



Railtalk Magazine *Xtra*

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Content

Pg 2 - Welcome

Pg 4 - Pictures

Pg 55 - World News

Pg 63 - From the Archives

Submissions & Contributions

Railtalk Magazine Xtra, a magazine written by the Enthusiast for the Enthusiast. So why not join the team. We are always looking for talented photographers and writers to join us at Railtalk. Be it though pictorial submissions or via a written article featuring an event or railtour, we greatly appreciate any contributions to the magazine however big or small.

Photographic Contributions

All Photographic contributions should to be sent to us via email, post or via the members section page on our website. Contact addresses are provided above.

All images should be provided at a resolution of at least 2400px x 1700px at 240dpi.



Welcome to Issue 184Xtra

Welcome to 2022, which starts just like 2021 actually and pretty much of 2020 also, the prospect of not having freedom to travel where we want and when we want without restrictions. Lets hope that by the spring, we regain some of that valuable freedom.

We start this month with news that Finnish rolling stock maintenance company, VR FleetCare, has signed an agreement with VR Group on the maintenance of the new Stadler diesel locomotive's stock. The agreement period is 10 years will enter into force in 2023 when the locomotives enter into commercial traffic. The locomotives represent the latest diesel locomotive technology and are significantly more environmentally friendly than older diesel locomotives.

The agreement covers the 60 ordered locomotives and the maintenance of possible option locomotives between 2023 and 2033. With the decision, VR Group's tractive stock will be fully maintained by VR FleetCare. According to the maintenance agreement, VR FleetCare is responsible for the maintenance and repair of the Dr19 locomotive in accordance with the maintenance programme. The agreement also covers spare parts and material management. The goals are a high level of usability and high-quality equipment maintenance.

Risto Kontiokoski, Vice President of VR Group's locomotive fleet management, said: "Although the negotiations were tough, VR FleetCare ultimately made a competitive offer and has a high level of expertise in locomotive maintenance. VR FleetCare is also currently responsible for the rest of our tractive stock. The locomotives, which are almost twice as powerful as the old diesel locomotives, are low-emission and can also be fuelled with renewable fuels. We are also looking at other forms of motive power for the locomotive, because it may be changed in the future. The modular design of the locomotive would allow for changes in the form of motive power as the availability of renewable fuels improves and sufficiently efficient and competitive alternatives come to the market."

The Dr19 is a new type of locomotive from VR Group, manufactured especially for freight traffic. It is also tailored to the challenging winter conditions in Finland. Only slightly over half of Finland's 6,000km-long railway network and shunting yards have been electrified. Although the network is being electrified, diesel locomotives will still play an important role in the coming years. The locomotives will become part of commercial traffic in 2023. Maintenance work will be carried out at VR FleetCare's service workshops and depots around Finland.

Jouko Järvinen, Vice President of Locomotive and Track Machine Services at VR FleetCare, said: "The maintenance agreement for VR Group's latest locomotive is very significant for us. It is also great to have the opportunity to perform maintenance on a locomotive with the latest technology. When it comes to providing tractive stock services, we have lots of experience in locomotive maintenance, and we also have modern working facilities and skilled personnel. Through high-quality work, we ensure that tractive stock does not cause problems for customers' transports."

Meanwhile also in Finland, Russian Railways (RZD), Karelian Trains and the Finnish rail traffic maintenance company, VR FleetCare, have signed a 20-year agreement on the maintenance and lifecycle services concerning the high-speed trains operating between Helsinki and St. Petersburg starting from 2022. The rolling stock consists of a total of four electric trains with seven wagons manufactured by Alstom. With this agreement, the Allegro trains will continue to be maintained at the Helsinki depot in Finland.

As always a massive thanks for all the excellent photos, please do keep sending them in, until next month....

David

This Page

In Slovenia, Sz Class 541.013 passes Crnotice with a rake of VTG wagons. [Laurence Sly](#)

Front Cover

Norwegian Di4 No. 655 waits at Dunderland at approx 15:00 (sunset was at around 13:30) with the 12:27 Bodo to Trondheim service on December 13th.

[Mark Torkington](#)



On December 11th, NS SGM2 No. 2136, SGM3 No. 2992 and SGM2 No. 2143 are seen in Lisse working intercity service No. IC2145 from Amsterdam Centraal station to Den Haag Centraal station. After 46 years this was the last day of regular service with these trainsets. *Erik de Zeeuw*

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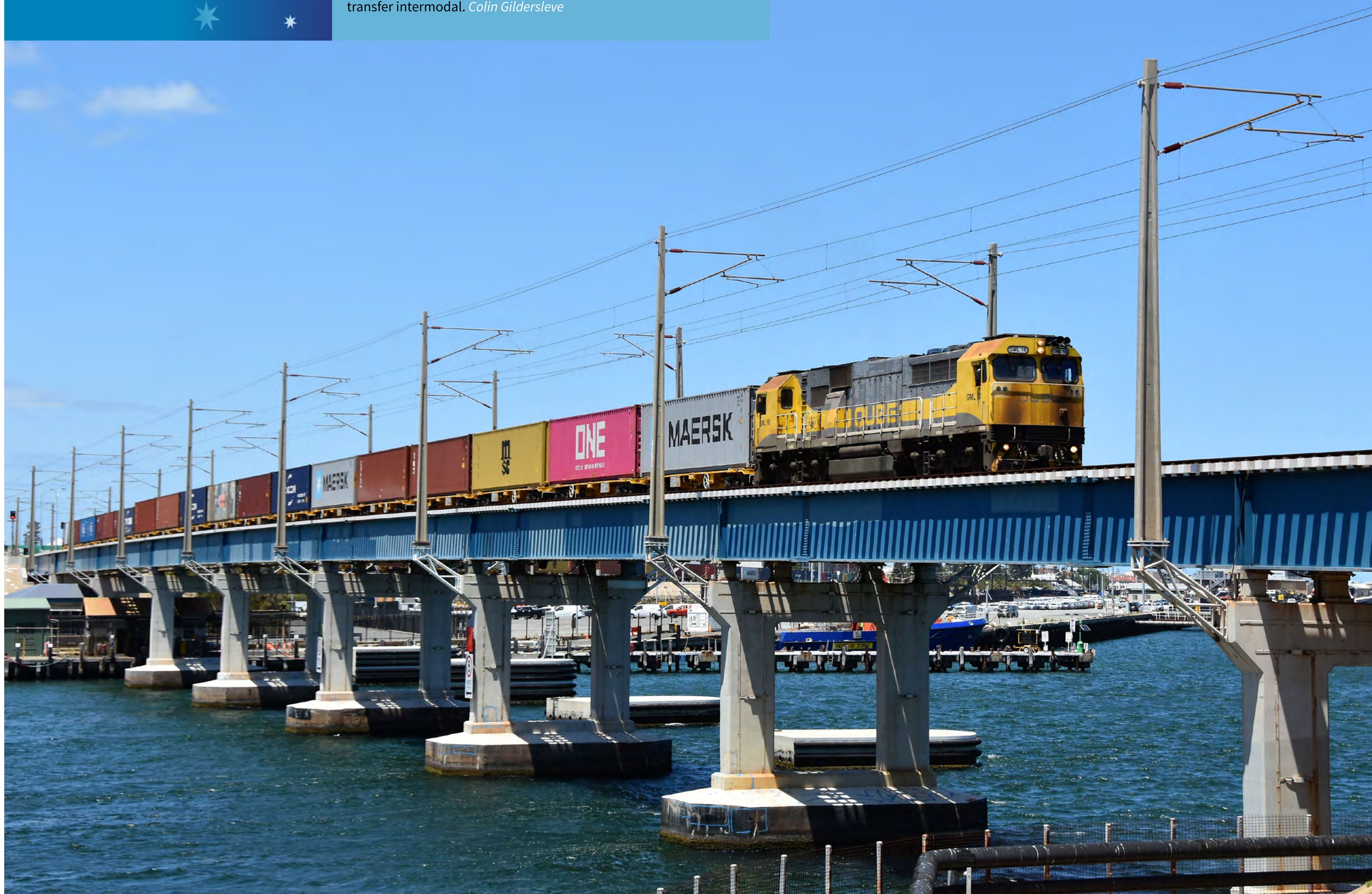
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With Thanks

Once again many thanks to the many people who have contributed, it really makes our task of putting this magazine together a joy when we see so many great photos.

These issues wouldn't be possible without: Ray Anslow, Brian Battersby, Mark Bearton, Mark Bennett, Tim Blazey, Rob Boyce, Keith Chapman, Julian Churchill, Nick Clemson, Derek Elston, Mark Enderby, Tim Farmer, Dave Felton, FrontCompVids, Colin Gildersleve, Paul Godding, Richard Hargreaves, Jim Haywood, Keith Hookham, Colin Irwin, John Johnson, Anton Kendall, Mathijs Kok, Jyrki Lastunen, Ken Livermore, Michael Lynam, Peter Marsden,

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More night trains for Europe: two new Nightjet lines are launched

Vienna – Munich – Paris and Zurich – Cologne – Amsterdam start

The Berlin – Brussels and Berlin – Paris lines will start at the end of 2023

Europe has grown closer together by rail: With Vienna – Munich – Paris and Zurich – Cologne – Amsterdam, two new night train connections were launched when the timetable changed. These two lines mark the start of a joint night train offensive by the Austrian Federal Railways (ÖBB), the Deutsche Bahn (DB), the French SNCF, the Swiss Federal Railways (SBB) and in cooperation with the Dutch Railways (NS). Further lines are already specifically planned. The Berlin – Brussels and Berlin – Paris lines will start in December 2023.

Andreas Matthä, CEO of ÖBB: “With the Nightjet we are offering a climate-friendly alternative to short-haul flights within Europe. The new connections are a strong sign of international cooperation between European railways. Only together can we build a European night train network for environmentally conscious travel. Taking the train through the night to the most romantic city in the world, to the city of love, that of course has something very special for many passengers and also for me: with beautiful dreams in the dream city.”

DB Board Member Passenger Transport Berthold Huber: “A strong range of rail transport is indispensable in order to achieve the EU’s climate targets. Europe’s leading railways are joining forces for the night train. This is how we win even more customers for the railways and together set an example for climate-friendly travel in Europe.”

Vienna – Munich – Paris

From December 13th, the Nightjet will travel from Vienna to Paris three times a week. Every Monday, Thursday and Saturday there is a direct route from Vienna Central Station via St. Pölten, Linz, Salzburg, Munich (East) and Strasbourg to Paris Gare de l’Est. Departure from Vienna is at 7:40 p.m., arrival in Paris the next day at 9:42 a.m. The connection from Paris to Vienna is offered every Tuesday, Friday and Sunday. The direct train to Paris revives the history of the Orient Express, which was on this connection until 2007.

Zurich – Cologne – Amsterdam

In addition to the new connection Vienna – Munich – Paris, a new Nightjet will also start from Zurich via Basel and Cologne to Amsterdam when the timetable changes. This connection, which also offers inexpensive seats in intercity coaches, is particularly interesting for travellers from North Rhine-Westphalia. Thanks to the early departure from Cologne, day travellers can reach Amsterdam shortly after 9 a.m. The late return trip at around 8.30 p.m. enables a stay in Amsterdam of eleven and a half hours - two and a half hours longer than before.

The two new Nightjet lines connect a total of 15 German cities with the European night train network. Tickets for Nightjet connections are available in the seated car from 29.90 euros per person and direction, in the couchette car from 59.90 euros and in the sleeping car from 89.90 euros. The Nightjet tickets are available in all DB travel centers and agencies as well as via bahn.de and the DB Navigator app. Alternatively, tickets can also be booked in the ÖBB travel centers, online in the ÖBB ticket shop, in the ÖBB app and from customer service on +43 5 17 17. Further information on the ÖBB Nightjet is available at nightjet.com.

Photo: From left to right: Klaus Garstenauer (board member ÖBB-Personenverkehr), Michaela Huber (board member ÖBB-Personenverkehr), Michael Peterson (CEO DB Fernverkehr), Alain Krakovitch (General Director Voyages SNCF at SNCF Voyageurs), Jean-Baptiste Guenot (Head of Long-Distance Travel, SNCF) and Marco Kampp (Head of International Long-Distance Transport, DB) in front of a Nightjet at Munich East Station.



Austria

RCG warehouse locations made climate-neutral

Two of three ÖBB Rail Cargo Group (RCG) warehouse locations in Austria are now climate-neutral - namely Lenzing and Vienna Freudenau. RCG is therefore offsetting unavoidable emissions.

RCG records greenhouse gas emissions for the Lenzing and Vienna Freudenau locations, continuously reduces them and now offsets unavoidable emissions through climate protection projects. RCG is also focusing on climate protection and sustainability beyond the modal shift plan.

