



Railtalk Magazine *Xtra*

Issue 176x
May 2021
ISSN 1756 - 5030

Contact Us

Editor

david@railtalkmagazine.co.uk

Content Submissions

entries@railtalk.net

Technical & Subscription Support

admin@railtalk.net

Content

Pg 2 - Welcome

Pg 4 - Pictures

Pg 38 - World News

Pg 46 - 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 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 176Xtra

As restrictions ease throughout many parts of Europe then the true cost of the pandemic starts to be revealed and we can see that in some countries, the railway of the future might not be the same as we have been used to.

This was the announcement from Czech national operator recently:

The organizational structure of Czech Railways is to be significantly streamlined, in many cases by up to three levels. The planned redundancies in České dráhy are beginning to take concrete form. The management of the state carrier has already sent the trade unions their idea of organizational changes, which are to take place from July 1st. According to Czech Television, it will mean a reduction of up to 40% of managers.

“If we do not want to lose a fifth of the market within two years, it is inevitable to set up a new organizational structure by July 1st so that it is faster and saves wage costs,” Ivan Bednárik, chairman of the Czech Railways board, said in a video for employees. He has carried out a similar reduction of employees at ČD Cargo in the past.

“We live in our world and we’re still going the way we’ve been doing for the last 15 to 30 years, and we haven’t tried at all to learn that some things can be done differently. The time when it didn’t matter if a colleague was at work for two hours and was playing Solitaire for three hours is gone,” says Bednárik in the video. At the same time, he points out that he is aware of the great differences in the functioning and work commitment of employees.

The cuts will mainly affect the Directorate-General, which in the past has also become a repository for a number of unsuccessful politicians and deputies, especially from the Ministry of Transport. Management wants to save about 7 percent of the cost. Instead of up to seven stages of management, a maximum of four stages should be created. According to Bednárik, it can be 30 or 40 percent of managers. “As a matter of priority, we must maintain the functionality of the whole. So that passengers get to

work, to school, to the doctor, etc” Bednárik said.

Czech Railways has learned about the loss of a number of lines in the last six months. They will include the R23 line from Kolín to Ústí nad Labem, and other lines in the Liberec region, where they will lose the operation of the Pošumava locals. “If we don’t do something about it this year, no one will do anything about it anymore,” Bednárik tells the employees in a video.

Of course much can be said about allowing private operators to take over local routes but in neighbouring Slovakia, RegioJet wants out.

It says that it will not submit an offer for the operation of trains on the line between Bratislava and Komárno, from where it left last December. The company stated that Slovakia has no interest in liberalizing rail transport at all. Minister of Transport Andrej Doležal called the statement absurd. RegioJet issued its opinion after the closing of bids for the competition for ten years of operation on the track, where it ran from 2012 until last year. “The reason is the absolute loss of confidence in the sincere interest of the Ministry of Transport in fair competition, which would bring an increase in the quality of services and cost savings,” the company said in a statement. According to RegioJet, there is no schedule of competitions in Slovakia. “There is still the same team of officials at the Ministry of Transport who have been deliberately announcing pseudo-competitions for several years, which do not lead to any result. There is a reasonable suspicion of interconnection with business structures that are interested in maintaining lucrative railway contracts,” said RegioJet. In Slovakia, not a single open competition for the provision of railway transport has yet taken place with a successful end. According to him, RegioJet will remain in Slovakia only with commercial trains.

Until next month

David

This Page

Lineas No.1571 is seen running light engine in Rotterdam Port on March 19th. [Erik de Zeeuw](#)

Front Cover

On April 21st, a test run of the new ICNG combined train sees Nos. 3112, 3113 and 3108, each with five coaches, pass Soest Weideweg. [Andre Pronk](#)





For BLS/Crossrail Class 186.211-9 the Belgian border is only a few hundred meters away whilst working the Frenkendorf shuttle from Switzerland to Antwerp in Belgium on March 19th. From Roosendaal trains to Belgium changes track from the right hand side to the left hand side. *Erik de Zeeuw*

Terms & Conditions

Railtalk Magazine is a free monthly online digital magazine (e-mag), provided in PDF format.

Railtalk Magazine takes no responsibility for any information provided or printed in this magazine. Best efforts are made at the point of going to publish, to effect all information is correct, however no guarantees are given or implied.

All content is © copyright either Railtalk Magazine or it's respective owners. All items are credited to their respective owners and no parts of the magazine should be reproduced without first obtaining permission. In cases where ownership is unclear, please contact the editorial team and

we will be happy to provide details of respective owners once permission has been granted to pass on such information.

Railtalk Magazine is published by HAD-PRINT a trading name of HAD-IT LIMITED.

HAD-PRINT
Unit 2-4, France Ind. Complex,
Vivars Way, Canal Road, Selby
North Yorkshire YO8 8BE

info@had-print.co.uk | 01757 600211

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, Mart Brouwers, Keith Chapman, Julian Churchill, Nick Clemson, Derek Elston, Mark Enderby, Tim Farmer, Dave Felton, FrontCompVids, Paul Godding, Richard Hargreaves, Jim Haywood, Keith Hookham, Colin Irwin, John Johnson, Anton Kendall, Mathijs Kok, Jyrki Lastunen, Ken Livermore, Michael Lynam, Peter Marsden,

Phil Martin, Denzil Morgan, Thomas Niederl, Peter Norrell, Chris Perkins, Mark Pichowicz, David Pollock, Andy Pratt, Paul Quinlan, Railwaymedia, Alan Rigby, Bryan Roberts, Neil Scarlett, John Sloane, Stephen Simpson, Laurence Sly, Stewart Smith, Steamsounds, Steve Stepney, Mark Torkington, Gerard van Vliet and Erik de Zeeuw.



On a gloomy and wet day, CBH Groups Nos. CBH120 and CBH121 take loaded grain hoppers through the Swan Valley and onto Kwinana Port. The grain will then be exported from there by ship probably to China. *Colin Gildersleve*







Austria

Despite losing about 10% in volumes and 260 million in revenues compared to the previous year, RCG was able to close 2020 with an EBT of 7.6 million Euro thanks to efficient countermeasures and government support.

In order to counteract the 10% loss in volumes with its own efforts, ÖBB Rail Cargo Group has relied on extensive countermeasures since the start of the COVID crisis and was therefore able to raise a potential of 190 million Euro in 2020. Along with subsidies of about 80 m. Euro, RCG was able to start the new year successfully in 2020 with an EBT of 7.6 million and revenues of 2.2 billion Euro.

In 2020, ÖBB RCG brought over 460,000 trains safely to their destinations, which amounts to 1,260 per day. Over 95 million net tonnes were transported a distance of 28 billion net tonne-kilometres with efficient end-to-end logistics services.

ÖBB financial statement 2020: RCG successfully countered drastic slump in volumes

With a modal share of 28.2% of the total freight traffic in Austria, ÖBB Rail Cargo Group is once again top of the league in Europe for 2020 and once again proved that rail freight transport has an important role to play – both for the climate and for delivering supplies of critical and systemic importance.



Partnership with Marcegaglia to be extended

The cooperation between Marcegaglia and ÖBB Rail Cargo Group will be extended in 2021 to include one more train per week. Sustainable rail transport services bring steel shipments from Italy across all of Europe and save the climate from 3,800 tonnes of CO₂ emissions a year.

The successful partnership between Marcegaglia and the ÖBB Rail Cargo Group is going to be extended again this year to include one more train per week. Fast, efficient and reliable high-performance trains transport steel products from this Italian industrial company to Austria and on to the Austrian market. These rail services take a significant number of heavy trucks off the roads, which saves the climate from 3,800 tonnes of CO₂ emissions a year. The transfer of services back to San Stino di Livenza and its re-launch as a logistics hub brings a great deal of added value to the collaboration and encourages the implementation of in-house services.

Warehouse logistics in S. Stino di Livenza

The ÖBB RCG's logistics centre in San Stino di Livenza is a key hub for freight transport across all of Italy. Its central location provides ideal links to the largest economic markets in Central, Southern and Southeast Europe. Its proximity to Venice and the key economic hubs in Triveneto mean that block trains and intermodal trains as well as efficient freight handling are all available at the warehouse in San Stino.



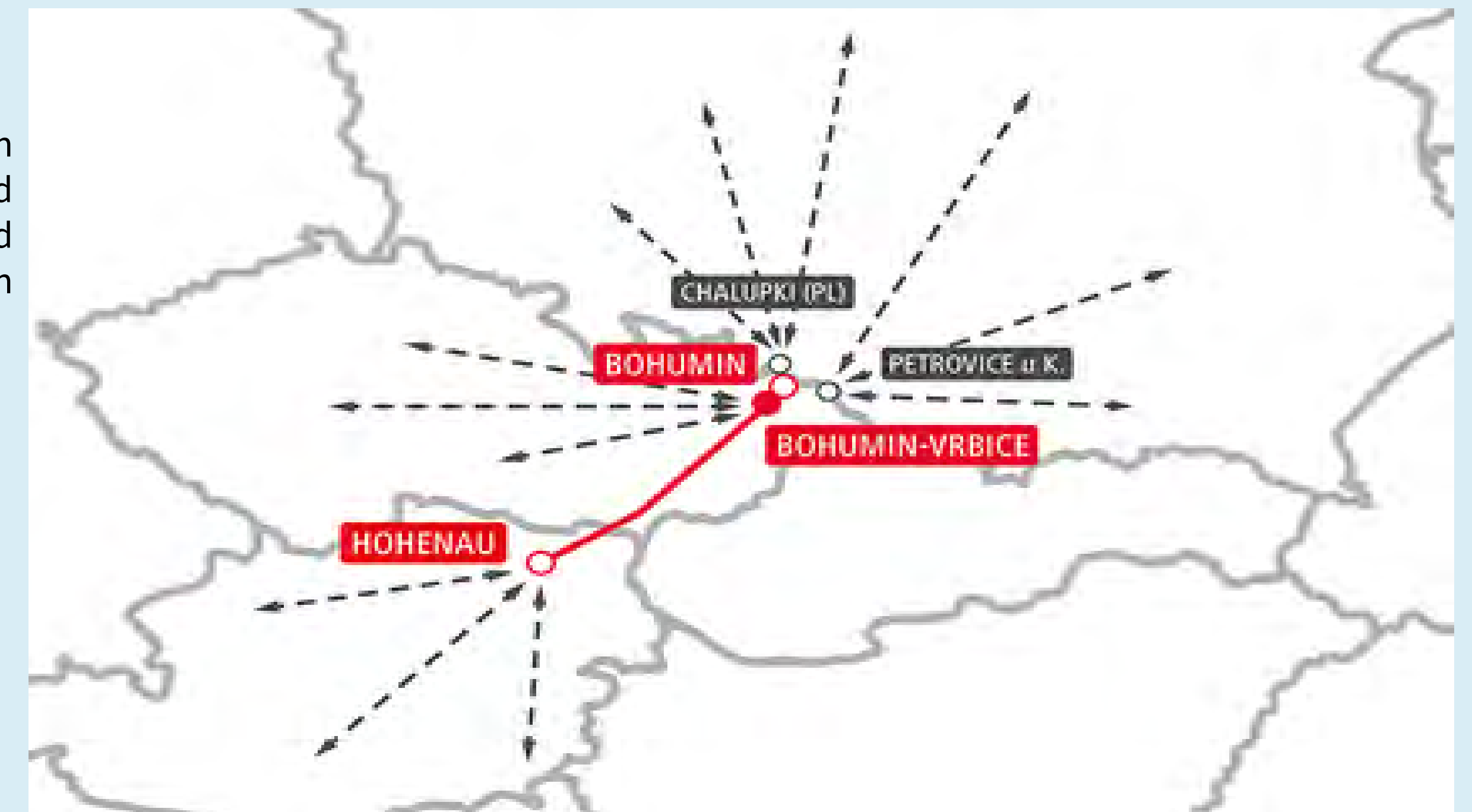
NEW: In-house traction for the first / last mile from Bohumin-Vrbice

Not only does the RCG TransFER Hohenau–Bohumin/Petrovice provide the ideal connection to the broad gauge network, it also now includes in-house traction for first and last mile services from Bohumin-Vrbice to the Czech Republic.

