

# InnoTrans 2022 Report



B2B-Magazine for the Railway Industry

No. 4 ■ 26<sup>th</sup> annual set ■ November 2022

**FOCUS ON**

**InnoTrans 2022**

**Visitor magnet as always**

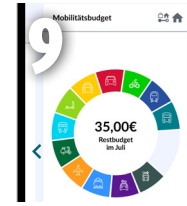
137,394 guests from 137 countries came to see the highlights of transport technology. 2,834 exhibitors were expecting them with more world premieres than ever before.



**2** Finding ways out of the climate crisis  
A changed world requires new ways of thinking - railway transport still has great potential and expectations are high.



**6** Networking again at last  
It was good to meet again face to face. A perfect setting was created by the exhibitors and Messe Berlin. Even the weather showed its sunny side.



**9** Mobility+  
A big topic in the new exhibition area for complementary mobility services. Apps for sustainable travel.



## InnoTrans 2022 – A phenomenal comeback

At this year's InnoTrans, visitors explored the latest rail vehicles from around the world.

Photo: Messe Berlin GmbH

Finally, after four years, the entire world of transport technology and mobility met again at the Berlin exhibition grounds. 137,394 visitors were anxious to see the 250 world premieres, 128 vehicles and 14 buses.

International visitors from 137 countries came to the world's leading trade fair. There they obtained information about the entire product and service repertoire of transport technology and mobility from 2,834 exhibitors from 56 countries. For the first time, exhibitors presented 250 world premieres, more than ever before. As a dominant theme, manufacturers focused on sustainability. In the track and outdoor area, for instance, Siemens Mobility presented the next generation of hydrogen trains with the Mireo Plus H as well as the Mireo Plus B which is equipped with a modular, high-performance battery system. Stadler showed for the first time the hydrogen-powered multiple unit FLIRT H2 for passenger transport in the USA.

Guests even experienced a ride on the hydrogen-powered Coradia iLint passenger train from Alstom. This train ran twice a day from Berlin-Spandau to Berlin-Ostbahnhof.

Hitachi presented the "Blues Train" which combines three traction technologies – diesel, electric and battery. The DM 20 hybrid locomotive presented by Vossloh is also characterised by its ability to switch quickly between operating modes and energy sources.

Deutsche Bahn was present with not one but several idea trains. The "City" idea train was incorporated in the centre car of the Digital S-Bahn Hamburg. This idea train is still in the future – but the idea train of the Südost-

bayernbahn is real. DB Regio exhibited this double-decker car in the track area.

**New drives in the bus display**

A highlight this year was again the Bus Display with 14 buses operating on the 500-metre test circuit in the Summer Garden. For the first time, Solaris presented the Solaris Urbino 18 hydrogen, an 18-metre bus with hydrogen as its main energy source. The ŠKODA H'CITY also relies on hydrogen as a sustainable drive. Van Hool exhibited its A12 electric bus. Ebusco showed the fully electric city bus 3.0 in the Bus Display. Model 2.2, the new e-bus for the Berliner Verkehrsbetriebe (BVG), was also on site.

**Supporting programme – always well informed**

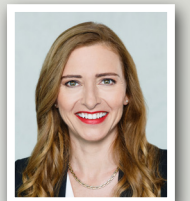
The high-profile supporting programme with its wide-ranging discussion rounds, lectures and events offered plenty of variety. This is where visitors could find out about all the current topics and trends in the mobility industry - from automated rail operation to tunnel construction, smart public transport and the innovative passenger experience. The Mobility Science Slam and the first Hyperloop Conference were new additions to the programme. The slammers explained their research projects on the future of mobility in short, popular science presentations. On Friday, the first Hyperloop Conference took place. It was the first international conference on high-speed transportation. The videos of the events are available on the [InnoTrans Plus](#) online platform.

**A high score for InnoTrans**

According to a representative survey, exhibitors and trade visitors gave a positive rating for their visit to the trade fair. Over 90 per cent of trade visitors were highly satisfied with their visit to the trade fair. More than 90 percent of exhibitors share the positive overall impression. The willingness to recommend InnoTrans to others is very high, with over 90 percent in both groups. The proportion of decision-makers among the professional visitors was very high. Almost one in two stated that they held a managerial position in their company. More than 85 percent of exhibitors expressed a positive assessment of the business results of their participation in the trade fair, and over 90 percent expect positive post-fair business.

**COMMENT**

**Industry family reunion**



**Kerstin Schulz**  
Director  
InnoTrans

Photo: Messe Berlin GmbH

After a long wait we were once again able to exchange ideas in person and look each other in the eyes. It was a great moment to see the visitors crowding out of the S-Bahn at the South Entrance on the first day of the trade fair. There were so many highlights, such as the 250 world premieres which we hadn't been able to show for a long time, including many unusual exhibits in the track area. I was very pleased to see the wide eyes of the Career Award winners who were at InnoTrans for the first time. The participants of the Career Boost also did a great job of presenting themselves to the companies on the Talent Stage. I was happy to welcome numerous guests from around the world, such as transport ministers from all over Europe and international delegations from Egypt, Brazil, Canada, South Korea, Saudi Arabia and many more. What pleased me most was to see the exhibitors fully engaged at the stands, initiating and closing many deals. We were overwhelmed by the positive response from visitors and exhibitors. After InnoTrans is before InnoTrans. We are already working on making InnoTrans 2024 even bigger, more diverse and more innovative than ever before.

Ad





**OB FÜR BAHN, STRASSENBAHN, TROLLEYBUS ODER E-BUS – DIE KUMMLER+MATTER AG IST IHR UMFASSENDE PARTNER FÜR MODULAR AUSBAUBARE SWISS MADE INHOUSE-PRODUKTE UND PROFESSIONELLE UNTERSTÜTZUNG IM DIENSTLEISTUNGSBEREICH**



## A brilliant start



In her speech, Adina Vălean, EU Commissioner for Transport, underlined the importance of trains as the most environmentally friendly means of transport. Photo: Messe Berlin GmbH

At the opening ceremony, representatives from politics and the economy emphasised the challenges of a global rail network.

■ A festive start was given to InnoTrans 2022 by artists who performed a music and dance flash mob. Martin Ecknig, Managing Director of Messe Berlin, welcomed the around 1,000 invited guests. "InnoTrans is a real success story in many respects. 26 years ago it was held under the Funkturm (radio tower) for the first time. At the time there were 172 companies showing their products. Today we welcome 2,834 exhibitors from 56 countries who occupy the entire exhibition grounds. This makes InnoTrans the world's leading trade fair for transport technology, the largest global platform in the mobility industry with a market coverage which is second to none," he said in his speech.

EU Commissioner Adina Vălean underlined the importance of new technologies which have the power to revolutionise the transport sector. Being the geographical centre of Europe, Germany has a special importance in rail transport. This was most recently demonstrated in the Ukraine crisis, where not only people in need of protection but also important goods were transported by rail. "Trains help to integrate Ukraine into the European network," she said. Adina Vălean stressed the importance of trains as the most environmentally friendly mode of transport and confirmed the

EU's objective to achieve a 50 percent increase of railway passenger transport by 2030 and to double it by 2050. In this context, an important concern for the Commissioner is the expansion of high-speed connections.

### Using rails more efficiently

The German Federal Minister of Transport, Dr. Volker Wissing, emphasised the challenges currently facing the industry. They range from exploding energy costs to the war in Europe. Wissing announced that the upcoming renovation of the rail network will be faster and more efficient. Digitalisation should also help increase capacities.