RCG therefore invests in climate protection projects run by the ClimatePartner organisation as an offsetting measure. These include wind energy projects in Bandırma in Turkey, regional projects in the Karwendel Nature Park in Austria and additionally a forest protection project in Brasil. As a result, both locations - Lenzing and Vienna Freudenau - now feature the “climate neutral” label, which is awarded independently. This process is reviewed annually by TÜV Austria.

In addition to the avoidance and reduction of greenhouse gases, offsetting is an important step in holistic climate protection. As a leading rail logistics specialist, we are focused not just on separating ourselves from the competition, but also on value orientation. Responsible action in harmony with the environment and society is an important principle for long-term economic success.

Lenzing - a long-time partner of RCG

The Lenzing Group supports the ecologically responsible production of specialty fibres from wood, a renewable raw material. Its innovative product and technology solutions make Lenzing a partner to global textile and non-wovens manufacturers and a driver of numerous new developments. The Lenzing Group's high-quality, biodegradable fibres form the basic material for a wide range of textile applications and are also ideally suited for use in hygiene products. RCG ensures good transport shipment, consignment and the loading and unloading of rail wagons, containers and trucks for Lenzing at the warehouse location.

RCG and Lenzing share a long-standing partnership in the rail and warehouse logistics sectors, in addition to the pursuit of sustainable, green solutions.



ROLA beats last year's transport volumes

As early as October, the Rolling Road (ROLA) had surpassed the transport volumes achieved in the full-year in 2020 and 2019.

ROLA's concept of transporting trucks on an environmentally friendly rail system is one that has really gained momentum this year. In 2019 about 151,000 trucks were transported across all ROLA routes; in 2020, that number was 147,000.

This year the ÖBB Rail Cargo Group (RCG) managed to reach that level in Autumn. At the end of October the total number of trucks recorded on all ROLA routes was 158,000, meaning that RCG has already exceeded its performance from the last two years. This positive outturn is also reflected in the tonnes of CO2 saved by ROLA: it has saved more than 20,000 tonnes since the start of the year.

ROLA = Environmental protection

Every truck that is transported by rail saves CO2, reduces the impact on those living near transit routes and avoids congestion, which in turn reduces delays and stress. The ROLA system involves transporting the whole truck, including the tractor unit, on a low-floor wagon. The truck drivers travel in their own carriage with on-board catering – their ROLA journey counts as part of their statutory driving and rest time.

The Rail Cargo Group operates the cross-border connection between Wörgl and Trento from the terminal in Wörgl, in addition to the Brenner Pass connection. As well as the Brenner line, RCG offers another connection between Wels and Maribor.



Alstom to supply Belgium's SNCB with an additional 98 multifunction M7 train cars

Alstom has received a new order to supply a further 98 double-deck M7 multifunction train cars to the Société Nationale des Chemins de Fer Belges (SNCB). The order forms part of a framework contract signed in 2015 for the supply of up to 1,362 M7 train cars and is worth a total of around €268 million. SNCB has ordered a total of 747 train cars to date.

The M7 train car is based on the same concept as double-deck M6 train car, which are popular and known for their high level of reliability. The new interior arrangement and enhanced passenger information systems optimise passenger comfort.

The train provides SNCB with broad operational flexibility since the cars can operate commercially as multiple-unit trains or can be drawn by specialised traction stock along with other car types. The trains can operate up to a speed of 200 km/h across Belgium's electrified network and on cross-border lines linking the country with the Netherlands and Luxembourg.

"This order underlines the high level of confidence SNCB has in our double-deck trains," says Bernard Belvaux, Managing Director Alstom Benelux. "Indeed, we now are in the process of delivering this new equipment. More than one hundred passenger cars are already operating

on the Belgian network with a high level of availability and recognised levels of comfort. We are excited to serve the transport system in Belgium by supplying a comfortable solution that addresses the growth in passenger numbers".

The M7 power car is developed by Alstom at its Valenciennes double-deck centre of excellence. The M7 cars are assembled at Alstom's sites in Bruges, Belgium, and Valenciennes, France. Alstom's site in Crespin, France, performs the carbody assembly of the trailer cars.

Alstom's center of excellence in Charleroi, Belgium, supplies the traction system and the national and European signalling systems. Alstom's centre of excellence in Siegen, Germany, supplies the bogie system for the M7 trailer cars and Le Creusot, France, supplies the bogie systems for the M7 steering cars.





Belgium

Siemens Mobility to retrofit the Belgian Railways train fleet with ETCS Level 2 technology

Siemens Mobility to retrofit 305 Siemens Desiro commuter trains, 64 M6 steering cars and 21 I11 driving cars supplied by Bombardier/Alstom

The Belgian Railways fleet will now meet the latest European standards baseline V3.6.0 for rail safety interoperability

Siemens Mobility will provide 10 years of maintenance for ETCS system

Siemens Mobility has been awarded a contract by NMBS/SNCB, the Belgian National Railways, to retrofit 390 trains and driving cars with European Train Control System (ETCS) Level 2 technology.

With the ETCS Level 2 upgrade, the fleet will be able to operate with a greater degree of efficiency and meet the latest European standards for rail safety interoperability. Siemens Mobility will provide the onboard unit equipment and installation support for trains across the fleet. The new technology will not only support the existing national functions in Belgium and Luxembourg, the re-authorisation of a number of the retrofitted vehicles will

also allow the vehicles to potentially operate in Germany and the Netherlands. In addition, Siemens Mobility will provide 10 years of maintenance for the ETCS system and will also provide an Online Key Management Solution which will further digitalize train operation.

“We are excited to once again partner with the Belgian Railways to help modernize their rail operations. Our sophisticated and field proven ETCS products and applications will improve safety and increase capacity,” said Andre Rodenbeck, CEO of Rail Infrastructure at Siemens Mobility. “Furthermore, this project is another important step in transforming the European railway

towards a harmonized and interoperable system that safely paves the way for cross border rail transportation.”

The retrofitting of the fleet will be carried out through a comprehensive approach that includes the design of a vehicle-specific system integration concept. Where feasible, essential parts of the existing ETCS onboard unit equipment will be maintained. Siemens Mobility has already equipped the Desiro trains in the fleet with a previous version of the Trainguard ETCS Level 1 solution. This approach will also enable the upgrade of the Alstom based ETCS on-board solutions that were equipped on the I11 and M6-style steering cars supplied by Bombardier. Siemens Mobility will initially retrofit and re-authorize a prototype of each vehicle type. By investing in the ETCS Level 2 upgrade, the Belgian Railways will meet the latest European standards baseline V3.6.0 for rail safety. The new system will also simplify future upgrades to the next ETCS versions according to TSI standards (Technical Specifications for Interoperability), which provides the basis for additional functionalities like Automatic Train Operation (ATO).

With its decision to opt for ETCS, Europe has paved the way for futureproof, cross-border rail traffic. Promoted by political leaders and driven by railway operators and leading providers such as Siemens, a network of ETCS-equipped lines is being created within Europe and beyond. In parallel to new construction projects, many railway companies are refitting their railway vehicles and fleets with ETCS onboard solutions. As one of the ETCS pioneers, Siemens Mobility has already implemented retrofit projects in several countries, including Switzerland, Great Britain, and Spain.

Siemens Mobility has been a leading rail technology provider in Belgium for many years. This includes several rail infrastructure projects in signalling, electrification, and solutions to digitalize rail. Siemens Mobility has also previously partnered with the Belgian Railways to deliver new trains and locomotives, provide route guidance and signalling for workshops as well as solutions to facilitate the passenger journey.



The Czech Rail Cargo Carrier has acquired the first EffiShunter 1000M

The Czech freight carrier Rail Cargo Carrier - Czech Republic, which belongs to the Austrian ÖBB group, has become the first private operator of the EffiShunter 1000M locomotive in the Czech Republic. The delivery of the locomotive to the operator takes place in cooperation with Unicredit Leasing Česká republika, which owns the locomotive and has leased the locomotive to RCC CZ for a long time.

The delivery of the locomotive also includes a new MyLOKO application for the management and maintenance of the locomotive fleet. The handover took place at the turn of November and December at the CZ LOKO plant in Jihlava. The locomotive, equipped with an ECTS interlock, will be used mainly in the Ostrava region, but will be approved for operation in the Czech Republic, Slovakia and Hungary.

“Our contractual partner is Unicredit Leasing, with which the carrier has concluded a contract for its lease and maintenance. Our company will take care of the complete maintenance within the framework of a full service contract, which is the current trend,” said Michal Schaffer, Head of Marketing.

Both the carrier and the RCC already have two EffiLiner 1600 locomotives in their fleet, nicknamed Bizon, also through Unicredit Leasing. The company, which is part of the state railway Österreichische Bundesbahnen (ÖBB), uses them in its subsidiaries RCC - Czech Republic and RCC - Slovakia.

Photo: ©CZ Loko



ČD Cargo is newly connecting Lovosice with Rotterdam

On the evening of Tuesday, December 14th, 2021, the first ČD Cargo train from Rotterdam arrived at the ČD-DUSS terminal in Lovosice.

The transport was provided along the entire route by Vectron of ČD Cargo - in the Czech Republic and Germany (to the terminal in Lehrte) under a ČD Cargo license, then to the Netherlands on an LTE-NL license.

Four round trips per week will be held regularly. At the Lehrte Megahub terminal, partial reloading of containers and semi-trailers takes place in both directions.

Photo: ©CD Cargo



New Vectron locomotives for ČD Cargo

ČD Cargo, which already operates 12 own Vectron locomotives within its vehicle fleet and others leased for the time being, has ordered two Vectron AC alternating current electric locomotives with a Diesel Power Module (DPM) from Siemens Mobility. Now, it is the first order of locomotives that can be operated either in the mode of supply from the electric traction line 15 kV AC or 25 kV AC (dependent electric traction, rated traction power 6,400 kW), or in the so-called Last Mile mode to overcome the final section without a catenary line. For this purpose, Vectron AC locomotives are equipped with a Diesel Power Module (DPM). It consists of a diesel-electric aggregate located together with its accessories and a fuel tank in the locomotive, capable of supplying electricity to the traction and auxiliary drives of the locomotive (independent diesel-electric traction, internal combustion engine power 180 kW).

“We currently use three leased locomotives with the last mile diesel technology within our branch in Austria. The very positive experience with this technology, which eliminates the need to use another shunting locomotive when operating the last mile, in most cases the siding network of our customers, reassured us in the decision to purchase them. We have very good experience with Siemens Vectron locomotives at the head of our trains, which is why we are glad that our fleet will be increased by two more engines, now also with the DPM technology,” says Tomáš Tóth, Chairman

of the Board of ČD Cargo, and continues, “Purchase of new, interoperable locomotives is part of our long-term concept of renewal and sustainability of the vehicle fleet, within which, among other things, we acquire at least 10 new locomotives of similar parameters every year. Vectrons AC with the DPM move the interoperability of this type of locomotive and, of course, our entire locomotive fleet again a little further.”

“Vectron AC with a Diesel Power Module (DPM) is a great investment in the future of sustainable rail freight. It quickly and at low cost allows you to overcome short non-electrified sections at the beginning or at the end of a freight train journey. Thanks to this, a single electric locomotive can transport a freight train along its entire route without the need to use other diesel engine shunting locomotives,” says Roman Kokšal, CEO of Siemens Mobility Czech Republic.

He also adds: “The operation of these locomotives increases the attractiveness and efficiency of rail freight. They are therefore an effective tool for achieving the goal of shifting freight from road to electrified rail. In doing so, they contribute to a significant reduction in energy consumption as well as carbon



dioxide emissions and harmful substances. Let us add that the Vectron AC with a DPM is equipped with the European train control system ETCS Level 2 Baseline 3, including approvals The national train control devices PZB, LZB and Mirel are also installed.”

The locomotive was already granted approvals for operation in the Czech Republic, Slovakia, Germany, Austria and Hungary

Photo: ©CD Cargo

Alstom to provide trains and maintenance support for the Marseille-Nice regional line

On December 16th, Alstom and Transdev formally launched in Crespin (Hauts-de-France) the implementation of the contract for the supply of 16 8-car trains for the Marseille-Toulon-Nice line, which Transdev will operate in summer 2025. This order, worth approximately 250 million euro, also includes maintenance support for the trains for a 10-year period. Delivery of the new material, manufactured at Alstom's Crespin site, will begin at the end of 2024.

The launch took place in the presence of Olivier Delecroix, Sales Director of Alstom France, and Vincent Destot, Regional Director of Transdev Hauts-de-France, who is very involved in Transdev's rail projects.