With five to seven round trips a day, the TransFER Hohenau–Bohumin/Petrovice is the ultimate high-frequency service between Austria, the Czech Republic and Poland. It represents reliable, eco-friendly rail transport service. RCG provide additional forwarding services like transshipment, warehouse logistics, customs clearance and final distribution and facilitate the shift from normal to broad gauge, forging the ideal link to the CIS countries' economic area.

What's more, RCG now provide in-house traction with its own staff for first and last mile services from Bohumin-Vrbice to and from key destinations in the Czech Republic.

Satellite connections between Austria, Italy, the Czech Republic and Poland guarantee the efficient onward distribution of goods across its extensive TransNET and connect Central, Southern and Southeast Europe with Northeast Europe and locations as far away as Asia.



ČD Cargo experienced its most difficult year in its history

ČD Cargo, a. s., the largest subsidiary of České dráhy, a.s. and a member of the ČD Group, which deals with rail freight transport, concluded its operations in 2020 with a loss. This freight transport segment contributed to the consolidated result of the ČD Group with an economic result of -248 million CZK after tax.

The results of ČD Cargo for 2020 were negatively affected by the Covid-19 pandemic. In the year-on-year comparison, 4 million tons less were transported. Transports of solid and liquid fuels, automotive, iron and the combined transport of goods from/to China were most significantly affected. However, the decline in performance in most commodities fully corresponded with the economic development of individual sectors.

“From my point of view, ČD Cargo experienced clearly the most difficult year in its independent existence. On the one hand, we faced an unexpectedly sharp decline in demand for our services and, in difficult conditions, we tried to provide our customers with delivered transports in the highest possible quality. On the other hand, we were still thinking about the future. In these difficult times, we did not reduce our short-term operating overcapacity and fully focused on further expanding the territorial scope of the ČD Cargo Group. After Austria, we also fully established ourselves on the German market last year and opened a new subsidiary in Hungary,” states Tomáš Tóth, Chairman of the Board of Directors of ČD Cargo, a.s.

ČD Cargo responded to the decline in performance with a number of cost-saving measures with the aim of increasing the use of internal capacities

and temporarily reducing unnecessary costs. At the same time, a number of projects were prepared to take advantage of business opportunities and more efficient operation of rail freight transport under the ČD Cargo brand. Last but not least, the company managed to secure sufficient external financial resources on the financial markets for future investments.

“Without these unpopular measures, the economic result and the overall economic situation of our company would be much worse. More than 500 administrative and operational employees left our company, we prepared the physical liquidation of other 1,200 long-term redundant and inoperable wagons and several dozen locomotives, and we reduced the costs of external services. A more drastic intervention in capacity would already mean a reduction in the range of our services, which is unacceptable from the point of view of our strategy. We have not significantly reduced investments in core business, which is crucial for our future. A clear goal was also the return of the company to the black numbers in 2021. Already the first quarter of this year indicates to us that we are on the right path and that our measures worked,” added the Chairman of the Board of Directors.

Photos: ©Jiri Stembirek/CD Cargo



CZECH RAILWAYS HAVE SIGNED A FRAMEWORK AGREEMENT WITH THE SIEMENS MOBILITY-ŠKODA TRANSPORTATION CONSORTIUM FOR 180 STATE-OF-THE-ART EXPRESS CARS TO BE SUPPLIED

The Czechs can look forward to traveling in state-of-the-art passenger cars as Czech Railways national carrier has just ordered them from the Siemens Mobility-Škoda Transportation consortium to operate these coaches on long-distance domestic and international lines. The framework agreement concludes provides for the purchase of a total of 182 cars with its value reaching almost CZK 12.5 billion. The consortium is going to supply up to 180 cars consisting of 20 nine-car sets bearing a capacity of 555 seats and a maximum operating speed of up to 230 km / h. The last two wagons shall be purchased by the Czech Railway Administration Authority. The super-modern comfort cars are to be operated in the upcoming years on routes from Prague via Ústí nad Labem to Hamburg or via Brno to Budapest and Vienna.

“We very much appreciate the fact that to be part of such a major project substantially boosting travelling quality on the Czech and international railways. Environmentally friendly transport, to which the railway undoubtedly belongs to, is gaining more and more importance in Europe, and the use of new modern vehicles is fundamentally increasing the railways attractiveness and is contributing to its growth in the transport market. At the same time, it also helps in meeting the commitments to gradually reduce emissions in transport. I believe that the new wagons parameters with their speed reaching up to 230 km/h including the comfortable transport suitable for business trips and family trips will make more new passengers switch to the Central European railways,” says Petr Brzezina, Chairman of the Board of Directors of the Škoda Transportation Group.

“Czech Republic, is planning to increase the travelling speed on conventional lines to 200 km/h and to build high-speed lines as well. In future, this will provide for trains running at higher speeds than the currently maximum permitted speed of 160 km/h. That’s why we have to continue investing into new trains as planned to meet the standard vehicle equipment requirements operating on both conventional and high-speed networks in Central Europe. Thus, we will strengthen long-term international transport strategic partnerships and manifest our position in the long-distance transport area.” Ivan Bednárík, Chairman of the Board of Directors and CEO of ČD, explains and adds: “These sets are going to be equipped with state-of-the-art elements on the current European market and providing thus the highest possible comfort to passengers. We are planning to deploy them on the interstate long-distance lines Prague - Ústí nad Labem - Berlin - Hamburg, Prague - Brno - Budapest and Prague - Brno - Vienna - Graz - Villach. Trains are going to reach their maximum speed in the section between Berlin and Hamburg already in the first years of operation.

The concluded framework contract provides for a total of 182 wagons be purchased, 180 of which are intended for ČD passenger transport, whereas two wagons shall be purchased by the Czech Railway Administration Authority for track testing purposes. The new sets will be approved for operation in the Czech Republic and neighbouring European countries.

They are providing high comfort to passengers and bringing several innovative elements. “We are very pleased that the Czech railway industry is involved into this contract as well. Our company is going to chip into this contract by supplying selected components and especially by taking after the entire assembly, static tests and the wagon commissioning. The wagons shall be manufactured at our Škoda Vagonka, Ostrava-based production facility. Consequently, we are adding up to the cooperation on a similar project of delivering 50 passenger cars to ČD, which we are currently implementing in Ostrava,” says Tomáš Ignačák, Deputy Chairman of the Board of Directors of Škoda Transportation.

“We are pleased that ČD is once again relying on our successful Viaggio platform when it comes to expanding and modernizing its transport services.” says Gerhard Greiter, General Manager of the Northeast Europe Region at Siemens Mobility and adds: “These new wagons are going to pertain to our Czech development department’s brand. They are coming with comfort, offering quiet conditions for travelling even at high speeds and furthermore, there’s barrier-free access. Our state-of-the-art express railway wagons are going to contribute to increasing the attractiveness of a sustainable railway transport in the Czech Republic. “

New passenger cars data:

- modern non-traction returnable nine-car units with a control car,
- front control rail car+1st class wagon, then a 1st class wagon, then a wagon with restaurant and a 2nd class section, then a multipurpose 2nd class wagon (children’s cinema, wheelchair places, etc.), followed by four 2nd class wagons, and finally a 2nd class end wagon (bicycle transport section),
- 99 seats in the 1st class, 456 seats in the 2nd class,
- restaurant section with 18 seats and the possibility of purchasing hot or cold meals as well as other snacks during the trip,
- open-space air-conditioned interior,
- The entire set is pressure tight (which is important especially when driving at higher speeds) protecting passengers from pressure shocks and pressure exerted on our ears when passing through tunnels or when passing other trains, while at the same time helping to create a quiet and long-term clean interior,
- There are automatic photocell-controlled sliding doors controlled between the compartments and the boarding areas,
- button-operated boarding doors and a selective boarding door unlocking system enabling that the doors be centrally closed and locked against unwanted opening before the train departs and of course, there’s a centralized unlocking system as well
- to unlock doors after the train stops only on the side of the platform,
- ergonomically adjustable seats in the 1st class in a 2+1 arrangement with leather upholstery and a 2+2 arrangement with textile cover in the second class,

- folding tables at the back of the seats in front in cases of seats aligned behind each other and fixed tables between the seats where the seats facing each other,
- wireless mobile phone chargers in the 1st class,
- 230 V sockets and USB connectors for powering portable passenger electronic devices,
- innovative window technology providing for the cell phone signal passing into the wagons more easily while maintaining the glass’s thermal insulation properties, in the windows of the sliding blinds against the sun,
- Wi-Fi wireless data network internet connection, including an on-board entertainment and information portal,
- electronic audiovisual information system with integrated LCD monitors and an electronic reservation system,
- barrier-free access to provide for a wheelchair-friendly travelling, including 3 places for wheelchairs, barrier-free toilets, electric lifting platforms for boarding / exiting people in wheelchairs and sockets for recharging the battery batteries of electric wheelchairs,
- children’s cinema, nappy changing table, pram storage spaces, 12 bicycle places
- (including sockets for charging e-bikes) and bulky luggage storage space, approval to be operated in the Czech Republic and the neighbouring European countries (Germany, Poland, Austria, Slovakia and Hungary)



First order of hydrogen trains in France – a historic step towards sustainable mobility

Auvergne-Rhône-Alpes, Bourgogne-Franche-Comté, Grand Est and Occitanie regions sign the very first order of dual mode electric-hydrogen trains in France. This marks a historic step in rail transport's reduction in CO2 emissions for the benefit of passengers and regions, and in the development of a hydrogen ecosystem as well as a promising sector for the future.

Acting on behalf of the four regions, SNCF Voyageurs has placed an order with Alstom for the first 12 dual mode electric-hydrogen trains (plus two optional trainsets) in the Coradia Polyvalent range for Régiolis, developed by Alstom. The contract is worth a total of almost 190 million euros^[1].

In the early days, trains were powered by steam and thermal, then electric energy followed, this innovation marks a genuine revolution in rail mobility. A first in France, it will work towards the energy transition goals to cut greenhouse gas emissions and noise pollution, an ambition supported by the French government through its Hydrogen plan launched in June 2018. It is fully in line with the PLANETER programme to reduce the environmental impact of SNCF Voyageurs' regional mobility solutions, based on the conviction that introducing more TERs (regional express trains) can significantly reduce CO2 emissions. Other French regions have already expressed their interest in participating in a second phase of the project.

