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NEWS FOR THE RAIL & TRANSPORT INDUSTRY

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LOGISTICS IN
TRANSITION

+++ NEW SILK ROAD BY RAIL CHINA-ASIA-EUROPE

+++ Events: RAIL LIVE, European Silk Road Summit, TRAKO **+++** Interviews: **+++** Stefan Kalmund nexxiot **+++** Mag. Christian Kern ELL **+++** Sven Schallach HSL **+++** Susanne Menge MdB **+++** Michail Stahlhut HUPAC **+++** Heinrich Kerstgens Rhenus **+++** Andreas Mandl LTE **+++** Günter Petschnig PJM Prof. Jarek Rosiński Transmission Dynamics **+++** CRRC **+++** VDEI **+++** SITK **+++** E.L.V.I.S. **+++** SBB CARGO **+++**

**MODERN
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FOR THE
FREIGHT
INDUSTRY**

#3-4/2023

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EDITORIAL



Credits: HMV

Dear readers!

Not only geopolitical conflicts, but also legislative practice are putting the logistics and cargo industry under great pressure. Energy prices are rising, logistics chains are crumbling, environmental policy necessities are forcing the conversion of means of transport to sustainable, emission-free forms of drive. **Mergers and sales of company assets** are one of the consequences – we report on the mega-marriage of CMA CGM/Bolloré in shipping logistics and the expansion course of Gebrüder Weiss in land logistics.

Industry 4.0 and Logistics 4.0 are further consequences. It is important to promote the optimisation of your own processes through artificial intelligence (AI) and robotics, automation, digitalisation and the Internet of Things (IoT). A good opportunity to get up to date are event specialist Ben Holliday's conferences on Big Data and IoT in Rail. The next conference will take place on May 15 and 16, 2024 in Cologne. Digital topics are also a must at maritime, road and aviation logistics conferences. Because the industry has to learn how to deal adequately with the growing technical possibilities – not every offer is suitable for everyone. We talk to managers about new developments in the cargo business and digital developments, for example for monitoring the supply chain.

And there is still a lot to do, as our report on a **derailed train in the Gotthard Tunnel** shows. This important connection between Switzerland and Italy will be partly disabled until mid-2024. In the future, digital developments could prevent a freight car with damaged wheels from driving into a tunnel and then derailing with broken wheels and causing major damage, as is now the case.

During a state visit to Kazakhstan in September 2013, China's leader Xi Jinping announced the **"Silk Road Economic Belt"** strategy. Goods were to be transported westwards and vice versa along the historic trade routes through Central Asia via railway lines and roads. The "Maritime Silk Road" became another element of the concept. It was accompanied by Chinese investments in the infrastructure of the countries involved and contributed greatly to bringing the world's states closer together.

That was ten years ago – reason enough to report on current developments in Silk Road rail traffic and the necessary transport logistics. We are particularly pleased to present as interview partners a representative of the **world's largest railway producer CRRC** from China and the **Austrian former Federal Chancellor Mag. Christian Kern**. Kern is President of the Board of Trustees of the **Austrian Chinese Business Association (ACBA)**.

We wish you stimulating reading!

Hermann Schmidtendorf, editor-in-chief and publisher

CONTENTS

EDITORIAL 3
IMPRINT 90
COMMENTARY **Railway. Whether integrated or split – invest!** 6

FOCUS I:

Digital solutions for logistics & freight business ... 10 – 51
Digital solutions are becoming increasingly important to make freight transport and logistics processes effective and safe.

Accident in the Gotthard Tunnel complicates north-south transport 10 – 15

Stefan Kalmund CEO nexxiot about digital added value 32 – 35

Interview with PJM CEO Günter Petschnig 40 – 43



Small format, big impact: a digital transport tracker

Credits: nexxiot

FOCUS II:

New Silk Road 64 – 83
The New Silk Road China-Asia-Europe is now ten years old and is bringing important impetus to freight transport.

Interview with the former Federal Chancellor of Austria Mag. Christian Kern 64 – 66

CRRC, the world’s largest manufacturer of railway vehicles 76 – 79

Interview with the Rhenus representative Heinrich Kerstgens 68 – 71



Locomotives from China also come to Europe via the New Silk Road.

Credits: Hermann Schmidtdorf

EVENT: **Rail Live! Madrid, Silk Road Summit Budapest** 19; 67

MARITIME: **Fusion CMA – Bolloré** 56

RESEARCH & DEVELOPMENT:

PESA hydrogen locomotive supports ORLEN hydrogen strategy 48 – 50

AIR TRANSPORT: **EU – Aircraft fuel must contain Sustainable Aviation Fuel** 44 – 47

LOGISTICS, SERVICES: **Sven Schallach (HSL Logistik), Andreas Mandl (LTE) – Interviews** 24 – 31

Interview CEO HUPAC Michail Stahlhut 72 – 75

LAND TRANSPORT: **DEKRA Congress on the future of commercial vehicles** 52 – 55

INDUSTRY & INFRASTRUCTURE:

Vossloh Rolling Stock Kiel 80 – 83

Interview Prof. Jarek Rosiński, CEO Transmission Dynamics 36 – 39



The cargo industry is moving forward through digital solutions.

Credits: Hermann Schmidtdorf/graphic design Britta Ruge

NEWS

Credits: Lufthansa Cargo



LUFTHANSA CARGO

The Airbus A321 is a twin-engine, short- to medium-haul, narrowbody aircraft with a fuselage length of about 7 metres (22 feet). This is the fourth time that the freight carrier Lufthansa Cargo has had such a machine converted in the USA for freight transport. The company wants to create a fast freight network specifically for contested destinations in Europe and the Mediterranean region, including North Africa.

In the industry service aerotelegraph.com, Holger Heinemann, program manager for the cargo business at Lufthansa Cityline, explained that he would like to have ten of these aircraft. With the compact medium-haul aircraft, Lufthansa Cargo wants to enable fast delivery and same-day solutions. Management says these are expected from freight service providers in online trading. Growth of 20 percent annually is expected in cross-border e-commerce shipments alone in the next few years. The A321 F will therefore be used in scheduled services and in charter operations. The cargo flights are popular with Lufthansa Cityline’s Airbus cockpit crews, says Heinemann. They appreciated “longer distances, new destinations and quiet work”.

at/r/hfs

CARGOBEAMER

The operator CargoBeamer is further expanding its best-developed line. The route between Kaldenkirchen (Germany) and Domodossola (Italy) consists of 17 weekly rotations since the end of August 2023. Since it runs on the Simplon corridor and through the Lötschberg Base Tunnel, CargoBeamer could ensure unobstructed operations of the line in recent weeks which were dominated by the Gotthard tunnel incident. Additionally, the new schedule serves as the highest frequency on a route in

Credits: CargoBeamer



transalpine intermodal traffic between two terminals for craneable and non-craneable semi-trailers in Europe.

CargoBeamer offers its customers a great flexibility with up to four daily departures in each direction. As is customary on CargoBeamer connections, customers can send non-craneable semi-trailers, P400, refrigerated and silo trailers in addition to craneable semi-trailers and containers. CargoBeamer continues to work with BLS Cargo as the traction partner.

c-tk/hfs

VOLTA TRUCKS/STEYR AUTOMOTIVE

The Volta Zero was intended to propel the commercial vehicle industry into a sustainable future as a groundbreaking all-electric truck with a 16-ton capacity. This is what the Swedish company Volta Trucks, founded in 2019, hoped for. The company also raised more than 360 million in financing and won the investment company Luxor Capital as the largest individual investor. In April 2022, Volta Trucks said it had an order backlog of around 6,000 vehicles with an estimated sales value of 1.2 billion euros. Series production of Volta Trucks began in April 2023 at the Austrian partner Steyr Automotive. Around 100 employees are currently working on the order there. From the presentation of the concept to the start of series production, work in Steyr took place in record time.



Credits: Steyr Automotive

But in August 2023, the US battery supplier Proterra became bankrupt. This caused turbulence in vehicle production and Volta Trucks initiated bankruptcy proceedings in Sweden. Branches in Great Britain and Sweden are to be closed. An insolvency administrator will decide on the future of the company and production. Steyr Automotive hopes that Volta Trucks will continue to operate so that the order will not be completely lost.

The last MAN brand truck was built in contract manufacturing at Steyr in September. After that, production for Volta Trucks should become an essential pillar of the future vision for Steyr. A capacity of 14,000 vehicles per year was therefore reserved in Steyr for the production of Volta’s electric trucks. 700 jobs should be created in Steyr and a further 2,000 in the supply chain, reports the industry service “Industriemagazin”. Now 360 jobs are to be cut, including 100 temporary workers.

im-hf

WHETHER INTEGRATED OR SPLIT – INVEST!

Railway:



Credits (2): Hermann Schmidtendorf

Hotly debated: Deutsche Bahn.

How times change! In 2019, I asked the spokeswoman for the CDU/CSU parliamentary group in the German Bundestag for transport and digital infrastructure to discuss rail policy. Even back then, the FDP and the Greens were loudly demanding massive structural changes at the state-owned company Deutsche Bahn. But Daniela Ludwig stuck to DB in its existing integrated structure.

Hermann Schmidtendorf: Are there any wishes for rail transport from the CDU/CSU that go beyond the current coalition agreement? The Greens and the FDP want to separate the infrastructure from the DB, that doesn't correspond to your ideas? But do you support the goal of "priority for rail"?

Daniela Ludwig: I have wishes for Christmas and my birthday. In politics, I have a clear idea of what I want and what is feasible in reality. The coalition agreement corresponds to our ideas for successful rail transport. The projects are described very specifically and we will now work through them piece by piece. This also means that we are an integrated group, i.e. network and operations in one hand. The FDP has not yet been able to explain what advantages the separation of the rail network will bring.

In: bahn manager magazine 4/5-2019

In the interview quoted, the CDU/CSU spokeswoman viewed the debate about a possible sale of

the DB foreign subsidiary ARRIVA as a purely "entrepreneurial decision". A few months later, there were also cracks in the camp of the Christian Democrats who were in power at the time. I wrote about this:

The deputy chairman of the CDU/CSU parliamentary group, Ulrich Lange, calls for the DB to be transformed into "a GmbH owned by the federal government" (Abendzeitung Munich from January 10, 2020). "There is a right to give instructions to the managing directors. "We haven't had that with the railway boards so far," believes Lange.

But that doesn't seem to be true. In 2016, the Scientific Service of the Bundestag pointed out, among other things, that when changing the legal form to a GmbH, "according to the purely legal requirements, no gain in control, monitoring and influence on the part of the shareholders is to be expected" – the legal form and its individual designs would not only have to be constitutional, but also correspond to European requirements for services in the area of general interest. The Verkehrs Rundschau reminds us of this.

That's why bahn manager suggests also examining the non-profit corporation as a legal form. There are clear advantages in tax law here, such as exemption from corporation tax and trade tax. There is no sales tax for services in the "ideal area", while the reduced sales tax rate of currently 7 percent applies to services in special-purpose businesses.