"We are proud to participate in the implementation of the first concession of a French regional line with Transdev. We are offering a proven, comfortable train, capable of running at 200 km/h, in order to serve the mobility of all passengers. We will also provide maintenance support and thus contribute to the long-term operational efficiency of the trains. These new trainsets will replace the current Corail cars and will be added to the many Alstom trains already running in the Southern Region," explains Olivier Delecroix, Sales Director of Alstom France.

"We are delighted to be able to work with Alstom, which has a long history in the Hauts-de-France region, to enhance our rail offering in the context of regional rail being opened up to competition, and to enable everyday passengers to benefit from a high quality of service," emphasises Vincent Destot, Regional Director of Transdev Hauts-de-France.

"Transdev is looking forward to the start of the concession, in the summer of 2025, so that all passengers on the Marseille-Nice line can discover the unequalled comfort of the Omneo Premium trains and enjoy the best services that will be available on board," added Claude Steinmetz, Rail Director of Transdev France.

A train that combines capacity, comfort, and accessibility. These Omneo Premium trains come from Alstom's Omneo platform, of which 491 train sets have already been ordered by 10 French regions (373 "Regio 2N" suburban and regional trains and 118 "Omneo Premium" Intercity trains).

The Omneo Premium trains on the Marseille-Toulon-Nice line will be adapted to meet Transdev's specific operating challenges which include:

- Creation of a convivial space allowing passengers to enjoy a catering area (with a snack offering);
- Interior fittings offering all the services desired by the Region, such as bicycle spaces (12 per train), doors to separate the 1st class areas, and interior harmony reflecting the image of the Region and of the line on which the trains will run;
- Implementation of new on-board services, including innovative systems for video surveillance, seat reservation or bicycle space reservation, passenger counting and 4G communication between the train and the ground.

The new 8-car trains are 110 metres long and will accommodate up to 352 passengers (plus 66 folding seats for short journeys). This high capacity is achieved by alternating single and double-deck cars. Comfort has been particularly well thought out for long journeys: wide seats, large glass walls to take advantage of the natural light and the panorama of the seaside, clear passenger information with screens and displays, air conditioning, 2 classes with lower and upper decks, toilets and connectivity tools (Wi-Fi, electrical and USB sockets).

This coastal train will accommodate all travellers thanks to wide corridors and multi-purpose areas on the ground level, allowing bicycles, scooters, and luggage to be parked.

10-year maintenance support

Alstom will also provide Transdev with 10-year



maintenance services for the 16 trains. Alstom's Services teams in France will provide maintenance engineering, supply spare parts, and overhaul the main components (including bogies, engines, pantographs).

Alstom is a certified Railway Company as well as a certified Entity in charge of Maintenance (ECE). With 12 service centers and more than 1,000 employees dedicated to services in France, Alstom has a unique knowledge of rolling stock as well as the industrial base to meet the challenges of heavy maintenance of main components. An "Origine France Garantie" train, manufactured in the Hauts-de-France Region

The Alstom site in Crespin (Hauts-de-France) will design, manufacture, assemble and homologate the Omneo Premium trains for the Marseille-Toulon-Nice line, which Transdev will operate in summer 2025.

For the third year in a row, Alstom's Omneo train has been awarded the "Origine France Garantie" official

label, the only certification that attests to the French origin of a product, thanks to an independent audit and guarantees a high level of standards.

"This is recognition of the know-how of the employees at the Crespin site and a guarantee of our commitment to our customers, passengers and the entire French rail industry," concluded Olivier Delecroix at the signing event held at the Crespin Alstom site on 16 December. Alstom™ and Omneo™ are protected trademarks of the Alstom Group.

Regio 2N is a trademark of the French Regions Association (ARF).

Photo: Exterior view of the Omneo Premium train for the Marseille-Nice line – Non-contractual design for illustration purposes. © Alstom / Yellow Window



Germany

LOTOS Class 186.273 passes signal box 'Mathilde' in Oberhausen with an intermodal from Poznań (Poland) to Duisburg on December 8th.
Erik de Zeeuw



Plant shunting services: a single source for the first mile

Up to 250 wagons loaded with vehicles and sheet scrap leave BMW's Dingolfing and Regensburg plants each day. It's made possible by the team at DB Cargo, which the Bavarian carmaker has entrusted with plant shunting services at both locations for many years.

At the right place at the right time

"Freight wagons from a wide range of rail service providers have to be shunted in and out of the two BMW plants every day. That requires extensive planning and management," explains Christine Middendorf, Senior Account Manager at DB Cargo Logistics. "That's why

BMW chose a single rail service provider, DB Cargo, for the first mile between the railway station and its production sites in Dingolfing and Regensburg. Using a single provider facilitates coordination and communication." This means that for all BMW rail service providers, long-haul transports start and end at freight yards in Dingolfing and Regensburg, where DB Cargo either hands off the transports or its plant shunting services take over. DB Cargo brings the right freight wagons to the right loading point at the plants at the right time, or collects them once they are unloaded, based on a shunting schedule defined and arranged with BMW.

New technology reduces carbon emissions by up to 40%

"The sustainability of our transport services is of utmost importance to us at the DB Group, which is why we suggested an alternative drive solution that would improve BMW's carbon footprint. Our suggestion was very well received. Beginning in early 2022, we will be using a road-rail vehicle in Dingolfing. This vehicle, which can be used both on the road and rails, is significantly quieter and much more economical than the traditional diesel locomotive currently in use. This switch will allow us to reduce carbon emissions by up to 40%," says

Middendorf.

Excellent teamwork

The local DB Cargo shunting employees in Regensburg and Dingolfing also have positive feedback about past and future cooperation, Middendorf says: "Our staff and the employees at BMW have really come together as a team over the years. That's why it means so much to many of us that we will continue to operate shunting services for the company."





Germany

On December 8th, Rurtalbahn Cargo (RATH Gruppe) Class 185.672 shunts at the Oberhausen West Yard. The MOSOLF Group is one of the leading system service providers for the automotive industry in Europe. *Erik de Zeeuw*



CFL Cargo No. 37053 is seen in Oberhausen with a rake of Roos cars loaded with pipes on their way from Gütersloh to Vitry-le-François (France). *Erik de Zeeuw*





New siding: Palm Group is investing into the future

Palm Group is getting ready for the future: not only has the family-owned company invested more than half a billion euros in its Neukochen plant and headquarters just outside Aalen in Baden-Württemberg, but it has also completely overhauled its paper mill. Its centrepiece is a state-of-the-art corrugated paper production facility, the largest of its kind in the world, with a capacity of 750,000 tonnes per year. This represents a 100% increase in production volumes.

“Transporting as much as possible by train”

Naturally, this higher output means more products that require transportation. With this in mind, the factory’s redesign focused in particular on issues relating to the environment, transport and infrastructure. This is where DB Cargo comes in. “We decided to build a new railway siding and to shift as much of our transport as possible to rail,” says Dr Wolfgang Palm, managing director at Palm’s paper plant. “We want to minimise future traffic levels around our plant on the one hand, and we also want to comply with our corporate sustainability principles on the other hand. Environmentally friendly and ecologically sound paper production is our top priority. Transportation is part and parcel of this.” Marc van der Las, head of sales for waste logistics at DB Cargo, can only agree: “We are delighted that Palm, as a family-owned company, is setting such an example and has made a long-term decision to rely on railway transportation by creating a new siding in Aalen. The company is making a statement, sending a message.” It is a plain fact that freight trains produce around 80% less CO₂ emissions than lorries, so switching to rail means a substantial drop in CO₂. Looking at Palm’s Aalen plant specifically, the new siding will lead to a reduction of 3,100 tonnes of CO₂ next year, and there will be considerable potential for increasing this figure still further. The siding has two tracks – a 200-metre track for waste material and a 220-metre track for paper. The latter track can accommodate up to nine wagons.

A long-standing, well-functioning partnership

DB Cargo and Palm Group have a working relationship that goes back many years. DB Cargo started providing rail transportation for Palm’s factories in Wörth am Rhein and Eltmann near Bamberg decades ago, and it also served the old siding at Aalen until 2016. “There have been no train services from Aalen for several years. The new siding allows us to restart rail transports at



Palm’s plant there and significantly expand our partnership with company,” says Justyna Eberhard, key account manager at DB Cargo. She also has some information about the new link’s figures: “Transport via the new siding just started at the end of October. We currently transport 15 to 20 wagons of paper rolls from Aalen to the port of Amsterdam every week. We also move 8 to 10 wagons to other Palm plants.” Over the course of a year, this will add up to almost 90,000 tonnes of freight from Aalen.

Planning for further expansion

The goal is to move up to 18 wagons every day, which would correspond to 45 lorries. Marc van der Las says, “We are already planning to step up our activities so we can tap into further potential, and we want to include other goods in rail transport too.” Justyna Eberhard elaborates on the paper transports: “If you look at the total quantity that DB Cargo transports for all three Palm factories, the new siding will enable us to increase the volume of paper we move from 75,000 to 150,000 tonnes.”



Hand in hand for green logistics: DB Cargo and the Scherm Group are working together to put more freight on the rails.

This November, SLF Scherm Logistik und Facilitymanagement GmbH commissioned a new railport in Borken in central Germany. The company acquired the town's last plot of land with a siding for this purpose. Created in close cooperation with DB Cargo, this new transshipment facility offers both sustainability and a central location. In the hall measuring 8,000 square metres, the logistics specialist can handle almost all kinds of goods with protection from the weather. The cargo includes palletised freight, pasta from Italy and drinks from France, as well as sensitive or dangerous goods such as disinfectants, cosmetics and batteries.

This is all thanks to the lowered siding at the heart of the railport that allows goods to be loaded at ground level. There, the goods are unloaded, stored, repacked and transported on to the recipient. Where customers require, SLF Scherm can also prepare goods in transit at the railport ready for their destination. It can assemble displays for special promotion items, which are subsequently set up at the point of sale. Overseas containers from Hamburg or Bremerhaven are also part of the portfolio. Containers are sent to and from Borken by rail, helping to reduce CO2 emissions. In addition, SLF Scherm maintains a minimum stock level. Customers therefore do not experience any supply bottlenecks should a delivery fail to arrive.

From a logistics perspective, the railport is a sophisticated place. Sixteen wagons and ocean shipping containers can be unloaded or loaded daily in the hall either for environmentally friendly rail transport or for the last mile via HGV – and a further ten in the outdoor area. The key elements are the reach stackers that process the containers. A special forklift grabs containers from above and loads them directly from the railway onto the lorry – or vice versa.

“We are very pleased to be able to make our six-year collaboration with SLF Scherm even greener,” says Kai Maass, Head of Regional Sales Germany at

DB Cargo. “Together we will bring even more goods onto the environmentally friendly railways in the future.”

Crisis proof and environmentally friendly

For Swen Oesterheld, Managing Director of the Scherm Group, the pandemic has shown one thing: “Even if borders are closed, trains keep on running. Transport by rail is therefore not only environmentally friendly, but also crisis proof.”

With the new railport, the company wants to position itself to withstand the pandemic and meet the challenges of climate protection. It is also a response to the driver shortage affecting countries well beyond Great Britain. In this way, the logistics service provider aims to shift more transports to rail in the future and reduce the distance of lorry transports to the destination. In 2020 alone, the company saved 1,000 tonnes of CO2 through its environmentally friendly logistics system together with DB Cargo. These savings are set to increase significantly in future. SLF Scherm hopes that the railport will save around 2,000 tonnes of CO2 in the future compared to transport by HGV.

At the same time, the Borken railport will relieve the motorways and thus help to reduce traffic jams. Restrictions due to driving and rest periods for drivers are also eliminated. Only the last mile of the transport is covered by lorry, in order to reach the recipient flexibly.



“This is how we link road and rail in an environmentally friendly way,” says logistics manager Bernd Pfeifferling.

Others in the region stand to benefit too, as even companies without their own siding can use the railport and take advantage of this modern, environmentally friendly logistics system.

Vossloh's leading logistics expertise enables successful modernization of the Berlin – Hamburg high-speed line in record time

Vossloh is one of the main players in the modernization of Deutsche Bahn's main transport lines. Deutsche Bahn has just successfully completed the comprehensive renewal of several track sections with a total length of around 193 kilometers on the Berlin-Hamburg high-speed line at a total cost of around €100 million. Vossloh supplied the pre-manufactured long rails with a total length of around 400,000 meters from its welding plants on a just-in-time basis and was responsible for the overall rail logistics. Since September 11th, 2021, 34 long rail units have been working on the project in a logistical masterstroke, mainly at weekends and at night, in order to minimize the impact on traffic. Despite the tightest time frames and enormous quantities of materials, Vossloh met all delivery deadlines and thus made a significant contribution to the successful and scheduled implementation of the line

modernization.