This official French order for hydrogen-powered trains is the result of two years of joint efforts by the project's various stakeholders. The dual mode electric-hydrogen Coradia Polyvalent train meets the requirements of France's diverse rail network and has an autonomy of up to 600 km on sections of non-electrified railway. This four-car, 72m-long train has a total capacity of 218 seats and the same dynamic performance and level of comfort as the dual mode electric-diesel version.

Almost 400 dual mode electric-thermal and full-electric Coradia Polyvalent trains have been ordered by French regions since 2011. The development and manufacture of Coradia Polyvalent trains secure over 2,000 jobs in France for Alstom and its suppliers.

Six of Alstom's 15 sites in France are involved in the project: Reichshoffen (Bas-Rhin) for design and assembly, Ornans (Doubs) for engines, Le Creusot (Saône-et-Loire) for bogies, Tarbes (Hautes-Pyrénées) for traction chains and the development of hydrogen propulsion, Villeurbanne (Rhône) for on-board electronics and Saint-Ouen (Seine-Saint-Denis) for design.

"France has everything it needs to become a hydrogen champion: the French government is fully committed to turning this ambition into reality. We will be covering 47 million Euros of development costs for France's first regional hydrogen-powered train. I am delighted that this support has enabled the four partner regions to confirm their order for the first 14 trains," said Jean-Baptiste Djebbari, Minister Delegate for Transport, French Ministry of the Ecological Transition.

"Environmental protection is a major issue and without doubt the greatest challenge of the 21st century. This order for the first Coradia trains in Auvergne-Rhône-Alpes is the next step in our region's ambition to boost green growth focusing on innovation, business development and job creation. Since our commitment to the European project Zero Emission Valley, we have aimed to make our region – home to almost all players in the hydrogen sector – one of the lowest carbon regions in Europe, by developing applications for this new source of energy. Hydrogen trains are an innovative alternative to the diesel trains running on our non-electrified lines," said Laurent Wauquiez, President of the regional council of Auvergne-Rhône-Alpes.

"As a source of energy and a storage solution, hydrogen, and particularly green hydrogen, is a way not only to tackle the effects of global warming, but also to boost employment, attractiveness and growth in our region. As a pioneer in this strategic technology, the region has brought together the talents and skills of both Bourgogne and Franche-Comté in its shift towards hydrogen. The order for three Coradia Polyvalent H2s worth a total of 52 million Euros marks another step in our rollout of hydrogen for low-carbon mobility solutions. The trains will run between Auxerre and Laroche-Migennes, and will be part of the first regional ecosystem in France to include the train, based in Auxerre," said Marie-Guite Dufay, President of the regional council of Bourgogne-Franche-Comté.

"This landmark order confirms our commitment to maintaining employment and activity at the Reichshoffen site, where all the trains – three plus two optional for the Grand Est region and nine others ordered by our counterparts – will be assembled.

This is the first step in the long-term strategy of TER Grand Est and our involvement in this unprecedented programme aims to stimulate a nationwide launch of the light hydrogen train in France. Indeed, the trials carried out will be fundamental in developing a French hydrogen rail sector and, in a second phase, producing the light hydrogen train that the Grand Est region badly needs to roll out its policy to save and develop its small railways," said the President of the regional council of Grand Est.

"This is a key moment in our drive for hydrogen in Occitanie. This first order gives the go-ahead for a new era of technological progress at the service of green mobility with the liO regional public transport service. The Occitanie Region is the only one committed to the 4 greening solutions for its regional trains (Régiolis Hybrid, battery train, bioGNV, hydrogen) and will welcome the 3 hydrogen Régiolis trains on the Montréjeau - Luchon line which we are going to reopen by 2025. It is also good news for our region's employment and growth, particularly with the Alstom plant in Tarbes involved in manufacturing these innovative trains. Low-carbon reindustrialisation of our regions and green mobility solutions are no longer a utopian dream, they are already at work in our regions. I would like to salute the collective engagement of the four regions that have demonstrated their capacity to initiate and support this project, which promotes the emergence of a promising sector for the future here in France," said Carole Delga, President of the regional council of Occitanie / Pyrénées – Méditerranée.

"Alstom is particularly proud to be contributing, alongside SNCF Voyageurs and the Auvergne-Rhône-Alpes, Bourgogne-Franche-Comté, Grand Est and Occitanie regions, to a cleaner and more sustainable mobility solution. Alstom is the first rail company in the world to launch a hydrogen train onto the market and to master this technology through its iLint train, developed for the German market.

This new order for the French market is fully in line with Alstom Group's ambition to become number one in the green and smart mobility market and to help roll out an efficient hydrogen ecosystem in our regions," said Jean-Baptiste Eyméoud, President of Alstom France.

"This order marks a historic and concrete step towards clean mobility, by rolling out a new rail solution with zero direct emissions. Hydrogen has become a concrete solution to help regions achieve their energy transition. We are proud of our commitment to this way forward and of the addition of this technology to the range of solutions developed for our regions through our PLANETER programme. This order is the result of several years of work alongside our organising authorities and the manufacturer, achieved through the commitment and expertise of our teams in the Rolling Stock and TER departments, to develop a hydrogen train to meet our regions' needs," said Christophe Fanichet, CEO, SNCF Voyageurs.

[1] This contract was booked in the 4th quarter of Alstom's 2020/21 fiscal year



After working a train to Duisburg-Rheinhausen Ost, Duisport rail Class 275.107-1 departs in the direction of Krefeld on March 24th. *Erik de Zeeuw*



On March 24th, DB ICE 4 No.9216 passes the classic row of houses in Wuppertal-Oberbarmen with ICE650 working a service from Berlin Ostbahnhof to Köln Hbf. *Erik de Zeeuw*





100 days of the new S-Bahn trains for Berlin and Brandenburg – a first assessment

New 483/484 series reliably under way Delivery of first series trains in summer

On April 15th, Berlin's new S-Bahn trains were a hundred days old – still so very young, yet already proving highly reliable. The new 483/484 series has passed its baptism of fire and also proved itself during the spell of cold winter weather in February: The trains successfully defied snow, ice, and wind.

The first train punctually entered service at 0.01 a.m. on New Year's. Since then, the ten pre-series trains have been running on Line S47 (Spindlersfeld – Hermannstraße) and have replaced the old 485 series trains.

Passengers are happy and feedback from the driver cabs is also positive: Drivers praise the train's power, strong braking capacity, and smooth and quiet operation.

S-Bahn head Peter Buchner: "We're very satisfied with the new trains. The intensive two-year test phase is now paying off since the trains covered

every corner of the Berlin S-Bahn network before entering passenger service. The close collaboration between the manufacturer and operator was a very important factor during construction and commissioning for ensuring that a train would be delivered that optimally meets the specific conditions in Berlin. We also greatly benefited from our many years of experience in S-Bahn operations. A big thank you to Siemens Mobility and Stadler for the trusting partnership!"

With the new trains, S-Bahn Berlin not only offers its passengers greater comfort, but also provides more capacity for our customers. When all the 21 two-car units and 85 four-car units ordered from Siemens Mobility and Stadler have been delivered by the end of 2023, a total of 106 new quarter trains will be in operation.

Beginning this summer, the first series trains will be delivered and join the 483/484 fleet once they have been accepted.

Nicklas Meyer, Chief Vehicle Engineer and Technical Project Manager at Stadler for Berlin's new S-Bahn: "As manufacturer, we're still intensively

accompanying the ongoing trial passenger operations. This way, we can ensure that further operational findings flow directly into the production of the series trains. Looking back at the first hundred days, we as manufacturer are also very satisfied with the trains' technical performance. In particular, the period of sub-zero temperatures in February confirmed our concept. We're convinced that the first S-Bahn to be equipped with air conditioning will also prove itself at the peak of the summer."

Gerald Winzer, VP Regional Train Projects, Siemens Mobility: "We're proud that the new S-Bahn for Berlin is running so smoothly. The new S-Bahn trains are equipped with state-of-the-art, highly robust technology. They mastered the first 100 days with flying colours, even in wintry conditions and very low temperatures, and are a showcase project for urban mobility. Berlin's "new one" offers an improved driving experience and greater comfort for Berliners."



Freight trains will travel even more quietly by 2025

Less noise, more quality of life: by 2030, the federal government and Deutsche Bahn want to relieve half of all residents from rail noise. To this end, DB is now taking further measures: Led by DB Cargo, only new electric mainline locomotives with quiet braking systems will be on the road by 2025. At the same time, DB will put high-emission diesel locomotives out of service and thus make a further concrete contribution to environmental and noise protection.

Dr. Sigrid Nikutta, DB Goods Director: “In the European Year of the Rails, we as DB are making it unmistakably clear: The future belongs to green rails, they form the backbone of our traffic and goods flows. The railway will be even quieter and greener in the future. After the successful retrofitting of our freight wagons, our mainline locomotives are now on their way. By purchasing only new locomotives with disc brakes, our DB freight trains will be much quieter across the country for the foreseeable future.”

DB announced the interim target today along with the Group’s annual noise protection report. By 2025, all of DB Cargo’s 850 electric mainline locomotives will be running with quieter disc brakes - 90 percent of these locomotives are already equipped accordingly.

A binding ramp-up now applies to the remaining ten percent of the vehicles. Second, DB Cargo Deutschland will in future only purchase new freight wagons with innovative noise protection components, which will further increase the freight railways contribution to less noise.

In order to further reduce rail traffic noise, DB Cargo will also phase out diesel locomotives of the 232/233 series by 2030: These high-emission vehicles from Soviet production will finally end of service after more than 50 years of use.

The second pillar for less rail noise aims to invest millions in noise protection along the lines. The noise protection report presented today balances the effect: as announced, rail traffic noise was already halved in the past year - through the retrofitting of 100 percent of all freight wagons with quieter ‘whisper brakes’ at DB Cargo Germany alone and through the federal noise abatement program.

At the end of 2020, the mark of more than 2,000 kilometres of noise-rehabilitated route was broken for the first time (2019: 1,844 kilometres). Over 75 kilometres of new noise protection walls were completed last year along the existing routes and around 146 million Euros were invested in this. Around 1,500 apartments were noise-refurbished.