In: bahn manager magazine 1/2020



I would like to repeat this suggestion in view of the current progress in Germany in the **creation of a "non-profit" infrastructure from within the DB Group**, which is enshrined in the current coalition agreement between the SPD, FDP and the Greens. The federal government could pay directly into a non-profit infrastructure company, not a GmbH, and possible cross-financing to other DB areas would be excluded. And that would happen quickly – without the DB having to deal with itself for years. The "integrated" state railways in Germany's neighbourhood are doing the same thing. Interesting: While the German federal government wants to limit non-profit status to the railway infrastructure (DB Netz) and the train stations (DB Station and Service), the CDU/CSU parliamentary group is now calling in its position paper dated April 25, 2023 for the division DB Energy to be outsourced at well. And this despite the fact that there has recently been a strong emphasis on non-discriminatory work for the open market. Instead, things are going completely backwards in Switzerland: **the freight transport division SBB CARGO, which had just been separated from the overall group, was reintegrated into the state-owned company** (see article below).

Our opinion: Even if a state railway had to be "broken up" as an integrated group, the group structures must be streamlined in a transparent manner. But above all: **the state must invest!**

The current federal government is doing a lot on this front, more than all previous governments – but unfortunately still not enough. **The German federal government wants to spend 45 billion euros on the renovation of railway lines and crossings by 2027. This is a turnaround, a good thing!** But there are more and more trains running on the dilapidated infrastructure, and the volume of trains, especially in the freight sector, must continue to grow stringently in view of the climate policy challenge. For over 20 years, Germany's state railway was kept on the back burner. Therefore, **government spending must be doubled** in order to achieve lasting progress in the important railway sector.

Hermann Schmidtendorf, editor-in-chief



Can DB Energie stay with DB?

SBB CARGO:

ONCE AGAIN STATE-OWNED SBB CARGO IS INTENDED TO PREPARE THE FREIGHT TRANSPORT OF THE FUTURE

Now grows together what belongs together. On June 7, 2023, the Swiss Federal Railways AG SBB announced: The freight transport company SBB CARGO will again become a 100 percent subsidiary of SBB. To this end, the minority shareholder Swiss Combi sells its 35 percent shareholding to SBB and in return becomes a strategic partner of SBB. In

THE FREIGHT TRANSPORT SUBSIDIARIES OF SBB

SBB Cargo AG: Provides one-seventh of Swiss freight transport with wagonload traffic, block trains and combined transport, transports 180,000 tons a day for its customers, thereby reducing the burden on the roads by 15,000 truck trips a day and on the environment by 490,000 tons of CO2 every year.

SBB Cargo International: Market leader on the north-south axis through the Swiss Alps, connects the North Sea ports with the most important economic hubs in Italy with block trains from the loading to the unloading point or from terminal to terminal. The shareholders are SBB AG with 75 percent and Hupac AG with 25 percent.

SBB Intermodal AG: As the developer, the newly founded Intermodal AG will drive forward the expansion of the terminal infrastructure in Switzerland, as envisaged in the "Suisse Cargo Logistics" concept. *hfs*

this way, SBB wants to reposition itself for the freight transport of the future with the Suisse Cargo Logistics concept.

Swiss Combi AG, based in Dietikon, only became a shareholder in SBB Cargo in April 2020. It belongs 40 percent each to Planzer Holding AG from Dietikon and Camion Transport AG from Wil SG. In addition, Bertschi AG from Dürrenäsch AG and Galliker Holding AG from Ältschhofen LU each hold 10 percent of the company.

The minority shareholders have contributed valuable knowledge from the transport and logistics sector to SBB Cargo AG as a leading company in Swiss rail freight transport, according to SBB. But with the buyback of the shares and the new freight transport management, the SBB wants to increase freight transport and manage it from a single source. The previous freight transport segment management had a coordinating role on a mandated basis and was not a member of the group management. Freight traffic will now be managed again at the SBB Group level: "SBB is thus simplifying the management structure and preparing for possible government funding for single-wagon load traffic. *hfs*

An SBB shunter sets the course for a locomotive from the "fully integrated" SBB Cargo.



ALSTOM: "FUTURE COLLECTIVE AGREEMENT" SECURES GERMAN JOBS AND PLANTS UNTIL 2026

As a result of the takeover of the railway industry from competitor Bombardier, the railway manufacturer Alstom incurred a deficit of 581 million euros. Significant cuts in personnel were planned for the Görlitz, Bautzen, and Hennigsdorf sites, while employees in Mannheim feared a gradual decline due to the removal of essential competencies.

But on June 9, 2023, the group management, the general works council and the metal industry union concluded a so-called future collective agreement. The partners emphasised that the contract "initially secures jobs and locations in Germany for the next three years." Productivity should be increased by assigning clear priorities and range of tasks to the individual locations. The workforce waives special financial benefits amounting to 34 million euros, which are only paid out if the group's key performance indicators are achieved. Two percent of Germany's sales are to be invested in the plants each year. Up to 700 new positions will also be advertised – in future-oriented areas such as software and digitalisation. *hfs*



Secured for the time being: the production of double-decker cars at the Alstom Görlitz plant.



WaggonTracker

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Weltweite Systemlösungen für den Schienenverkehr



**Digitaler Schienengüterverkehr
Akkreditierte Prüfstelle ISO/IEC 17025
Engineering**



A single broken wheel, but major damage: The derailed train in the Gotthard Tunnel.

Credits (2) SBB

Restricted land transportation:

GOTTHARD BASE TUNNEL AFTER TRAIN ACCIDENT: REPAIRS WILL LAST UNTIL SEPTEMBER 2024



On Thursday, August 10, 2023, an SBB Cargo freight train derailed in the western tube of the Gotthard Base Tunnel. This caused devastating damage. The accident not only destroyed eight kilometers of tracks, a lane change gate and

over 22,000 sleepers, but also the track ballast. A difficult situation for the transport of goods between northern Europe and Italy: According to the Swiss Federal Railways, the repair work will last at least until next summer. An interim report from the Swiss Security Investigation Board SUST describes what happened as follows:

"On August 10, 2023 the freight train 45016, run by SBB Cargo, was on the way from Chiasso to Basel with

two Locomotives (BR 185) and 30 freight cars of different designs. Approximately 10 km after entering the southern portal of the Gotthard Base Tunnel, at railway km 47, a fragment of the wheel disc of the first axle in the direction of travel of the 11th car broke away. Shortly afterwards, more fragments came loose from the wheel. ... From this point on, the axle hung diagonally under the car. The freight train then drove about 4 km further... Shortly before the Faido multifunctional point at railway km 40.4, approx. 17 km after the tunnel portal, a last wheel fragment broke away. The axle, which hung diagonally under the car, hit the continuous concrete sleepers in front of the Faido lane change switch and destroyed all the switch drives. As a result, the following sixteen freight cars derailed and some of them overturned in the tunnel."

The accident investigators found several pieces of the broken wheel scattered throughout the tunnel. Examination of the parts showed a disturbing result: all fracture surfaces show **"fatigue cracks originating from the running surfaces"**. Even the largest single fragment has "further fatigue cracks on both sides" with varying proportions of gaping cracks originating from the tread. The broken wheel is a BA 390 solid wheel with an axle load of 22.5 t. ►

The steel grade is ER7. The bike was manufactured in 2008. Since the axle was last serviced (IS22), it has had a mileage of around 140,000 km. The cracks in this wheel disc on car 11 apparently grew over a long period of time – probably months – and ultimately led to a wheel break.

There were also some freight wagons from the wagon rental company Transwaggon on the train. This company said it "unreservedly welcomes" the preliminary investigation report. This particularly applies to the provisional safety recommendations:

"With Safety Recommendation No. 183, the STSB advocates that the Federal Office of Transport (BAV) extends the "JNS Urgent Procedure Broken wheels" from 2017 to the wheelsets of the BA 390 series. The "JNS Task Force Broken wheels" of the European "Joint Network Secretariat" that was set up at the time responded to several broken wheels on wheel types BA 314 and BA 004 and called for more intensive inspection measures during operation and maintenance to limit the risk of these two wheel types. After a wheel of the BA 390 series broke on the derailed car 11, it seems absolutely sensible from our perspective to extend the immediate measures taken at that time to the BA 390 wheel type."

Could the accident have been avoided? The shorter the inspection intervals in a workshop, the greater the chance of detecting the first small cracks on a wheel before they become larger with further use and ultimately lead to the wheel breaking. And while driving? There are special wheel break detectors that can be attached to freight wagons. However, as our interview below shows, these detectors are only a possible solution in their digital version.

Could the rail infrastructure operator detect an

impending wheel break on a passing wagon by installing appropriate detectors and then stop the train? The Swiss railway network is equipped with over 100 sensors. The warning signals from these Wayside Train Monitoring Systems (WTMS) converge in the so-called ZKE intervention centre (ZKE Netz V2) in Erstfeld. There the signals are automatically classified and prioritised depending on severity, alarm value, day of the year, time of day and vehicle type. Possible false alarms are flagged. For alarms of the highest level, such as a hotbox over 100°C, the train is stopped immediately – no further signals are set to green. But the preliminary investigation report states the following about the wheelsets:

"To date, a crack in a wheel disc cannot be detected due to the state of the art of the train control systems currently available in the infrastructure in Switzerland. For technical train investigations in the field a crack can only be identified to a limited extent, depending on its severity and only in the visible wheel area."

The Gotthard Base Tunnel is Italy's main connection with Switzerland and the rest of Central and Northern Europe. Until it is completely renovated, the SBB, the Austrian ÖBB and other railways are trying to handle traffic via alternative routes. A precarious situation: There are hardly any suitable detour routes via France. To make matters worse, the most important border crossing between Italy and France is currently closed following a landslide in Saint-André à La Praz, about 20 kilometres from the border. The reopening of this so-called Fréjus railway will probably only be possible at the end of 2024.

Hermann Schmidtendorf

“It’s not the **broken wheel** that’s the problem, but rather **its consequences.**”

? **CARGO FREIGHT JOURNAL:** Professor Hecht, after a freight train derailed in the Gotthard Tunnel after a wheel broke, the SBB said there was no way to predict such events in time. But back in 2009 you advised the Berlin S-Bahn to use special detectors to monitor wheel sets?

Prof. Dr.-Eng. Markus Hecht: That’s right. I’m thinking of the Knorr-Bremse derailment detector EDT 101. The broken wheel itself is not the problem. It becomes problematic if it is not recognised and the train continues on with the broken wheel. This is exactly what the detector prevents. It detects a derailed axle by recording and evaluating the impacts of the running wheels over the railway sleepers. This is also referred to as a spring-mass oscillator, which measures the vertical acceleration absorption. You need two of these small devices, one for each end of the wagon. With the pneumatic version, if they detect an axle derailment, they immediately trigger the brakes, preventing the train from continuing and causing major damage. The system works similarly to an airbag in a car.

? Such detectors are already used at SBB Cargo?

Yes, when transporting dangerous goods by rail. This enabled a serious accident to be avoided years ago.

? Then why aren’t these devices installed in all freight wagons?