Adina Vălean, Dr. Richard Lutz, CEO Deutsche Bahn AG, Michal Krapinec, CEO České dráhy, Volker Wissing, Henri Poupard-Lafarge, President Alstom Transport S.A., Peter Spuhler, CEO Stadler Rail AG, and Michael Peter, CEO Siemens Mobility GmbH, debated the potential of rail in terms of sustainability during the subsequent panel discussion. The industry representatives placed great hopes in hydrogen technology. But electrically powered trains are also to be further developed and made more durable.



At the Rail Leaders' Summit, Federal Transport Minister Dr. Volker Wissing and Dr. Richard Lutz, CEO of Deutsche Bahn (right), discussed the future of the rail network. Photo: Messe Berlin GmbH

## Rail of the future

Transport ministers and general managers of international transport companies exchanged views at the DB Rail Leaders' Summit.

■ Dr. Richard Lutz, Chairman of the Management Board and CEO of Deutsche Bahn (DB), opened the DB Rail Leaders' Summit at the Palais am Funkturm in front of an international audience with participants from more than 50 countries. The most important topic was the climate crisis.

As Adina Vălean underlined in her keynote speech, the world has significantly changed since the last InnoTrans in 2018. In an "age of permanent crisis", train traffic has proven to

be a resilient means of transport. In order to more easily achieve the sustainability goals set by the EU, it is necessary to build on such innovations as those on display at InnoTrans. It is now a matter of enabling these innovations to quickly find their way into practical applications.

Federal Transport Minister Dr. Volker Wissing echoed this call: "The railways of the 21st century will be European," he predicted and added that rising energy costs and overloaded rails were obstacles on the way to achieving climate-neutral

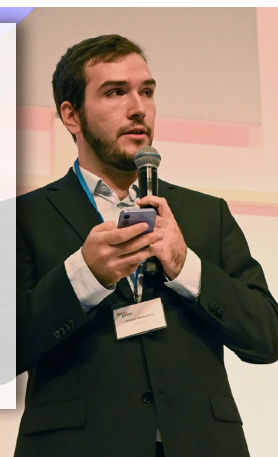
mobility with digitalisation offering promising solutions for climate-neutral rail transport. In addition, he claimed that cross-border thinking is needed, as well as investments in highly congested routes.

Oleksandr Kamyshin, Chief Executive Officer of Ukrainian Railways (UZ), emphasised that railways are absolutely essential in a war zone like Ukraine. Rail plays an important role for aid and refugee transports as well as for grain exports from his country to the EU.

In the subsequent panel discussion with Richard Lutz, Volker Wissing and Henrik Hololei, Director General of the EU Commission for Mobility and Transport, Lutz underlined the importance of connecting Ukraine to the European rail network. Henrik Hololei described the rail networks as Europe's lifelines. He added that the problem was that thinking in this regard was still far too much focused on the regional level. According to Volker Wissing, in future rail transport should be "simple and interoperable" in order to meet the increasing demands on its efficiency. Therefore, standardisation and digitalisation could make a contribution and at the same time attract young people to the industry.

In a second panel discussion, Dr. Daniela Gerd tom Markotten, Member of the Board of Deutsche Bahn responsible for digitalisation and technology, emphasised how important it is not to lose sight of the customer's perspective in the digitalisation processes of the railway system. This demands, for example, a good internet connection in all trains.

## "The thousand-kilometre journey was worth it".



Budding engineer Tristan Niedecken was one of the participants in the first Eurailpress Career Boost. Photo: Messe Berlin GmbH

Young talents presented themselves on the big stage at the Eurailpress Career Boost.

■ A new format premiered at InnoTrans. At the first Eurailpress Career Boost, job seekers presented themselves to their potential employers in a 90-second elevator pitch. A total of 17 applicants ven-

tured onto the Talent Stage at the InnoTrans Campus. One participant was Jakub Krzystof Szajek from Vienna. The 22-year-old is studying international business administration with a focus on transport economics and

logistics. "I have a great passion for the railway system. Therefore, the pitch was not only a good opportunity to present myself, but also a challenge to see how successful I can be in such a format. In fact, I got many offers after my pitch. It was a successful experience for which it was worth travelling the 1,000 kilometres from Vienna," he concluded.

The soon-to-be engineer Tristan Niedecken from the German city of Erfurt also took up the challenge of the elevator pitch. The 26-year-old is studying for a bachelor's degree in industrial engineering for railways. Tristan sees the Career Boost as a welcome alternative to a conventional application: "Once I have finished my degree in August 2023, I want to start my career right away. There are many opportunities in the industry, but I really want to choose the employer who suits me. InnoTrans is the best trade fair for that. The Elevator Pitch was my free ticket, so it was a great way to introduce myself in person instead of always sending out CVs online."

### IMPRINT

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## Innovative exhibition booth, inspiring guests and a top-class programme



InnoTrans 2022: The SPITZKE Group exhibition stand

Photo: SPITZKE SE

For the SPITZKE Group, numerous highlights made InnoTrans an extremely successful event in 2022 again. During the four days of the trade fair, the railway infrastructure company remained true to its motto "Creating in networked dimensions" – not least because SPITZKE's trade fair presentation once more proved to be a popular meeting place for the industry to engage in lively discussions, professional exchange and networking.

■ Topics such as "Changing times in production" and "The future of mobility on rails" were among the numerous best case and fireplace discussions which promised a varied and informa-

tive trade fair programme at the SPITZKE booth right from the first day of the trade fair. The panel discussion on the second day of the exhibition offered a special highlight. Under the chair-

manship of moderator Carina Jantsch, host Mark Fisher, Chief Technology Officer of SPITZKE SE, Jens Bergmann, Member of the Management Board of DB Netz AG in charge of infrastruc-

ture planning and projects as well as finance and controlling, Jan Grothe, Chief Procurement Officer of DB AG, and Winfried Zuber, Managing Director of WSP Infrastructure Engineering GmbH, discussed the topic of "Thinking ahead to consistently achieve partnership-based, modern, efficient construction!". The panelists agreed that the challenges of the expansion and modernisation of rail transport require joint action by all players. According to Mark Fisher, the key to this might be partnership in project preparation and implementation, as well as the territorial and quantitative bundling of projects and thus an increase in efficient possession management. With reduced risks and better conditions this might be the way to make the railway industry more attractive for workers.

### Partner day and promotion of young talents

The keynote speech by guest speaker Prof. Marcel Fratzscher also fascinated the audience and led to lively expert discussions. On the third day of the trade fair, the head of the German Institute for Economic Research spoke on the topic of "The economic new start after the crisis: what do we need for a successful transformation?" on the occasion of SPITZKE's Partner Day.

Friday at the railway infrastructure company SPITZKE's booth was all about young talents: On the "Day of vocational training", school classes and students were given an insight into the wide range of career prospects of the industry. In addition, the winners of this year's SPITZKE student competition were crowned on a grand stage.

### NEWS

#### ■ L-4 for ultra-wideband train positioning system



Highly accurate speed and positioning data

Photo: Piper Networks

Recently, the independent safety assessor TÜV SÜD granted Piper Networks the CENELEC Safety Requirement Level 4 (SIL4) for an ultra-wideband (UWB) train positioning system. The certification is a milestone for Piper and the transportation industry as it is the first UWB-based positioning and speed technology which achieves the vitality required for safety. Piper's UWB technology enables real-time tracking of trains, vehicles, other rail assets and track workers with an accuracy of up to a few centimetres, even in the most challenging environments such as metro tunnels or elevated tracks. The system is now ready for integration with signalling and train control programmes being implemented by transportation agencies and their engineering offices in the U.S. and worldwide.

