functionalities in further individual

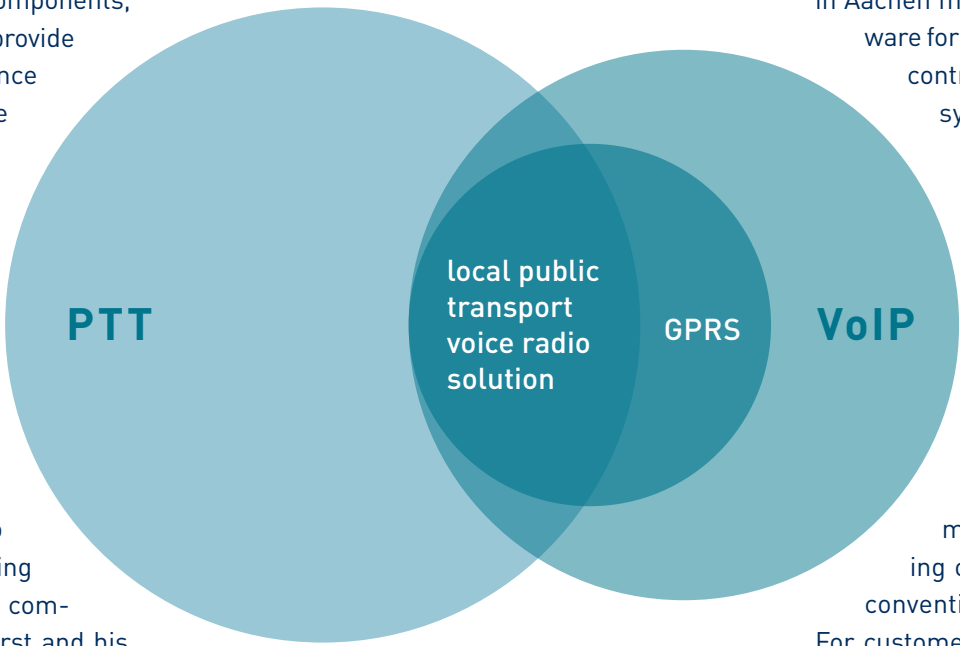
components. In addition to the normal user functionality, additional expert functionalities are available which can be integrated as required. In particular in Europe there is considerable demand for such highly specialised functions. In addition to the size of the customer's company,

are currently operating with the systems of the IVU.suite. And in some cases the on-board computers have already been in operation for more than 15 years. A fleet of vehicles may well be using several generations of equipment. And in order to guarantee that the value of this hardware is retained, the development team based in Aachen makes sure that IVU.cockpit, the software for communications, data exchange and control of the vehicle IT, supports all the systems used by the customer.

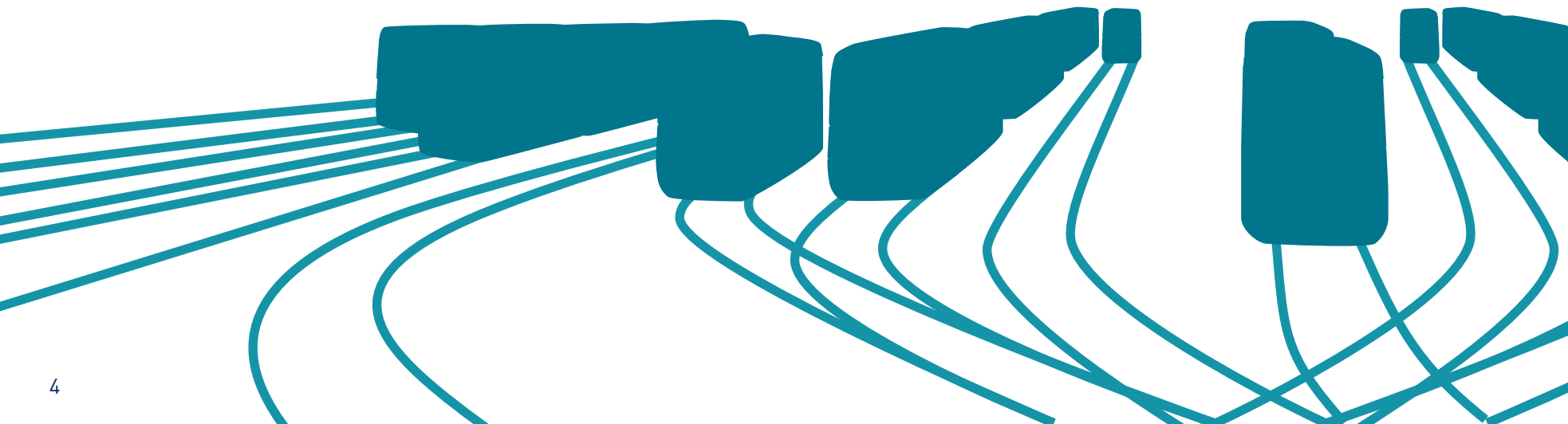
'Evolution rather than revolution' is the maxim of the engineers. This means that IVU.cockpit not only runs under Windows CE and Linux, but also with other operating systems.