The individual price of around 1,500 euros is not a problem. But retrofitting a larger fleet of vehicles incurs higher costs. Above all, a false alarm cannot be ruled out. An example: When the gravel is frozen, the signals are similar to those when a wheel breaks. That’s why the freight railways are probably hesitant to generally install these systems and thus accept incorrect, more frequent emergency braking. ▶

? What could stop this misconduct?

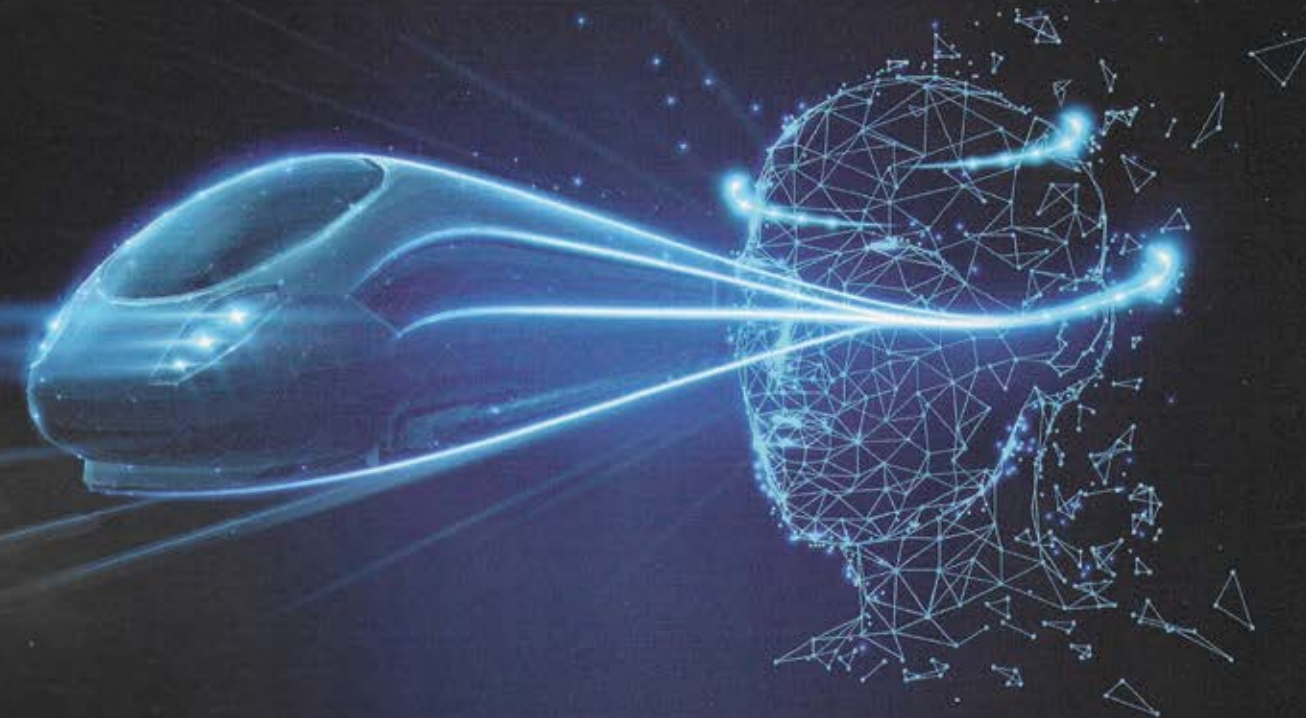
With the Europe-wide introduction of the Digital Automatic Coupling DAC, there will be a stable data connection from all wagons of a freight train to the locomotive. Then you can install a digital version of the detector. This also registers inductive vibrations, making it safer to detect errors. If a wheel breaks, a warning signal is sent to the personnel in the locomotive, from where emergency braking is then carried out.

The interview was conducted by Hermann Schmidtendorf.

Prof. Dr.-Eng. Markus Hecht (RWTH Aachen) has been head of the rail vehicles department at the Institute for Land and Maritime Transport at the Technical University of Berlin since 1997. Before that, he worked at Schweizerische Lokomotiv- und Maschinenfabrik AG (SLM) Winterthur as a senior engineer. Participation in numerous professional associations, advisory boards and commissions, expert assessor for rail vehicles, advisory professor at Tongji University Shanghai. We spoke to the rail expert about technical solutions to prevent damage caused by broken wheels on rail vehicles.



Credits M. Hecht



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RESEARCH & DEVELOPMENT

USA: WHEEL BREAKAGE DETECTION BY WHEEL SPRAYING WITH MIST

The broken wheel of a freight wagon in the Gotthard Base Tunnel caused major disruption to train traffic between northern and southern Europe. Trains will have to take diversions with considerable additional time (see the map), and some transport will probably take to the road. The preliminary accident report states that the monitoring sensors installed in Switzerland's rail infrastructure are not suitable for detecting broken wagon wheels in a timely manner and stopping the dangerous train.

But are there really no detectors for at-risk wheels on the market? In the USA, freight trains are significantly longer and heavier than in Europe. There is therefore a particular interest there in preventing damage caused by broken wheels and derailed trains. In 2022, the **Federal Railroad Administration of the U.S. Department of Transportation** had the Office of Research, Development and Technology examine marketable sensors. Result: There are numerous sensors that prevent or minimize accidents and damage – also first for broken wheels.

"Whereas the Broken Rim related derailments remain almost unchanged, recent deployment of ultra-



A wheel with a crack on the Tycho detection facility.

sonic wheel crack detection system on one of the major railroads appears to be quite promising.

... The automatic wheel crack detection (AWCD) systems require the trains to roll past a wheel crack detector at a slow speed with the wheel flange riding on the rail, thus allowing the wheel tread to be submerged in a water trough to provide water as couplant for ultrasonic detection. As of 2013, only one facility has been put into service by one Class I railroad."

(Source: DOT/FRA/ORD-22/19, Final Report | May 2022)"

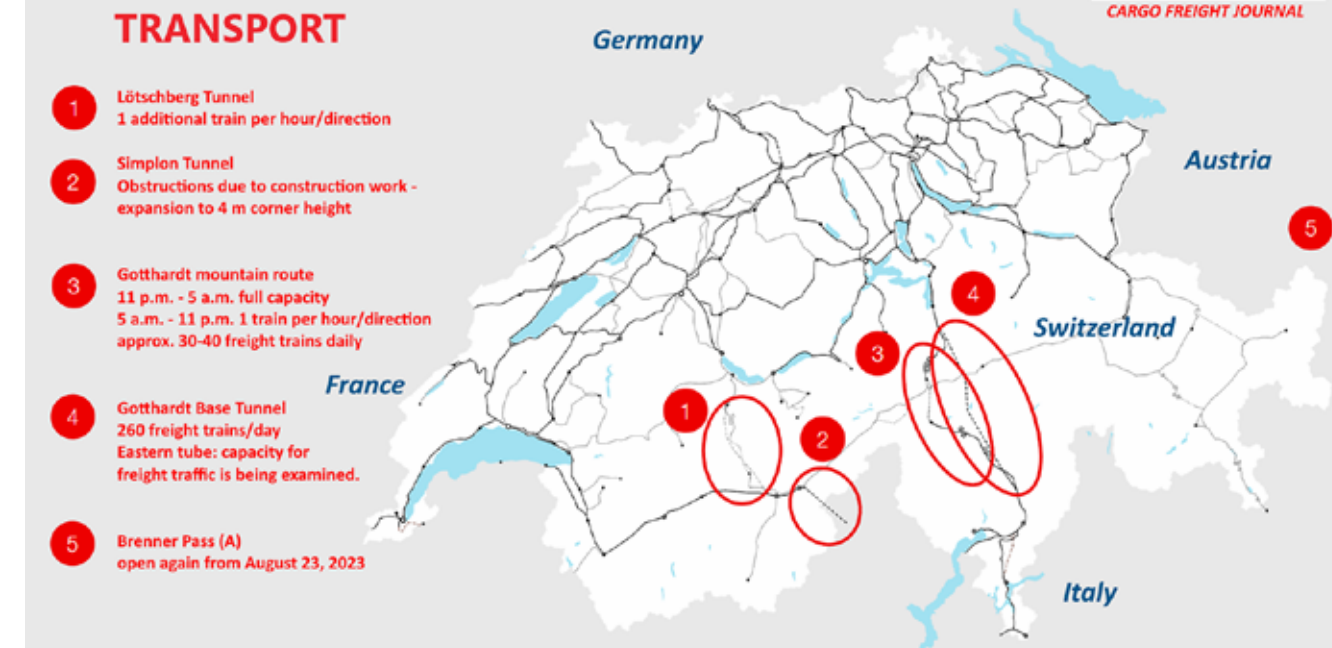
What is apparently meant here is a system from the American company **Nordco, which is part of the Wabtec Group**. In a presentation, the company reports that the system was developed as part of a research program to detect cracks in railway freight car wheels using ultrasonic methods. The partners were the **American Association of Railroads (AAR) and the Transportation Technology Center (TTCI)**. The Wayside Cracked Wheel Detection System (CWDS) was installed on the premises of a Union Pacific railroad repair shop in Nebraska and was found to be in good condition. Nordco describes its system as follows:

*"The **Wayside Cracked Wheel Detection System** consists of four inspection stations per rail, with one ultrasonic test head per station (for a total of eight test heads). As the car passes over the inspection stations on flange-bearing track, the system sprays couplant onto the lower surface of the rail wheel using a fine mist. ►*

Credits TTCI

CAPACITIES AND ALTERNATIVE ROUTES IN FREIGHT TRANSPORT

SBB CFF FFS
CARGO FREIGHT JOURNAL



The inspection probes assess the integrity of the wheels as they pass through the inspection stations at speeds up to 5 mph (8 km/h). Each inspection station inspects one wheel in a four-wheel sequence, so that the workload is spread and equalised over the entire system, minimising the risk for individual inspection station failure. The system then provides real-time assessment and reporting of flaw types, flaw sizes, and flaw locations that appear in and across the tread and rim of the wheel."

In 2018-2022, the TTCI also tested an automatic CWDS manufactured by Tycho, which can inspect wheels for internal fatigue cracks at speeds up to

Part of the broken wheel in the Gotthard Tunnel.



Credits SBB

15 mph – 24 km/h. Nanjing Tycho Information Technology Co. is a subsidiary of China High-speed Railway Technology Co., CHSR. Validation of the system, sponsored by the Association of American Railroads (AAR), was carried out using the **Heavy Axle Load Test Train (HAL), consisting of approximately 120 cars with an axle load of 39 tons each, at the Accelerated Service Testing (FAST) facility near Pueblo, Colorado**. This ultrasonic system uses **spring-loaded contact ultrasonic transducers to inspect moving railroad wheels for internal fatigue cracks** in the tread, near the rim surface, and on the wheel flange. The tests were positive – the system detected all wheel cracks installed in the test train.

However, the test report emphasises that the test facility is maintenance-intensive. An installation in an open field is therefore not practical everywhere. Therefore such systems should be perfected. They could then also be installed at critical points in the route network at slow speeds. If such a system works stably in a weatherproof manner, it could perhaps avoid accidents like the one in the Gotthard Tunnel in the future.