## Turnout for high speed



High-speed turnout in Prosenice, Czech Republic

Photo: SDT - Výhybkárna a strojírna, a.s.

Turnouts, especially for railways as well as tramways, light rail and metros, are the speciality of the Czech company DT – Výhybkárna a strojírna. In connection with the planned construction of high-speed railway lines in the Czech Republic, its developments are also focused on turnouts for high-speed lines.

■ The high-speed turnout from DT – Výhybkárna a strojírna enables speeds of up to 350 kilometres per hour on the straight track and up to 160 kilometres per hour on the diverging track. The geometry stands out thanks

to the use of transition curves to avoid sudden changes in cant deficiency. The turnout also has other innovative features, such as a frog with movable point housed in a bainitic frame and a hydraulic changeover and locking sys-

tem. In 2020, two turnouts were put into operation in the Czech Republic, where they are being tested by Czech Railways. The turnouts are designated as type J60-1:33.5-4000/8000/14000-PHS.



## Contact wire wear simply recorded

Instantaneous value measurements read out on the smartphone

Photo: 4NRJ

With its MFC® solution, the French company 4NRJ reinvents the concept of catenary wire wear measurement.

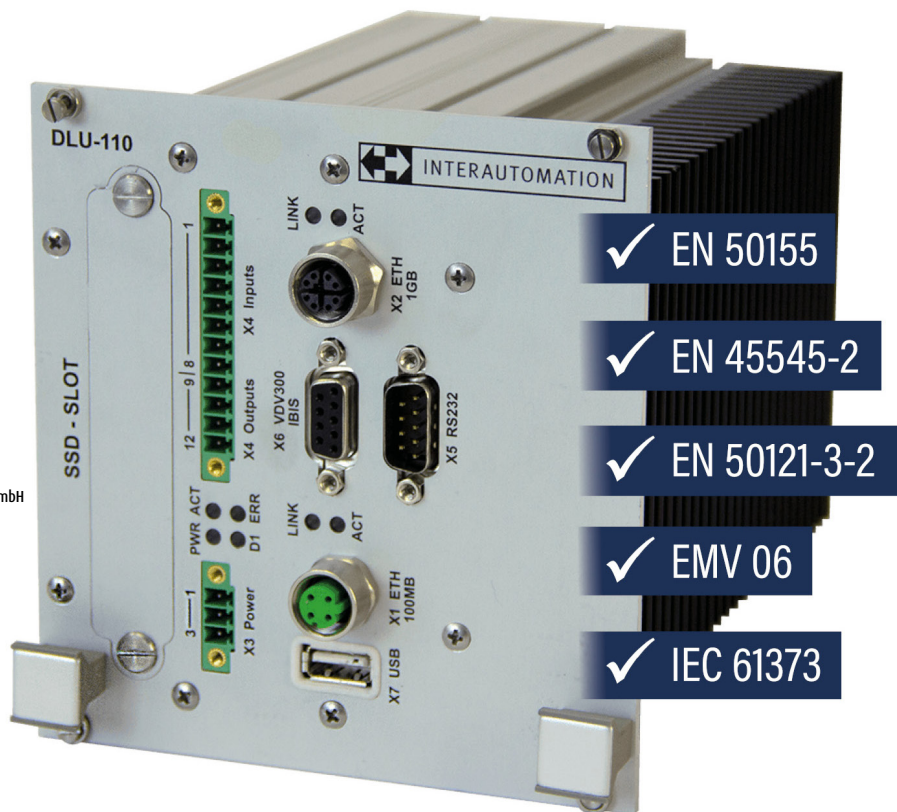
■ This innovative solution is simple to use and easy to transport. Only one or two operators are needed to perform the necessary measurements from ground level. The MFC® measuring tool is screwed directly onto its own insulating rod. The operator will then start the measurement cycles from his smartphone. The measurements are read out immediately and can later be

exported to Excel or CSV files. The 4NRJ-MFC® app can be downloaded free of charge from the Play Store® in the current English-German version. The MFC® kit includes a special pole, a self-test stand, a charging system, a carrying case, operating instructions and a dynamic QR code. Easy to use, easy to transport, it saves time and money!

# Extra on-board computing power

DLU-110 high-performance on-board computer

Photo: INTERAUTOMATION Deutschland GmbH



The DLU-110 from INTERAUTOMATION Deutschland GmbH brings powerful NVIDIA® graphic chips into railway vehicles and makes it possible to run the most demanding applications on the spot, using artificial intelligence such as video-based algorithms.

■ Four years after its last edition, this year's InnoTrans offered plenty of highlights – including the railway-ready edge device DLU-110. INTERAUTOMATION's DeepLearning

Unit (DLU-110) uses the NVIDIA® Jetson™ architecture for the first time and allows AI evaluations of neural networks which require intensive computing to be calculated directly

on-board the vehicle. Classic use cases are all kinds of video analyses, including the gathering of occupancy levels, object and situation recognition, the determination of seat occupancy, the

detection of soiling and many more, which require an extra amount of computing power which typically only a special graphics processor can provide.

## AI power and numerous interfaces

In addition, the DLU has all the interfaces which are typical of on-board computers. Further to the two network interfaces (Gbit/s & 100Mbit/s), there is the possibility of connecting electrical vehicle signals (I/O input) as well as serial bus interfaces (RS232, RS485, IBIS bus).

As an extension of the internal data storage, an SSD memory of up to nine terabytes can be installed, for example to act as an infotainment server. A particular challenge during the construction of the DLU was the cooling of the graphics processor in order to be able to obtain railway approval. Since it was possible to design this as passive cooling, the DLU has received all the necessary certifications for use in the railway sector (including EN50155, EN45545, IEC61373).

The DLU can be equipped with different memory sizes and processors of the NVIDIA® Jetson™ architecture, so that the processor performance and the hard disk space can be tailored to the respective application, for example as a high-performance graphics computer or as a high-performance train server. The edge device is available as an OEM device and can be requested from INTERAUTOMATION via the website.

## NEWS

### First concrete block with Blue Angel eco-label



The white ribbed slab floor indicator also has the eco-label

Photo: Rinn Beton- und Naturstein GmbH & Co. KG

In July 2021, Rinn Beton- und Naturstein became the first concrete block manufacturer in the world to receive the German "Blue Angel" for its climate-neutral paving blocks produced with up to 40 percent recycled granulate. One of the many criteria set by the Federal Environment Agency for this was the receipt of the Environmental Product Declaration (EPD). Rinn is the first in the industry to receive an EPD according to the new European standard EN 15804+A2. The bricks protect resources, the climate, the water cycle and have been proven not to release any harmful substances into the environment. All Rinn's railway products are labelled with the coveted Blue Angel environmental seal, including floor indicators, the safety element "dash" and the safety measure "hatch". Rinn Beton- und Naturstein offers the nube colour concept with a choice of 120 surface texture options.