Hard-as-steel climate protectors on rails: The new “Bayern-Shuttle” supplies the automotive industry in the Free State

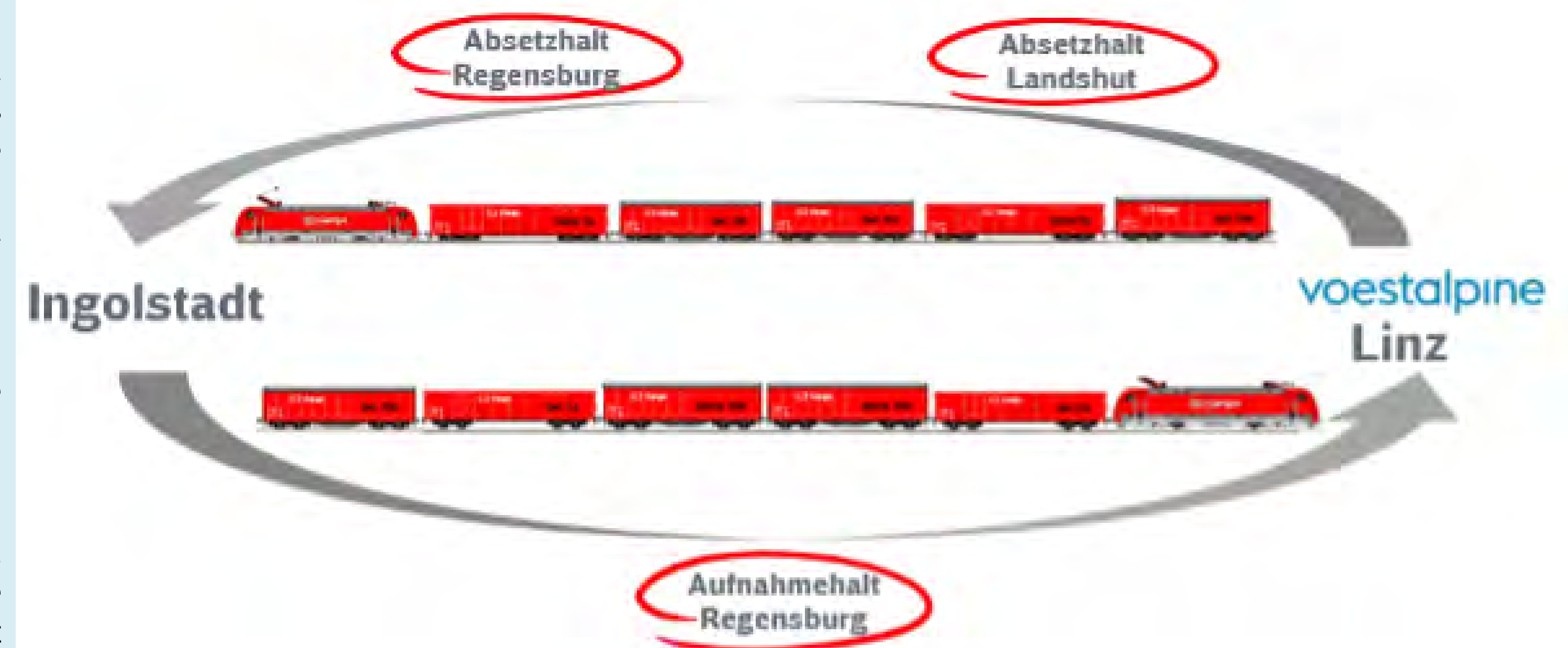
DB Cargo, together with Austrian partner CargoServ, drives more than half a million tons annually for the steel group voestalpine on the climate-friendly rail. Steel there, scrap back: the shuttle between Linz and Bavaria is always at full capacity and runs on green electricity

The new ‘Bayern-Shuttle’ from DB Cargo ensures climate-friendly supplies to the Bavarian automotive industry and its suppliers. Without CO2 emissions, steel is delivered every working day in a goods cycle by rail from voestalpine in Linz, Austria, to Lower and Upper Bavaria and the Upper Palatinate. The goal: the major car manufacturers in the region and their suppliers. In the opposite direction, freight trains drive scrap from the car factories to the steelworks in Linz. In total, more than half a million tons are moved every year. The new cycle protects the environment and the Bavarian-Austrian highways.

In addition, voestalpine has ordered CO2-free traction power and logistics chains from DB-Cargo. Even CO2 emissions that arise, for example, from the onward carriage by truck, are offset by purchasing additional ‘green’ electricity. The logistics partner CargoServ also exclusively uses CO2-neutral ‘green’ electricity on the Austrian route section. In total, this saves approx. 8,000 t of CO² pa compared to a truck.

“Together with our partner DB Cargo, with whom we have had a very successful cooperation for years, and our group’s own rail transport company CargoServ, we can use the new shuttle to further expand the climate-friendly and sustainable rail freight transport between our production site in Linz and our important premium automotive customers in Bavaria.”, says Hubert Zajicek, member of the Management Board of voestalpine AG and Head of the Steel Division.

“Our new Bayern shuttle is not only fast, it is also flexible and can accommodate production fluctuations to the day. That suits the industrial customers very much. And the new electric and hybrid models from the major German premium manufacturers leave significantly fewer CO2 traces in production and logistics,” praised Dr. Sigrid Nikutta, CEO of DB Cargo, the new Express. In addition, in view of the short-term border



closings, rail logistics in particular have recently proven to be crisis-proof and stable. “One freight train replaces 52 trucks - that’s why the handling of our trains is never a problem even under Corona conditions.”



DB and air transport agree on an action plan for cooperation and more climate protection

4,3 Millionen innerdeutsche **Flugpassagiere** für die Reise auf der Schiene gewinnen

ca. **1/6 weniger** **CO₂-Emissionen** im innerdeutschen Luftverkehr



The Federal Association of the German Aviation Industry (BDL) and Deutsche Bahn (DB) are launching a joint action plan to strengthen the networking of modes of transport and to reduce greenhouse gas emissions in the transport sector. In the declaration signed in Berlin, the two parties announced that they will be taking a series of measures to improve the interfaces between the modes of transport and the mobility offer so that more travellers choose rail, especially when traveling to hub airports.

area is to be improved for intermodal customers. Baggage handling should also become easier. Frankfurt / Main Airport is the starting point for this.

3. Faster train connections between metropolises :

The federal government is working with DB to expand the federal rail routes to enable the German cycle to be implemented in stages. This enables shorter travel times and nationwide coordinated connecting trains. The action plan takes into account high-performance, attractive rail connections, especially between the metropolises, and better transfer connections in local transport.

The aviation industry and DB see the potential that a good 20 percent of those traveling by plane within Germany will choose rail instead. The partners want to leverage this potential in the following years: With high-performance, attractive offers and ongoing infrastructure expansion, BDL and DB want to attract around 4.3 million passengers to switch to the train. In 2019, the aviation industry recorded around 23 million travellers, 8 million of them on feeder traffic and 15 million on purely domestic trips. As a result, the share of domestic air traffic in CO₂ emissions in Germany could be reduced by a sixth.

The action plan focuses on three points:

1. Growing range of feeder trains for international flights:

The Lufthansa Express Rail service will expand to include more domestic German routes. Wherever passengers accept the offer and increasingly switch to rail, the aviation industry can consequently reduce flight frequencies and also discontinue connections, such as on the Cologne-Frankfurt connection or most recently on the Berlin-Nuremberg route. The fast rail connections are primarily intended to shift feeder flights to large hubs and individual traffic to the airport by rail.

2. Easier switching between flight and train :

Optimized routing and signage will make it easier for travellers to switch between plane and train. The change at the airport between the train and the airport security

In this way, the need for domestic flights on more and more routes can be made superfluous.

Ronald Pofalla, DB Board Member for Infrastructure: “This action plan is active climate protection! Travellers who have previously used the plane should in future take the environmentally friendly train as a matter of course. There are already numerous fast connections between the metropolises that can keep up with any domestic German plane.”

Berthold Huber, DB Board Member for Passenger Transport: “With the timetable change from December, we will be offering more alternatives to short-haul flights with new, super-fast Sprinter connections. In addition, we are connecting the airports even more closely to the railways. We want to work closely with the aviation industry. The most recent expansion of our partnership with Lufthansa is groundbreaking in this regard.”

Peter Gerber, President of the BDL Air Transport Association: “We want to network the modes of transport in such a way that the customer-friendliness of the mobility offer for travellers is further improved. With a growing range of rail services and optimized interfaces, more people will switch to rail. This is an important building block for climate protection in the transport sector.”

Dr. Stefan Schulte, President of the Airport Association ADV: “A customer-friendly connection of the airports to the rail network is a prerequisite that more people choose to travel to the airport by rail instead of plane or car. Our joint action plan names specific projects to further optimize networking.”

In order to replace feeder flights and to avoid car journeys to the airports, the connection of the large hubs to the railways is a key factor. Five airports are already linked to long-distance and local transport (Berlin, Düsseldorf, Frankfurt, Cologne / Bonn and Leipzig / Halle) and a further seven airports to local transport (Dresden, Friedrichshafen, Hamburg, Hanover, Lübeck, Munich and Stuttgart). Stuttgart Airport will be connected to long-distance traffic from December 2025. Furthermore, the Free State of Bavaria is examining options for a more extensive connection to Munich Airport in a feasibility study. The BDL considers this to be necessary to strengthen intermodality.

Infographic ©: DB AG / BDL





PKP CARGO Vectron Class 193.506 passes Bohmte with a 'China Railway Express' from Neuss and Hamburg to China on April 1st. *Erik de Zeeuw*





On March 19th, RTB Cargo Class 186.297-8 'Aachen' hauls a 'Blerick shuttle' from Venlo to Rotterdam. *Erik de Zeeuw*



NS Class 193.766 in NS Flow livery enters Hilversum with train No. IC141 from Amsterdam CS to Berlin Hbf (Germany) on March 23rd. Perhaps the most striking difference is the livery. The loco will remain blue/yellow, but otherwise the appearance hardly resembles the current rolling stock. For example, NS has had the tradition for decades to frame the area around the windows with a blue band. That is now about to change. The NS logo will be large on the trains and the train will largely be yellow. The head of the train/locomotive and the top and bottom will turn dark blue. *Erik de Zeeuw*



Netherlands

On March 26th, RTB Cargo Class 186.506 passes Deventer with a rake of empty tanks heading towards the Kijfhoek yard in Zwijndrecht.

Erik de Zeeuw







On March 29th, VolkerRail No. 7178 arrives in Amersfoort after working a driver training run.
Erik de Zeeuw



Netherlands

Kombirail Europe Class 186.536-9 passes Griendtsveen with the 'Betuwe Express' from Rotterdam to Duisburg-Ruhrort (Germany) on April 8th. *Erik de Zeeuw*



RFO No. 683/9702 is seen shunting in Amersfoort Yard on March 29th. Erik de Zeeuw



On April 8th, DB Class 193.317-5 leads Nos. 6428 and 6464 past Boxtel with an empty tank train from Lutterade DSM yard to the Sloehaven in Flushing.
Erik de Zeeuw



NS Class 193.766 has nearly reached Amersfoort Central station with a train from Berlin (Germany) to Amsterdam on March 29th. *Erik de Zeeuw*



DB TRAXXF140AC3 Class 187.179-7 has just crossed the Dutch border with a unit cargo from Köln Gremberg (Germany) to Venlo on April 8th. *Erik de Zeeuw*





Netherlands

On April 8th, Kombirail Europe Class 186.495-8 arrives in Venlo with the 'DuKo Shuttle' from Köln Niehl Hafen and Düsseldorf Hafen (Germany) to Rotterdam. *Erik de Zeeuw*



Netherlands

New Vectron locomotive Class 193.766 from the Dutch railways (Nederlandse Spoorwegen) passes through Twello station with train No. 7703 from Berlin on its way to Amsterdam Centraal.