“With the implementation of this major project on one of Germany's most important rail links, we have jointly accomplished a truly Herculean task. I would like to thank Deutsche Bahn for the trust placed in us and the more than 100 employees from the Lifecycle Solutions division who have successfully mastered the logistical and time challenges to the complete satisfaction of our customer,” says Jan Furnivall, Chief Operating Officer of Vossloh AG, adding: “Following the modernization of the line, Deutsche Bahn can now offer 60 journeys per day on the route between Germany's two largest cities with the change of timetable on December 12th 2021. We are proud that with our tailor-made solutions we are making an important contribution

to the necessary change in transport and thus enabling more sustainable mobility.”

The modernization project, which has now been completed, is related to Deutsche Bahn's “Strong Rail” strategy, which aims to bring more traffic onto the rails. The funds come for instance from the third “Service and Financing Agreement (LuFV)” concluded between the federal government and Deutsche Bahn in January 2020. According to this agreement, around €86 billion will be invested in the maintenance and modernization of the existing rail network by 2030. This corresponds to an increase in funding of 54 percent compared to the previous agreement. Deutsche Bahn is reportedly investing a record amount of €12.7 billion in the rail infrastructure in 2021.



VGF, Frankfurt's public transport provider, will replace the conventional train control system currently used in its metro and tram network with a new, state-of-the-art digital system. The "Digital Train Control System Frankfurt" is one of the company's most important projects for the future. Following a public procurement procedure initiated in early 2021, the VGF is now awarding the important contract to Siemens Mobility.

"The digitalization of the train control system with the "DTC" is a project that will not only have outstanding importance for Frankfurt's public transport network in the coming years but will also make the city and the VGF leaders nationwide," said Frankfurt's Cabinet Member for Transport Stefan Majer about the project. "The DTC will mark the first time a Communication Based Train Control System (CBTC) is used in a German city." The technology will wirelessly and digitally link metros and trams with one another in real time. This will allow trains to operate at shorter intervals and, in turn, enable the VGF to significantly expand its capacity without having to convert or build new rail lines or stations.

Majer, Frankfurt's Cabinet Member for Transport, emphasized the project's possible connection with "Frankfurt MIND(+)", a parallel project. "The DTC can be linked to individual traffic via the city's central traffic computer. This would make fully integrated traffic control possible for the first time in a major urban center in Frankfurt and Germany – nothing less than a milestone in the country's mobility transition."

Long-term partnership between VGF and Siemens

On the planned awarding of the contract, VGF CEO Michael Rüffer said, "We'll be converting the train control system for our entire metro network to DTC, followed by the tram network. To achieve this, we need a powerful and competent partner – which we've found in Siemens Mobility. We're especially pleased to be continuing a partnership with Siemens that was already a successful model back in 1899, when Frankfurt put 181 classic Siemens trams into service."

"More than 40 cities worldwide already trust our Trainguard MT CBTC solution. We are proud that we can use this innovative technology for the first time in Germany at the VGF. Our technology combines maximum availability, maximum line capacity, shortened intervals, and up to 20% less energy consumption with the highest possible level of safety," said Andre Rodenbeck, CEO Rail Infrastructure at Siemens Mobility. "In the future, metro trains in the Frankfurt network will be able to run every two minutes."

Financial support for the project

The importance of this mobility milestone can also be seen in the project's financial scope: On Monday, December 13th, 2021, Hessian Minister for Economic Affairs, Energy, Transport and Housing, Tarek Al-Wazir, officially granted funding of €95.5 million to the VGF to co-finance the project, together with the Federal Government and the state of Hesse.

"Digital Train Control System" for the Frankfurt metro

What is "Communication Based Train Control"?

Digital train control systems such as the DTC Frankfurt are known in the industry as Communication Based Train Control (CBTC) systems. All nine lines of Frankfurt's metro system are to be converted to digital train control by 2031. The conversion will begin with the "B route" (lines U4 and U5), including the U5 extension to the Europaviertel, and is currently planned to begin operation in 2025.

CBTC functions as a complex system of signals and messages that enables permanent exchanges between trains and rail infrastructure in real time. Various components on the rail line and in the trains enable this radio-based, bidirectional data communication between trains and infrastructure so constantly transmit route-relevant information to the trains. A short film produced by the VGF clearly explains the complex system and is available for viewing on the company's innovation website: DTC - Innovation VGF (vgf-fm.de)

What are the advantages of digital train control?

This form of data transmission makes it possible to dispense with conventional signals, which reduces maintenance costs. In addition, the VGF can use the digital train control system to increase the capacity and efficiency of its routes, particularly in the underground sections.

Expanding services – offering more trains and shorter intervals, which is essential for achieving a mobility transition including a general switch from cars to public transport – is the central aspect of rail modernization. CBTC systems enable trains to run in what is known as a "wandering spatial distance", which means that the trains operate with just the braking distance between them, rather than in fixed block sections as at present. This makes it possible to run trains at shorter intervals, which will enable the VGF to increase its capacity by up to 25 percent – for example on the "A route",



served by Lines U1, U2, U3 and U8 – without having to expand or construct new lines, which is not only expensive and often draws protests, but also takes considerable time.

State-of-the-art, high-performance train control technology not only enables more trains to operate on a route, but also ensures greater punctuality and reliability. The system enables more energy-efficient driving – with savings up to 20 percent possible – and provides greater passenger comfort through gentler acceleration and braking. This, in turn, also reduces wear and tear on both trains and rails.

All in all, a CBTC train control system will increase the capacity and attractiveness of the metro system, which is ultimately intended to increase the share of public transport in urban traffic. This will directly contribute to a reduction of pollutant emissions and ensure cleaner air in the city.

"Digital Train Control System Frankfurt" or "CBTC"?

"Digital Train Control System Frankfurt" is the name used by the VGF for a digital CBTC train control system. The basis for introducing the system was created in the company around three years ago.

224-kilometre battery range: Stadler sets world record for Guinness Book of Records with FLIRT Akku

Stadler has set the record to be officially entered in the Guinness Book of World Records for a battery train journey in battery-only mode. Travelling on the route from Berlin to Warnemünde in the company of independent technical consultants, the FLIRT Akku test carrier reached a range of exactly 224.00 kilometres at wintry temperatures around freezing point. The three-unit FLIRT Akku used for the record journey has been developed by Stadler since 2016 as a local CO₂-neutral mobility solution for the climate-friendly operation of unelectrified railway routes. The vehicle was approved by the German Federal Railway Office and introduced to the public for the very first time in 2018. Ever since when the FLIRT Akku test carrier has travelled around 15,000 kilometres in battery-only operation, before setting the world record for a regional train journey in battery-only mode without additional charge now.

“We designed and calculated the vehicle for an operational range of 80 kilometres, depending on the route requirements of the respective network. But on various journeys testing the technology, we were able to realize significantly greater ranges, so that we even dared to attempt the world record at wintry temperatures. The vehicle had already had to cope with various scenarios like making up for unplanned delays on the track or operating under extremely hot or cold weather conditions in the testing after all”, explains Evelyn Thiel, Technical Project Leader for the FLIRT Akku at Stadler.

“We are very proud to be the official holder of the world record for travelling

the longest route in battery-only mode with a regional train now – having reached this result under weather conditions which are anything but ideal for batteries. Stadler has already worked in the area of battery technology for rail vehicles over 75 years ago. We consistently continued to pursue this approach for unusual technological solutions in the company, and developed a flexibly deployable train that also enables CO₂-neutral mobility on so-called diesel routes with the FLIRT Akku. As a market and technology leader in battery technologies for rail vehicles, the decision to undertake the record journey was a logical consequence”, says Dr. Ansgar Brockmeyer, Executive Vice President Marketing & Sales and Deputy CEO of Stadler.

“We can confirm that the FLIRT Akku test carrier travelled exactly 224.00 kilometres in battery-only mode on the journey from Berlin-Gesundbrunnen to Warnemünde without charging its batteries from an overhead contact line or other external energy source”, says Heiko Hüserich, TÜV Nord.

The first «Fast Light Intercity and Regional Train» was developed in 2002 at the behest of the Swiss Federal Railways SBB for the Zug city railway. The four-unit series went into passenger use under the name of RABe 523 2004. Ever since when the FLIRT has turned into an international bestseller with over 2,000 vehicles sold. Today, vehicles of this type are being operated in 20 countries in virtually all climate zones, from the equator to the polar circle,



528 of them in Germany alone. The single-decker regional and intercity multiple unit convinces with its flexibility in the process. Two- to six-unit train compositions are realizable in normal and broad gauge designs for top speeds of 160 to 200 km/h. In doing so, the FLIRT can be customized to individual client requirements very flexibly in terms of its drive technology, number of seats, passenger flow and interior design.

The lightweight aluminium design, maintenance-friendly construction and components that have been tried and tested a thousand times help to keep the operating, energy and maintenance costs low. Besides electric, diesel or bi-modal drives, the FLIRT is also available with climate-friendly battery and hydrogen propulsion.

SiC semiconductor technology in tram: Siemens Mobility and Stadtwerke München successfully conclude test

Siemens Mobility and Stadtwerke München (SWM) successfully completed a one-year test of semiconductor technology based on silicon carbide (SiC) in an Avenio streetcar in Munich in August. They have now presented the results of their research. The study found that the motor noise produced by the vehicle fell sharply and that energy use declined as well during the trips that the tram made on Munich’s public-transportation rail network. The semiconductor technology was produced by Infineon Technologies. The tests were conducted as part of the European research and development project PINTA. By taking part in the trial, Siemens Mobility significantly contributed to efforts to integrate SiC power semiconductors into rail vehicles.

“We would like to thank Stadtwerke München for the good partnership we had during the tests of SiC semiconductor technology in an Avenio München,” said Albrecht Neumann, CEO of Rolling Stock at Siemens Mobility. “The energy-saving potential found by the test clearly demonstrates the energy efficiency of this promising technology that is designed for use in all types

of trains.”

Ingo Wortmann, the Head of Mobility at Stadtwerke München (SWM), added: “One factor plays a key role in the acceptance of trams – particularly in terms of new construction projects: Our vehicles must be as quiet as possible while in service. The project conducted with Siemens shows that we can not only optimize the noise levels of our vehicles but also improve our energy efficiency. We would be very interested in this solution if these improvements could be commercially mass-produced.”

During the test in Munich, SiC semi-conductor technology was installed in one of two traction converters used by a three-car Avenio tram. The test phase included all development tests necessary to gain authorization for technology’s use in passenger service that were conducted in the company’s system test center and in the vehicle. The continuous monitoring of energy levels showed an approximate 10 percent reduction in energy consumption. The measurements also found lower noise levels during operations and an

overall reduction in motor noise. The Avenio München equipped with a SiC core spent one year transporting passengers and covered 65,000 kilometers in the process. The PINTA project is part of a far-reaching European research and innovation initiative called Shift2Rail. The goal of this initiative is to create a visionary rail system in Europe through targeted investments. Two of three project phases have now been completed: the initial planning stage and the successful vehicle test for the SiC converter. The focal point of PINTA3 will be system optimization created by the use of SiC in dual-system trams (TramTrain). The objective of the PINTA project is to fuel the introduction of SiC technology in order to lower life-cycle costs and thus bolster the rail industry in Europe. The technology is already being used in a range of industrial sectors, including automotive electromobility. This project has received funding from the Shift2Rail Joint Undertaking (JU) under grant agreement No. 826054. The JU receives support from the European Union’s Horizon 2020 research and innovation program and the Shift2Rail JU members other than the Union.