The same applies for the IVU.fleet operational control system. Even though this is now one of the most modern systems on the market, it still operates with existing on-board computer generations and conventional communications processes.

For customers, this offers a considerable financial advantage because it makes it possible to introduce new hardware in stages, while still being able to introduce the latest software systems.



the age structure of the existing software and hardware is a further factor which the IVU engineers have to take into account in their development work. More than 10,000 vehicles



Development highlights

The new IVU.fleet operating control system for the first time allows group calls using public networks. This means that the dispatcher can communicate with a number of drivers at the same time. In the past this could only be achieved by setting up costly private networks. With VoIP over GPRS this is possible at much lower costs using public networks. PTT/VoIP over GPRS offers all the functions of conventional analogue voice and data transmission, with excellent sound quality and widespread area coverage. In addition, voice and data transmissions are possible simultaneously with the new digital system. IVU is the only system producer so far to have introduced this new communications system in its products. All the bus drivers of MVG Mainz now communicate using PTT/VoIP over GPRS.

The software engineers in Aachen have also made important further developments 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. But here too the developers have made sure that the system is also attractive for smaller applications. A compact solution is available for the transmission of current vehicle positions and anticipated departure times. Additions can be

integrated in the system at any time subsequently in order to meet more complex requirements.

With regard to ticketing, Dik Lokhorst and his team make sure that the systems are always up to the latest standards and that the ticket purchases are as convenient as possible both for customers and the service providers. A new feature added to the ticket vending and accounting system IVU.fare can provide personalised tickets and administer season tickets. For example, concessionary electronic ticketing is now possible in combination with the personal ID cards held by students or the elderly. In addition, the user interface of the ticketing background system (tariff administration and fare management) has been redesigned and is now considerably easier to use. A further addition is the IVU.validator for access control, validation of electronic tickets, and also as a POS terminal. All systems are designed for a working life of 10 years or more, so that they represent a sound investment which will retain its value over the long term. This is part of the evolutionary approach adopted by IVU and it means that equipment is not made obsolete by the introduction of a new generation. The modular structure of the systems has been adopted throughout so that it is easily possible to add or exchange modules at any time, ensuring the long-term operability of the software and hardware.



Dik Lokhorst
is head of product development
and a manager of IVU

GLOSSARY

- **VoIP:** Voice over Internet Protocol delivers telephony services via computer networks such as the Internet. Voice communications are converted to digital format and transmitted in IP packets.
- **GPRS:** General Packet Radio Service is the packet-oriented service for data transfer in GSM and UMTS networks.
- **PTT:** Push-To-Talk is a method of conversing via communication systems equipped with a button to switch from voice reception to transmission mode. This means that the communicating parties do not talk at the same time. Particularly with group calls, this technology can reduce background noise.

NO MORE MISSED CONNECTIONS



By tram to the bus: No more missed connections thanks to IVU Systems (Source: Nahverkehr Schwerin GmbH)

For many years, Nahverkehr Schwerin GmbH (NVS) has successfully been using the systems of IVU Traffic Technologies AG to control and optimise the public transport in Schwerin, state capital of Mecklenburg-West Pomerania. In order to further improve the quality of the services it provides for its customers, Nahverkehr Schwerin GmbH has now also placed an order with IVU for the complete software for its ITCS control centre. This means that in future NVS passengers will not only be better informed but will also be able to reach connections more

easily, and also make cashless ticket purchases. An important objective of NVS is to continually improve the quality of its public transport services. In future, they not only want to show their passengers the departure times from a particular stop or station, but also to provide information about connections further along the line, and any changes to operations. The improved information about connections means that, if necessary, passengers will be able to alter their route during their journey, thus considerably reducing any possible delays. And in future it will

also be possible to purchase tickets on buses and trams easily and conveniently using a bank debit card.

Communications between drivers and the control centre will also be improved. The old analogue radio links will now be replaced by powerful UMTS mobile systems for data exchange and speech via VoIP. The increased rate of data transfer means that information will reach the dispatcher much sooner, and agreement can be reached with the drivers more quickly. Using the new technology, the control centre will be informed directly about the location of the vehicles and can react more flexibly to interruptions in services.

A new feature included in the IVU system is the monitoring of breaks and operating periods. In future, the operators will not only be able to optimise the vehicle schedules, but will also be able to ensure more effectively that drivers are complying with the rest periods required under health and safety legislation. This means that a quick check will show whether a driver is available for the next assignment, or has not yet completed a statutory rest period.

Test operations with the control system will begin towards the end of the year. All 30 trams and 40 busses of NVS will then be equipped with the necessary software and hardware from IVU.