Mart Brouwers



India



Alstom delivers the 100th 12,000 HP electric locomotive to Indian Railways

Alstom, India's biggest multinational sustainable mobility provider with a comprehensive portfolio of offerings, has successfully manufactured and delivered the 100th electric locomotive to Indian Railways.

As part of the contract worth €3.5 billion won in 2015, the company will be supplying 800 fully electric high-powered double-section locomotives of 12,000 HP (9 MW) for freight service, capable of hauling ~6,000 tonnes at a top speed of 120 km/hr. This is the largest Foreign Direct Investment project in the Indian Railway sector.

In the financial year 2020-2021, Indian Railways recorded a freight loading of 1,232 million tonnes, which was 2% higher than the previous fiscal. Introduction of faster trains has helped increase the average speed of transportation by 83% leading to a shorter turnaround time and has supported the movement of essential goods during COVID-19 times **.

With the first Prima T8TM WAG-12Be inducted for commercial service in May 2020, these locomotives are transforming the heavy freight transportation landscape of India. Deployed for operations on major freight routes, including Dedicated Freight Corridors, the Prima T8TM WAG-12Be-Locos have already clocked over close to 5 million kilometres hauling a wide range of commodities. These locomotives also made the inaugural run on the first fully operational sections of the Dedicated Freight Corridors, in December 2020. Some of the key commodities moved by these e-Locos include - coal, cement, food grains, fertilisers, petrochemical products, minerals, and posts/ parcels, across 17 States and 2 Union Territories.

Speaking on this milestone, Alain Spohr, Managing Director - Alstom India said, "I'm pleased to mention that despite challenges posed by COVID-19, we have been able to successfully manufacture and deliver 100 e-Locos to the Indian Railways in less than



a year. Due to the intricacy of the project, it is really an honour to work on a first-of-its-kind 'Make in India' project that resulted in a technology breakthrough for the nation. Our successful collaboration with Indian Railways is paving the way for bringing advanced innovation and technology to the Country. Alstom is committed to delivering safe, reliable, and efficient solutions for IR's revolutionary journey towards becoming the world's first 100% green railways".

The Prima T8TM WAG-12Be-Locos are built at one of India's largest integrated greenfield manufacturing facilities at Madhepura (Bihar). Spread across 250 acres, this industrial site is built to international standards of safety and quality. The site has installed production capacity of 120 locomotives per annum and Alstom has progressively achieved over 85% indigenization. With these powerful e-Locos being manufactured within the country, India has become the 6th in the world to join the club of countries producing high horsepower locomotives indigenously.

The project also includes setting up of two ultramodern maintenance depots in Saharanpur (Uttar Pradesh) and Nagpur (Maharashtra). These depots are equipped with the latest technologies and features to anticipate breakdowns thereby enabling proactive maintenance of India's most advanced freight locomotives at significantly lower costs.

The depot in Saharanpur is currently operational and houses a 'Training Centre' equipped with a loco simulator and smart classrooms for skill development of railway employees and loco pilots. Till date, more than 500 loco pilots from Indian Railways have been trained and going forward, an additional 500 will be trained annually. The Nagpur depot will be functional next year.

** Data pointers taken from the official Press Information Bureau website.

France

Alstom extends its expertise in braking systems with the acquisition of Flertex



Alstom is continuing to implement its Alstom in Motion strategic plan with the acquisition of Flertex, a group specialised in the design and manufacture of brake linings (pads and shoes) for braking systems, particularly for the rail industry but also for other industrial applications.

This acquisition expands and strengthens Alstom's expertise in braking systems, a key element in the overall technical performance of trains. It comes only a few months after that of IBRE, a company specialised in the development, manufacture, and supply of cast-iron or steel brake discs. This acquisition also represents a promising development opportunity for Flertex and its employees.

"We are pleased with this acquisition which, similarly to IBRE, enhances our solutions and skills in the field of braking to meet our own needs as well as those of our customers," says Jean-Baptiste Eyméoud,

President of Alstom France.

Flertex is a group of international scope with approximately 120 employees, with the vast majority working at its sites in Gennevilliers (in the region of Île-de-France) and Saint-Florentin (in the region of Bourgogne-Franche-Comté), with a turnover of around 16 million euros in 2020. More than 50% of its turnover comes from the rail industry, mainly in France and Europe but also in Latin America.

For more than 60 years, Flertex has focused strongly on innovation to develop ever more efficient materials: increased braking performance, noise reduction and reduced emissions of fine particles into the atmosphere.

Photo: © Flertex

U.S.A.

Alstom to operate and maintain Innovia people mover system at Houston's George Bush Intercontinental Airport

Alstom has been awarded an €87 million contract by the Houston Airport System in Houston, Texas to provide ten years of operations and maintenance services for the Skyway automated people mover system at George Bush Intercontinental Airport.

Under the agreement, Alstom will be responsible for 24-hour train operations and dispatching as well as maintenance of the Innovia vehicle fleet, guideway, signalling system, and facilities including stations and the maintenance building. This follows a previous ten-year services contract with Bombardier Transportation, which is now part of Alstom.

“Alstom is pleased to continue and build upon this long-term relationship with the Houston Airport System,” said Jérôme Wallut, President, Alstom Americas. “We’re proud that our industry-leading Innovia automated people mover system has been moving travellers and employees between terminals at George Bush Intercontinental Airport safely, efficiently and reliably since 1999. Our experienced service delivery team will continue to focus on maintaining the system’s high-performance levels and supporting the airport in meeting its mobility solutions requirements.”

Alstom has 50 years of experience in designing, building, operating, and maintaining automated transit systems for airports and cities in North America, Europe, the Middle East, and Asia. In the United States alone, Alstom supports automated transit systems at airports in Atlanta, Chicago, Dallas/Fort Worth, Denver, Las Vegas, New York, Newark, Orlando, Phoenix, Pittsburgh, Sacramento, San Francisco, Seattle, and Tampa as well as Houston. Furthermore, as part of LAX Integrated Express Solutions (LINXS),



Alstom will operate and maintain the new automated people mover system under construction at Los Angeles International Airport.

In addition, Alstom has a long-standing track record of providing operations and maintenance services to transit systems, including more than a dozen across the United States and Canada. Its comprehensive services portfolio also includes modernization, parts, repairs, overhauls, and digital and

support services.

Alstom™ and Innovia™ are trademarks of the ALSTOM Group

Photo: ©Alstom Innovia APM system at Houston International Airport

U.S.A.

Alstom to share its industry-leading expertise in green mobility with New York's Long Island Rail Road

Alstom has signed a Product Test Agreement with Long Island Rail Road (LIRR) in New York, the busiest commuter railroad in North America, to explore the potential application of one of Alstom's innovative and environmentally-friendly traction technologies.

Specifically, Alstom and LIRR will work together over an eight-month period to validate the feasibility of converting the railroad's M-7 cars to battery-operated electric multiple units (BEMUs) and assess their operational viability on the railroad's Port Jefferson and Oyster Bay branch lines. The units could potentially replace the use of diesel locomotives on the railroad's non-electrified lines and allow passengers to travel to their destinations without having to change trains.

“As the United States focuses on the role of infrastructure, notably sustainable mobility, in its economic recovery, it is especially meaningful to be entering into an agreement with Long Island Rail Road to study an energy-efficient, eco-designed traction alternative that could be tailored to meet the railroad's unique operational needs. We're proud of our innovative technologies which are helping railroads around the world meet their environmental commitments and look forward to potentially bringing the first battery-powered commuter trains to North America,” said Jérôme Wallut, President, Alstom Americas.

As a leader in green mobility, Alstom offers a range of solutions for reducing CO2 emissions and pollution in the railway sector, among them battery-powered trains and hydrogen trains. Both technologies provide benefits to the environment, operators, passengers and the general public alike.

Within their applicability range, they offer efficient alternatives for non-electrified lines. They can reduce harmful emissions in comparison to traditional diesel locomotives or diesel multiple units, improve operability due to fleet standardization and provide opportunities to combine electrified and non-electrified networks. Furthermore, these solutions reduce noise and vibrations, increasing passenger comfort and providing a quiet environment for residents in communities along the railway. Alstom was the first rail company in the world to launch a hydrogen train onto the market and into commercial service.

The M-7 electric multiple units in operation at LIRR were manufactured by Bombardier Transportation, which is now part of Alstom. The M-7 cars make up the majority of LIRR's fleet and after nearly 20 years of operation, continue to exceed the railroad's reliability goals.

Poland

Alstom, Thales and Nokia consortium completes high-speed signalling upgrade for Poland

A consortium led by Alstom has completed the delivery of its signalling solution ERTMS/ETCS Level 2 for the E65 railway line which is under modernization and links Warsaw in central Poland with Gdynia, in the north of the country. This project was based on a contract previously signed with PKP Polskie Linie Kolejowe S.A.

The delivery of the state-of-the-art technology on 350 kilometres of line that covers 35 railway stations and links Warsaw with Gdynia enables train traffic at the speed of 200 km/h. The project delivered by the Consortium of companies was one of the largest and most complex projects in the history of the Polish Railways. The joint effort of the parties involved has resulted in a significant improvement of safety and passenger comfort, as well as line capacity that will contribute to shorter train travel duration.

Alstom and Thales Polska were responsible for the design and implementation of ERTMS/ETCS Level 2 signalling solution, and Nokia for providing the GSM-R system. Within the scope of the project, the Consortium upgraded eight Integrated Control Rooms, delivered remote traffic control and management systems, turn-key solutions for Dispatcher Centres, an integrated passenger information system and CCTV solutions.

Sławomir Nalewajka, Managing Director of Alstom in Poland, Ukraine and Baltics said: "This jointly-delivered project is a game-changing achievement in the history of high-speed railway implementation in Poland. Moreover, the decision of the Head of National Safety Authority in Poland to approve train traffic at the speed of up to 200 km/h under the control of ERTMS Level 2 is the first ever decision of this kind in the history of Polish Railways. We are proud that once again we had the opportunity to deliver a project that

sets the new standards on the national railway network."

"I am happy that the upgrade of such a crucial project is completed. Thanks to our joint solutions we have become a part of the European railway system. Poland has entered the high-speed rail era," said Paweł Przyżycki, Managing Director of Thales Polska.

"State-of-the-art communications technologies and rail traffic control systems have been implemented in this landmark project. Both the E65 Warsaw – Gdynia corridor, as well as the entire Trans-European Transport Network will derive economic and social benefits from the completion of this project," said Piotr Kaczmarek, a Head of Nokia Poland.

The task was delivered within the scope of the Operational Programme Infrastructure and Environment (POIiŚ) project 7.1-1.4 "Modernization of E 65/C-E 65 railway line on Warszawa – Gdynia section in terms of supervisory layer LCS (ICR), ERTMS/ETCS/GSM-R, DSAT and power supply for the traction system."

Photo: Signalling solution ERTMS/ETCS Level 2 for the E65 railway line. © Alstom



Egypt

Alstom puts into service the Samalut Sector of the Beni Suef Assuyt railway line in Egypt

Alstom has successfully installed and commissioned its SIL 4 signalling Electronic Interlocking SYSTEM (IXL solution-SmartLock 400 GP), including a support system and SCADA that supervises and controls different subsystems, based on Alstom ICONIS, TLC system and 11 kv power supply sub-station. Samalut is considered the 8th commissioned sector of the Beni Suef Assuyt line.