Ad

## We are on Track! Electronic control for rail vehicles



### Socket-outlets with built-in USB-Charger 1 x USB-A / 1 x USB-C

The three into one solution for charging mobile devices on rail vehicles

- AC 250 V 16 A socket with mechanical protection against accidental contact (shutter)
- 1 USB-A and 1 USB-C charging port with max. 3,0 A
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- Stand-by consumption < 70 mW
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LÜTZE  
TRANSPORTATION

# Hydrogen in passenger and freight transport



The hydrogen shunting locomotive of Pesa/Orlen

Photo: DVV Media Group

Hydrogen is increasingly being tested as a propulsion energy source. As many as three experimental vehicles were on display at this year's InnoTrans, and one series-production vehicle was presented live in operation.

The Polish rail vehicle manufacturer Pesa and the Polish mineral oil company and petrol station operator PKN Orlen showed their fuel-cell-operated shunting locomotive. The SM42-6D shunting locomotive is a converted SM42 diesel shunt-

er. It has been equipped with a fuel cell from Ballard. The 70-tonne locomotive maintains its four traction motors of 180 kilowatts each. The locomotive will operate on the Orlen works premises from 2025/26.

## Different railcar concepts

The two exhibited hydrogen railcar concepts were very different from each other. The Flirt H2 of Stadler Rail Group, Bussnang, Switzerland for the USA has the entire hydrogen tech-

nology as well as the batteries housed in the centrally located, nine-metre-long "powercar" - the passenger areas in the end cars, which are equivalent to those of the electric Flirt, are thus connected with a long dark tube as a corridor. The Flirt H2 as a one-off is

scheduled to enter service in California in 2024. According to Stadler, the range is just under 500 kilometres for a day's operation. The Mireo Plus H from Siemens Mobility GmbH is different - it has the technology under the floor and on the roof. But here, too, the train largely corresponds to the series-produced Mireo multiple units for overhead line operation.

## In passenger service in Northern Germany

Alstom's iLint 54 hydrogen train, which is already in passenger service in Northern Germany, was not exhibited at the exhibition grounds. As an alternative, the French company offered a total of six trips across Berlin, between Spandau and Ostbahnhof, on three days of the fair.

## Networked players around hydrogen

Hydrogen is widely tipped to become a leading future energy carrier - not only in the rail sector, but for numerous applications in industry and mobility. Messe Berlin is responding to this dynamic with the "Global Hydrogeneration" hydrogen project. With communication and networking, the initiative aims to "bring together the socially relevant players in the field of hydrogen", according to Messe Berlin. After its first appearance at the ILA air show in June, Global Hydrogeneration was now represented at InnoTrans.



Presentation of this year's Siemens Mobility Supplier Award with the MES Expo at InnoTrans - winners of the Technology & Innovation category: Medcom (Poland); Logistics Performance category: Fracht AG (Switzerland); Competitiveness category: Milwaukee Composites (USA), Quality category: Huber + Suhner GmbH (Germany), Moving beyond category: Mitsubishi Electric (Japan)

Photo: DVV Media Group

## NEWS

### Legal entity for ERCI



Carlo Borghini (centre right) and Dirk-Ulrich Krüger cut the ribbon to establish ERCI as a legal entity on 22 September.

Photo: DVV Media Group

In June this year, the partners of the European Railway Clusters Initiative, ERCI, officially announced the establishment of a legal entity. At InnoTrans 2022, Carlo Borghini, Executive Director of Europe's Rail Joint Undertaking (ERJU), and Dirk-Ulrich Krüger, ERCI President, symbolically cut the ribbon for the foundation at the booth of Railenium, the French technological research institute for the railway sector. The legal entity is intended to strengthen ERCI and help it to sit at the right tables. According to its own statements, ERCI sees itself as the only body which represents the interests of small and medium-sized enterprises (SMEs). It is based in the European

capital Brussels. ERCI was founded in 2010 and comprises 15 research and innovation-oriented rail technology clusters in 16 countries. The initiative represents more than 2,000 companies (of which 1,500 are SMEs) and promotes innovation as well as the development of new business opportunities as a means to sustainably strengthen competitiveness within the European railway industry. ERCI supports cooperation between industry and research, initiates innovation projects and organises B2B meetings and workshops. This also includes promoting visibility and strong networking at EU level as well as outside Europe.

## REVIEW

■ This was  
InnoTrans 2022

# The world of railways as guests

InnoTrans 2022 was a celebration. Visitors stood shoulder to shoulder amidst the vehicles, the innovations lined up one after the other and one event followed the next. Guests swarmed the halls, finally meeting face-to-face again and making good business deals. With a review in pictures, we are already looking forward to the next edition of InnoTrans in 2024!



"InnoTrans is back!" announced Martin Ecknig, CEO of Messe Berlin, at the InnoTrans International Press Circle.



Managing Director Axel Schuppe and Head of Public Affairs Pauline Maitre, both from VDB, exchanged views during the Networking Brunch at the International Press Circle.



The Spanish Minister of Transport Raquel Sánchez Jiménez visited InnoTrans. She was accompanied on her tour by Pedro Fortea, Director General of the Spanish railway association MAFEX, the Spanish Ambassador D. Ricardo Martínez and Matthias Steckmann, Director of the Mobility & Services Division of Messe Berlin (from left).



With the large crowds in the track area, it was easy to lose sight of each other.



In the Summer Garden, guests could experience 14 buses and take a break among the greenery.



The South Entrance of the exhibition centre was all about InnoTrans.



Transport Minister Dr Volker Wissing took a seat behind the steering wheel of the Solaris bus.



At the media workshop in the track area, Dr. Sigrid Nikutta, Member of the Board of Management of Deutsche Bahn AG responsible for freight transport, answered questions about the freight train of the future.



Winfried Hermann, Transport Minister of Baden-Württemberg, is happy that even more battery-powered trains will be used in the "Ländle".



Numerous associations were represented at the International Press Circle (from left): Philippe Citroën, Director General of UNIFE; Prof. Dr.-Ing. Roland Leucker, Managing Director STUVA; Dr. Heike van Hoorn, Managing Director DVF; Axel Schuppe, Managing Director VDB; Kerstin Schulz, Director InnoTrans; Martin Schmitz, Managing Director Technology VDV; Caroline Wilkie, Managing Director ARA; Matthias Steckmann, Director Business Unit Mobility & Services of Messe Berlin; Pedro Fortea, General Director MAFEX; Peter Jenelten, Managing Director SWISSRAIL; André John, Head of Mobility ZVEI and Martin Ecknig, CEO Messe Berlin.



Bettina Jarasch, Senator for the Environment, Mobility, Consumer and Climate Protection of the State of Berlin, at the presentation of the hydrogen train Mireo Plus H for the Heidekrautbahn.



Kerstin Schulz, Director of InnoTrans, welcomed international delegations from Egypt, Brazil, Finland, Italy, Canada, Korea, Saudi Arabia ...



Deutsche Bahn pledges support for the Ukrainian railways. EU Transport Commissioner Adina Vălean, DB CEO Richard Lutz, Ukrsalisnyzja CEO Oleksandr Kamyshin and German Transport Minister Dr Volker Wissing at the signing of the Memorandum of Understanding.



The importance of railways in the Ukrainian war zone was underlined by Oleksandr Kamyshin, CEO of the Ukrainian State Railway at the opening ceremony.



The French Minister of Transport, Clément Beaune (centre), was welcomed by Kerstin Schulz, Director of InnoTrans and Matthias Steckmann, Director of Mobility & Services at Messe Berlin.