Germany

Over 1,000 stations renovated: DB completes modernization program in 2021

Lighter, more environmentally friendly, more comfortable: campaign for attractive train stations successfully completed in 2021

The federal government's 120 million emergency program is having an effect

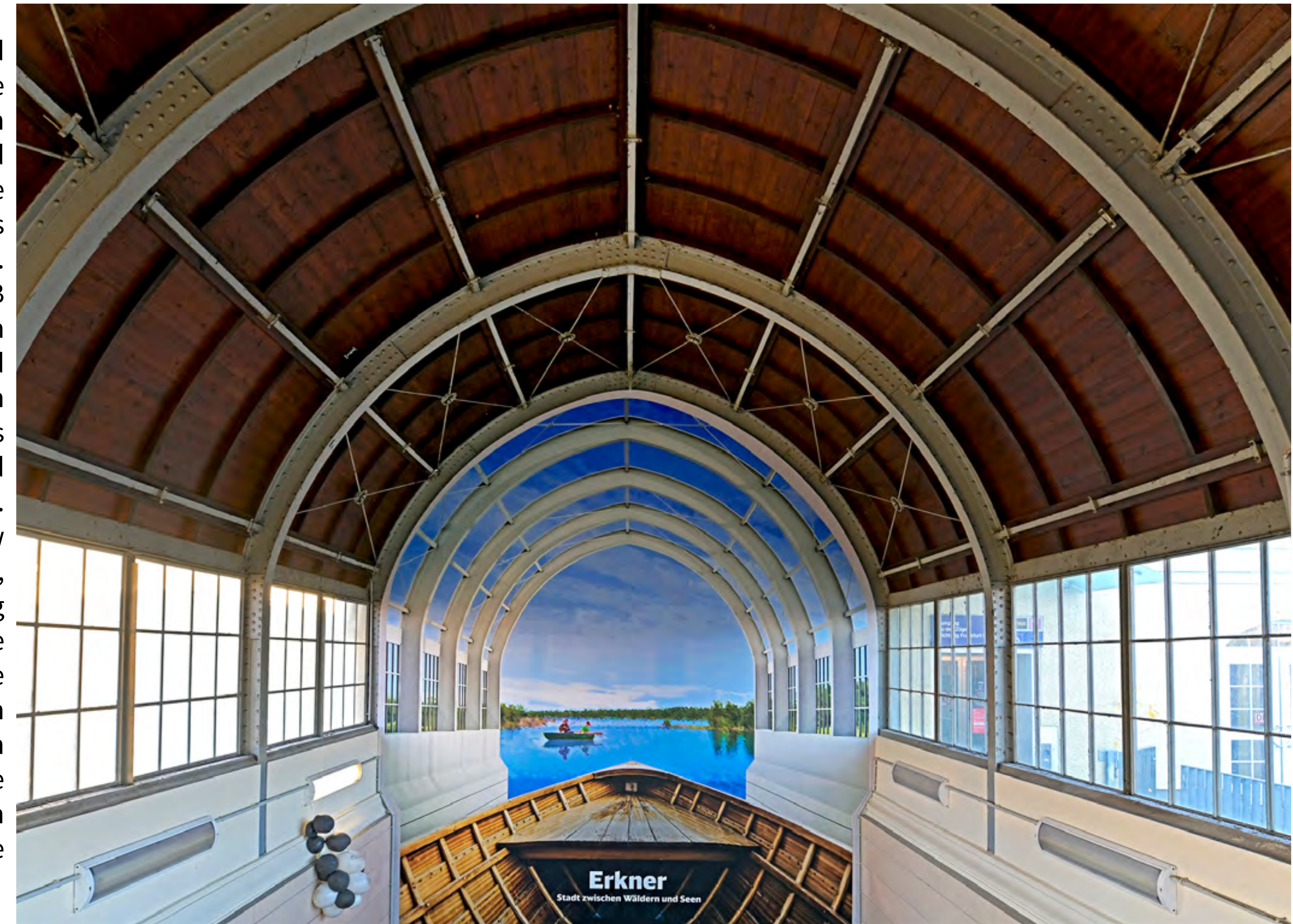
More satisfied travellers

Around 900 craft businesses benefit

Deutsche Bahn (DB) renovated over 1,000 train stations this year. With the modernization program launched in May, DB was able to invest an additional 120 million euros in the stations. The funds come from the federal government's economic stimulus. Around 900 regional craft businesses throughout Germany have benefited from DB's orders. With more than 400 new benches, 100 additional weather shelters and around 110,000 litres of paint, the stations now offer a better appearance and more comfort for travellers. In order to save energy, the DB converted around 90 stations to energy-saving LED lights and replaced around 50 heating systems. With more attractive train stations, even more people should be convinced to choose the climate-friendly train as a means of transport.

Ronald Pofalla, DB Board Member for Infrastructure: "Passengers shouldn't just get on and off at the train station, they should feel comfortable. On average, we have renovated four train stations a day since the economic stimulus program started in May - that's record speed. These stations are now lighter, friendlier, more comfortable and more weatherproof - lots of small improvements that make a big difference. With this we want to attract more people to the railways. "

With the immediate program 2021, DB invested nationwide in small, medium-sized and large stations. The train stations are located in metropolises as well as in rural areas. Around 13.5 million travellers will benefit from the improvements. Surveys show that passengers feel more comfortable in the renovated stations. For example in Limburg Süd: Here the DB has embellished the station building with railway motifs and renewed and coloured the waiting areas on the platforms. At Munich Donnersbergerbrücke train station, DB has redesigned the staircases, floors and ceilings and laid new tiles in a modern black and white look. In Dülmen the transition to the platform got new windows and stairs. In Göttingen Hauptbahnhof, the DB purchased new wheelchair lifting devices, replaced benches and beautified the wall surfaces. DB renovated the 1,400 square meter slate roof at Bonn-Bad Godesberg train station. In addition, 80 windows in the station building have been replaced. The ramp and the walls of the Marzahn S-Bahn station in Berlin have been spiced up in bright colours by the artist Steven Karlstedt.



Stadler further expands its signalling expertise via the acquisition of the German BBR Group

In the field of signalling technology and digitalisation, Stadler is taking over the German company BBR Verkehrstechnik GmbH (BBR) and its group companies, thereby consistently expanding Stadler's in-house expertise in these future-oriented areas. This will allow the two companies to become an even stronger provider of state-of-the-art signalling solutions to drive forward and shape the digitalisation of the rail industry.

Stadler already strengthened its position in this area in November 2021 with the acquisition of the Swiss company Bär Bahnsicherung AG. Stadler will concentrate the entire signalling portfolio in a newly created division as of January 1st 2022. Thanks to the acquisition of BBR, Stadler is gaining a partner that perfectly complements its growing range of products in the field of signalling technology: while Stadler had previously concentrated its Signalling activities on the on-board equipment of rail-bound vehicles with signalling technology. Stadler entered the Swiss interlocking market with Bär Bahnsicherung. BBR on the other hand is an established international company that can contribute the necessary experience and knowledge to jointly drive forward the digitalisation of the global railway infrastructure.

For more than 30 years, BBR has been one of the leading suppliers of solutions in the field of railway safety. Signalling technology from BBR is used successfully by railway operators all over the world – not only in Germany, Austria and Switzerland, but also in other countries in western and northern Europe, Asia and now also in the USA. In addition to infrastructure-related solutions such as electronic interlockings, train detection systems or points operating equipment, BBR's portfolio also includes on-board equipment for rolling stock manufacturers and development work, particularly in the areas of interlockings, train protection and component retrofits. BBR employs around 270 people at its headquarters in Braunschweig (Germany) and at its site in Vufflens-la-Ville near Lausanne (Switzerland), which will be kept

on by Stadler along with all current employees. This will increase the number of employees at Stadler in the Signalling area to over 500.

“To ensure our independence, we have steadily built up our own Signalling activities since 2016. We are very pleased gain long-standing signalling know-how and experienced specialists for Stadler by taking on the BBR team. The merger of our two companies forms an excellent basis for offering our customers innovative signalling solutions from a single source – both on the vehicle and on the infrastructure side. BBR products win over customers all over the world – especially in the field of urban mobility. We are convinced that together we can play a decisive role in shaping the digitalisation of the railway industry as innovation leaders,” says Peter Spuhler, Chairman of the Board of Directors and Group CEO a.i. of Stadler.

BBR founders Arne Baudis, Thomas Bergmann and Frank-Michael Rösch emphasise: “After handing over operational responsibility for the company in 2017, we were on the lookout for strategic partnerships internationally. In Stadler, BBR has found a strong and highly innovative partner. As a Swiss company, Stadler has a similar corporate culture to that forged at BBR – medium-sized, flexible and respectful. The Braunschweig site will be further expanded to become a centre of excellence with state-of-the-art development and production capacities for the digitalisation of rail transport.”

Successful market entry for in-house signalling technology

Stadler entered the signalling business in 2016 so that it would no longer be dependent on direct competitors in the area. Today, Stadler can offer this important component of modern train technology itself. To make this possible, Stadler established its own engineering location on the Wallisellen site, which became an independent company within the Stadler Group at the beginning of 2020. Stadler's own GUARDIA automatic train protection system (ETCS solution), which was developed as part of a joint venture,

gained generic approval in 2019 and is now used in several European countries. It has also been incorporated into BLS's new FLIRT trains in Switzerland since 2021. Stadler has successfully gained a foothold in the market for train protection for branch lines and urban operators with its self-developed CBTC platform (Communication-based Train Control), which has been in implementation in Switzerland for BLT since 2019 and is also used in the USA, where it already benefits from a customised component development by BBR.

Helping to shape digital rail transport

Stadler took over Bär Bahnsicherung in November 2021. The merger with BBR will enable Stadler to strengthen its position in the German-speaking signalling market and gain valuable references within Europe and in other markets, especially the USA. BBR, Bär Bahnsicherung and Stadler have a common goal as providers of future-oriented technology: advancing digitalisation in rail-based transport and establishing rail transport as a competitive mobility solution. Rail digitalisation creates sustainable mobility, thereby making an important contribution to achieving the 2050 climate targets.

Creation of a new division

The acquisitions of the companies BBR and Bär Bahnsicherung highlight Stadler's ambitions in the future-oriented field of signalling as an additional strategic pillar. To enable Stadler to actively shape the digitalisation of the rail industry and drive forward the sector as an innovation leader, Stadler will pool its signalling expertise from across its seven locations in Switzerland and Germany in a new Signalling Division as of 1 January 2022. Marc Trippel, previously Chief of Staff of the Stadler Group, will take over the management of the new division. As division head, he will also become a member of Stadler's Group Executive Board.

From January 1st at the Bahn: oat drink as a milk alternative to coffee

At the start of the new year, Deutsche Bahn (DB) is introducing an oat drink as a milk alternative for coffee on board ICE and Intercity trains. The oat drink from the Swedish company Oatly is 100 percent plant-based and can be ordered as an alternative to cow's milk to Fairtrade-certified filter coffee or caffè crema.

DB is also committed to the sustainable use of ecological resources in on-board catering. We are consequently working to further improve the sustainability of the articles:

- Deutsche Bahn has been offering share mineral water on long-distance trains for almost two years. By buying

the sustainable share water, passengers finance well construction projects - and save plastic.

- Disposable / to-go products: Deutsche Bahn invests extensively in the use of renewable raw materials from sustainable forestry. In June 2021, DB replaced the previous plastic cutlery for to-go products with FSC-certified wooden cutlery.

- DB has been donating food and crockery to the food banks, the station mission and other non-profit organizations in Germany for many years.

- Since April 2017, DB has been serving exclusively

Fairtrade-certified coffee in its ICE and IC trains. The other hot drinks, such as tea and cocoa, were also switched to fairly traded raw materials.

- There has been a collaboration with the Bergwaldprojekt association since 2013. The association is committed to the preservation and care of the local forest. This enabled the association to plant over 35,000 new trees in Germany with more than 175,000 euros.





















Hungary

On October 9th, Class 628.163 is seen working charter train No. Sz13501 near Abaújkér. *Thomas Niederl*



Netherlands

RRF Class 66 No. 653-04 runs light engine from the Rail Service Center to the Waalhaven yard on November 22nd.. *Erik de Zeeuw*



Netherlands

Rurtalbahn Class 193.485 in its new livery 'LOKSPITZE.COM' has almost reached its final destination in Rotterdam with a Blerick shuttle from Venlo. Since early 2021, the RATH Group has been offering personnel services in the railway sector with Lok-Spitze Bahnpersonal GmbH (LSB for short). *Erik de Zeeuw*

















▶ Vectron Class 193.286 passes Podpec whilst hauling an Adria Transport container train from Koper to Graz. *Laurence Sly*

▶ Class 363.035 passes Podpec whilst hauling a train of tanks from Koperh. *Laurence Sly*

▶ A Class 363 passes Ostozno whilst hauling an empty car train. *Laurence Sly*







Class 342.024 passes Hrastnik whilst working train No. MV247 09:25 Ljubljana - Budapest.
Laurence Sly

SZ Class 363.001 passes Crnotice whilst hauling an intermodal train from Koper.
Laurence Sly

SZ Class 342.024 passes Ostrožno whilst working train No. MV246 09:00 Budapest - Ljubljana.
Laurence Sly



Slovenia

A Class 342 passes Loce whilst working train No.
MV247 09:25 Ljubljana - Budapest.
Laurence Sly



▶ An unidentified Class 541 passes Hrastovlje whilst hauling an intermodal train from Koper.
Laurence Sly

▶ Class 363.014 passes Crnotice whilst hauling an intermodal train from Koper. *Laurence Sly*

▶ A Class 363 passes Zanigrad whilst hauling an intermodal train to Koper. *Laurence Sly*



SJSC “Latvijas dzelzceļš” opens first rail crossing center in the Baltics

Continuing the development of technological processes at SJSC “Latvijas dzelzceļš” (LDz), a new railway crossing center has started operating, from which railway crossings with intensive traffic will be monitored remotely throughout the territory of Latvia. This is the first crossing center of its kind in the Baltics and it will be possible to serve up to 24 rail crossings at a time.