On this occasion, the Minister of Transport, Lieutenant General Kamel El Wazir visited the pre-dynamic tests on 3rd April.

Samalut sector length is 14 km and connected with Maghagha, Beni Mazar and Matai stations which are already in service. Overall, the length commissioned is 110 km with 8 stations, 37 level crossings and 174-point machines.

The inauguration ceremony was attended by Eng. Hussein Rashidy, Head of signalling system at ENR, Eng. Shaban Mahmoud, Upper Egypt Zone Manager at ENR, Eng. Mostafa Shahin, Head of strategic projects departments, Eng. Mohamed Magdy, BSA Executive Project Manager at ENR, Eng. Mohamed Fawzy, operations Manager at ENR, Eng. Ahmed Essam, Head of civil works and Ramzi Agoudjil, Alstom Egypt BSA Project Director.

"We are very proud of the great sense of responsibility and inclusivity of our Egyptian team; thanks to their great work and dedication, we have delivered the 8th commissioned sector of the Beni Suef Assuyt Project. We are committed to meeting our customers' expectations and pursuing our long-term partnership with the Egyptian National Railways. We strive to provide to the country the state-of-the-art signalling solutions." said Mohamed Khalil, Managing Director Alstom Egypt.

Alstom has been a partner to Egypt's railways since 1971 continuously supporting railway infrastructure development in the country. Over these years, Alstom Egypt has established a local talent pool and Center of Excellence (COE) related to signalling, power supply and depot equipment to support projects across its Africa-Middle East-Central Asia region. It is this rich heritage that has enabled Alstom to make a significant contribution to Egypt's rail industry development. Today, Alstom employs approximately 500 people in Egypt and its current projects include the modernization of signalling system on the Beni Suef – Assuyt line and two monorail lines for Cairo.

Alstom remains fully committed to the principles of operating an ethical business and sets clear guidelines in order to deal with public authorities and customers.

Italy

Alstom will supply 20 Coradia Stream regional trains for the Region of Lombardy in Italy

Alstom has signed a contract with FERROVIENORD[1] for the supply of 20 regional trains intended for the regional railway service of the Region of Lombardy for a total value of €125 million. This is the second contract within a framework agreement signed in November 2019 with FNM S.p.A.[2]. The trains will be delivered from June 2023 onwards.

The train ordered by FERROVIENORD, named “Donizetti” by the customer, belongs to Alstom’s Coradia Stream range of trains. The single-deck electric trains each have four traction motors and a maximum speed of 160 km/h. They represent the latest generation of a model that is already in commercial service in ten Italian regions, and are produced in conformity with the Technical Specification for Interoperability (TSI).

“We are, as always, very proud to be working with our trusted partners FNM and FERROVIENORD to provide modern, comfortable and sustainable regional transportation in Italy. In the last 10 years, Alstom has delivered 54 regional trains for Lombardy. The new generation of Coradia Stream represents the best solution for meeting the increasing needs of both the region’s travellers and the operator,” said Michele Viale, Managing Director of Alstom Italy.

Coradia Stream can be easily adapted for different types of service. The interior and seating arrangements can be modified to suit diverse needs, for example with more seats on longer routes or optimised standing space for shorter journeys. The modular interiors can be adapted to suit the seasons or particular requirements: bike racks, drinks and snack dispensers, multimedia areas and work or relaxation zones, for instance, can easily be added. Wider windows offer increased luminosity and a sense of greater space and comfort. Advanced infotainment, audio and video services, as well as live video surveillance, ensure comfort and safety.

The new trains satisfy strict criteria of environmental sustainability and are 96% recyclable. They consume 30% less energy than the previous generation. Minimal levels of noise and vibration ensure a quiet and comfortable journey. The trains boast high-performance air conditioning systems.

The Coradia Stream trains for Lombardy are manufactured by Alstom in Italy. Project development, most of the manufacturing and certification are performed at Alstom’s site in Savigliano (CN). Design and manufacturing of the traction systems and other components takes place at the Sesto San Giovanni (MI), and the on-board signalling systems are delivered by the Bologna site.

[1] FERROVIENORD, controlled 100% by FNM, operates 331 km of railway network and 124 train stations in Lombardy. In addition to the activities aimed at train circulation, FERROVIENORD is responsible for the ordinary and extraordinary maintenance of the network, its upgrading, the activation of new systems and assistance in upgrading works.

[2] FNM is the main integrated Group in sustainable mobility in Lombardy. It represents the first pole in Italy that combines the management of railway infrastructures with road mobility and the management of freeway infrastructures.

Photo: Coradia Stream regional train for the Region of Lombardy in Italy.
© Alstom Design & Styling



France

FINAL AWARD OF THE CONTRACT FOR THE NEW RER B TRAINS

The RATP / SNCF Voyageurs and Île-de-France Mobilités group are pleased to announce that the Alstom-Bombardier/CAF consortium will finally perform the MI20 contract the award of which was notified on 5 February 2021.

Negotiations over the past few weeks meant that the new Alstom-Bombardier group has been able to apprehend the contract terms and clear up any concerns, whereby the Alstom-Bombardier/CAF group is now in a position to implement the contract as per the award.

The RATP/SNCF Voyageurs group and the Alstom-Bombardier/CAF consortium met on April 13th at which time the latter’s commitment to the contract was confirmed together with their intent to initiate the subsequent implementation stages.

This major project, worth €2.56 billion, which was called for and financed by Île-de-France Mobilités, is crucial in order to make various years of headway with the order for the new RER B trains, thereby upgrading Europe’s second busiest line after the RER A line, to the benefit of its passengers.

With the aim of improving service quality on RER line B, 146 new trains will replace the MI79 and MI84 trains that are currently in service and the first train is scheduled to be delivered at the end of 2025.

Alstom Algeria launches the final phase of dynamic testing and system integration on the extension stretch of the Constantine tramway line



On April 19th Alstom Algeria launched the final phase of dynamic testing and system integration on the extension stretch of the Constantine tramway. For the occasion, Mr Kamal Nasri, Minister of Transport and Public Works, Mr Saci, Wali of Constantine, and local authorities from the Constantine wilaya, visited the entire 10-kilometre stretch of the new tramway line extension, from the Slimane Zouaghi stop to the Université Abdelhamid Mechri terminal.

The visit celebrates the achievement of nominal performances for the whole length of the second 3.6 km stretch. Upon completing this step, the system will be ready for commercial service. Trains will connect the Kadri Brahim stop to the Université Constantine II Abdelhamid Mechri terminal.

The stretch includes six passenger stops, equipped with six sales windows and two sales offices, in addition to three electric substations, two tramway hoppers, and the Ali Mendjeliviaduct. In July 2015, Entreprise du Métro d'Alger (EMA) had assigned the turnkey extension of the Constantine tramway line by 10.3 kilometres in total to the consortium formed by Alstom (its leader) and Cosider Travaux Publics. The first phase of the extension, measuring 6.9 km, has been operational since May 2019. It connects the Zouaghi station to the edge of the new town of Ali Mendjeli.

“We are proud of the work our teams have accomplished, which has led to the project’s final phase. We are committed to meeting the needs of our clients and to continuing our partnership with EMA. Our approach reflects our unwavering determination to bring clean, sustainable mobility to Algeria,” said Amar CHOUAKI, Managing Director of Alstom Algeria.

As part of this project and consortium leader, Alstom is responsible for telecommunications, signalling, traction energy, ticketing, and railway systems, including the catenary system. Present in Algeria for over thirty years, where it employs 250 people, Alstom has always supported the development of local infrastructures and the railway sector, particularly the tramway market (several tramways are already operating in Algiers, Oran, Constantine, Ouargla, Sétif, and Sidi Belabes). Additionally, Alstom has always considered that developing its industrial and engineering activities in the country was a strategic priority, including the transfer of technology and developing local skills. Thanks to its JV Cital, Alstom is responding to the country’s increasing mobility requirements, such as the need for tramway systems, and continues to support the development of Algerian towns.

Photo: The extension of the Constantine tram leads to the new district of Ali Mendjli, in the southern suburbs of the city (here, the Abdelhamid Mehri terminus). © Alstom

CAF WINS TENDER FOR THE SUPPLY OF NEW TRAMS FOR THE CITY OF LISBON

The new trams will operate on Carreira 15 (line 15) which runs parallel to the mouth of the River Tajo, connecting the main tourist monument areas in the Portuguese capital, such as Commerce Square, Belém and the Jerónimos Monastery, as well as the city’s main stations of the various means of transport such as metro, railway, ferries, etc.

It is worth noting that, already in the mid 90s, CAF took part in the production and supply of half of the articulated trams that have been running on the aforementioned Carreira 15 since 1995. The newly procured trams will add to the transport capacity on this line.

The proposed Urbos tram for Lisbon is a one-way, 5-module articulated unit, designed to run at a maximum speed of 70 km/h. It spans a total length of 28.5 metres and will be equipped with one driver cab and low floor to facilitate passenger access.

These new units are prepared for future retrofit of on-board energy storage solutions similar to those already fitted on units supplied by CAF to other cities such as Birmingham, Luxembourg, Kaohsiung, Seville, etc. This technology allows for catenary-free tram operation in certain city areas to protect architecturally sensitive areas, while also offering significant transport energy efficiency benefits.

This contract consolidates CAF’s leadership in the tram sector and in sustainable urban transport in general, and an ever increasing number of fleets in cities around the world are currently benefiting from vehicles supplied by the CAF Group.

SHARE:

France

Alstom's "lumière" tramway is now in service on the number 9 Tram line in Île-de-France

On April 10th, Alstom's "lumière"[1] tramway, from its Citadis line, went into commercial service on the number 9 Tram line, which now connects Paris to Orly-Ville in 30 minutes (compared to 60 minutes beforehand). Measuring 45 metres, the T9 line Citadis X05 can transport up to 314 passengers. Starting this year, 80,000 passengers are expected on the line, which serves the 13th arrondissement of Paris and the towns of Ivry-sur-Seine, Vitry-sur-Seine, Thiais, Choisy-le-Roi, and Orly-Ville.

In November 2016, Île-de-France Mobilités, which is financing 100% of the rolling stock, chose Alstom to provide 22 Citadis X05 tramways, which feature a particularly innovative design, thanks to its new light signature which was chosen from three variants proposed by Île-de-France Mobilités during a public consultation in February 2017. These tramways were developed and built at Alstom's La Rochelle site, a worldwide centre of excellence for Alstom tramways. Tramway deliveries began in November 2019 and ended in December 2020,

in accordance with the initial timeframe that had been agreed with prime contractor representative Transamo. "Alstom and its teams are proud to see that Citadis tramways are now operational on the T9 line, a much-anticipated route for Val-de-Marne residents. With their particularly innovative design, we have full confidence in the capacity for these new tramways to meet the high expectations for comfort and reliability of Parisians and Île-de-France residents," insisted Jean-Baptiste Eyméoud, Alstom France President.