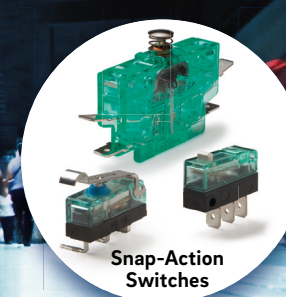
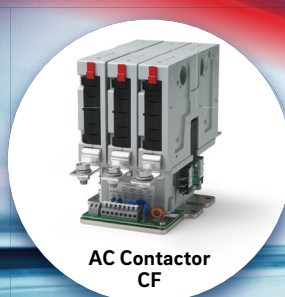
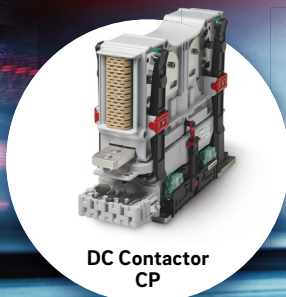
All Photos: Messe Berlin GmbH

www.schaltbau.com



# RAILWAY

Switching and controlling under maximum load





## How door-to-door service can succeed

Representatives from transport companies, research and administration at the International Bus Forum

Photo: Messe Berlin GmbH

"Mobility as a service for citizens - sustainable, smart and available everywhere" was the theme of this year's International Bus Forum, which was organised by the German Transport Forum (DVF).

Micro-mobility solutions such as sharing kick scooters or bicycles can complement classic public transport and provide better connections for the last mile – if they are included in the concepts of local public transport authorities and integrated in terms of tariffs and sales, said Jochen Schlei, CEO of SRP Consulting. Sebastian Storch, Associate Director at Umlaut, added that in order to improve the customer experience, more investment in digital infrastructure is needed. Funds should not only flow into the organisation of such models in the

"backend". Roland Werner, Senior Director Public Policy at Uber, advocated the inclusion of his company's ride services as a last-mile feeder to public transport.

In order to make public transport a "sustainable, smart and available everywhere citizen service", it is also necessary to modernise the operation and sales of conventional transport modes. Rolf Erfurt, director of operations at Berliner Verkehrsbetriebe (BVG), said that as part of the conversion of his company's bus fleet to e-buses, the company plans to use ten depots instead of the current

six. This involves 1,700 buses in the city, added Meike Niedbal, State Secretary at the Berlin Senate Department for Mobility. Berlin is also considering the use of 50-metre-long trams to increase capacity, said Guido Schötz, a staff member at the Berlin Senate Administration.

### Ideas for more attractiveness

Anna-Theresa Korbitt, Managing Director of the Hamburg Transport Association (HVV), stressed that to improve the attractiveness of public transport, it is highly important to make it easily accessible. If there were a nationwide ticket – the German Federal and regional governments are currently negotiating such a ticket – many products of the current regional associations would become obsolete. Meike Jipp from the German Aerospace Centre demonstrated with the help of analyses of the temporary 9 Euro ticket, which was also valid all over Germany, that inexpensive and easy-to-understand offers in public transport reach a broader target group than regular subscription offers.

Various companies presented product pitches on concrete developments for attractive public transport. Alexander Stucke from QUANTRON AG presented his company's overall solution for conversion to alternative drives – also available for smaller bus operators. Stefanie Böger from the HÜBNER Group showed a steering system for multi-articulated high-capacity buses for up to 300 passengers. ZF Group's Werner Engel presented an autonomous vehicle which is currently under development by his company - however, he believes it will be some time before the technology is used on a large scale.



Flagship products of Huawei's native Hard Pipe Network (NHP) solution (Left: Huawei OptiXtrans E6616 & Right: Huawei OptiXtrans E9624)

Photo: Huawei Technologies Co., Ltd.GmbH

At InnoTrans 2022, Huawei Technologies showcased its innovative solutions and flagship products which were specifically developed for rail transport.

In its developments, the Chinese provider placed great emphasis on leading Information and Communication Technology (ICT) infrastructure, green digital power, smart urban rail transport and smart trains. With these products, Huawei aims to take railway connectivity to a new level and enable safe, smart, environmentally friend-

ly and sustainable development. At InnoTrans 2022, Huawei introduced the cloud platform and Intelligent Operation Centre (IOC) for urban rail transport. With them, it offers a new approach to smart track construction. The cloud platform for urban rail transport is the foundation for a variety of services such as Automatic Fare Collection

(AFC), Passenger Information System (PIS) and Access Control System (ACS).

Huawei plans and develops centralised ICT infrastructure resources for on-demand allocation, individual and efficient sharing. In the field of innovative ICT infrastructure, Huawei presented the Wi-Fi 6 standard for rail vehicle-to-railway communication, an all-optical network, an integrated data communication network, an intelligent depot campus network, and an integrated power supply, all of which play their part in promoting intelligent urban and long-distance transport. For optical data transmission, Huawei unveiled the industry's first Native Hard Pipe (NHP) solution, which creates a highly secure, reliable and all-optical carrier network for intelligent railways. The NHP solution supports fifth-generation hard pipe technology, also known as Optical Service Unit (OSU), and is compatible with various hard pipe technologies such as Synchronous Digital Hierarchy (SDH).

The ninth Huawei Global Rail Summit was held on 22 September. Experts from the railway industry exchanged views on the trends and practices of the digital transformation of rail transport, as well as the future perspective of the digitalisation of rail transport.



Vehicles, alternative drives and the corresponding charging infrastructure – the Bus Display gave an overview of the state of the art of environmentally friendly city buses.

One of the highlights was the presentation of the new articulated Urbino 18 hydrogen bus by Solaris. Similar to the shorter version of the model, hydrogen is the main energy carrier in this vehicle. With the 18-metre model, the Polish manufacturer is addressing the growing demand for buses of this type. The heart of the Urbino 18 hydrogen is the hydrogen fuel cell, which acts as a kind of mini-hydrogen power plant on board the vehicle. In the fuel cell, hydrogen is converted into electrical energy, which is then fed into the drive system. The new vehicle has no conventional engine compartment because it has been equipped with a modular drive system. Thanks to the space saved, it has been possible to increase passenger capacity. Eliminating the engine compartment also created more space on the roof of the vehicle, where lightweight hydrogen tanks were mounted. The 60-kilowatt-hours batteries installed in the vehicle have a supportive function. They are used, for example, when accelerating or for energy recuperation. It takes about 20 minutes to fill up the vehicle tanks. According to Solaris, the bus will cover about 350 kilometres on one filling of hydrogen and, depending on the configuration, it offers space for up to 140 passengers.

### Range up to 350 kilometres

The H'CITY 12 from Škoda also celebrated its premiere. The hydrogen

bus is part of the manufacturer's New Energy Vehicle solution with polymer electrolyte (PEM) fuel cells as an energy source. A reaction of hydrogen and oxygen takes place in the PEM fuel cells and there are batteries to store the generated energy. This type of propulsion allows a range of up to 350 kilometres with a single filling of hydrogen, Škoda says. The bus can accommodate up to 85 passengers (26 seated).

### Optimum visibility

The Belgian manufacturer Van Hool presented the A12 Battery Electric in Berlin – the first vehicle from a new bus series which offers exclusively emission-free drive systems – battery, fuel cell (hydrogen) and overhead line. The vehicle's large windscreen is designed to provide optimal visibility – for the driver as well as the passengers. The buses are equipped with the latest generation of light-emitting diode (LED) headlights, including daytime running lights. The large window at the rear of the vehicle is designed to provide plenty of daylight. LED lights are also used there. The buses have wide passenger doors to facilitate boarding and alighting. A closed driver's cab is provided as standard. Other exhibitors in the Summer Garden at the fair included Ebusco, Otokar, Kiepe Electric and Karsan.