With the commencement of the operation of this center, SJSC “Latvijas dzelzceļš” will gradually phase out physical control of the level crossings where there are staff on-call on a permanent basis. At the crossing center, one duty officer will be able to service up to six crossings at a time, thus optimizing resources and improving working conditions with the assistance of technology.

Māris Kleinbergs, Chairman of the Board of SJSC “Latvijas dzelzceļš”: “Along with the constant modernization of railway infrastructure and facilitating its safety, SJSC “Latvijas dzelzceļš” has been focusing on the review and gradual modernization of all technological processes for the past two years. The establishment of a centralized railway crossing center is an important step in the transformation of LDz from a company where much work was done manually to a modern, European-level railway infrastructure company.”

The duty officer of the level crossing center is obliged to monitor the situation at the railway crossings with the help of a video surveillance system and, if necessary, to take appropriate actions to prevent emergency situations. Furthermore, the rail crossing center attendant will, if necessary, notify the train dispatcher or station attendant about a potentially dangerous situation at the level crossing, and will be able to activate the level crossing alarm, as well as follow the train movement online with the help of a special program. With the help of technology, it will also be possible to detect vehicles that have crossed the track at a prohibitory red signal.

From now, the supervision of 17 guarded level crossings will be gradually connected to the railway crossing center. In the future, when evaluating the efficiency of the operation of the new level crossing center, it is planned to switch other guarded level crossings to this control center, which are currently supervised by station staff.



Russian Railways and Russian Post sign agreement on mail vans

The Federal Passenger Company (FPC), a subsidiary of OJSC Russian Railways, and JSC Russian Post have entered into an agreement on running mail vans with passenger and post & baggage trains.

Vladimir Pyastolov, FPC's Managing Director, and Sergey Sergushev, Deputy Managing Director for Logistics at Russian Post, signed the document in Moscow on December 22nd. Present at the signing were Oleg Belozerov, Chief Executive Officer and Chairman of the Management Board of Russian Railways, and Maxim Akimov, Managing Director of Russian Post.

The agreement determines the procedures for running Russian Post mail vans with the Federal Passenger Company's fast post & baggage and long-distance passenger trains for the next three years.

“Russian Railways has enjoyed long-term fruitful cooperation with Russian Post. Russia's developed railway network enables the stable delivery of postal items to any point of our vast country in the most environmentally friendly way. The agreement we have signed today covers the period from 2022 to 2024 and shows that rail services remain in demand for modern postal delivery.

Our cooperation is increasingly taking into account e-commerce and new approaches that also indicate our technological development,” said Oleg Belozerov.

A first similar agreement was concluded in 2014 with the launch of post and baggage train No. 990/989 running between Moscow – Vladivostok – Moscow. The train consists only of Russian Post vans, departs every day and carries mail along the entire Trans-Siberian Railway. In addition, Russian Post vans also run with 72 long-distance FPC passenger trains, some of which deliver mail to Russia's remote regions.

“Cooperation between Russian Railways and Russian Post not only has a long history behind it, but also huge prospects going forward – we have several projects on the table related to the containerization of postal messages. And, of course, these projects will rely on the expertise and infrastructure capabilities of Russian Railways. Moreover, the post has long since been about much more than just letters – it also delivers hundreds of millions of items and the benefits of e-commerce to families all across Russia. Russian Railways plays a particularly important role where delivery is impossible by other means of transport – rail transport, for example, is sometimes the only way we can fulfill our obligations to people in Russia's north. I am very

proud of our cooperation and am sure that it will bring wonderful benefits both to Russian Railways and to Russian Post – but most importantly to our customers and clients,” said Maxim Akimov.

A few months ago, in September 2021, the Russian Railways' Holding and Russian Post signed a memorandum on the joint development of logistics services. This agreement, which was concluded at the Eastern Economic Forum, covers the delivery of postal items and groupage cargo consisting of goods from online stores, retail chains and small and medium-sized businesses.

In order to implement the memorandum, the two companies are planning to organise multimodal services for Russian Post deliveries along domestic and international routes using container trains running on a regular timetable.

Russian Railways and Russian Post are also currently working on the possibility of launching special international container trains for the delivery of e-commerce goods. New technologies will optimise delivery costs and increase delivery speed and quality.

Czech

AŽD autonomous trains depart on Czech railways

AŽD has presented the first public ride of an autonomous train on a digital railway on Švestková dráha (Plum Railway line). A railway vehicle without the driver's intervention reacted, for example, to a broken-down car standing at a level crossing. AŽD is working intensively on the introduction of advanced autonomous technologies into practice, thus creating space for a new philosophy of driving a railway vehicle. This can mean autonomous operation without any crew on the regional connecting line, but also a set of so-called assistants, who will facilitate and support the driver's work in specific parts of the journey.

"We definitely do not work with a black-and-white vision of replacing drivers, but with a vision of a modern way of operating the railway, where a number of processes can still not be ensured other than by professional staff," says Zdeněk Chrdle, CEO of AŽD.

Gradual steps will make it possible to increase efficiency and reduce the cost of operating railways. In the near future, there will be a full automation of specific operating procedures (e.g. autonomous train movement in the

depot) and it will be possible to deploy intelligent assistance systems that will facilitate the work of drivers. In addition, it is necessary to prepare for the possibility that the unavailability of qualified staff may significantly reduce the standard of regional transport services. Among other things, the autonomous train operation system implements functions "replacing" the driver's senses.

"In practice, this means installing a range of sensors, detectors, artificial intelligence, support and diagnostic systems on the vehicle and on the track to ensure the required safety and operational efficiency. Considerable attention is also paid to the issue of ensuring safe interaction of automated railways with road transport. Here we use cooperative ITS systems and the results of the C-ROADS project, which involves direct communication between road vehicles or vehicles and infrastructure, including railways," explains Zdeněk Chrdle.

The transition to the future fully autonomous railway is also hindered by current legislative conditions. AŽD therefore solves not only technical challenges, but also legislative issues, both at the national level and in



cooperation with European partners and institutions. In addition to European projects within the joint venture of the EU and the railway sector Shift2Rail, AŽD directly cooperates with Czech research centres, including the Czech Technical University in Prague, University of West Bohemia in Pilsen and the Brno University of Technology. As a founding member of Europe's Rail (a joint venture between the EU and the railway sector), AŽD will continue to promote the vision of digital railways in cooperation with major European partners such as railway infrastructure managers, carriers, major manufacturers and suppliers or research centres

Slovakia

Stadler delivers double-decker multiple-unit trains to Slovakia for the first time

Stadler and the Slovakian railway company ZSSK (Železničná spoločnosť Slovensko, a.s.) have signed a contract for the manufacture and delivery of four double-decker multiple-unit KISS trains. The six-car vehicles are intended for use on regional lines in western and central Slovakia. This is the first time that double-decker multiple-unit trains from Stadler will operate on the Slovakian rail network. According to the contract, the delivery of the four new KISS vehicles should take place by the end of 2023.

The ZSSK fleet already includes 21 single-decker articulated railcars (GTW) from Stadler, 15 of which are narrow-gauge GTW with electric drive and 6 are standard-gauge GTW with diesel-electric drive. In autumn 2018, ZSSK also placed an order with Stadler for five GTW rack-and-pinion adhesion multiple units and a multifunctional rack-and-pinion adhesion locomotive for use on the rack-and-pinion and adhesion network of the metre-gauge electric TEŽ mountain railways in the High Tatras, the 'smallest high mountain range in the world'.

"We are very pleased that we have succeeded in winning this tender and that we will be able to supply our reliable, safe and comfortable double-decker multiple-unit KISS

train to Slovakia for the first time. The rail operator and passengers will benefit from the modern vehicles to the same extent. We are particularly proud that we can continue our common history with ZSSK thanks to this order. We would like to thank ŽSSK for their trust and look forward to continuing our successful partnership," says Dr. Ansgar Brockmeyer, Executive Vice President Marketing & Sales and Deputy CEO of Stadler.

More about the vehicles

The six-car KISS vehicles are 155 metres long and have more than 600 seats in 1st and 2nd class. Like all KISS trains from Stadler, they are characterised by high drive power and sprint-capable acceleration. When operating on electric drive powered via the overhead contact line, the KISS vehicles can reach a maximum speed of up to 160 kilometres per hour. The trains have a step-free entrance area and four toilets, one of which is for people with reduced mobility. The multifunctional compartments offer not only places for wheelchair users, but also generous storage space for bicycles, prams and luggage.

The new KISS vehicles have an HVAC system for the passenger compartments and driver's cabs.

Passengers benefit from a modern passenger information system (PIS) and WLAN. Cameras inside and outside as well as on the roof to observe the pantograph ensure safe rail operation. The vehicles are also equipped with

a certified energy consumption measuring system and a precise passenger counting system.

The drivers can take advantage of a modern, ergonomically designed driver's cab.





Italy

EIB provides financing to FS Italiane to purchase new high-speed trains in Italy and Spain via €350 million green bond

The European Investment Bank (EIB) is supporting the purchase of modern high-speed trains by Trenitalia, owned by Ferrovie dello Stato Italiane S.p.A. (“FS”), via a €350 million private placement subscription of a green bond issued by FS, which will be passed on to Trenitalia through an intercompany loan.

The project boosts the expansion of high-speed transport on the trans-European transport network (TEN-T) in Italy and Spain, promoting a single railway market and the transfer of road and air traffic to railways, in line with the 4th Railway Package of the European Union (EU). This is the aim of the Bank’s financing operation announced today by EIB Vice-President Gelsomina Vigliotti and CEO of FS Italiane Luigi Ferraris.

Out of the total of €550 million approved for the whole project, providing for the purchase of 34 trains, the first tranche of €350 million was finalised through the subscription of a green bond under the Euro Medium

Term Notes (EMTN) Programme of Holding FS, which confirms the FS Group’s commitment to sustainable finance. The EIB will finance 50% of the purchase of 34 high-speed trains by Trenitalia, 20 of which will be leased to its Spanish subsidiary ILSA to be used on the Madrid-Seville-Málaga, Madrid-Barcelona and Madrid-Valencia-Alicante high-speed lines in Spain. The remaining 14 trains will be managed by Trenitalia and will be used on the Turin-Trieste and Milan-Naples-Salerno-Reggio Calabria lines.

The project will enable Trenitalia to modernise its existing fleet for the Italian lines and, at the same time, increase the competitiveness and expansion of the Italian group in the high-speed sector outside Italy.

This is the EIB’s first subscription of a green bond and therefore the first operation under the Green Bond Purchase Programme, which was approved by the EIB Group at the end of May 2021 and is in line with best

practices and the EU taxonomy. Consequently, Holding FS also received an opinion from Sustainalytics that certified its greenness and for the first time the compliance of its eligible green projects with EU guidelines, thus confirming FS as a virtuous green issuer on the European market. Moreover, certification by the Climate Bonds Initiative, a non-profit organisation that promotes sustainable finance worldwide as a tool to combat climate change, was also confirmed for this operation in keeping with the goal of the FS Group.

Once again, Italy remains the main beneficiary of EIB products, with the FS Group being the first European company to benefit from the facility, confirming the shared commitment of FS and the EIB to sustainable green finance. In addition, EIB loan financing is expected to be allocated to issues of the Bank’s own Climate Awareness Bonds, which is a strong confirmation of its consolidated leadership role over almost 15 years of green bond issues in the financial markets to the tune of

more than €40 billion.

EIB Vice-President Gelsomina Vigliotti said: “Strengthening the Single Market by stepping up efforts and investments to complete the trans-European transport network and support the transformation of mobility towards a low-carbon future is one of the key objectives of the EIB. Thanks to this operation, FS will be able to modernise its existing fleets in Italy and expand its business in Spain, increasing competitiveness in the high-speed and sustainable transport sector.”

“I am very pleased with this further green bond issue aimed at strengthening the fleet of high-speed trains in Italy and Europe”, said the CEO of FS Italiane Luigi Ferraris. He continued: “It is a source of pride for the FS Group to be the first to receive financing from the EIB which, in signing this tranche, has underscored our commitment to increasingly sustainable mobility.”



Eurostar

iProov and Eurostar Launch Trial to Provide Contactless Travel at London St. Pancras International

iProov, the world leader in biometric face authentication technology, and Eurostar, the high-speed passenger rail service linking the UK with mainland Europe, has announced that its trial of a contactless fast-track service, SmartCheck, is now live. SmartCheck enables passengers to complete secure ticket verification and UK exit check on their mobile devices prior to travel. As part of the trial, Business Premier and Carte Blanche ticket holders will be able to scan their identity documentation using their iPhones before arriving at the station, completing a brief biometric face scan to verify that they are the genuine holder of the identity document. The biometric face verification, which uses iProov’s Genuine Presence Assurance technology, is then linked to their e-ticket, with confirmation sent to the passenger. On arrival at St Pancras International station, passengers proceed through a dedicated SmartCheck lane. A brief face scan at the ticket gate verifies that the customer has completed the ticket check, with no sharing of paper or electronic tickets needed. A second face scan at the UK Exit Check allows Eurostar to verify that the passenger has completed their passport information, again replacing the need for travellers to hand over documentation.