Hermann Schmidtendorf

Data Modeling

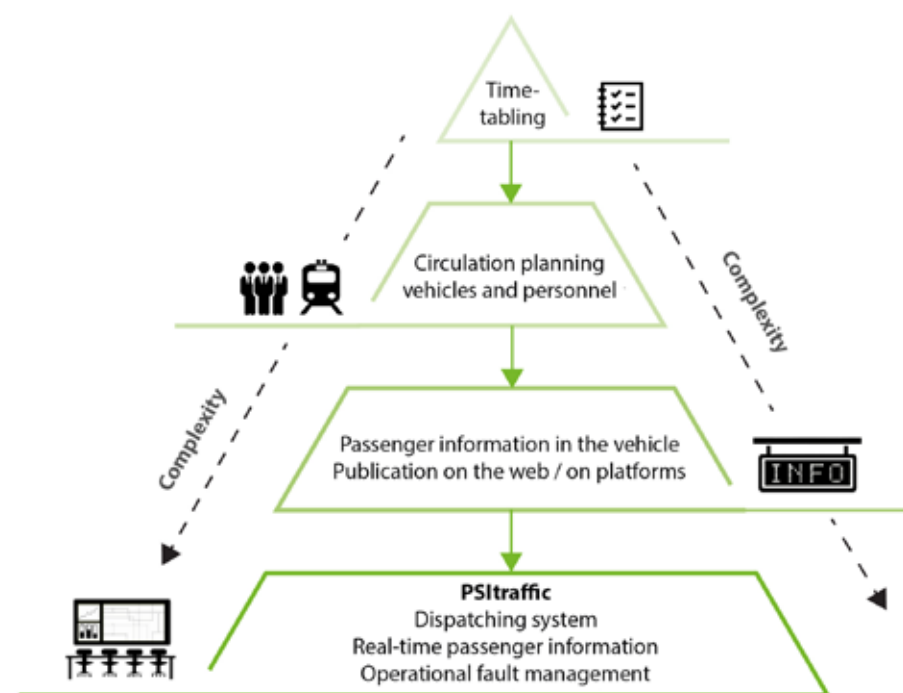
AFTER PROCESS DIGITALISATION: WHY STANDARDS ARE URGENTLY NEEDED

Almost every business process in railway companies has now been digitised. This has resulted in countless individual digital components that all too often require manual data transfer from one software to the other – with many frictional losses. The challenge: modeling a powerful overall system using standards.

More and more managers of railway companies are complaining that they have less time for their actual core business. It is almost always the same reason: companies have to put too much effort into IT issues. Where does this dilemma come from despite

the high level of digitalisation? After all, most companies now use numerous powerful software systems, for example for enterprise resource planning (ERP), personnel and duty planning, vehicle dispatching, timetabling, operational scheduling or customer information.

As always, the devil is in the detail. Most programs function as self-sufficient individual systems, while the operating processes are closely interlinked. Companies therefore have to deal with many media discontinuities – see illustration – which significantly impact efficiency. ►



Every interface in the rail system between planning, information distribution and operational business makes communication more complex.

Source: PSI Transcom

This includes, for example, the multiple manual transfer of data into different systems or the manual synchronisation of previously independent inventory systems at different times. In addition, employees have to act under high pressure. Reliable customer information depends on current planning data, for example. These are obtained, among other things, from a system for vehicle dispatching, which is only used during office hours. As a result, reworking is required in many areas – with a lot of time and a high risk of errors.

Expert knowledge is not required to derive a suitable solution for this situation: the creation of an overall IT system – with consistent processes through automated transitions.

Individual systems lack the overall context

The practical implementation of this theoretically simple equation is far more challenging. In order to assemble the individual building blocks into a powerful whole, standardised import and export interfaces are required, which only a few systems have. In addition, existing standards are not fully developed and do not fully reflect operational requirements. This in turn poses the risk of becoming “independent” due to a lack of further development. In the worst case scenario, this could require proprietary adjustments. Almost all IT systems in railway companies, for example, require infrastructure data. But there are no standards for their transmission, starting with the planning of the signal boxes and maintenance through to timetable plan- ►

Since July 2023, Robert Baumeister (B.A. TU Chemnitz, M.A. University of Jyväskylä, MBA PFH Private University of Göttingen) has been the further managing director of the Berlin software specialist PSI Transcom GmbH with a focus on Train Management/AVMS, for which he has been responsible since 2016. Before that he has been working for several years in the energy sector as project manager for network control systems.



Credits: PSI

ning, vehicle scheduling or passenger information.

What it means when individual systems lack the overall context can be clearly illustrated using the example of the timetable. A timetable is usually enriched several times by different systems for scheduling use on the day of operation. For example, rolling stock and personnel must be assigned to planned journeys, as well as information for passengers on the platform, on the train and for various online information. Because different target systems are responsible for this, content, special symbols and languages for announcements and special texts each require appropriate preparation. In addition, the vehicle fleets of railway companies are usually equipped with on-board information systems from different manufacturers, which means that the companies have to operate, maintain and keep up different interfaces.

Planning and scheduling belong together

Actively promoting the further development of standards in committees is a key requirement today. In contrast to existing standard interfaces such as railML (Railway Markup Language) or VDV, the new solutions must limit the scope for modeling as much as possible. Because they stand in the way of (fully)

automatic data exchange despite high levels of conformity. Companies are also well advised to rely on existing standards wherever possible. This refers to processes in which, for example, a dispatching and customer information system such as PSItraffic imports enriched timetable data and processes them efficiently for operational scheduling on the day of operation. This also shows how important it is to break away from the prevailing IT separation between planning and scheduling.

Standards secure the future

The development of uniform data modeling and a standardised exchange format is one of the railway industry's most urgent challenges. If standards are used across the board, they ensure a cross-system data flow, reduce individual adjustments (e.g. custom tags in railML) to a minimum and at the same time ensure the necessary modularity in order to be able to flexibly exchange or renew system components in the future.

Robert Baumeister, Managing Director, PSI Transcom GmbH



RAILWAY FAIR RAIL LIVE! 2023 FROM NOVEMBER 29TH – DECEMBER 1ST IN MADRID

Rail Live! is Spain's most important railway conference and exhibition. 2023 will be the largest edition yet, with a floor plan 50% larger than that offered in 2021.

THE EXPO: Over three days, we will bring together 10,000 rail professionals to gain first-hand market knowledge, be inspired by leading industry innovations and build new business partnerships.

THE CONFERENCE COVERS 12 KEY TOPICS driving the industry. It is the place for operators, infrastructure managers, rolling stock manufacturers and their suppliers, academia and government to present the latest technologies and trends.

NETWORKING: A mix of site visits, drinks receptions and long breaks between sessions will allow the industry to personally engage with new and existing customers, reaffirm partnerships and cement new connections.

Rail Live! began its journey in Spain in 2017 with the support of MAFEX. The event has grown significantly year on year to ensure it is a global meeting point for those at the forefront of rail's digital transformation. In 2023 we look forward to being back in Madrid for our biggest edition yet. As the industry establishes itself as the preferred mode of transport, this is the perfect time to take advantage of the knowledge sharing and networking opportunities at Rail Live!

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ELVIS AG:

GERMAN BI FULL-SERVICE SOLUTION FOR LOGISTICS AND TRANSPORT

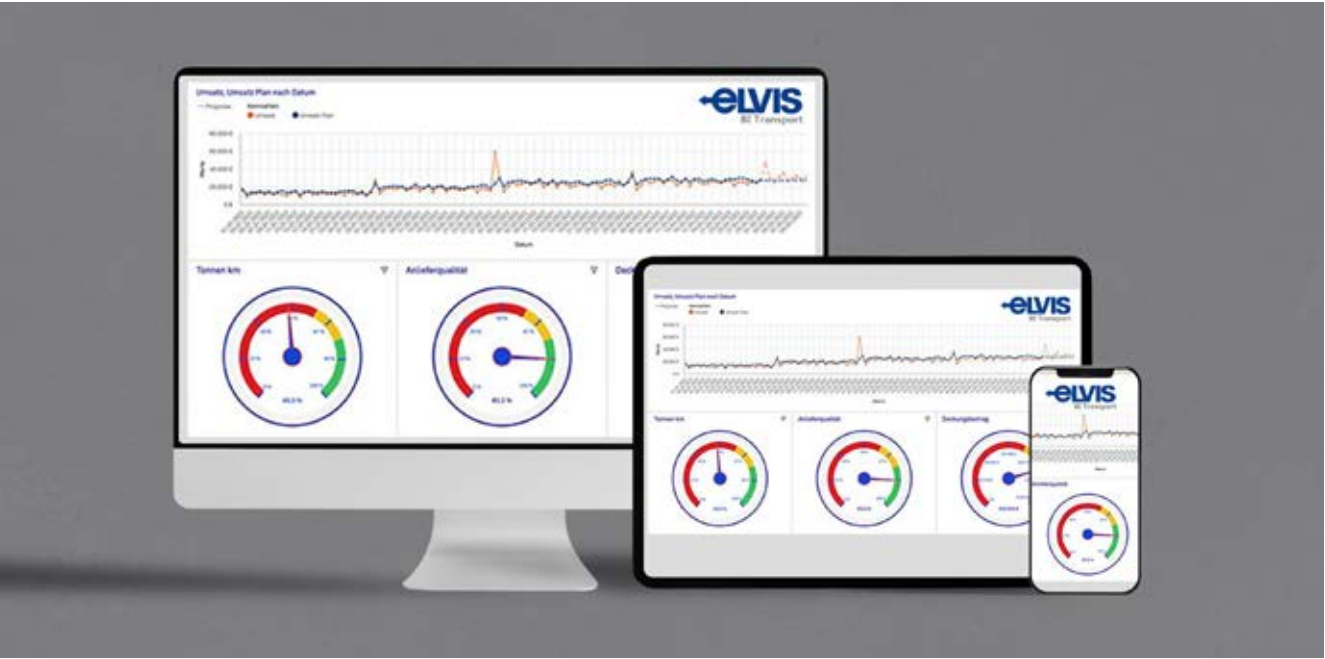
PLAN, ANALYSE
AND OPTIMISE WITH



Abbreviations are omnipresent in the area of transport and logistics. There are complete loads (**FTL – Full Truck-Load**) and partial loads (**LTL – Less than Truck-Load**), **Transportation Management System (TMS)** and of course also **KPI**, i.e. **Key Performance Indicators**. By creating relevant KPIs, the

performance of logistics processes along the entire supply chain can be continuously monitored, analysed and optimised. This is important in order to keep logistics costs as low as possible. This includes the areas of purchasing, transport and warehousing. To evaluate the indicators, goals such as time ex- ▶

Continuation on page 22.