## NEWS

### Innovative organic foams

Bio-foams from ZFoam Eco

Photo: ZFoam



Demand for materials which respect our environment in a more sustainable way is increasing worldwide, and ZFoam also wants to contribute to the protection of the environment by reducing its carbon footprint. ZFoam ECO has launched a complete line of BIO foams for insulation, packaging and construction purposes. These

foams are made from biopolymers whose raw materials come from forestry waste or agricultural materials such as sugar cane. They are 100 percent renewable and have no negative impact on the food chain. ZFoam can also offer ISCC-certified materials and a negative carbon footprint. ZFoam mainly offers cross-linked and non-cross-linked BIO-PE foams which have the same mechanical properties as "standard" polyethylene. Since 2020 these products have been successfully used in a wide range of applications. The future of our planet concerns us all.



# New at InnoTrans: the Mobility+ platform



Cybersecurity expert Mirko Ross at the Mobility+ Speakers' Corner

Photo: Messe Berlin GmbH

Providers of complementary mobility services had their own exhibition area for the first time at InnoTrans 2022: Mobility+. One of their major themes was the use of apps for sustainable travel, and some world firsts were presented. The supporting programme also included a lecture by cybersecurity expert Mirko Ross.

Some exhibitors in the Mobility+ area had set themselves the goal of making sustainable travel attractive and enabling the mobility turnaround with the development of corresponding apps. Axon Vibe AG, Switzerland, introduced its new Tokyo Nudge app, which has been developed together with the East Japan Railway Company. Based on location, context and

travel intention, the artificial intelligence-driven mobility and rewards platform "compensates" the passenger with a free drink or snack in case of disruption.

Via Bonvoyo, the app of Deutsche Bahn Connect GmbH, companies can reward their employees with individual mobility budgets for local public transport, bike sharing or the

ICE train. Bonvoyo also displays CO2 values of selected means of transport. Taf mobile GmbH, Jena, Germany has also developed a mobility budget solution together with Israeli HopOn Ltd. It includes a digital credit system for employers and institutions as well as a specially developed dashboard for easy administration. Employers can provide employees or customers with a

special budget for the use of mobility services, for example limited to certain days and hours, types of transport and routes.

## Cybersecurity - more important than ever

In view of the increasingly complex systems of intermodal mobility, the cyber-security expert and owner of the company asvin GmbH, Mirko Ross, has turned his attention to cyber-security. At the Mobility+ Speakers' Corner on 22 September in Hall 7.1c, his presentation "Cybersecurity in the Supply Chain - Challenges in Intermodal Mobility" was an invitation to what he called a "horror show with lectures and lessons learned".

Behind the expectation of customers to receive one booking system for all mobility offers, he said, is a technically super complex system which allows for increasing hacker attacks. In the meantime, data is no longer stored only on a company server, but is located in clouds and data centres of various players. For economic reasons alone, no company can tackle the ingenuity of hackers by strengthening its firewalls. "Companies would lose that race," says Ross. The only chance, he said, is to introduce a mesh architecture instead of the security silos of and within companies, through which information is automatically and actively exchanged among all players. Many are super vigilant about their cybersecurity, Ross pointed out, but the creativity of hackers is incredible. In 2021 alone, attacks on software supply chains grew by 600 per cent, he reported, and then gave impressive examples of very recent hacking attacks on mobility providers.

## NEWS

### Illuminated Platform Edge



Illuminated platform edge on Platform 1 Berlin Südkreuz Photo: DB / H.-C. Plambeck

The Illuminated Platform Edge by SIUT GmbH from Berlin is made up of individual modules which are strung together and interact with each other. They consist of a special concrete slab developed by Rinn Beton- und Naturstein GmbH & Co. KG, an integrated light guide and a control unit in which train-specific data is received, processed and translated into light signals. Each concrete panel can be controlled independently and is able to display static and dynamic light patterns in different colours. Embedded in the floor, the guidance system visualises train information in an intuitive way which can be understood around the world. Thanks to the versatile visualisation as well as the options for data connection, the Illuminated Platform Edge serves the passenger and the operator in terms of safety enhancement, orientation assistance and information provision.

# Capture, analyse, control



People flow analyses on the PwC Mobility Platform

Photo: Mapbox / OpenStreetMap

With the Mobility Platform, PricewaterhouseCoopers (PwC) has developed a software tool for intelligent management of mobility data for public transport. The platform enables public transport companies and transport associations to efficiently analyse the movement and mobility behaviour of users and to control it via intelligent communication services. With the help of smartphone sensor data, the platform creates a picture of the behaviour of crowds. Movement paths, densities, mobility types, infrastructure utilisation and potential problem areas - such as narrow passages - can be recognised and evaluated in real time. The integrated artificial intelligence supports this by specifically identifying anomalies and trends and drawing attention to them.

## Avoid waiting times

A defect in the vehicle, a construction site or traffic jam on the road - sometimes a small thing is enough to throw the timetable out of sync. With the "Intelligent Connection Pro-

tection" by Cosmo Consult AG from Würzburg, manual efforts in operations can be reduced and waiting times for passengers can be avoided. In the event of a delay, the use of artificial intelligence determines within seconds which type of coordination is necessary to achieve the greatest cost-benefit factor. For example, survey data on transferring passengers

as well as the proportionate use of the means of transport (bus, train) for the onward journey are taken into account. The data-based result is delivered as a suggestion and can be automatically transmitted to the vehicle driver by means of an individual extension. It provides information on whether a vehicle should be kept waiting or not.

Anschlussicherung											
Linie Abbringer		Station		Eingreifen notwendig			Kein Eingreifen notwendig			alle Anschlüsse	
Linie Abbringer	Station	Fahrtrichtung	Zeit Abfahrt Abbringer	Warteminuten	Entscheidung Warteminuten	Wartung Abbringer	Maximale Abfahrt nach Fahrplan	Anschlüsse durch Warten	Anschlüsse durch Warten	Wegweisende Anschlüsse	Betroffene Folgeknoten
94NC	Bad Herrenalb- BfH	R	12:00	Kein zurückhalten nötig	0	0	0	1	0	0	0
S4	Bretten Baden	R	12:00	Kein zurückhalten nötig	0	2	0	2	0	0	0
192K	Bruchsal	H	12:01	Zurückhalten	2	0	1	0	1	0	0
198C	Bruchsal	H	12:01	Zurückhalten	2	0	1	0	1	0	0
RB17c	Bretten Baden	R	12:01	Zurückhalten	1	0	1	0	1	1	0
REB	Bad Friedrichshall Hbf Gleis 4	H	12:01	Kein zurückhalten nötig	0	0	1	2	0	0	0
S1	Erdingen Stadt Gleis 3	R	12:01	Kein zurückhalten nötig	0	0	0	0	0	0	0
118E	Bad Herrenalb- BfH	R	12:02	Kein zurückhalten nötig	0	0	0	1	0	0	0
RB17c	Bretten Baden	H	12:02	Nicht zurückhalten	0	2	2	1	0	1	0
S4	Bretten Baden	H	12:02	Kein zurückhalten nötig	0	15	2	2	0	0	1
S7	Bautzsch Bahnhof Gleis 5	R	12:02	Kein zurückhalten nötig	0	0	2	4	0	0	0

Overview of waiting recommendations for intelligent connection protection

Photo: Cosmo Consult AG

PricewaterhouseCoopers and Cosmo Consult AG presented their software solutions for intelligent data assessment at InnoTrans 2022 - two world firsts which help optimise the capacity utilisation of public transport and reduce operating costs.