IVU.DEVELOPMENT

PRODUCT DESIGN WITH THE CUSTOMER

The IVU User Groups



Hartmut Reupke (BVG)

With constantly growing numbers of people living in the world's cities and steady technological progress, passengers also have rising expectations concerning public transport. Punctuality, extensive information, and the highest level of flexibility and convenience are only

some of the demands which public transport operators face every day. They can receive support from the systems of the IVU.suite, which are also constantly being developed to meet the growing requirements of public transport. IVU set up the User Groups in response to an initiative of the public transport companies in Berlin and Cologne (BVG and KVB) in order to make sure that the IVU.suite is always able to stay close to customer needs.

Customers come together in a User Group to work with a representative of IVU on a topic of interest relating to the IVU.suite. They develop new ideas on product design and contribute their experience gained in daily operations. Since February 2009, User Groups have been working on topics such as statistics, personnel disposition, and usability. At the start of this year, a further User Group was set up for the broad field of optimisation and this successfully began its work with a first joint meeting in April in Wiesbaden. IVU has made an online forum available for communica-

tions and the presentation of the results of the User Groups. So far this year, there have already been 60 new registrations, which is evidence of the level of interest shown by IVU customers. Since users often find themselves confronted with the same problems during their daily operations, the User Groups also provide a platform for the exchange of experience and for discussions about practical matters. This means that solutions can be found much more quickly and adaptations made to meet the requirements of all customers.

CONTACT USER GROUPS

If you are interested in joining one of our User Groups or would simply like to find out more about them, Florian Geldner would be glad to help: florian.geldner@ivu.de, T +49.30.859 06-507

ZURICH TRANSPORT CHOOSE IVU.CREW – THE MODERN PERSONNEL SCHEDULING SYSTEM



A modern standard product, already used worldwide by various large public transport companies, and which is able to take individual requirements into account – this was what the Swiss public transport organisation Verkehrsunternehmen Zürich (VBZ) wanted for their new personnel scheduling system. Individual duty planning was also particularly important for VBZ. They have now found what they were looking for with IVU.crew, the modern personnel scheduling system from IVU Traffic Technologies AG.

IVU.crew will in future combine personnel scheduling with the possibility for individual duty planning and a new appointment administration function. IVU was able to impress in particular with its automatic personnel scheduling. In Zurich they were delighted by the innovative planning options, the flexibility offered to the dispatchers, and a much simplified system for including drivers' requests when planning duty

schedules. VBZ's 1,300 drivers can now not only enter which duties they would prefer, but they will also receive automatic reminders about important appointments, for example tests and visits to the doctor. So that they will not have any

“The most important thing when choosing IVU.crew was that the new personnel scheduling can integrate special requirements such as individual appointment management and our holiday points system”

conflicts with their work, all appointments are included directly in the system plans and sent to the driver as a PDF file. The Swiss holiday points system is also integrated directly in the personnel scheduling with IVU.crew. Each week of the year is graded according to its popularity and the holidays for each driver can be allocated on the basis of the sum of their week-points. The system is designed to make holiday planning much

easier, and the calculations involved in this can now also be carried out by IVU.crew.

Via standard VDV interfaces, IVU.crew can be integrated in VBZ's existing system landscape easily and without complications. As soon as the new personnel scheduling system has demonstrated in a pilot scheme that it can meet all the specified requirements, a period of trial operations will begin. And in Summer 2011, IVU.crew will be introduced in all the VBZ public transport depots.

“The most important thing for us when choosing IVU.crew was that the new personnel scheduling can integrate special requirements such as individual appointment management and our holiday points system,” explains Ms. Thomet, project leader at VBZ. “It is important for us that the duty scheduling is not only made easier for the dispatchers but is also as convenient as possible for our drivers.”

BVG-FAHRINFO THE THIRD DECADE OF PASSENGER INFORMATION



A success story by Andreas Mürer

When the BVG set up the first MS DOS-PCs in its customer centres at the start of the 1990s, nobody could have guessed where this would lead to. At that time, the possibility of being able to calculate hundreds of journeys every day without having to plough through timetable books or learn every detail of network plans excited not only the IT experts. The staff working at the information counters were delighted too when they found that they were able to respond to customer enquiries more easily and much quicker.

In the following years it became possible for the first time to make timetable information more widely available in electronic form on floppy disks and CD-ROMs. Produced in large numbers, these reached a much wider and steadily growing group of users as PCs became more widely available.