Credits (2) ELVIS BI Transport

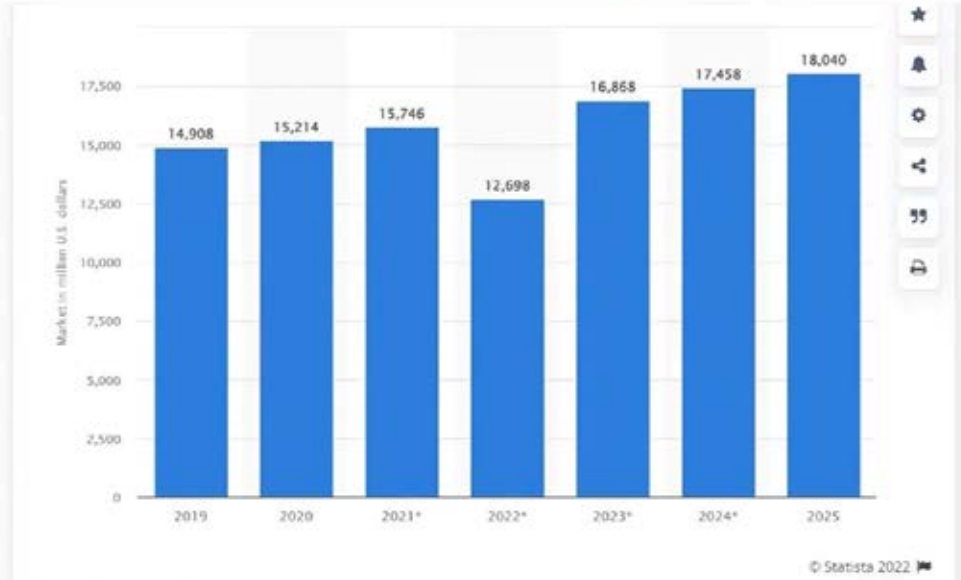
BI – WHAT IS IT?

In recent months, a certain acronym has been used more and more frequently: AI. This means artificial intelligence and refers to a sub-area of computer science and its practical applications. The aim is, among other things, to use machine learning to get an IT system to perform tasks better and better. But what does BI mean, especially for the logistics and shipping industry?

BI means Business Intelligence. This includes collecting, evaluating and presenting business data using a specialised IT system. For this purpose, the data from individual solutions for monitoring and controlling a company is integrated. It should be possible to look at and evaluate the operational processes backwards, as well as to use them to form the basis for future decisions. This sounds complex, but it is certainly practiced everywhere at the simplest level, even if only by using spreadsheets such as Microsoft Excel.

At a higher level, special software solutions are necessary. These are aimed at merging, collecting, analysing and evaluating data from various source systems along complex networked transport and logistics chains. The statistics speak for themselves: the market for BI solutions has been growing consistently worldwide in recent years, apart from one year with a pandemic dip. *hfs*

Size of the global business analytics and analytics software application market from 2019 to 2025 (in million US dollars)



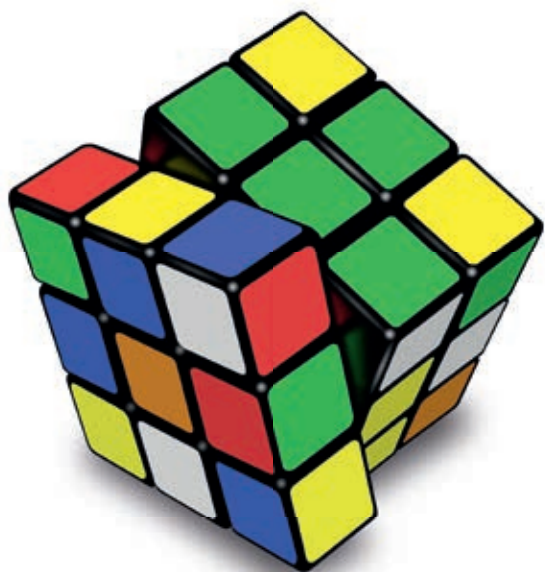
penditure, costs, productivity and quality of services are set. Ideally, these indicators are represented by software solutions and monitored in real time.

The more partners, the more complex the task

But that is easier said than done. Daniel Markus noticed this ten years ago when he started working at **ELVIS AG** in the German town of Alzenau. Markus worked at the transport network as a logistics controller. "I knew how to calculate ton-kilometers and volume-kilometers. I was able to easily calculate a contribution margin for partial routes or general cargo and loved it." But the network and therefore the requirements of the various partner companies kept growing. The data submitted by the partner companies was of varying quality; data had to be compiled by hand and Excel tables were sent back and forth. That was taking more and more time. What was a hindrance was that the shipping partners had different TMS systems and were at a different technological level.

So Daniel Markus came to the decision that his company's IT team should set up an independent BI system with the specialised company **RSM Consult GmbH**. This could then standardise data exchange for all partner companies, including the subsequent analysis and presentation of conclusions. The collaboration worked perfectly. This is how **ELVIS BI Transport** now calls it, "the first BI full-service solution for the transport industry".

Are transport routes worth it? Are the trucks busy



and on time? Are costs and sales correct? The company assures us that the system can handle like these. "ELVIS BI Transport" evaluates your data based on your TMS. With ready-made dashboards and reports, you can check your punctuality barometer every day and see in the early warning which customer you need to call today. You can see orders, customers and sales in the top/flop overview. Whether empty kilometres or downtime analysis, we have already integrated many logistics key figures and made them evaluable. Nothing slips through the cracks in automated daily reports."

The key figures can also be created to determine the quality of transport partners in the supply chain. For example, the KPI "Time to Utilization" can be determined – the total transport costs in relation to sales as well as the punctuality record of deliveries.

A ready to use system in four steps

When determining a customer's needs, the ELVIS IT specialists proceed in four steps. At the beginning there is the inventory. Which TMS and systems are used and which of them should be connected? Who needs which reports/dashboards, when, and how many users should there be? Once these questions have been clarified, the interface connection begins. The standard dashboards and reports are then defined and, if necessary, the creation of additional dashboards and the connection of the users, who are then assigned the necessary access rights. ELVIS then helps in daily operations through updates, data security, professional and technical support as well as user trainings.

How do ELVIS BI Transport customers see this? The company points to the managing director of **BTK Logistik** Josef Heiß as one of the references. This gentleman is actually enthusiastic. He says: "The data from our TMS was loaded into ELVIS BI Transport in just 14 days. Whether contribution margin or service life evaluations, we were able to get started with the analyses straight away. Without a lot of IT back and forth, we are now further developing our key figures in good discussions with the team."

"The Rubik's Cube for Logistics"

The IT specialists from specialists from ELVIS AG and RSM Consult GmbH are now extremely ►

self-confident. "We bring all the data to a common denominator. The power lies in the connection. With ELVIS BI Transport we have created the magic cube for logistics," says the managing director of RSM Consult Joachim Pajonk. What this means, among other things, is that the system is not a closed one. Rather, it is possible to integrate as well, if required, warehouse management systems, financial accounting or telematics. Joint analysis by users within an online session is also possible without any problems. Any commercially available TMS can be used; additional

systems can be connected if necessary. . In this way, you get the right business decisions and recommendations for action quickly.

The ELVIS specialists emphasise that competitiveness will be sustainably increased. There is budget security through fixed prices. And the company ensures data security by hosting and operating the customer's data warehouse in a private cloud, i.e. on its own servers in Germany.

Hermann Schmidtendorf



VACATURE MACHINIST, (NATIONAAL EN/OF INTERNATIONAAL)

HSL Netherlands B.V. is onderdeel van de Exploris S.A. Transport groep. Wij zoeken machinisten / wagenmeesters. Houd je van afwisseling en uitdaging in je werk? Dat komt goed uit, iedere dag is bij ons anders.

BEZIT JE DE VOLGENDE KWALITEITEN? Verantwoordelijkheidsgevoel • Oplossingsgericht • Teamplayer • Inzet

Als machinist is het belangrijk dat je een flexibele instelling hebt en secuur werkt. Ook communiceer je makkelijk en ben je praktisch ingesteld. Werken doen we 24/7, dus onregelmatig – en weekendwerk is voor jou geen probleem.

DAARNAAST BRENG JE HET VOLGENDE MEE: Volledig bevoegd machinist (Nederland-Belgie-Duitsland) • Wagenmeester/ wagencontroleur • Plezier in het werk

WAT BIEDEN WIJ? Naast een vaste aanstelling, een goed salaris, een auto van de zaak, een goede pensioenregeling, interne doorgroei mogelijkheden en aandacht voor elkaar hebben we een hecht en betrokken team. Samen klaren we de klus!

HEBBERN WE JE AANDACHT? Stuur dan direct je CV en motivatie naar:
Voor meer informatie over ons en overige vacatures kijk op onze website
Acquisitie naar aanleiding van deze vacature wordt niet op prijs gesteld.

werkenbij@HSL-Netherlands.eu
<https://HSL-Netherlands.eu>

HSL: “Flexible spot freight trains across Europe”

A conversation with the CEO of HSL Netherlands about quality in freight transport and synergies through eight country representatives.



Credits: HSL

Latest “cart horse” at HSL: One of five EURO9000 locomotives, exhibited at the HSL anniversary celebration in Hamburg.

CARGO FREIGHT JOURNAL: Mr. Schallach, you spread good news at the Munich transport logistics trade fair in May 2023 – you have received a new license. What is it about?

Sven Schallach: We have received a new license for HSL Netherlands since June 1st in the form of the new safety certificate from the European Union Railway Agency, the ERA. This is now the first extension of the certificate. We were able to receive the happy news from the ministry at the trade fair and are now looking forward to another five years in which we can further advance the HSL. The license applies to the entire territory of the Netherlands.

? How do you work with your European partners? At the transport logistics trade fair it was very nice to see that the language at your stand was almost like a European Parliament, because you had invited various country representatives from your HSL group, who then celebrated together with the customers in the evening. I think you even use political abbreviations to characterise your meetings?

Yes indeed. With the HSL Logistics Group we have branches in eight countries: Poland, the Czech Republic, Slovakia, Austria, Switzerland, Belgium, the Netherlands and Germany. And because of these eight countries that we represent there, we also call

this our G8 meeting. We have specially arranged a so-called G 8 meeting in sales, where all sales people meet and discuss the company’s strategy. This also gave rise to the operational G 8 meeting, at which the operational employees can exchange ideas, and we have now recently started in the Netherlands with the G 8 meeting of safety managers, where all safety managers come together and continue to advance the idea of security through mutual exchange.

? This probably integrates the people – are you proud to promote the railway industry here as part of a larger community?

Of course, everyone can be proud of what we have achieved over the last 20 years. We had our twentieth anniversary at the end of June 2023, which we celebrated accordingly in Hamburg, at our headquarters. It’s always better together when you sit at a table in person and can discuss and exchange ideas; language problems also become smaller.

? Keyword language: I’m assuming that at the meeting of your G 8 group, the people taking part speak English among themselves, because everyone can do it somehow. But if you now send trains across the borders, then unfortunately we won’t get anywhere with English. Because it is ►

true that in Europe the locomotive crew in every country must be able to speak the national language, and if you want to travel through several countries, you must be able to speak several national languages and also the relevant railway law issues. Do you think this is a hindrance to cross-border freight transport?