SmartCheck aims to revolutionize the travel experience by making it completely effortless for the passenger, while maximizing privacy and increasing reassurance through improved security. The aim is to eliminate queues and expedite the boarding process to further improve customer

satisfaction, especially for frequent travellers. The concept is being brought to train travel as part of the First of a Kind 2020 competition run by Innovate UK, funded by the Department for Transport (DfT). The initiative supports research, development and innovation in the UK rail industry. At this time, the trial involves a limited number of invited passengers and is focused on the check-in and exit control processes operated by Eurostar at St Pancras Station and not the UK or Schengen Entry controls.

“This secure, convenient and privacy-protecting technology will make life easier and safer for travellers around the world,” said Andrew Bud, Founder and CEO, iProov. “The days of rooting around in your bag for your passport or hoping that your phone battery doesn’t run out before you show your e-ticket at the gate are over. It’s effortless and convenient while also delivering the reassurance and security that travelers expect.”

“We are committed to working closely with governments to introduce new tools and technology that streamline the check in and border process,” said Gareth Williams, Strategy Director and Company Secretary, Eurostar. “Face biometric technology, which we start trialling today, is a fast and contactless solution which will enable secure passenger checks to take place more efficiently and provide a seamless start to the Eurostar customer journey.”

“Our investment into the First of a Kind competition, supporting ingenious inventions on our rail network, is driving real-world innovations as we build the railway of tomorrow,” said Grant Shapps, Transport Secretary. “The brand new contactless travel technology from iProov and Eurostar is a window into the future of border control, of smoother, more seamless and convenient journeys.”

iProov’s Genuine Presence Assurance technology enables organizations to securely verify the identity of consenting online individuals in a way that is completely effortless for the user. A brief, multi-dimensional biometric face scan combines light, time and space to verify that a remote user is the right person, a real person, and that they are authenticating in real time. This highly secure process, supported by iProov’s active threat management system, protects against spoof attacks and can be used on any phone, tablet, or computer with a front-facing camera. The trial was developed in close partnership with Eurostar and WorldReach Software, now part of global identity and data security company, Entrust. All personal data is processed in compliance with GDPR law, with full passenger consent. It is not shared with any party outside the trial and is deleted within six hours of the user travelling. iProov technology is in use throughout the world, with customers including the US Department of Homeland Security, the UK Home Office, the NHS, the Australian Taxation Office, the Singapore Government and many banks and enterprises.

Germany

Alstom's Coradia iLint hydrogen powered train wins German Sustainability Award

Alstom's revolutionary Coradia iLint, the world's first mass-produced passenger train powered by hydrogen fuel cells, has won the 2022 German Sustainability Design Award. The award recognises technical and social solutions that are particularly effective in driving the transformation to sustainable products, production, consumption, or lifestyles. To make its selection, the Design category jury brought together experts from the fields of industrial design, sustainability, academia, business, and the arts to evaluate products, services, and systems in line with the United Nations' 2030 Agenda.

"Alstom has the clear goal of becoming an international leader in alternative rail propulsion technologies. Our Coradia iLint hydrogen train is proof that innovative, sustainable mobility is a reality. We are very pleased to receive the German Sustainability Design Award and are proud to be able to decisively advance the development of sustainable propulsion systems," commented Müslüm Yakisan, President of Alstom in Germany, Austria and Switzerland.

With the Coradia iLint Alstom has developed an economical alternative to conventional carbon-heavy diesel trains and has paved the way for further sustainable mobility innovations. Alstom's award-winning hydrogen train

combines various innovative concepts such as clean energy conversion, flexible energy storage batteries, and smart management of motive power and available energy. Specifically developed for use on non-electrified lines, the Coradia iLint enables emission-free, sustainable train operation while maintaining high performance.

German railway operator Landesnahverkehrsgesellschaft Niedersachsen was the first Coradia iLint customer and received the European Railway Award in early 2021 for its consistent commitment to employing alternative drive systems.

Based on the ground-breaking development, Alstom is also meeting demand for hydrogen applications on rail outside Germany, including in France and Italy where the first contracts have already been signed.

Since the transport sector accounts for over 20 percent of global greenhouse gas emissions, now more than ever sustainability and emission-neutral solutions are playing a major role in the climate debate. Alstom has recognized the potential and importance of sustainable mobility solutions in rail transport in meeting global environmental targets and is developing

forward-looking drive technologies to support these goals. This is because operators of partially electrified and non-electrified rail lines will remain dependent on conventional diesel trains and thus on fossil fuels until an emission-free alternative exists.

Alstom first presented the Coradia iLint to the public at InnoTrans Berlin in 2016 and in 2018 the Coradia iLint received approval for passenger operation in Germany. Since then, the first two pre-series trains have already covered more than 200,000 kilometres of regular passenger service. Starting in 2022, Alstom will begin delivering the first of a total of 41 Coradia iLint series trains ordered in Germany.

Alstom already offers a complete portfolio of alternative drive systems for rail transport. In addition to innovative hydrogen technology, Alstom is the only company in Germany to have successfully sold battery trains, proving that reliable and emission-free alternatives to diesel-powered regional trains on non-electrified routes are already ready for the market.

Italy

Trenitalia (FS Group): the first Frecciarossa trains on the Paris-Lyon-Milan route

On December 18th, the first two Frecciarossa trains departed from Paris and Milan, in the debut of the Trenitalia and Ferrovie dello Stato high-speed service in France. It is an historic milestone in the evolution of the European rail market.

A Frecciarossa departed from Paris Gare de Lyon at 7.26am with stops at Lyon Part Dieu, Chambéry-Challes-les-Eaux, Modane and Torino Porta Susa, before arriving at Milano Centrale. The other train did the reverse, leaving Milano Centrale at 6.25 and terminating at the Gare de Lyon station in Paris. There will be a further two trains in the afternoon.

Tickets can be bought on the Italian and French versions of the trenitalia.com website, on the Trenitalia app and ticket offices at all Italian stations, and at Gare de Lyon in Paris and at Part-Dieu station in Lyon, as well as at some of our distribution partners.

The two trains a day going to and from Paris Gare de Lyon and Milano Centrale, via Lyon Part-Dieu, Chambéry, Modane and Turin, will be joined by a further three trains a day to and from Paris Gare de Lyon and Lyon Part-Dieu and Lyon Perrache. Trenitalia will run a total of ten trains with nearly 5000 places a day between Paris and Lyon.

As the first European operator to move into the French railway market after it opened to competition, Trenitalia with Frecciarossa will offer French passengers, and also Italians who want to get to – using the most sustainable, safe and comfortable means of transport – Chambéry, Lyon and Paris, a new travel experience which will enrich and complete that already provided by the French railway company.



France

Alstom to transfer Bombardier Transportation's contribution to the V300 ZEFIRO very high-speed train to Hitachi Rail

On December 1st, Alstom announced that it has agreed to transfer business activities related to Bombardier Transportation's contribution to the V300 ZEFIRO very high-speed train to Hitachi Rail. The transaction is part of Alstom's commitments to the European Commission in relation to Alstom's acquisition of Bombardier Transportation with reference to the V300 ZEFIRO. Alstom today finally discharged its divestment obligations as required by the Commission's clearance decision.

Alstom will continue to honor its obligations under the existing orders for Rolling Stock from Trenitalia and ILSA to ensure a seamless transition. For Hitachi Rail, the transaction consolidates the company's commitment to the very high-speed rail market, especially Italy's Frecciarossa 1000, and reinforces the strength of the company's Service and Maintenance capabilities.

The transaction will comply with all applicable social processes and consultations with employee representative bodies and is subject to regulatory approvals. Closing of the transaction is expected in the first semester of 2022.

China

Alstom's driverless airport APM enters service at Shenzhen Bao'an International Airport

On December 17th, Alstom's Innovia automatic people mover (APM) system began passenger service the same day that the new satellite hall in Shenzhen Bao'an International Airport opened. The APM system project was undertaken by Alstom's Chinese joint venture CRRC Puzhen Bombardier Transportation Systems Limited (PBTS)[1] since 2018 and in September this year, PBTS also won the contract to provide operation and maintenance (O&M) service for the APM system. The Shenzhen Bao'an International Airport is located on the east bank of the Pearl River approximately 32 kilometres away from downtown Shenzhen. The Innovia APM system runs on a 2.6 km line connecting an air side satellite hall to Shenzhen Airport's existing Terminal 3. Operating at a maximum speed of 80 kilometres per hour, travel time for passengers is approximately 3 minutes. Shenzhen Bao'an International Airport has seen rapid passenger growth, surpassing 52 million passengers by the end of 2019, making it one of the busiest international airports in China. The satellite hall was designed to throughput 22 million passengers and will be an important structure to improve passenger capacity. The Innovia APM system is equipped with the highest level of automation available to provide convenient transfer services between T3 and the satellite hall for domestic and foreign travelers. PBTS designed, built and commissioned all of the electrical and mechanical equipment, including all the Innovia APM vehicles. The propulsion equipment was provided by another Alstom Chinese joint venture, Bombardier NUG Propulsion System Co. Ltd. (BNP) [2], while its Chinese joint venture Bombardier NUG Signalling Solutions Co. Ltd. (BNS)[3] provided the advanced signalling systems Cityflo 650 to Shenzhen Airport APM.

"The start of operation of our Innovia APM at Shenzhen Airport marks another milestone for Alstom's Chinese joint ventures and proof of customer trust in our products and services. The fully automated driverless technology will provide convenient transfer for arriving and departing passengers reliably and efficiently, while reducing operating personnel and operational costs. Alstom is always committed to working alongside our customers to realise their transportation visions by providing safe, smart, and reliable mobility solutions," said Jianwei Zhang, President of Alstom China.

Alstom has already supplied APM systems to Beijing Capital International Airport, Chengdu Airport, Shenzhen Airport, Shanghai Metro Line 8 and Guangzhou Zhujiayincheng, and is also currently delivering an Innovia APM system to Hong Kong Airport. Alstom's APM technology will be in service in China's six largest urban centres. The driverless Innovia APM is a transportation system specially designed to serve airports and dense urban areas. It offers quick, comfortable, and convenient service for commuters within cities, to and from airports, or between airport terminals. Innovia APM cars operate on a dedicated guideway underground, on ground level or elevated. This ensures a consistent service that does not interfere with surrounding road or runway traffic. Built on 50 years of successful and dependable operation, Innovia APM systems incorporate modern aesthetics

and advanced subsystems for optimised functionality. Over 30 of Alstom's APM systems have been delivered around the world and are in operation at 12 of the world's busiest airports.

1. CRRC Puzhen Bombardier Transportation Systems Limited is owned at 50% by Alstom Group and is consolidated by equity-method. The 50% share in net income of CRRC Puzhen Bombardier Transportation Systems Limited is included into Alstom aEBIT.
2. Bombardier NUG Signalling Solutions Company Limited is owned at 50% by Alstom Group.
3. Bombardier NUG Propulsion System Co., Ltd. is owned at 50% by Alstom Group.



Alstom's Citadis X05 trams enter passenger service in Athens

Alstom's latest generation of tram, the Citadis X05, has entered passenger service in Athens. Running on a line that extends from the centre of Athens to the city's Aegean Sea coast, it is estimated that over 60,000 passengers will ride the Citadis trams every day.

Prior to their entry into passenger service, the 25 trams successfully completed dynamic tests without passengers, totalling more than 15,000 kilometres on Athens' urban network, ensuring safe and reliable operation once in service.

"Despite the pandemic, we managed to deliver these trams on time, and we are very proud of that. Alstom has committed to improving passenger experience with comfortable and modern rolling stock, while increasing the capacity. Citadis X05 represents the latest evolution of a successful range of trams. During the recently concluded tests, Citadis X05 again proved its reliability and performance, while showing that its style and class suit Athens well," said Stavros Vlachos, Managing Director Alstom Greece.

The 25 trams ordered in 2018 by Attiko Metro, the urban transport authority of Athens, are the first Alstom trams to ever circulate in Greece. They will run at a maximum speed of 70km/h on the city's existing network, as well as on any planned extensions.

In addition to the manufacturing and supply of the trams, Alstom is also responsible for the on-site testing, training and three-year warranty services, as well as spare parts for the vehicles.