With Internet connections becoming more common in private households, the first version of the BVG's online timetable information service went into operation in 1997. At the time, this was only intended to augment the existing media and it was expected that it would only have a

comparatively modest number of users. But the explosive growth in the numbers of people with access to the World Wide Web in the subsequent years there was also a continuous increase in the numbers using the online timetable information

In contrast to other information portals on the Web, the timetable database of BVG-fahrinfo is revised regularly – often several times a week.

service. At times the growth was so rapid that it was difficult to upgrade the server hardware quickly enough. The success of BVG-fahrinfo was due primarily to the frequent updates, the attractive Internet information platform, and in particular also to the quality of the data, which had been a priority right from the start. In contrast to other information portals on the Web, the timetable database of BVG-fahrinfo is revised regularly – often several times a week. This is the only way to ensure that customers can be informed promptly about short-term alterations or unexpected changes. The users of BVG-fahrinfo know that they can rely on the high quality of the information. Since the introduction of the online portal,

the numbers accessing it doubled about every 18 months. And since mid-2009, BVG-fahrinfo has regularly had more than 100,000 visitors a day. On New Year's Eve – traditionally the day with the greatest volume of enquiries – more than

140,000 visitors made use of the timetable information service developed by IVU. In parallel to the increase in the numbers of users, BVG-fahrinfo also grew in terms of the functions it offered. On the

basis of IVU.journey, which uses the tried and tested HAFAS computing kernel for journey optimisation, a series of additional applications were developed in cooperation with the BVG's own experts. In addition to the basic timetable information, BVG customers can now also obtain a wider range of accurate information relating to their planned journey. In particular, this includes the electronic city map, which is now accessed about 5 million times every month. The graphical presentation offers the traveller relevant information in the usual corporate style of BVG. As well as integrating timetable information, the city map also includes details about the stop or station, updated departure times, location maps, sales

points, and it can show the nearest stop to any given address. Information can be accessed simply by clicking on any individual stop or station.

A further information module integrated in BVG-fahrinfo contains an integrated S-Bahn urban rail network and can show at a glance if any lifts or escalators are out of order at connecting stations. This is an important addition to the barrier-free timetable information service introduced in 2008 for people with restricted mobility. Another module with links to the BVG-RBL public transport companies makes it possible to find out the actual times of departure for all BVG bus and tram stops. It not only provides the departure times of trains and buses on the basis of the current timetable, but also informs passengers about any delays or cancellations. A further module can create personalised PDF files containing either the timetable information on display at the stops or a personal timetable for selected connections so that users can carry their own personal timetable with them during their journey.

In 2008, the technical advances in mobile telecommunications led to a further development. Already in 1999 a basic WAP information module had been introduced which made it possible to call up simple journey connections using the first internet-capable mobile phones. As the new generation of mobile phones became increasingly common a mobile XHTML Website was created under <http://mobil.BVG.de> which offered all the core functions of BVG-fahrinfo. Since its introduction this service has become increasingly popular. Starting from about 1,000 users daily, the mobile timetable information service expanded in just more than a year by some 70 %. It now generates a volume of more than 200,000 enquiries a month. An advantage of the mobile information platform is that it can be used to determine the actual

departure times from any stop or station in the city, wherever and whenever – a service which is currently being used some 100,000 times a month.

Now in its third decade, the BVG-fahrinfo has matured rather than growing old. There will continue to be new challenges to be faced, calling for solutions which satisfy the changing needs of customers. The statistics show that current rates of use are the equivalent of each of Berlin's 3.6 million residents, from new-born babies to centenarians, using BVG-fahrinfo once a month. With the support of IVU, the Berlin transport company BVG will continue to be able to offer its customers an information platform which is a model of scope, quality and actuality. Because it is supported by IVU.journey, a modern IT system which has already established a fine international reputation.



ONLY THE FEDERAL POLICE RAN FASTER

The 2nd Potsdam Company Relay Race gave IVU the opportunity to show that it not only has a strong team for the development of new software solutions. With a combined time of 01:10:42 over a 4x4.9 km course, the IVU team came second overall – beaten only by the Federal police team, which was 1 min 32 seconds faster.

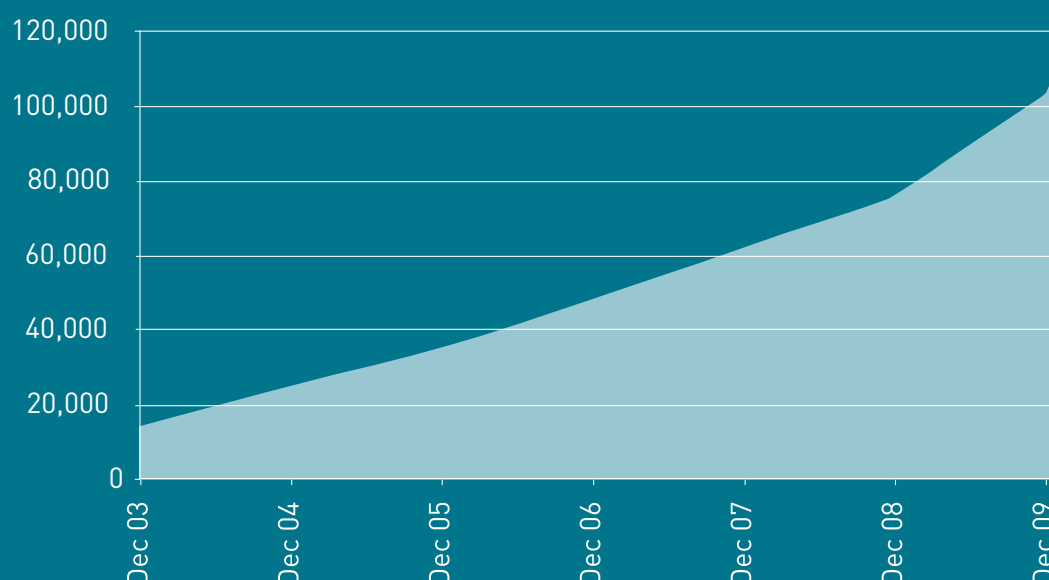
Under the slogan 'Achieving more together', DAK health insurance invited companies from the Berlin-Brandenburg region to take part in the relay race in the Potsdam BUGA Volkspark on 23rd June. In addition to 1,000 active participants, a further 2,000 guests came to cheer on their colleagues. Matthias Jandrig, Kevin Kröhnert, Henry Jobst and Stefan Meissner represented IVU in the race. As well as achieving second place with the team, Stefan Meissner also came fourth in the individual competition, proving that software engineers are not only effective when developing IT solutions.