The new tramway's design, fruit of a partnership between Alstom's Design & Styling teams and design agency Saguez & Partners[2], revolves around a light signature that runs throughout the entire tramway, both outside and inside, and provides better views of doors opening and closing. This includes a red line of light when the doors close, a green one when they open and a continuous white one when the tramway is in motion. The tramway features 8 double-doors per side, in addition to wider, well-lit gangways to improve flow

and increase the passenger exchange rate[3] by 20%. Tramways have been optimised through glass surfaces amounting to 45%, with 100% LED lighting, 8 extra-wide multimedia screens for visual display maps, USB ports, and bench seating. These innovations provide a high level of comfort along with an enriched passenger experience.

The tramway is also energy-efficient, thanks to improved energy usage from its traction and auxiliaries (100% LED lighting and air conditioning respectively provide -25% and -15% energy usage). The overall cost of preventive maintenance has dropped by 18%. Materials are 99% recoverable.

Eight out of Alstom's eighteen French sites are contributing to manufacturing these tramways: La Rochelle for development and assembly, Ornans for motors, Le Creusot for bogies, Tarbes for modules and equipment, Valenciennes for the interior and service activities, Villeurbanne for onboard electronics, Aix-en-



Provence for tachometer generators, and Saint-Ouen for design.

13 additional tramways have been ordered by Île-de-France Mobilités for the number 10 Tram line, which will connect Clamart to Anthony. They are currently in the development stage.

[1] "lumière" is a French word for light, in the sense of a source of illumination

[2] <http://saguez-and-partners.com/>

[3] Exchange rate: ratio that measures total passenger door openings and the total passenger area length for one side of a tramway.

Photo: © Alstom/Toma Thibaut Priou (Atypix)

Sweden

AB TRANSITIO AWARDS CAF CONTRACT TO SUPPLY UNITS THAT WILL OPERATE IN SEVERAL SWEDEN REGIONS

AB Transitio has awarded CAF a contract to supply regional trains under the terms of the framework agreement signed in 2014 by the Swedish public company relative to regional train purchases. The base contract comprises the production of 20 EMUs (electric units), 4 cars each, and 8 BMUs (biodiesel-electric bimodal units) consisting of 3 cars plus a power car. The contract provides for additional options that could increase the number of units by an additional 19 EMUs and 7 BMUs. The base contract amounts to more than €250 million, a figure that would almost double should all the additional vehicle options included in the contract be executed. The first units are scheduled to be delivered by the end of 2023.

The CAF-designed trains belong to the Civity Nordic platform, designed to operate in extreme weather conditions (from -40°C to +40°C). They are intended for operation in four regions of Sweden, specifically in Jönköping County, Kalmar County, Kronoberg and Blekinge. Initially, the new trains will run on the Krösätågen and Kustpilen lines, and for the latter an electrification project is under way, which is the reason underlying the decision to purchase bimodal BMUs.

Transitio AB will be the contracting party and owner of the trains and then will lease the trains out to the four aforementioned regions in Sweden.

Each region is a regional public transport authority, whereby each region is politically and financially responsible for public transport.

These units have been purchased for two main reasons: firstly, to meet the growing need to extend services on these lines over the coming years, and secondly, to replace the fleet that is currently in service (EMUs and DMUs) to improve both service quality and the environmental impact of public rail transport through the use of biodiesel, which is a 100% renewable fuel.

Regional rail transport plays a key role in regional and inter-regional transport in this Nordic country, with this project creating new economic development opportunities in these regions, as well as contributing towards increasing their appeal as a destination. As an example, these new units will run through the city of Vimmerby, where a popular tourist destination in Sweden can be found: Astrid Lindgren's World theme park, home to the iconic Pippi Longstocking.

THE CAF GROUP IS COMMITTED TO GROWTH IN NORDIC COUNTRIES

2019 saw the CAF Group take over the Swedish company EuroMaint - train maintenance sector leader in its country - thereby consolidating its foothold

in Nordic countries. EuroMaint has been a benchmark company in the Nordic railway market for many years, with a significant market share in the train fleet maintenance sector, an activity the company combines with the supply of railway components for operators in the region.

Boasting a workforce of almost 1,000 people, aside from contributing its backlog to the CAF Group as well as a considerable number of customers in this market, it has also consolidated CAF's foothold in the area and will promote opportunities to execute new projects in the Scandinavian region, a market where a significant number of tenders are expected to be announced over the next few years.

Over the past few years, CAF's operations in this region have given rise to a number of projects, ranging from the supply of high speed units for Norway, to the production of metro units for Helsinki, as well as the commissioning of tram fleets in the Swedish cities of Stockholm and Lund, or in Oslo, the capital city of its neighbouring country, Norway.



Europe

TOYOTA MOTOR EUROPE TO SUPPLY FUEL CELL MODULES FOR FCH2RAIL PROJECT

Almost half of the railway lines in the European Union are electrified and enable local emission-free rail transport. On the remaining sections of the lines, diesel powered trains are used. Within the EU project FCH2RAIL (Fuel Cell Hybrid Power Pack for Rail Applications), a consortium with partners from Belgium, Germany, Spain and Portugal is developing and testing a new zero-emission train prototype. At the heart of the project there is a hybrid, bi-modal drive system that combines the electrical power supply from the overhead line with a “fuel cell hybrid power pack” (consisting of hydrogen fuel cells and batteries) that works independent of the overhead line. The project FCH2RAIL was already launched in January and the reference routes and operating scenarios for the prototype have now been defined as a first result.

Where energy is available from overhead lines, the train takes the energy from them. When there are no overhead lines, the energy will come from the fuel cell and battery system, called the ‘Fuel Cell Hybrid Power Pack’. “We want to show that this type of bi-mode train is a competitive and environmentally friendly alternative to the diesel train”, describes project leader and researcher Holger Dittus from the German Aerospace Center - Institute of Vehicle Concepts (DLR).

Today, many railway lines are being equipped with overhead lines in Europe, a very expensive and long-term project that depends on the local geographical conditions. An alternative are purely battery powered trains, but they have a limited range of operation (30 to 70 kilometres), depending on the route profile and outside temperatures. Current diesel trains have lower performance in terms of top speed and acceleration compared to vehicles powered by electric motors from overhead lines. “Our bi-modal hybrid fuel cell battery system combines the advantages of both technologies: Energy coming from the overhead lines or from on board. This lets us make rail transport even more sustainable

and energy-efficient”, says technical leader Sergio Gascon, from Construcciones y Auxiliarios de Ferrocarriles (CAF), summarising the main goal of the project.

The energy supply system is to be designed in such a way that power and range can be expanded based on a modular principle: The number of fuel cell and battery modules influences the drive power; the number of hydrogen tanks determines the operation range on non-electrified lines. Therefore, the drive unit can be designed for use in both passenger and freight transport. With a budget of 14 million euros, the project aims to develop, demonstrate and approve such a system within the next four years. The project is funded with 10 million euros by the Fuel Cells and Hydrogen 2 Joint Undertaking (FCH 2 JU). “Our study on hydrogen and fuel cells in the railway environment showed that there is significant potential for FCH technologies in the rail environment and that hydrogen-powered trains will be an important part of building a sustainable European transport system.” states Bart Biebuyck, Executive Director of FCH 2 JU. “The European Commission has made it clear in its Hydrogen strategy that hydrogen is a promising option where electrification is more difficult – such as specific parts of the rail network. The FCH2RAIL project will demonstrate that the technology provides a flexible, zero emission solution to replace diesel trains in these areas and I am looking forward to seeing their results.”

To understand the environmental impacts of such a system, from its production, to its use, up to its disposal and to evaluate the performance under real conditions, it is planned to convert a CIVIA electric commuter train (manufactured by the Spanish manufacturer CAF) and to integrate a fuel cell hybrid power pack in this train. The Spanish state railway operator Renfe is providing the train. One of the central components of the on board energy system are the packaged fuel cell system modules from Toyota Motor Europe (TME), while the batteries and power

converters will be provided by CAF. Initial functional tests and trial runs for approval will take place on Spanish and Portuguese tracks with the support of the infrastructure managers Administrador de Infraestructuras Ferroviarias (ADIF) and Infraestruturas de Portugal (IP). The Spanish hydrogen research centre Centro Nacional de Hidrogeno (CNH2) has been entrusted with the construction of a hydrogen fuelling station to refuel the prototype and in FCHPP testing before train integration.

We embrace this opportunity of working within the consortium to bring our fuel cell technology to another type of hydrogen application. Hydrogen has an important role to play in helping decarbonise Europe’s railways, and we are excited to integrate Toyota fuel cell modules into the “Fuel Cell Hybrid Power Pack”, said Thiebault Paquet, Director of the Fuel Cell Business Group at Toyota Motor Europe.

Until the first trial runs, the international project team still has a number of technological challenges to solve: For the design, fuel cell and battery modules must be combined and controlled in such a way that the system meets all requirements and can be implemented cost-effectively at the same time. In addition, it should be possible to use the waste heat from the fuel cell modules in an efficient way to heat and air-condition the train. The air conditioning manufacturer Faiveley / Stemmann Technik (STT) and DLR are investigating innovative solutions for reducing the energy demand for heating, ventilation and air conditioning (HVAC) as part of the project.

The project also examines norms and standards in the fields of hydrogen and rail transport and attempts to bring the two together assuring safe interaction between the hydrogen technology and overhead catenary at all times. Based on this, the project team is developing proposals for responsible authorities to make approvals across EU of such trains easier in the near future.



Switzerland

SBB orders 60 double-deck trains from Stadler

SBB is ordering a further 60 InterRegio double-deck trains from Stadler for approximately CHF 1.3 billion. In doing so, SBB is creating sufficient capacity for the expansion of its regional services and fulfilling the requirements of the Disability Discrimination Act on its long-distance services. SBB is exercising an existing option to procure the 60 new trains.

By procuring 60 InterRegio double-deck trains (IR double-decker), SBB is strengthening its existing fleet with a tried-and-tested vehicle type. 41 of the vehicles will help to replace the old fleet and to fulfil the requirements of the Disability Discrimination Act (DDA) on long-distance services.

This includes the requirement for barrier-free boarding of trains for persons with reduced mobility by the end of 2023. 19 of the vehicles will also be used to reduce capacity bottlenecks for regional services in the Zurich region and the French-speaking part of Switzerland, to facilitate the expansion of SBB’s service offer and to provide greater comfort. The first vehicles will be in use as off timetable 2024.

SBB already has 93 IR and RE double-deck vehicles in its possession and is exercising an existing option to procure the 60 new vehicles.

Bicycle spaces, multifunctional compartments and power sockets.

The IR double decker is a multiple unit train and offers 466 seats over a train length of 150 metres. The low-floor design facilitates barrier-free boarding for all passengers.

The interior corresponds to the comfort standard of long-distance services and offers 2:1 seating in 1st class.

There are power sockets, easily accessible bicycle spaces, multifunctional compartments with space for pushchairs, several toilet facilities and a modern information system available throughout the train.

Stadler calls the IR double-decker a “comfortable innovative speedy S-Bahn train” (“komfortabler innovativer spurtstarker S-Bahn-Zug” or “KISS” in German).

U.A.E.