The modern Citadis X05 trams supplement the existing fleet of light rail vehicles for use on the network in Athens and Piraeus. The five-section trams are 33.42 metres long and 2.40 metres wide, with a maximum capacity of 294 passengers. Double doors along the entire length of the tram ensure enhanced accessibility. The Citadis X05 range offers superior passenger experience, with 20% more glass surface, LED technology for soft, homogeneous lighting, optimised air conditioning and ventilation system as well as travel information on large screens via a telematic system. Citadis X05 tram performance is in line with Alstom's ambition to become the leader of sustainable mobility as they ensure reduction of energy consumption by 25%.

More than 3,000 vehicles from the Citadis range have been sold by Alstom in 60 cities worldwide. Citadis trams have covered over 1 billion kilometres and transported 10 billion passengers since the first tram entered service in 2000. Along with Athens, Citadis X05 has been ordered by cities such as Sydney, Paris, Nice, Avignon, Caen, Lusail and Frankfurt.

In Greece, Alstom also provided 28 metro trains for the first Athens Metro project in early 2000.



Europe

Akiem and Siemens Mobility sign a framework agreement for the supply of Vectron locomotives



Initial firm order for 20 locomotives

The Vectron platform will boost Akiem's activities in key corridors of Central and South-Eastern Europe, up to Scandinavia

With this partnership, Akiem strengthens its ability to meet its customers' growing needs in passenger and freight operations throughout Europe

Akiem, the rolling stock leasing specialist, and Siemens Mobility announce Akiem's firm order for 20 Vectron locomotives. The order has been finalised as part of a framework purchase agreement for locomotives, ancillary equipment and services signed August 2021. With this new contract, Akiem confirms its leadership of the European leasing market and its ambition to supply European freight and passenger operators with appropriate, efficient rolling stock.

Efficient, safe and reliable rolling stock

Fabien Rochefort, CEO of the Akiem group, comments: "We are proud to build on a new partnership with Siemens Mobility and diversify our fleet portfolio. At Akiem, we are committed to offering our customers across Europe the locomotives that will secure and

develop their cross-border operations. We continue to strengthen our ability to deliver the reliable, efficient, safe and cost-effective traction services that passengers and freight operators demand. This acquisition will greatly help the wider development of our passenger activities, with vehicles offering traction speeds of up to 200kph. We are thrilled to continue providing our customers with state-of-the-art locomotives for corridors towards markets in Scandinavia, Italy and Central and South-Eastern Europe." Albrecht Neumann, CEO Rolling Stock at Siemens Mobility, adds: "We are very pleased to win Akiem as a new Vectron customer. Vectron is a highly reliable, environmentally friendly and powerful locomotive that meets European transport requirements and gives our customers maximum flexibility."

The multisystem locomotives ordered have a maximum output of 6.4 MW and a top speed of 200 kph. They are equipped with the required national train control system and the European Train Control System, ETCS. Siemens Mobility has sold 1,156 Vectron locomotives to date, including 767 Vectron MS units, to 58 customers in 16 countries. The Vectron fleet has so far accumulated over 500 million kilometres in service. Locomotives based on the Vectron platform are approved for operation in 20 European countries.

Ireland

Alstom to provide the most sustainable fleet of trains in Irish transport history

On December 13th, Alstom signed a ten-year framework agreement with Iarnród Éireann/ Irish Rail (IE) for up to 750 new X'trapolis commuter rail cars for Ireland's DART (Dublin Area Rapid Transit) network, with a firm initial order for 19 five-car trains, valued at €270 million, including a 15-year support services contract.

Alstom Chairman and CEO Henri Poupart-Lafarge, Minister for Transport Eamon Ryan T.D., and Chief Executive of the National Transport Authority, Anne Graham, joined Iarnród Éireann's Chief Executive, Jim Meade at IE's Inchicore Works to formally sign the contract which will see the replacement and expansion of the DART fleet as part of the DART+ Programme funded by the National Transport Authority under the National Development Plan 2021-2030.

"Alstom is delighted to have been selected to deliver the new DART+ fleet. Ireland is a very important market to us, and the new electric and battery-electric X'trapolis fleet is a big step for making rail even more sustainable while transforming the passenger experience in the Greater Dublin area and beyond," said Nick Crossfield, Alstom's Managing Director, UK & Ireland. "This order reinforces Alstom's position as the world's leading innovator and supplier of green mobility technologies."

Chief Executive of Iarnród Éireann Jim Meade said: "this framework agreement with Alstom will be central to a transformative change for our services and for our customers, and will help us in Iarnród Éireann to achieve our ambition of being the backbone of Ireland's sustainable transport network. We're excited to work with Alstom to deliver expanded services in the Greater Dublin Area, enhanced facilities for our customers, and a cleaner environment for our country."

Due to enter service in 2025, the initial order is for six five-car electric multiple units (EMUs) and thirteen five-car battery-electric multiple units (BEMUs), capable of journeys beyond 80 kilometres outside the electrified network under battery power, and the first modern battery fleet in Ireland. Energy stored in the battery system will be replenished via fast charging stations at chosen terminus locations and by recovering braking energy while the train is in motion. This capability will deliver emission-free connectivity and capacity ahead of electrification of the full DART+ network. Alstom will continue to support the DART fleet for a period of 15 years, providing technical support and spares, and deploying its Health Hub™ and Train Scanner technologies for predictive maintenance.

Alstom's highly successful, modular X'trapolis commuter train platform, with over 5,500 vehicles sold, will be specially tailored for the DART+ programme. Each 82-metre train will have space for 550 passengers with wide, walk-through gangways, low-level floor, and an automatic retractable step to maximise accessibility. Other features include dedicated cycle and family areas; enhanced passenger features such as charging facilities for mobile phones, e-bikes and e-scooters; and advanced CCTV systems throughout the train, to enhance safety and security for customers and employees.

Alstom is the pioneer of sustainable and smart mobility with a full portfolio of green mobility solutions, including the world's first hydrogen train, the Coradia iLint, as well as battery electric trains already sold in Germany (Coradia Continental BEMU).

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Norway

Siemens Mobility to modernize the Oslo Metro with a digitalized train control system

Siemens Mobility has been awarded a €270 million contract by Sporveien AS in Oslo, Norway to install and maintain a Communications-Based Train Control system (CBTC) on the Oslo Metro. Siemens Mobility will completely replace the current legacy signalling with its digitalized CBTC technology which will provide greater automation and connectivity, allowing for a more efficient and centralized control of operations. Specifically, the optimization and renewal of the complete 94 km network will increase the availability, safety, and capacity of the Oslo Metro, while also equipping it to meet the future demands for mobility and the need for any potential expansions or upgrades. As part of this contract, Siemens Mobility will design, integrate, test, and commission the system, while also providing digital maintenance and support services for the CBTC system for 25 years.

“With this investment we are securing the future of the T-Bane in Oslo. With CBTC technology we are revolutionizing the metro network with a modern, innovative system which will provide greater train automation, increased capacity and improved traffic flow,” said Cato Hellesjø, CEO, Sporveien.

“Siemens Mobility is delighted to have been selected to deliver Communications- Based Train Control signalling for the Oslo Metro. Our state-of-the-art signaling technology will increase the reliability, availability and efficiency of the Oslo Metro, which will ultimately enhance the passenger experience for the residents of Oslo,” said Michael Peter, CEO of Siemens Mobility. “This important project further underscores our leading position in the field for delivering automated signalling systems that improve the infrastructure and sustainability of public transportation.”

The Oslo CBTC system will operate at Grade of Automation level 2 (GoA2) and the radio based technology will enable real-time data to be captured on vehicle position and speed conditions. The digitalized system will allow the Oslo Metro to safely increase the number of vehicles on a rail line and the greater frequency of train arrivals will give them the capacity to accommodate more passengers on the system. Additionally, the ability to continuously receive updates on system status will improve operational efficiency, resulting in fewer delays and more up-to-date travel information.

To maintain and support the system, Siemens

Mobility will provide its comprehensive digital asset management solutions for rail systems which will reduce the risk of failure of critical assets, increase availability, and minimize maintenance costs. This will include the digital application suite Railigent, a cloud-based platform that will enable the Oslo Metro to intelligently use rail data, optimize their maintenance and operations, and help maximize the availability of its fleet.

The Oslo Metro is the largest of the Nordic metros and is part of the publicly owned corporation Sporveien AS, who operate and maintain the Oslo Metro

and Oslo Tramway. Inaugurated in 1966, the current network consists of five lines that stretch across 88 km, serving 101 stations of which 17 are underground or indoors. Utilizing a fleet of 115 Siemens MX3000 three-car trains, the Oslo Metro carries more than 100 million riders annually.

The Siemens Mobility CBTC solution Trainguard MT is the most extensively deployed automatic train control system in the world and is used by many operators, including Paris, Beijing, New York, London, and Copenhagen.



From the
Archives

Austria

OBB No. 52.3812 waits for the road at
Strasshof on April 2nd 1975.

John Sloane

www.railtalkmagazine.co.uk 63



From the Archives

OBB Class 2060.95 shunts 2143.41 at
Wien Nord depot on April 2nd 1975.

John Sloane

www.railtalkmagazine.co.uk 64

Austria



From the
Archives

OBB Class 1042.044 stands at Passau
on August 1st 1989. *Mark Enderby*

Austria

www.railtalkmagazine.co.uk 65



From the Archives

Rebuilt Nohab diesel No. 5305 is seen at Ronet Depot, Namur on June 11th 1994. *John Sloane*

Belgium



From the Archives

No. D18001 is seen on a southbound service at
Victoria on December 4th 1981. *John Sloane*

www.railtalkmagazine.co.uk 67

Chile



From the
Archives

Czech 2-6-2 steam loco No. 354.7152 arrives at
Luzna on June 29th 2008. *John Sloane*

Czech



From the Archives

Czech Class T478.1001 and 4-8-2 No. 475.179
are seen on special trains at Nedvedice on July
5th 2008. *John Sloane*

Czech



From the
Archives

Czech

CD Class 242.210 is seen arriving at Brno on July
6th 2008. *John Sloane*



From the Archives

CIE No. 204 waits to depart Cork Kent
station with an express to Dublin on
April 2nd 1996. *John Sloane*

www.railtalkmagazine.co.uk 71

Eire



From the
Archives

Germany

DB Class 216.125 rolls northbound
through Lehrte on October 19th 1974.
John Sloane

www.railtalkmagazine.co.uk 72



From the
Archives

Germany

A DR Class E04 is seen at Rheine on
August 31st 1979. *Mark Enderby*

www.railtalkmagazine.co.uk 73



From the
Archives

Germany

DB Class 798 railbuses are seen at
Bogen on July 26th 1989.
Mark Enderby

www.railtalkmagazine.co.uk 74



From the
Archives

Germany

DB Class 211.037 and 218.206 are seen
at Deggendorf on August 4th 1989.
Mark Enderby

www.railtalkmagazine.co.uk 75



From the
Archives

Hong Kong

A Kowloon Canton Railway Metro-Cammell EMU is seen at Sheung Shui on October 9th 1994. *Mark Enderby*



From the Archives

India



A WP Class steam loco is seen at
Varanasi on August 6th 1991.

Mark Enderby

www.railtalkmagazine.co.uk 77



From the Archives

India



Steam loco No. DHR780 is seen at
Batasia Loop, Darjeeling on October
13th 1998. *Mark Enderby*

www.railtalkmagazine.co.uk 78



From the
Archives

New Zealand

Kiwi Rail No. DSG3061 is seen engaged in shunting in the yard at Palmerston North on November 20th 2010.

John Sloane

www.railtalkmagazine.co.uk 79



From the Archives

New Zealand

Kiwi Rail No. DXB5051 together with Nos. 4191 and 4064 display a variety of liveries from present and past operators as they depart the yard at Wellington with a northbound freight on November 22nd 2010. *John Sloane*



From the
Archives

New Zealand 

Kiwi Rail No. DXR8007 awaits its next turn at Mount Manganui Yard, Tauranga on November 15th 2010.
John Sloane

www.railtalkmagazine.co.uk 81



From the
Archives

North Korea

North Korean Red Flag No. 5057 is seen at
Pyongyang on September 15th 2009.

Mark Enderby



From the
Archives

Spain

RENFE Class 311.115 is seen shunting in the exchange yard at Port Bou on April 1st 1991. *John Sloane*

www.railtalkmagazine.co.uk 83



From the Archives

Spain



RENFE oil fired 2-8-2 No. 141F.2351 is seen setting off south from Los Santos with a freight in the Zafra direction on August 6th 1974. *John Sloane*

www.railtalkmagazine.co.uk 84



From the Archives

U.S.A.

Virginia Rail Express' GP40 No. V21 is seen at Alexandria on April 8th 1994. *Mark Enderby*

www.railtalkmagazine.co.uk 85