But this event is not only concerned with the best sporting performances. In addition to team spirit and the experience of running together, the Potsdam company race also takes creativity and inventiveness into account. Some of the less athletically ambitious teams sported amusing claims such as 'The longer we take, the more we advertise', or wore unusual costumes, gaining the applause of the onlookers and a place on the winners' rostrum.

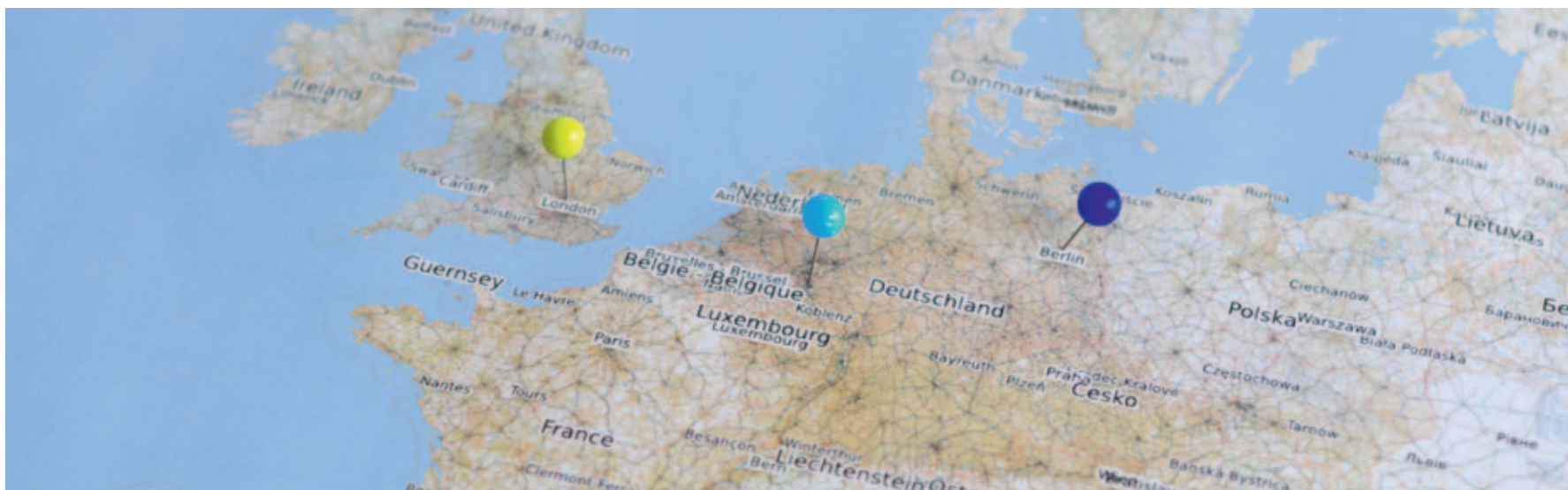
We congratulate our runners!



BVG FAHRINFO – VISITORS PER DAY



GLOBALISATION CALLS FOR WIDER-REACHING GIS SOLUTIONS



The process of urbanisation is spreading continuously all over the world. In search of employment and a better quality of life, more and more people are migrating from rural areas to the cities. The urban agglomerations are growing inexorably. Huge consumer markets are developing in densely populated areas and these are hotly contested in all sectors of business. Choosing the right locations and targeting selected customer groups are key factors influencing commercial success. Geo-datasets continue to provide the basis for expansion, branch locating and media planning. Prepared in a targeted way, and then analysed and visualised, the information provides a sound basis for a wide range of business decisions.