Alstom secures five-year service contract extension for automated people mover



Alstom has signed a five-year extension to its contract with Dubai Airports to provide comprehensive operations and maintenance (O&M) services for the Innovia™ APM 300 automated people mover (APM) system at Dubai International (DXB).

Alstom's APM system at Dubai International Airport has consistently been a top performer. In the first five years of O&M services, the transit system's average availability scored 99.85% against a 99.5% requirement, with the performance level increasing up to 99.94% in 2020. Furthermore, almost 4.7 million kilometres of safe vehicle operations and 606,290 safe man-hours were achieved with zero lost time incidents. In addition, the project won MEED's 'Innovation and Transport Project of the Year Award' in 2017 and was declared 'Top Performer' among all the contractors at Dubai International under the Health and Safety Index in 2018.

"Our Alstom team is delighted to build upon its relationship with Dubai Airports with this new five-year O&M agreement. We will continue to drive top performance as we deliver our world class operations and maintenance services to the world's leading airport, to ensure flawless mobility for DXB's customers," said Tamer Salama, Alstom GCC Managing Director.

On 29th January 2021, Alstom acquired Bombardier Transportation, who had originally delivered the turnkey APM system at DXB to connect Terminal 1 to Concourse D which opened for passenger services in February 2016. It designed and supplied all electrical and mechanical (E&M) elements, including 18 Innovia™ 300 cars (operating as five-car trains) and the Cityflo™ 650 communications-based train control (CBTC) technology for driverless operation. It was the system integrator and led project management, systems engineering, testing and commissioning, as well as

delivering five years of O&M services. The 1.5 km elevated system is designed to carry up to 200,000 passengers daily.

Alstom is a dedicated and long-standing partner of Dubai's transportation and mobility development. Alstom delivered the Dubai tramway, the first fully integrated tramway system in the Middle East and the world's first 100% catenary-free line, which was opened in November 2014. Alstom has also overseen the maintenance of the Dubai tram for a period of 13 years.

U.K.



Wabtec Wins a Significant Order for London Underground

Wabtec Corporation has secured an order to supply Siemens Mobility with several products for the London Underground's Piccadilly Upgrade Program. The deal, valued at more than \$70 million, is for brakes, air conditioning and ventilation (HVAC), passenger information systems, and third-rail current collectors.

"London Underground is one of the world's busiest transit systems with millions of passenger journeys per day. As such, it requires the most reliable and efficient solutions to deliver the expected flawless transport for Londoners" said Lilian Leroux, President of Wabtec's Transit business. "These orders build upon our long-standing relationship with Siemens Mobility and will support one of the most modern and sustainable metros ever built."

Wabtec will supply the components for 94 new trains as an initial order. The bogie brakes provide the London Underground with a weight savings of 250 kg reducing the train's energy expenditure and offers a significant two-year extension on overhaul intervals helping increase availability and reduce maintenance costs. The sanding system also will increase safety by improving traction and adhesion in London's demanding environment.

This order also marks the first time that trains in the London "Deep Tube" will be equipped with air conditioning systems.

These systems are designed to reduce energy consumption compared to traditional offerings.

In addition, the new passenger information system will create an exclusive passenger experience with clearer acoustics, bright modern and low energy displays, and comprehensive information displays for passengers.

Finally, the trains will be equipped with Wabtec's third-rail current collectors, an innovative solution designed with resin moulding technology on selected components to reduce weight by more than 15 percent.

"It is an honour to be working on this project with Siemens," said Leroux. "The Piccadilly Upgrade Program will greatly improve the London Underground and we are delighted to have so many solutions selected by Siemens to be part of a new fleet of trains that will create new levels of excellence in performance, reliability, safety, and passenger experience. We have nearly 2,500 employees in the UK who are developing and producing next-gen technologies that will transform the future of passenger rail."

The Piccadilly Upgrade Program aims to replace the aging rolling stock, signalling and control systems across four lines. The first phase of the program is aiming at modernizing the fleet serving the Piccadilly Line with new trains.

The PLU project will support London's growing population and result in direct, indirect and induced job growth throughout London over the next years.

From the Archives

Austria

OBB Class 1118.01 is seen at Salzburg shed on March 26th 1975. This loco was unique in Austria having formerly been the pre war Nazi DRG loco No. 18.42. *John Sloane*



From the Archives

SNCB Quadricurrent No. 1806 arrives at Leuven with a Koln to Oostend express on March 6th 1982. *John Sloane*

Belgium



From the Archives

Nos. 661.316 and 441.903 are seen at Sarajevo Rajlovac on May 30th 2007. *John Sloane*

Bosnia



From the Archives

SNCF Nos. 15016, 17059 and 16782
are seen stabled at La Villette depot,
Paris on October 23rd 1996.

John Sloane

France



From the Archives

France

SNCF BB No. 22260 calls at Nice with a service to Paris on July 24th 1997.
John Sloane



From the Archives

Time to kill before the ferry home is usefully employed at Cherbourg where SNCF BB No. 67415 was photographed in August 1988.
Jeff Nicholls

France



From the Archives

Germany

Russian built Class 132.361 roars away from Arnstadt on February 22nd 1991, which at the time was actually in East Germany. *John Sloane*



From the Archives

India (Northern Railway) WDM2 No. 17532 stands at Secunderabad on the South Central Railway on November 16th 1977. *John Sloane*

India



From the Archives

FS Class E444s and a pair of E656s face the turntable at Florence Romito shed on August 14th 1993. *John Sloane*

Italy



From the Archives

FS Class 341.1063 in service with the LFI stands at Sinalunga with a service to Arrezzo Pesciola on August 15th 1993. *John Sloane*

Italy



From the Archives

FS No. E402.009 stands at Pisa with a car sleeper train from Vienna on May 7th 2016.
John Sloane

Italy



From the Archives

FS No. 424.293 is seen parked outside Naples Smistamento roundhouse on July 17th 1998.
John Sloane

Italy



From the Archives

FS Class E656.017 calls at Taormina Giardini with the 'Treno del Sole' from Torino to Syracuse on August 21st 1995.
John Sloane

Italy



From the Archives

Luxembourg

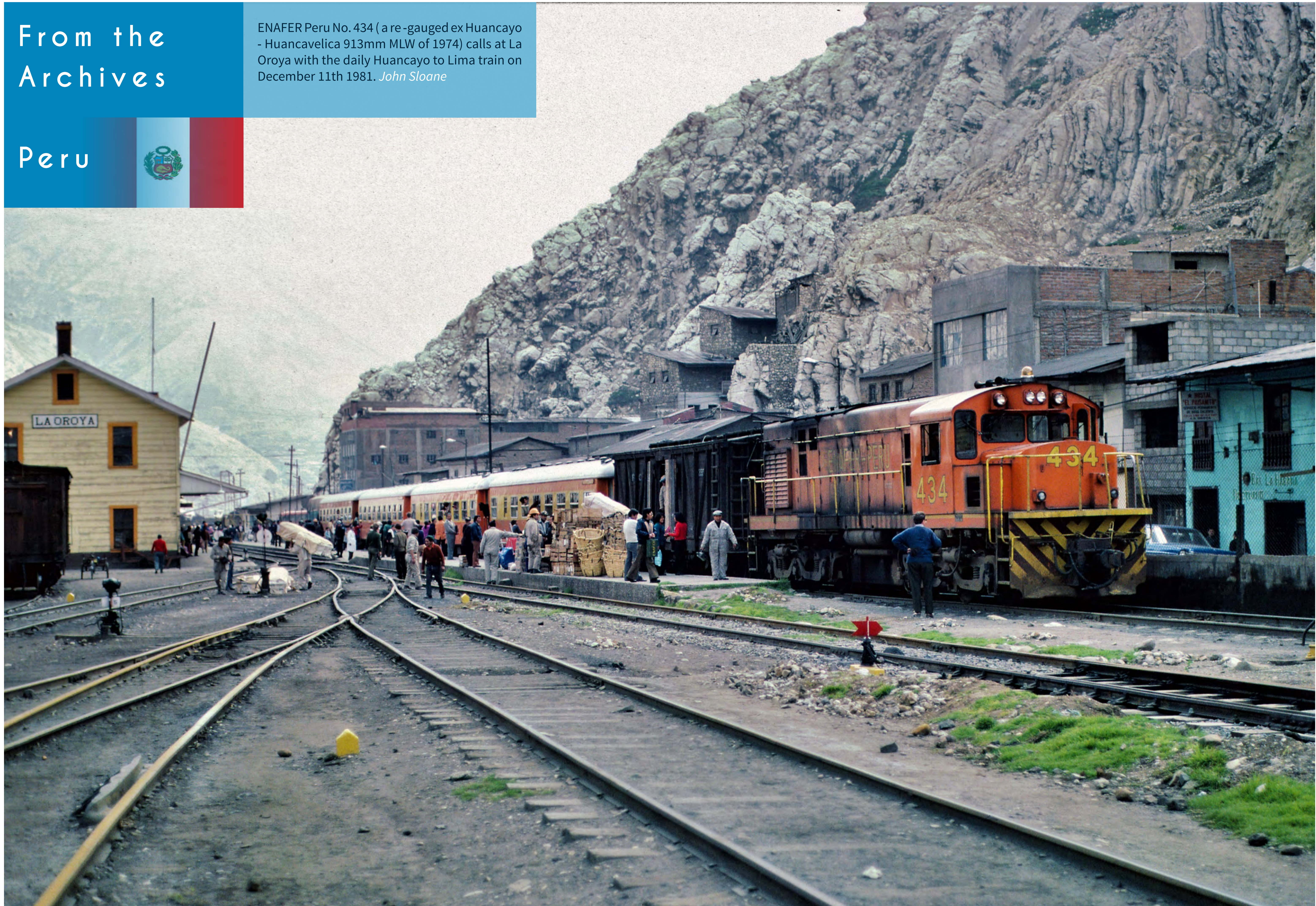
No. 1802 rolls through Bettembourg with a steel train on October 28th 2006. *John Sloane*



From the Archives

ENAFER Peru No. 434 (a re-gauged ex Huancayo - Huancavelica 913mm MLW of 1974) calls at La Oroya with the daily Huancayo to Lima train on December 11th 1981. *John Sloane*

Peru



From the Archives

Poland

By Polish standards a pretty small loco, No. SM03-246 approaches the turntable at Leszno depot on May 26th 2011. The turntable was the means of access to the half-roundhouse at this rundown depot. *Jeff Nicholls*





From the Archives

Spain

RENFE Class 250.005 calls at Castellon with an express bound for Barcelona on July 31st 1982.
John Sloane



From the Archives

Sweden

SJ Rc5 No. 1255 arrives at Borlange Junction in the early years of this century. An interesting mix of carriage shapes and sizes!. *Jeff Nicholls*



From the
Archives

GE built No. 4008 stands in
Bangkok Hualampong station
after arrival from the north on
March 20th 1989. *John Sloane*

Thailand



From the Archives

Thailand

No. 4218 is pictured ready to depart from Thung Song Junction with an express from Haad Yai to Bangkok on April 21st 1981. *John Sloane*



From the Archives

New Jersey Transit No. 4405 passes Harrison NJ with a train bound for Hoboken on April 2nd 1997. *John Sloane*

U.S.A.