## Travel is more than just reaching your destination



Eye-catcher at the trade fair: the stainless steel galley by Kugel Edelstahlverarbeitung GmbH

Photo: Messe Berlin GmbH

To convince even more people to travel by rail in an environmentally friendly way, trains not only have to be reliable and fast, they also have to offer a pleasant travel experience. At InnoTrans 2022, around 20 companies presented their solutions for delicious food and drinks, robust fittings, stable on-board entertainment and comfortable sanitary areas on trains.

■ On the "Travel Catering & Comfort Services Route" (TCCS), InnoTrans visitors were able to meet companies such as Kugel Edelstahlverarbeitung GmbH, a supplier of stainless steel kitchens for on-board train catering.

Kitchens are supplied to customers as a complete package, including all connections – and of course in compliance with railway-relevant fire protection standards. A kitchen for the ÖBB Railjet and the new

generation Nightjet trains was on display.

Several companies also presented accessories for on-board catering: from thermoelectrically cooled catering trolleys and specially developed

dishwashers for rail applications to on-board cutlery and crockery. For night trains, exhibitors showed their selection of pillows, sheets and blankets for a restful sleep during the journey. simplify engineering AG presented stationary goods elevators for the supply of food and beverages to the on-board catering facilities. The TCCS route also featured catering products as such.

### All-round comfort for passengers of all ages

In terms of on-board connectivity, PaxLife Innovations GmbH presented its solution. Even on route sections with poor Internet connection "to the outside" its cloud solution is able to offer on-board network services, so that passengers can enjoy streaming from a selection of videos, consult maps

showing the position of the train or make on-board catering orders from their seat.

Varicor GmbH presented its mineral material for surfaces in trains, such as washstands in the sanitary area, but also for fittings and shelves. Varicor manufactures its products using a special casting process which allows great freedom of design. According to the manufacturer, the material is "non-porous, extremely wear-resistant and easy to clean."

The Japanese CombiWith Corporation makes travelling with babies easier. It has developed specifically designed space-saving changing tables and a high wall-mounted seat for sanitary compartments on trains, allowing parents more freedom of movement when using the sanitary area. The products are already being used on trains in Japan, Korea, Taiwan and Italy.



Safe baby seat for the sanitary area by CombiWith Corporation from Japan

Photo: CombiWith Corporation

## Partition wall turns into intelligent display



Smart Glass Display from Vision Systems

Photo: Vision Systems

■ The intelligent glass partition from French manufacturer Vision Systems offers a further option for the display of news, images and videos, such as travel information or advertising. When nothing is being displayed, this partition can

remain transparent or opaque (white or dark) to provide privacy between classes. The partition's glazing integrates Polymer Dispersed Liquid Crystal (PDLC) and Suspended Particle Device (SPD) solutions, which allow the partition to

be either transparent to let light through or opaque to provide the right contrast for content readability. Vision Systems is also developing the digital application to control the partition from a tablet or other central control panel.

## Travelling more comfortably

Neapolitan manufacturer Pianfei Compositi Srl, which is part of the Aviointeriors Group, is bringing the business travel convenience of air travel to the railway sector.

Allegra - Sleeperette Club Seat  
Photo: Pianfei Compositi



■ The railway market is ready for another prestigious leap in comfort for business-class passengers on high-speed trains. In fact, no public or private rail company has yet paid attention to the comfort of business passengers on high-speed trains, as is the norm for equivalent air travel. This is the reason why Pianfei Compositi decided to launch an innovative "sleeperette" seat which can be transformed into

a bed, offering passengers comfort and privacy with a unique stylish Italian design as they have been exporting to the international aerospace market for many years. At the same time, they have not failed to improve the comfort of economy class passengers who have booked a seat with a unique and innovative design which offers great comfort for a journey in complete relaxation.



Discussion and practical examples on the topic of BIM at the Tunnel Forum

Photo: Messe Berlin GmbH

Once again this year, the Studiengesellschaft für Tunnel und Verkehrsanlagen e.V. (STUVA, Society for the Study of Tunnels and Transportation Systems) invited participants to a discussion at InnoTrans 2022. During the STUVA International Tunnel Forum, selected experts highlighted the potential of BIM for tunnel construction and the operation of mobility infrastructures.

■ Back in 2015, the German Federal Ministry of Transport presented a phase plan for the gradual introduction of BIM. "There are initial BIM-based pilot projects – such as the one in Rastatt – which are already being implemented, others are still in the planning stage," explains Roland Leucker, Managing Director of the Studiengesellschaft für Tunnel und Verkehrsanlagen e.V. (STUVA). Matthias Flora, Foundation Professor for Tunnel Information Modelling at the Leopold-Franzens University of Innsbruck, adds, "BIM in civil engineering is a recent field of research and became a topic as late as around 2017." Similarly to his predecessor Leucker, Flora sees a central challenge in the use of BIM for underground construction projects in the subsoil factor.

### Considering the complete life cycle of a project

Marcus Schenkel, Head of Infrastructure Projects Region Southeast at DB Netz AG, outlined the current status of ongoing BIM tunnel construction projects at Deutsche Bahn. Stefan Franz, project manager at Deutsche Einheit Fernstraßenplanungs- und -bau GmbH (DEGES, German Unity Long Distance Road Planning And Construction Company), then described how BIM is used in his company. DEGES, as a builder of major road projects, has been using the planning method since 2014. "The 'Digital Planning and Construction' division was founded in 2018 after early consistently positive experiences in the application of

the method in pilot projects," said Franz. The team of the 'Digital Planning and Construction' division looks at the entire life cycle of a project and accompanies project teams in the introduction of digital methods.

As Edgar Schömig, member of the executive board of Ed. Züblin AG, explained, Züblin uses BIM in tunnel construction to link 3D models with costing, scheduling, relevant information and processes in projects. In order to realise this successfully, a uniform project structure and a systematic outline are required, independently of specific projects. In recent years, the Deutscher Ausschuss für unterirdisches Bauen e.V. (DAUB, German Committee for Underground Construction) has pushed ahead

with the development of concrete BIM action instructions for underground construction. The first recommendations were published in 2019 and 2020, and four further parts were added in the course of this year. "We are currently working on making the developed object characteristics catalogue for tunnel construction available to the professional community via a so-called characteristics

server. The catalogue was presented with the recommendations. The aim is to enable the individual players to call up the features directly and integrate them into their BIM systems, so that an exchange of information across disciplines and companies is possible. The feature server is thus used by other systems as a unique source ('single source of truth')," says Roland Leucker.