The growing competition in the urban centres leads to growing demands being placed on GIS

functionalities. Increasing amounts of data about businesses, locations and markets have to be included in the analysis process. But in addition GIS solutions have to be easy to use and should also be available in as many languages as possible for globally operating companies. The integration of inexpensive datasets and the ability to adapt flexibly to the requirements of specific sectors and groups of customers are further requirements which are influencing developments. There is a growing trend towards web-based GIS applications on the basis of map databases for which no licence-fees have to be paid.

Many users are already familiar with using Internet map services such as Microsoft Bing Maps or Google Maps on a daily basis. GIS services and applications are already essential in many sectors. The majority of

users today are no longer specialists. They come from all occupational fields, are experienced with computers and use Web-GIS applications intuitively. Therefore in all sectors there is a demand not only for full-scale applications but above all for Web-GIS services which can be used quickly and easily and which lead in a targeted fashion to the required results.

IVU has responded to this trend with a Web version of its established geomarketing system IVU.locate which offers its customers an easy-to-use alternative. Local installation of the software is no longer necessary. Through the Web browser the user can directly access the GIS service which previously was made available on the Intranet. The Web version of IVU.locate now also offers

non-experts a convenient analysis tool which can be specially tailored to meet the specific requirements of the customer by means of reducing the functionalities. The results of the analysis can also be presented in all necessary languages, so that the worldwide use of the GIS services is possible. IVU.locate.web has already proved particularly useful for planning expansions in retail trading. Every day, IVU-Web-GIS responds to questions concerning transport connections, customer structure, purchasing power, or also to consumer habits and competitors in the catchment area. With tailor-made analytical methods and a clear presentation of results, the IVU system supports the customers in their search for

IVU.locate.web offers worldwide location planning even for non-experts

the ideal locations. The results are also visualised on maps, and presented in a summary in the relevant local language. The as-

essment of potential or existing locations worldwide is thus made much easier.

In order to make their GIS solutions even more attractive, IVU and others are increasingly integrating the map data of OpenStreetMap-Community (OSM), which has established a reputation in particular for being up to date. The maps are revised daily by members of the community so that there is no need for other time-consuming up-dating procedures. The maps are detailed and effective. Rapid processing and display and cross-border utilisation present no problems. The avoidance of licence fees means that the costs of Web-GIS services are considerably lower so that they are also suitable for smaller applications.

IVU.LOCATE.WEB (FILIALINFO WEB) OFFERS:

- Easy and intuitive to use even for non-experts
- Convenient and rapid access via web browser
- No need for local installation of full version
- Targeted use of required GIS functionalities
- Customised analysis methods
- A clear presentation of results

THE NEROBERGBAHN FUNICULAR RAILWAY

A special kind of travel experience in Wiesbaden

An unusual mode of transport and a symbol of German engineering skill can be found in Wiesbaden, the capital of Hesse, where the ESWE Verkehrsgesellschaft mbH operates the second-oldest water-ballast funicular railway in Europe.

For more than 120 years, the residents of Wiesbaden and their guests have been able to travel between Nerotal and Wiesbaden's Neroberg hill using an historic mode of transport – the Nerobergbahn funicular railway. Operating with the same technology as in the days of Kaiser William, the two yellow-blue carriages travel the 440 metre route to the top of the Neroberg in only 3.5 minutes. The daily journeys from the base station over the viaduct to the hill station at an altitude of 245 metres involve gradients of up to 25 percent.

The special feature of the Nerobergbahn funicular is the almost unique use of water ballast.