I consider this to be a disability throughout. I am a big supporter of Europe, as everyone now knows, and I am convinced that in order to get more traffic on the rails, we have to speak a uniform language, whatever that will be. This can all still be regulated in the fine control. But the initial will must be there for us to agree on a language and a way of communication, analogous to the regulations for pilots. We have also submitted a petition about this. This is being discussed diligently in the internet forums, and I recently received a letter from the German Bundestag stating that the petition will now be taken into committee.

? At least the vehicles look a little better. There are multi-system locomotives that are approved for electricity and security systems in several countries, and you have now acquired such locomotives and presented them at your event in Hamburg. What types of locomotives do you specialise in?

HSL Logistik has more than 50 locomotives. Brand new, as you’ve just noticed, are the EURO9000 locomotives – the six-axle locomotives leased from Stadler. We will receive five of these machines, which can and will then operate in the Netherlands,

Belgium, Germany, Italy, Switzerland and Austria. We are very proud to have such a powerful locomotive to be able to actually drive all the goods we transport from A to B. Because you notice that the customer wants to drive increasingly heavier trains. Ten years ago we were able to make ends meet with 2,000 tons haulage. Now the customer demands sometimes 3000 tons or an even higher tonnage, and you can pull that very well with a EURO9000. In addition, the EURO9000 can of course run on diesel and electric traction. And that gives us a lot of advantages in terms of the so-called last mile, because you don’t always have to change the locomotive there.

? They also travel with a wide variety of goods, but I assume that the customer provides the corresponding freight wagons. You can hardly expect lots of empty wagons to be completely lucky. What goods do you actually transport?

So, we have a big challenge as a private transport company to keep more than 50 locomotives running. Tying wagons to our legs is a step too high for us, and we say that it would be better for someone else to do that. We are broadly positioned in terms of product technology, so that even in situations of recession in any industry, we don’t really feel the effects or it doesn’t get us into serious difficulties. However, 99 percent of the wagons themselves are delivered by the customer.

? Can you say something about the routes you travel on? Do you have fixed timetables, ►

Credits: Hermann Schmidendorf



Sven Schallach has been working for the HSL Logistik Group since 2011, currently CEO at HSL Netherlands and Sales Director at HSL Logistik GmbH.

fixed destinations, and are there any one-off requests where you have to work out a timetable that you haven't used before?

As HSL, we drive 95 percent in the spot area. If we now define it so that a customer comes back every week, just on different traffic days, then we are even at 100 percent. We hardly have any regular services along the lines of 'the same train leaves every Monday at ten o'clock'. We have now built a corridor between East and West to run one train every day. It is of secondary importance to see which train is ultimately behind it. However, the customer now has the opportunity to book the train months in advance. We are traveling in eight countries, which means we are of course very present on all routes. Our race tracks, if you want to put it like that, refer to the Czech Republic and the Netherlands, Belgium, i.e. east-west, west-east.

? And so you can offer, even if I only have one train now, you'll take it. I don't have to immediately offer you a trip once a week for six months, even though you would probably like to have such trains too?

Of course! Of course everyone wants that. But we are also able to make a train within 24 hours. And that is actually our strength. We have the staff who are passionate about the company and getting the trains safely from A to B.

? How do customers come to you? Have they ever heard of you? Do you address customers directly yourself?

The most important thing in our industry is of course networking. Due to the years of experience that our employees and colleagues have, we are automatically approached by customers. We do not do direct cold calling. However, I also told my employees that if there was a time when things were a little quieter, they should take a look on the Internet and look for new traffic or acquire new customers from us. And that also helps, as a result of which some customers have actually come to us.

? What about visiting trade fairs? You could see at transport logistics that your customers were very enthusiastic. So personal contact is important?

Yes! This Corona period with these conferences via teams and other media was certainly an opportunity to try it out. However, I think that interpersonal relationships and personal meetings are priceless. So a trade fair like this, for example in Munich or Berlin or, as is now taking place in Poland in September, always remains interesting and is also visited by us.

? And the Stadler locomotives are a very reliable product in daily use?

You have to be sure that you don't get stranded somewhere halfway and then no service arrives. On the open road you are essentially in God's hands when you are on the road, and then you want to avoid any unforeseen things happening. Well, in the end you are in God's hands in court and on the high seas. Thank God there may also be earthly help with the railway! (Laughs) However, we also feel like we're in good hands and in good hands at Stadler, so we don't expect to be shipwrecked. Something can happen at any time, we have all been in the railway industry long enough for that, but at the moment we are not expecting it to happen and we are positive about the operation.

? You said that the different experiences, for example in the security area, are interesting when your different country associations meet each other.

Absolutely! We already talked about this G8 summit at the safety manager level. This was the first time in Rotterdam, and when an issue was described, the impressions and ideas from other countries were interesting, as they reacted to this story with a completely different view. I don't mean to say that they feel less security empathy, but rather that they may not have had the issue themselves and can therefore take a completely different perspective on it. And so it is very, very helpful that we communicate with each other from eight countries. And here we are back to the topic of Europe, that we should become one ►

Europe, but we should still maintain diversity.

? You have now become even more independent with HSL Netherlands and are probably using a term from space technology for your central control office. Please explain, what kind of institution is this that you have now personally taken over?

In other countries this is usually called disposition or operations. For us, at HSL Netherlands, we call it Mission Control. Mission Control is truly the conductor of the entire orchestra. Driving a train from A to B isn't really a big problem. However, we also have the slogan 'Quality has a name, HSL Netherlands'. And we are currently trying to move Mission Control in this direction, to really provide quality in the form of communication, i.e. quick reaction. You usually have five minutes to respond to customer inquiries. You don't have to have solutions right away, but I would like to see a reaction. This is important because the customer needs to know, and he has every right in the world, where his train is and what is currently happening to his train.

? And now you do it all there yourself? You previously had an external company...

We had previously given this to a friendly company. They are still friends of ours. We had outsourced it. It was clear from the start that we would recoup it as soon as we were able to manage it ourselves financially. But we still have a very good relationship with the other company and continue to work closely with them, even if we say, okay, we have now brought Mission Control home.

? The most important thing is the staff. It is difficult to get employees everywhere in Europe today. How do you do it now, with Instagram? Do you show films of kittens there and say, you can pet a cat with me once you've brought the locomotive back safely, or what clever ideas do you come up with?

Yes, well, that is certainly a viable, possible path. However, we are not in Phantasialand either. So, we expect a lot from our employees. However, we

also give a lot in the form of the so-called work life balance. We are on Instagram with our mascot, HaSel, which is a giraffe. We have our own YouTube channel under HSL, and we give train drivers the opportunity to work internationally. We now have national train drivers who we train internationally at our expense in the hope that they will of course stay with us. Apart from the monetary security that we give the employees, it is also important that they are heard, and we as management can be contacted directly. Our doors are open and no one needs to be afraid to express their own opinion. On the contrary, we even expect employees to share their own opinions.

? Now we should discuss another very important topic, namely the route, the quality of the route. If you drive through Germany, it will be difficult next year because there will be massive construction work. Do you already have an overview of your relations and whether you have to expect any detours or delays? How is communication with DB Netz, for example?

First and foremost, it is of course a shame that the infrastructure was left lying there for years and no investment was made at all. That was a wrong political decision, and DB Netz itself can't do anything about it. Ultimately, elected federal governments are responsible for this. We have construction work, namely on our race tracks through the Elbe Valley. All you can say is, this is a catastrophe. However, we also have very good key account managers at DB Netz with whom we are in close contact. We have our own department that only takes care of routes, and our colleagues do it so well that the customer will feel as little of it as possible. But we only cook with water and can't guarantee that the customer won't be a little late here or there must accept.

! Mr. Schallach, good luck with your transports and thank you very much for the interview!

The interview was conducted by Hermann Schmidten-dorf.

LTE: “Relieving road congestion with tailor-made intermodal rail transport”



Credits: Hermann Schmidtendorf

A CFJ conversation with the CEO of the rail freight company LTE – Logistics & Transport about European transport corridors, grain transport and a good work-life balance.

? **CARGO FREIGHT JOURNAL:** Mr. Mandl, you are an important person in rail freight transport in Austria and beyond and have many tasks in your company and the industry. But do you also like to be comfortable every now and then? In an interview you said that if you had the chance, you would like to experience a day like your cat does at home. You're probably doing very well for it?

Andreas Mandl: That's right! But I will say, this is my thirty-sixth year on the railroad. I still enjoy it, otherwise I would be doing something else. So yes, of course you like to have a little bit of comfort. But I allow myself the luxury of my hobbies. I like to go motorcycling and I take the sailboat at least one week a year. My wife don't miss out on vacation either. I actually have a nice life – and a wonderful team too!

? That is certainly important too! You didn't always have a childhood dream of pursuing a career in the railways. At the beginning you wanted to become a carpenter, worked on power electronics and then went to work for the Austrian Federal Railways ÖBB. What brought you to this?

I grew up at a young age in the Wachau, 100 kilo-

metres from Vienna. At that time I had a friend who went to Vienna for work. Then I said, okay, I'll come with you and do the training in power electronics. But at that time only two companies in Austria needed this specialist knowledge. One was Siemens, they built power electronics, and the other was ÖBB, they bought it from Siemens. That's how I ended up at ÖBB by chance. As soon as I got the job, the love was over, and then I just stayed there, and that's how it all developed. And then I worked in the ÖBB workshop area for a good ten years and was the workshop manager for corrective maintenance. Then there was a change to the freight transport sector. After 16 years, the ÖBB ended, and I switched to the independent railway industry to this day.

? So you know what it's like to work for both a public company and a private company. The idea is that both should be in the black. Would you still say that there are certain characteristics that differ in the way work is done at management level?

A difficult question!

? I think of the example of planning railway routes and station stops. With a state railway, members of parliament might quickly come and ►



Credits: LTE

say that the high-speed train has to stop on my doorstep, in my constituency. Of course, such an influence of political desires would not exist in this form in a private company. There are other influences, but from the shareholders?

I agree with you completely. In public operations you have these political influences that the train has to stop there or that a connecting line to an industrial area has to be laid somewhere, now, even though it would only be planned in five years and it would be more economical to do it later. Certainly not always, but among the large state-owned companies there are certainly massive interconnections that are, let's say, not entirely transparent. I criticise this a bit because I think, on the one hand, passenger transport has a certain economic mission. To do this you have to take trains. Public transport also needs to be promoted a bit. But there should be no cross-subsidies to freight transport, and today this is very intertwined with the large companies, let's say.

? Let's talk about your company LTE, a major rail freight transport company in Europe with operations in 13 countries.

If we founded national subsidiaries somewhere, there was a reason. LTE was created in Austria in 2000. The co-owner at the time, a construction company, had received the contract for a tunnel construction site with the condition that all of the

overburden and building materials had to be delivered by rail.

? You had your company headquarters in Graz?

Yes, at the Graz-Köflacher Bahn (GKB), a railway company that has been a 50 percent shareholder since the beginning. The second shareholder was the Porr company, the second largest construction company in Austria...