## 90 percent less fine dust in railway tunnels

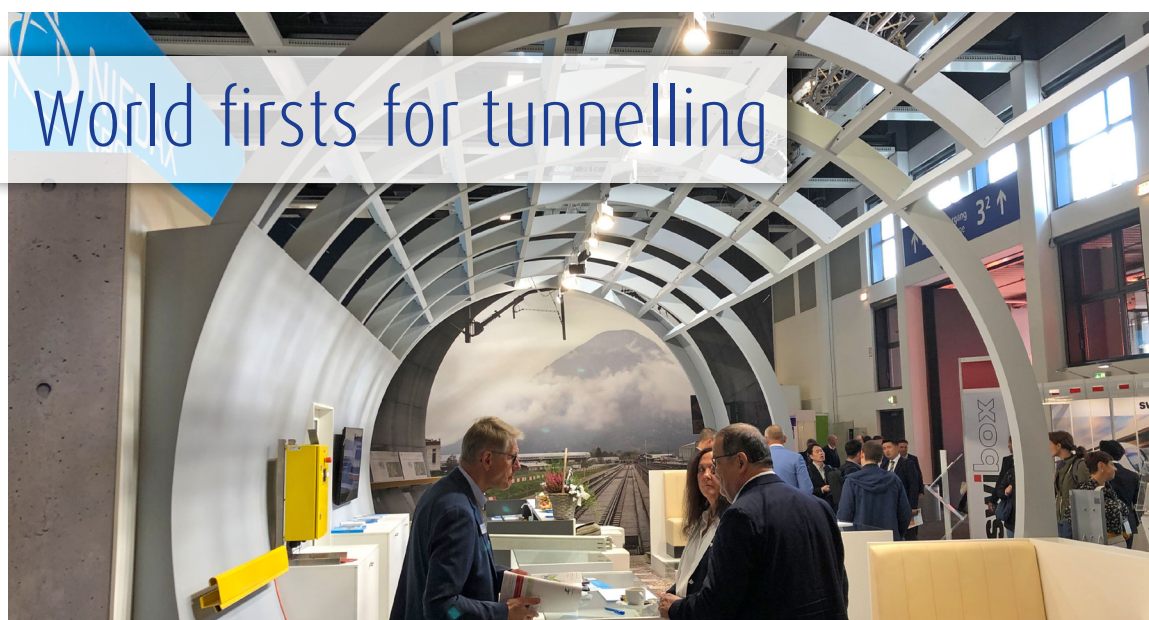
One of the world's most pressing challenges for railway operators is fine dust pollution. With Green Friction, Wabtec Corporation has developed a solution which helps to reduce this pollution in tunnels and underground railway stations.

■ The Green Friction braking system addresses the friction braking of trains. The range of Green Friction materials not only ensures the required performance of the brakes, but also reduces the emission of brake particles – particularly the finest particles (PM 2.5 and PM 1) – by up to 90 percent. Thereby, the technology guarantees the same braking performance as the original material.

### Tested together with the Paris RATP

The fact that Green Friction is already making an important contribution to the reduction of fine dust pollution is shown by the coopera-

tion with the Paris train and metro operator RATP. Several tests were carried out to investigate the fine dust pollution caused by conventional brake pads and by the Green Friction brake system developed by Wabtec. The results of the final test phase confirm the innovative power of the new technology, which helps to reduce particulate matter and emissions worldwide and to make train and underground traffic cleaner and safer for everyone. Wabtec is a global leader in innovative transport solutions. With over 27,000 employees in more than 50 countries around the world, Wabtec provides equipment, systems and digital solutions for the rail freight and transport sector.



Niedax Group and Swibox AG at InnoTrans 2022 in Hall 5.2

Photo: DVV Media Group

The construction, operation and maintenance of railway tunnels require the interaction and skills of a wide variety of trades. Experience, knowledge and new possibilities flow into the construction of new tunnels and the refurbishment of existing ones. At InnoTrans 2022, exhibitors in the Tunnel Construction segment once again demonstrated their expertise. Swibox AG and Niedax Group had never-before-seen world firsts on display.

### Branching off without cutting the cable

Whenever cables have to be branched off, the interruption to the cable is a potentially weak point. The insulation is removed, the conductor cut and a clamping point installed for branching off. Moisture infiltration can cause the clamping point to oxidise. Additional heat is generated and the voltage drops, which results in an increased fire hazard.

The solution of Swiss Swibox AG is its UCB-Box (Uncut-Cable-Branch-Box). The innovative piercing clamps can be used to safely branch off from the trunk cable. It does not matter whether the cable is made of copper or aluminium. The enclosure system also meets the functional integrity requirements of DIN 4102-12 over a period of 90 minutes. A Europe-wide patent application has been filed and was published on 23 February 2022. With the simple and process-safe installation in tunnels, substantial savings can be made in expensive installation hours while safety is increased.

### Safe electrical installation on the track

The digitalisation of railways increases the need for safe trackside electrical installations. Niedax Group, a manufacturer of cable laying systems, has developed a special cable conduit system for precisely this application. This turn-in floor duct system (EDBK), for which a patent application has been filed, has been given product approval by the infrastructure enterprise of Deutsche Bahn, DB Netz AG. This system allows laying the energy or fibre-optic cables which are required for digital railway operation along the rail in a way which is access-protected, time-saving and does not require blocking pauses. The EDBK system is made of glass-fibre reinforced synthetic material and can be installed flush with the floor, elevated or on the floor. Contrary to known installation techniques, the previously laid out cable is rotated into the guide system and there is no need for a separately mounted cover. This means that it can be installed by only a small number of staff and without the need for rail-bound equipment.



This year's Career Award winners: Jonathan Chan; Isabella Brioso; Beema Dahal; Kerstin Schulz, Director InnoTrans; Erik Schäfer, Product Manager InnoTrans; Simon Lehman; Tyler Kleinsasser; Stefan Sutter; Eva Zimmermann; Alena Conrads; Shehryar Tariq; Giovanni Celentano; Joel Amstutz; Alberto Fruchi; Alexander Staub and Marco Sala (l.t.r.)

Photo: Messe Berlin GmbH

■ The Career Award winners were honoured with a very special prize – a visit to InnoTrans including travel, hotel and programme. The Career Award has been conferred since 2016. The competition is organised by national and international associations and institutions which honour their domestic students for special achievements in their studies related to railway and public transport. This year a total of 19 students from Australia, the USA, Canada, Italy, Switzerland and Germany won a trip to Berlin. At InnoTrans they were given a comprehensive overview of the industry and were able to make specific contacts for their future careers.

Six award winners describe their impressions:

**Beema Dahal (USA):**

"I am very proud to have had the opportunity to be here at the largest international trade fair for transport technology. It provides a wonderful platform for young professionals like me to expand our knowledge and network with experts in the railway industry."

**Marco Sala (Italy), Project Manager Assistant Hitachi Rail STS:**

"I am proud of this achievement and very happy to have been here. Many thanks to InnoTrans and Messe Berlin for this opportunity."

**Alexander Staub (Switzerland), Electrical Engineer Traction Technology Stadler Rail:**

"What I find particularly inspiring about InnoTrans is the opportunity to see the train concepts of the future and to get an insight into other areas of the rail industry which I did not know before. A further highlight was the personal exchange with other rail enthusiasts."

**Jonathan Chan (Australia), Associate Rail Engineer:**

"InnoTrans is exciting and overwhelming at the same time. There is so much to discover in all the exhibition halls, which makes it clear how extensive and diverse the rail industry really is. Seeing the different elements that come together to build a functioning railway has broadened my perspective on the scale of the industry."

**Shehryar Tariq (Canada), Project Engineer (EIT) at PNR RailWorks**

"It is a great honour to be one of the winners of the Career Awards at InnoTrans. It's a great experience to see railway exhibitors from all over the world working on finding ways to improve rail transport with their different technologies and infrastructures."

**Eva Zimmermann (Germany), Industrial Engineer Deutsche Bahn AG**

"Since I have been working in the railway industry, I have been told so many times about InnoTrans. I was very pleased to finally be there myself, and then even as an award winner."

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