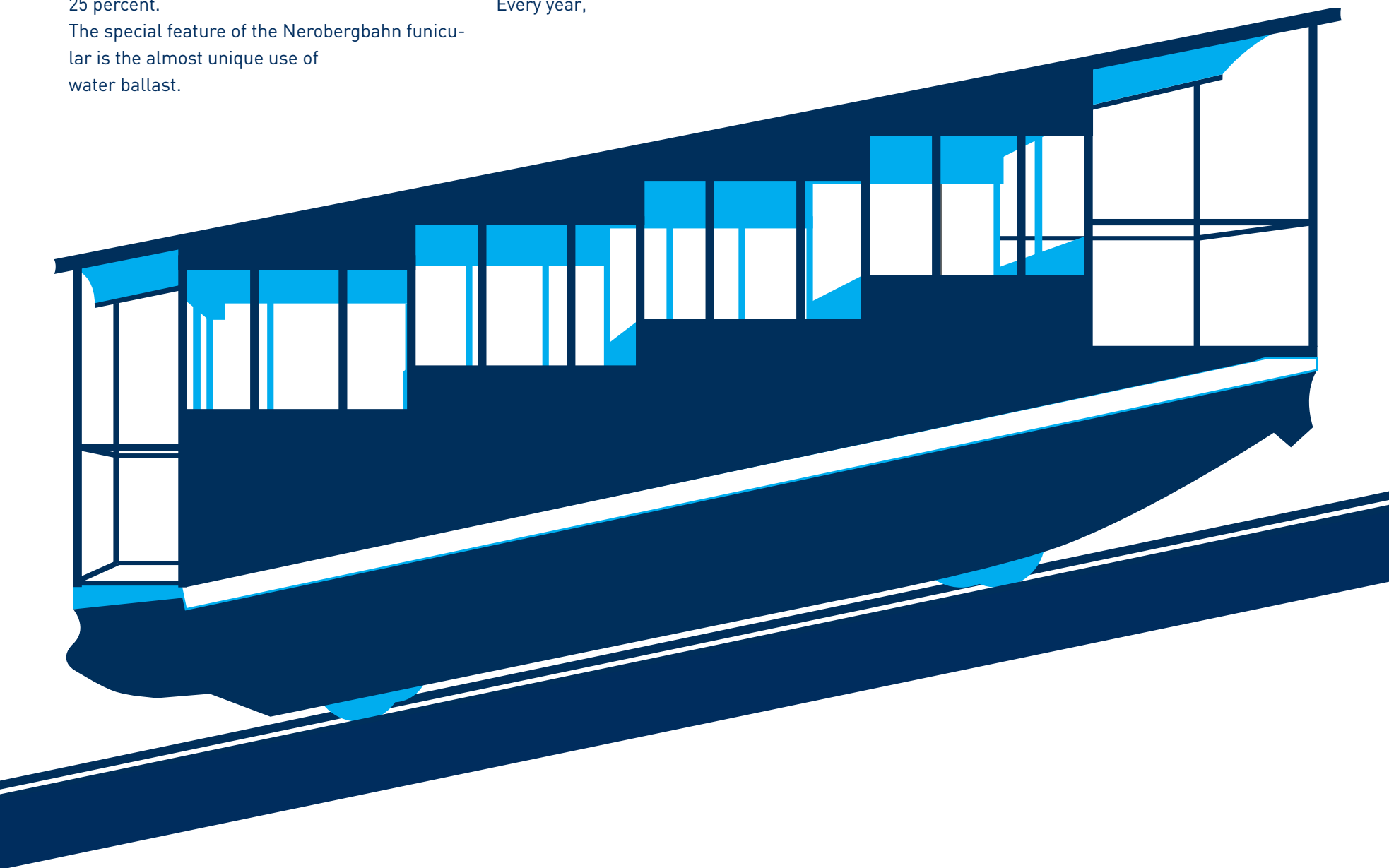
The two carriages are connected by a 452 metre cable and the tank of the carriage at the hill-top station is filled with up to 7,000 litres of water from two reservoirs on the Neroberg hill. The exact amount of water used can be adjusted to the nearest litre according to the numbers of passengers in the two carriages, so that the downward carriage is heavier and as it descends can pull up the lighter upward carriage. When the carriage reaches the base station, it passes over a bracket which opens a valve on the water tank and this automatically empties. The discharged ballast water can be pumped back up to the reservoirs on the Neroberg hill at a rate of 60 cubic metres per hour. The principle is similar to that of a lift: the load of the passengers is raised by means of a counterweight.

Every year,

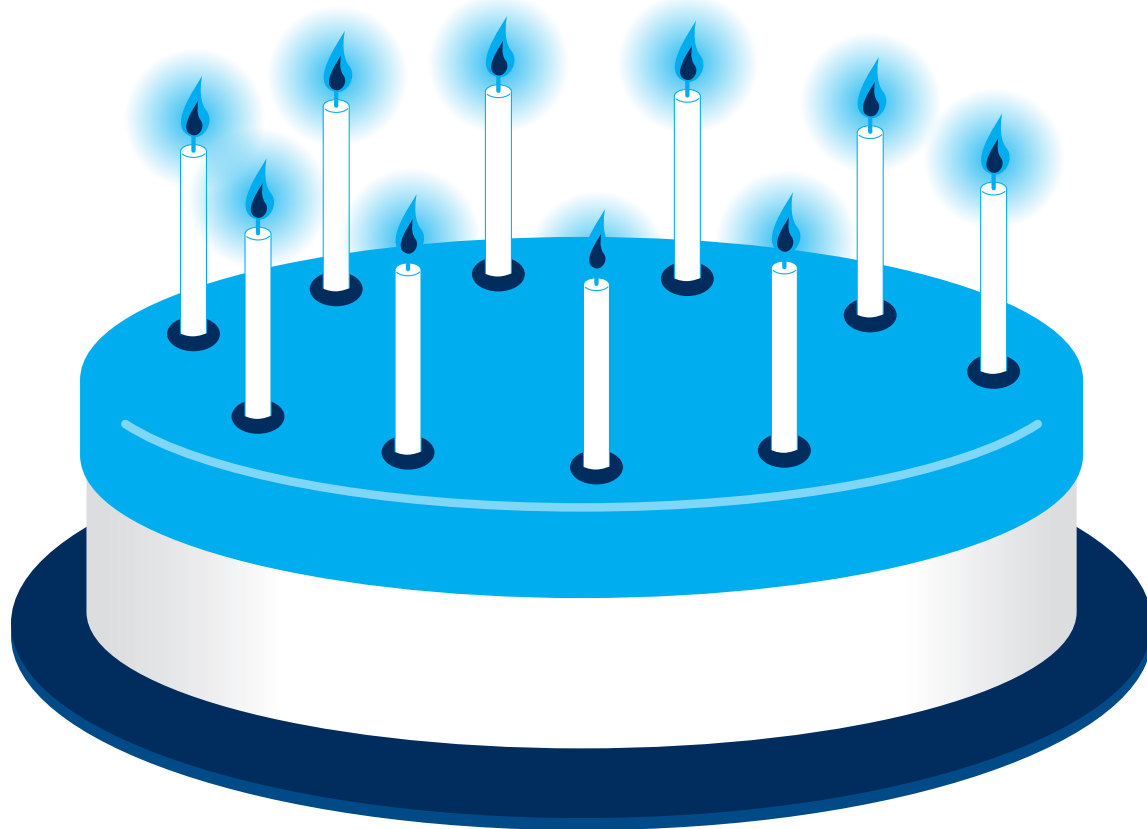
this unusual technology transports some 250,000 passengers in comfort to the top of the Neroberg hill and back down again.