? A few years ago I had the pleasure of interviewing the CEO of Porr...

... and this is how LTE was founded in Austria. The second step was that cement was delivered to Slovakia. The Slovakian state railway said at the time that they didn't like to work with an Austrian private company, they preferred the state Rail Cargo. That's why we founded LTE Slovakia. Then it went step by step. Next came the Czech Republic. Then there was grain transport, so we needed train services in Hungary and opened LTE Hungária, and so on.

I've been there since 2007. In 2005, the Graz-Köflacher Bahn founded Adria Transport together with the port of Koper. The port is also a partially state-owned company, as is the Graz-Köflacher Bahn, and the port company preferred that they work together on a quasi-federal property level rather than with a subsidiary. This is how the decision was made: ►

everything that concerns the Western Balkans will be done by GKB together with the port of Koper and Adria Transport and the rest of Europe will be done by LTE. In autumn 2015, the Rhenus Group took over the 50 percent stake in LTE from Porr. This brought in a bit of thrust again. And today we are traveling from Croatia to Poland and from the Netherlands to Bulgaria, to the Turkish border. The Iberian Peninsula, Scandinavia and the Baltics are still missing, but I still have nine years!

? And a hard-working team, as you say! What is the role of such a main shareholder? If Rhenus needs rail services, do you always call LTE first, or do you have to position yourself there with offers like other providers?

Quite correct. We respond to an inquiry and make an offer, and if we are not necessarily the cheapest, but the best provider, we get the order. It's hard at times – I usually fight against the inland waterway when we get requests from our owner. Rhenus relies more on inland waterway vessels. That's why my opponent is more likely to be the inland waterway ship than another rail company.

? But if the water level in the waterways drops due to climate change, will you have more chances with rail?

Then maybe our chances will increase.

? You have a wide range of transport goods, a lot of bulk goods, but you also transport containers. Is there a specialty? Do you have block trains that you run regularly every weekday for certain general customers?

Of course, like other railway companies, we have our intermodal services, which run like clockwork from terminal to terminal. We serve two major axes. One runs from Rotterdam towards Poland and back. The second major axis runs along the Danube, where we carry a lot of intermodal transport – mostly maritime goods, no continental transport.

One area in which we have certainly specialised, and

which we have been dealing with for over 15 years, is the agricultural sector, the transport of grain from the granaries of Eastern Europe to Western Europe, partly for export beyond Rotterdam. We have a certain amount of expertise in this area and we know our way around it. That is certainly a focus. The rapeseed harvest comes at the end of May and beginning of June, and continues over the summer with sunflowers and wheat until autumn. With the sugar beets, this continues over the turn of the year.

This is a seasonal focus, it runs over seven to eight months. There has to be a bit of know-how behind it because you have to plan the circulation properly. And of course you have to look. You have the main business for seven or eight months, but you have to supply the wagons all year round, and you can't just turn off the locomotives and say that it doesn't cost anything. You also have to make sure that you at least keep the fleet busy with business the rest of the time.

? Is Ukraine also a destination for you because rail transport is now taking over for grain transport now that the ports are no longer safe?

In the first ten months we have shipped almost 1 million tons of grain from Ukraine to Western Europe, as well as other products such as clay for ceramic production, for example, and some steel. These are the main products that now travel overland. This is what our colleagues from LTE Slovakia and our colleagues in Hungary do. The Hungarians tend to deal with grain, the Slovakian colleagues take care of the rest. We have two terminals for transshipment from broad gauge to standard gauge. Yes, that has increased massively. Of course, the attitude of the Ukrainian State Railways is now different than it was five or eight years ago, when they preferred to work with the State Railways. Circumstances change minds.

? Every option is needed because it involves very large quantities of transported goods. Which border crossings do you use, that is to Slovakia and Hungary? ▶

Yes. We also have an agreement on the Ukraine-Poland border, but less is happening there.

? New terminals should be built for reloading from broad gauge to standard gauge, but Ukraine would like to have that on their side mostly financed by the West, and Poland would also like to have it on its side and also financed by the EU. Such selfish, small-scale debate is of course not conducive to the overall goal of expanded mass volume transport?

That's correct. I don't think it makes much sense if we argue about who gets what funding. The question is, what do we want to relocate? We also work intensively ourselves and we finance this out of our own pockets. We are organising our terminal to shift trailer traffic from road to rail. The Ukrainian trailers wait at the border for between one and four days until customs clearance is completed. During this time, the transport could easily unload its goods in the Ruhr area if it was put on the rails.

We have just discovered the potential for the trailers on the Ukrainian side that pile up for one to four days. That's why we're working on a project to revitalise a terminal for reloading trailers. The terminal already exists. This dates back to the communist era and was used for military purposes back then. So there is enough paved area. We want to reactivate the places where tanks were previously loaded for

the loading of goods and then regularly run trains from Ukraine with combined transport towards Western Europe in order to relieve the pressure on the roads.

In Austria – and Austria is a small country – we have 12,500 trucks a day just in transit. These are mainly the axes from the Slovakian and Hungarian border towards Germany, from the Czech border towards Slovenia and Italy and of course the Germany – Italy connection via the Brenner Pass. We want to strengthen rail here.

! We wish you every success! Thank you very much for the conversation.

The interview was conducted by Hermann Schmidten-dorf.

LTE – LOGISTICS & TRANSPORT IN NUMBERS

- Own fleet: **70+** locomotives
- **700** cars available
- **7.5 million** freight tons p.a.
- **500+** experienced employees
- Sales: **€140 million** (2020)



Credits LTE/Strobl

nexxiot and Knorr-Bremse: quality, reliability, long-term focus

? **CARGO FREIGHT JOURNAL:** Mr. Kalmund, at the beginning of May 2023, the leading European freight wagon rental company Ermewa informed that it is now expanding its telematics portfolio to include the sensor and data technology of your company nexxiot. This affects over 45,000 freight wagons. I found that remarkable. Sometimes the services of a partner company are used without naming them. In this case, Ermewa refers to you as a good reference. How did this match come about?

Stefan Kalmund: Thank you for this exciting question. Three factors immediately come to mind. Firstly, the Ermewa company understands the requirements in the technology sector very well. So we have already found a very experienced conversation partner. Secondly, the entire selection process has been thought through over the years and examined which topics are really important in order to create added value for customers.

There is also the third essential question: Will the technology partner I choose still exist in a few years? That's not a given. This is perhaps the biggest risk in the decision a board or CEO makes. If I work with a company like nexxiot or with any other company, will I still be able to innovate with them in three or four years? And I believe that our partnership with Knorr-Bremse, which joined the company nexxiot

last year, was a key success factor for this decision.

? I found it remarkable that Knorr-Bremse's annual report also pointed out that there is now obviously an expansion of the future viability of the business area for this large company.

Yes. You can look at it from two sides. Knorr-Bremse undoubtedly has much more experience than any other company can possibly have. This means that they understand the rail business very well, but needed a technology partner who is perhaps faster, more unconventional and can therefore quickly digitise individual components in the rail industry. So I think we were a logical partner again after a very long selection process. And now let's look at it from our perspective.

Why does this partnership make so much sense for us? On the one hand, of course, because it allows us to expand the offering for our customers in the long term. We have been provided with a lot of capital. This is often the bottleneck factor for technology companies. Most people have to look for new financing again and again, every few years or every few months. We don't have to. So we are equipped with a large capital base and have also gained a partner who in turn exudes quality, reliability and long-termism, which is what our customers want.

? Do you also receive new topics through this partnership that you should also develop? Or will you just stick with what you've already done up until now?

In our traditional business, we have always carried out retrofitting, that is, retrofitting the current inventory, which has not changed for many years, and thereby making it smarter or more intelligent with technology. Here, for the first time, we are looking five or eight years forward in the freight sector. What needs will rail industry customers have in five or eight years? The products for this are already ►

being developed to ensure that we then move on to the next generation of products. Let's take brakes or other topics that are necessary there, keyword digital freight train. The second new topic that has been added: The technology that we have developed, namely the digitisation of goods that are difficult to digitise, whether they are entire freight wagons or individual components, can now also be transferred to other areas of Knorr-Bremse, such as Example doors, air conditioning systems. And of course our business also expands.

? This was also highlighted in the annual report.

Yes! If you follow the core messages of the new CEO Marc Llistosella of Knorr-Bremse, then at the end two companies are mentioned as major investments and strategic partners: One company is active in the truck sector, the other is us. In this respect, we are of course very honoured. But this also comes with a lot of responsibility to then provide exactly these services or these technologies.

? Then let's go to the topics you're offering today. What do you think is particularly important?

We have three business areas across the entire nexxiot company. One concerns the freight traffic on rail, then we have exactly the same for intermodal and shipping transport, and the third business area concerns the digitalisation of train systems for

Knorr-Bremse. All three areas are major growth topics, each with different challenges in the industry. Let's stay in the railway area for now. Rising energy prices – I have to be able to operate my fleets, my individual assets, economically. The keywords often mentioned are predictive maintenance or conditional based monitoring. Behind this lies the desire that in the future I no longer want to carry out revisions according to certain cycles every two, four or six years, but rather do it more intelligently because I have underlying data that supports this. Let's take, for example, a train that always traveled on the flat plain. There is probably different wear and tear than on a train that was constantly traveling in the mountains and had to brake frequently. And there are similar topics for the other business areas.

? Of course, the respective railway supervisory authorities have to play a role in changing the maintenance cycles. If we previously had certain annual deadlines from which I was not allowed to deviate, the new system would not work. What does the admission level look like?

This is exactly the big competitive disadvantage: the railways have the highest requirements, even though rail is supposed to catch up with road. That doesn't make it any easier, but we have to break that down. For example, last year we introduced a sensor, the kingpin sensor. This is intended to ensure that the moment trucks are loaded onto a pocket wagon, they are properly locked together so that ►



Credits (2): nexxiot

The economist (studied in England and the USA) Stefan Kalmund has been CEO of nexxiot since January 2020. Before that, he worked in the investment industry for 20 years, focusing on technology companies.

no accidents can happen – or, conversely, that they are unlocked the moment the crane lifts the truck. So there are many smart ways to support technology.

? These famous pocket wagons had apparently caused serious problems in Denmark with the railway administration of the Storebælt Bridge, the Great Belt Bridge, on the way from Denmark to Sweden. After an accident with a pocket wagon, they were suddenly, figuratively speaking, viewed as lepers, although the accident may simply have been caused by inadequate wind measurement. But the verdict said that the train operators and their pocket wagons were guilty. I didn't find that very convincing?

First of all, the invention of the pocket wagon is brilliant. I can load shipping containers from the entire intermodal area, and overall the modular concept – I can just put different transport modes on top. If you look at the number of new freight cars built, pocket wagons are certainly one of the areas in which the most new ones are being built at the moment. They are indispensable, they are necessary. Otherwise we would have even more trucks on the road. But we have to get them off the street, and the pocket wagon is a natural answer.