Safety is ensured by cogwheels under the funicular carriages which engage with a toothed rack on the track. In addition, each carriage has a brake drum with which the speed of descent can be regulated: a reliable system with which the Nerobergbahn funicular has operated without accidents since 1888.

But the Nerobergbahn railway cannot operate entirely without modern technology. The tickets for a trip to the top of the Neroberg in Wiesbaden are sold from the [IVU.ticket.box](https://www.ivu-tickets.de/ticketbox).



10 YEARS OF IVU ITALIA – CELEBRATING A DECADE OF SUCCESS!



Ten years ago, on 15 June 2000, IVU opened its first foreign subsidiary in sunny Italy. The success story of IVU TRAFFIC TECHNOLOGIES ITALIA S.R.L. started almost immediately after its registration with the Italian Chambers of Commerce. This summer, IVU Italia can look back over a decade of exciting and above all challenging projects.

Already in the first two years after it was founded, IVU Italia was able to attract orders from public transport companies in some of the country's key towns and cities. In its first year of operations, the new customers included ATM, the operators of the metro in the city of Milan, and the bus company SSIT in Spoleto, and they both chose the systems developed by IVU for planning, dispatching, control and optimisation. A year later, the small Italian subsidiary was also able to obtain orders for the software solutions provided by IVU from bus companies in Florence, Mantua and Brindisi. Today, IVU Italia works together with more than 20 public transport companies throughout the country – including Ferrovie Emilia Romagna (FER) and the near 600 buses of the Autolinee Regionali Pubbliche Abruzzesi (ARPA) the largest public transport companies in central Italy.

In 2007, the Italian state railway Trenitalia also placed orders for systems from the IVU.suite, together with the expert advice and support of IVU Italia. The railway company was initially interested in the timetable data management system of IVU, but only two years later it also decided to implement the systems for duty roster planning and scheduling for its 20,000 train personnel. The success in Italy is reflected in its performance figures. For years IVU Italia has shown a positive development and expects this year to generate EUR 3 million in revenue.

"The great success of our products in Italy is evidence of the level of trust our customers have in us and our project work," says a contented Mario Stefani, head of the IVU subsidiary in Rome. "Thanks to the strong links to IVU in Berlin and above all the support of our colleagues, we are able to implement these large projects all over Italy." This is a considerable achievement for the small Italian team of only 13 personnel.

**Buon compleanno! –
Congratulations on your anniversary!**

SAVE THE DATE

IVU at Euro Bus Expo in Birmingham
from 2nd – 4th November, 2010, Stand T178

IVU at UITP, Dubai
from 10th – 14th April, 2011, Stand 3B500

IVU.DEVELOPMENT

NEW NAMES

Following on from the systematic renaming of the IVU.suite in 2008, we have now also introduced new names for our logistics products. The requirements of the logistics sector are constantly growing and with the new names we intend to show that IVU has logistics systems which are able to provide optimum solutions.

IVU.waste (replacing Combitour) has been chosen as the new name for IVU's solution for the challenges in the waste management sector.

IVU.workforce (previously known as Contour) is the new name for our system for automated external workforce management.

IVU.locate (previously Filialinfo) supplies answers to all questions relating to geo-marketing – such as location selection, catchment area optimisation, media distribution planning, and the analysis of local customers and competitors.

IVU.elect is the name for our election system, which ensures the rapid collation of voting results and calculates the distribution of seats to parties and candidates in proportional electoral systems.

GEOMARKETING	WASTE MANAGEMENT	WORKFORCE MANAGEMENT	VOTING SYSTEMS
IVU.locate	IVU.waste	IVU.workforce	IVU.elect
previously: Filialinfo	previously: Combitour	previously: Contour	

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