The question remains, how can I support this technologically? I can do it through technology and sensors. There are different levels of maturity. In the first stage, the regulators and the railway operators still practice together. Can I support it through technology? That doesn't yet replace people, nor is it meant to replace them, but I can at least signal whether there's a problem or not. Do I have to intervene?

The situation is similar with the automatic brake test, which is also a very central topic. The question is, do I always walk along the train manually, or can I trust the technology at some point? And also: Can the authorities trust the technology so that I can radically shorten the duration of the brake test and communicate the condition of the brakes to the train driver at any time? If we want to be competitive as a rail industry, we have to access such innovative technologies.

? And your sensors? Are they now accepted by the Danish authorities? Does this mean that the handling of rail traffic on the Great Belt Bridge is finally back to normal?

I think something like this will never be finally solved because there are simply different interests. But there are at least very intensive discussions taking place between operators, car rental companies, authorities and technology manufacturers to find out what is important and how should it be measured? What do you perhaps need to turn on or off? Something worked for a very long time. Then an accident happens, people want to react, and now a new technology has emerged from that.

? This is all understandable. But experts said before the accident, the wind was measured on the side of the bridge with the weaker wind load. As a result, there was no wind warning with speed limit for the train that had an accident. Afterwards, of course, an authority does not want to be complicated. But that's probably not just a question of wagon construction, is it?

Something like that is also strongly linked to the credibility of those involved. Take the big rail accident that happened in America in early February 2023 in East Palestine, Ohio. There was a big explosion there. Nobody wants to have to testify before the US Congress or see their own company name on the front page of the newspaper in a negative context. When you see that hundreds of millions of dollars will ultimately have to be paid in damages and clean-up work, prevention through technology would have been significantly cheaper – regardless of what it would have looked like. But sometimes all it takes is a misfortune to shake everyone up, and only then are decision-makers ready to think about things that have been impossible to change for decades.

? Then we hope that your technological solution for pocket car transport satisfies all interests and that this positive effect can also work fully in Scandinavia. Because that would have an important function. ►



Real-time signals around the world: a surveillance logger from nexxiot.

And we need Scandinavia as a very important key for many transport routes that have to work in Europe.

? Let's move on. You have a number of other important issues in the railway sector. There are different solutions from providers of monitoring systems regarding the type of equipment on freight wagons. Some providers use space satellites for data transmission, others believe that this is unsafe and that transmission could be disrupted. What is the best transfer method for you? The devices should also have batteries, but they will eventually run out... How do you solve all this?

You're already putting your finger right in the wounds. What topics are we dealing with today? Point number one: Everything I screw on a freight car has to function reliably for many years. And a combination of „how often do I send and how long can I send“ is reliable. I don't even have a chance to replace a device or recharge the battery after three years. That's why everything you fix to the wagon has to work for eight or ten years or longer. We are currently equipping a large part of the Hapag-Lloyd fleet with devices. Once the shipping containers are on their way, I no longer have a chance to add new

equipment. So reliability is a basic requirement out in the field.

The second, and this is the big hurdle for many companies: How do I finance this entire investment in my fleet? Because it is actually an infrastructure investment. If something broke on a container or freight wagon, no one would question whether it needed to be repaired or replaced. And if cars are too old, the fleet will be renewed at some point. Here, on the other hand, they are trying to get refinancing either with public money because I deal with some innovation topics, or to make the customers pay for it. And that's why initial equipment often takes significantly longer than in other industries. So far it has mainly been companies like VTG, Deutsche Bahn, SBB and now Ermewa that have understood that I first have to make a basic investment in my infrastructure in order to then be able to think about what quality standards I need I would like to vouch for my customers in the future.

! Let's hope for a heightened awareness! Thank you very much for this conversation!

The interview was conducted by Hermann Schmidtendorf.

“Trains for brains” for good rail infrastructure and reliable trains

? **CARGO FREIGHT JOURNAL:** Professor Rosiński, The name of your company indicates that transmission, i.e. gearing, through professional life is the focus of your attention?

Prof. Jarek Rosiński: Yes exactly. I started a company that actually was labeled Jarek Rosiński Dynamics. As it grew and became more and more universal with applications in various fields, I thought it would be better to separate it from my name and surname and that's where Transmission Dynamics was created. Transmission Dynamics to be precise means the dynamics of transmission systems, mainly in rotating machines, drive engines, and drive systems. There's a lot of it. It is much more difficult to analyse systems that rotate because it is not easy to install sensors. It's easy on the mechanisms from the outside, but then we don't have such good diagnostics.

? Does this mean that the level of education in Poland, in Krakow, was world-class?

Absolutely! I always said when I got involved in various scientific circles, that the education provided at that time by HGH Kraków, the Institute of Mechanics and Acoustics was a part of it, was truly world-class. I don't want to go into details here, but probably part of this privilege was that the university had a surprising amount of financial support at that time, which was very difficult to obtain in those days, because it was the 1970s and 1980s. Now all that has changed, of course. But the second element is that the university had really outstanding scientists.

? Currently, your company does not only deal with gears. It is generally about digitisation. What exactly do you offer?

In fact, it is no longer just about the dynamics of drive systems. We entered into various topics. The dynamics of propulsion systems is still important because our company provides instrumentation for submarine propulsion systems for the Royal Navy. But there are plenty of these applications. For the railway industry our offer is called “Trains with Brains”.

? Are you bringing a brain onto the train?

Yes, brains on the train. If we look at this camera we designed, it has hearing. It has built-in microphones, it has a camera, it has lighting, it has acceleration ►

Professor Jarek Rosiński started his scientific career in Krakow as a lecturer in machine dynamics at the Institute of Mechanics and Video Acoustics. Then he went to England to work at the University of Newcastle's National Gear Technology Centre. For the last 17 years he has been the CEO of his own company Transmission Dynamics.

sensors, it has gyroscopic sensors, and it has vision, of course. So it has full communication with the external cloud, cloud based services.

? Is this the brain?

This is the brain. We do amazing things with this camera. It is the centre of the brain. This camera communicates with the oil plugs that sit underneath the train and have wireless communication with the camera. They detect magnetic filings, measure the temperature, measure the sensor, there are acceleration sensors and full analysis is already done on the sensor before we transfer this data to the cloud.

These are also sensors that we call smart bugs and they have exactly the same parameters, i.e. they measure acceleration and temperature. And they are very easily glued to various types of construction elements, in this case Axel Boxes. So that is lightning-fast deployment there. We have an extremely small mass here. This is what we put on the bearing housings. If they are on the housings of plain bearings, wheels, wheel sets, then we immediately have transmission diagnostics and bearing diagnostics. We detect bearings that are hot. If there was a problem before the emergency situation, it already indicates that the parameters deviate from normal. And there is a transmitter inside that also communicates with our camera.

? So from this it goes to the brain and from the brain to the cloud?

Exactly. These are incredibly interesting applications because the weight of these devices is smaller, much lighter than usually.

? Is this device stable against various negative influences such as stones and frost?

There is a possibility that such a system will be hit by a stone somewhere, it happens. But then we will know that it needs to be replaced because it disappears from the systems that provide information. If we find that the system was reporting all the time and suddenly stopped, then we know that this smart

bug needs to be replaced. These are extremely low-cost devices. So far, we have been lucky enough that even though hundreds of them are already installed, we have not lost a single one. This shows that the miniature size of this device actually makes a lot of sense. Because if we had a device several times larger, the possibility that this device was destroyed by thrown up ballast is much more difficult to resolve. When all this decreases, we immediately have a much better situation, because we automatically protect ourselves against crushed stone.

? You have serious companies among your clients, such as Angel Trans. This means a higher level of trust. This must be the case if you convince a company that operates in various European countries that such devices are installed there. What arguments do you use to convince in this case?

The arguments are very simple. You have to say what you will deliver and always really deliver it. If we do this on a small level and then on a larger level, then we start to be treated as a serious partner. And we managed to establish an incredibly good cooperation with Angel Trains. In fact, the camera we are discussing was created thanks to Angel Trains, because they trusted our design skills so much that they invested in the development of this camera from the very beginning with a high risk, because you never know whether the company will develop it. But the sophistication of this camera is truly amazing, from the design of the camera itself, to all the wireless communication, cloud communication, and many other things that are built into it.

? The camera then hangs on the roof of the train?

On the roof, yes. The fun is that we have this plate on the roof of the train. The camera is filming. If there is snow, we have windshield wipers installed. This is an incredibly important element, because it is not only a wiper, but also has a scratching element, which is used not only to scrape off snow or clean water from somewhere, but mainly to cut a thin layer of dust such as carbon, a net element. And we have an incredible number of cases of birds hitting the pantograph. ►



So this is something that we also film and catch these incidents. Although that cannot be treated by Network Rail as something that Network Rail can do something about, the information that it has been hit hard by a large bird helps them to immediately diagnose whether the pantograph was damaged. The diagnostics of this system are truly amazing.

? I know that in marketing people like to give numbers, like 10 percent savings on costs or something like that. Can something like this be defined with some seriousness or is it difficult?

You can now, definitely. We have repeatedly detected very serious faults on the British railway network, which has saved the network operator Network Rail over one and a half million pounds. You can also translate and scale it. This is a serious business case.

? It's actually nice to hear that. So your devices are basically very necessary. Do you think you will continue to expand? Because it sounds like it would be beneficial to everyone in this industry.

It is. In fact, we already have several dozen of these installations in the United Kingdom. We clearly have a vision that many more of them will be introduced. And this is only Great Britain. We already have the first installation in Austria, so this is also a system used by one of the larger railway companies. We have an installation in Australia; we have an installation in Canada, in Belgium. So it all begins to expand and spread in larger circles.

? A question in relation to the cloud. Who collects and processes this data? Without staff or artificial intelligence, it is difficult to draw appropriate conclusions. Someone has to do it.

And this is what our company also does. We have a company that employs not only electronics and mechanics, but also data analyst people, who process data, including experts in machine learning and artificial intelligence, are working to ensure that this part of diagnostics and prognostics is completely handled by automatic systems. And this is the ultimate element that makes this system so powerful

and we do everything inside the company.

? And do you provide data automatically to customers?

The essence. The video is communicated, the conclusions are communicated, the location is communicated with information on how it could be dangerous to the railway lines.

? And if your system thinks that it should act immediately, is there an alert, a siren sound at the customer headquarters or something similar?

If there is a situation in which we need to inform our customers very quickly, we send e-mails and text messages at the same time to many employees who are responsible. Mobile phones are also ringing, people are receiving e-mails and it is in their interest to act quickly. The good thing about this is that we have a gentleman representing the British railways, Network Rail, who simply responds to our alarms within an hour to 3 hours maximum, when, for example, we detect some more serious faults. Within 3 hours the line is closed and repaired. And this process is now going in such circles that at the beginning it was a worry, because at the beginning there were quite a lot of these alarms, but later, when the line is repaired, they become less and less. And the comfort that the line is quickly brought to a state where you can breathe is so great that these systems are simply used and in large numbers.

? This means that you also have a system that targets infrastructure, not just locomotives.

That's exactly how it is. This is infrastructure monitoring. This camera films at 60 frames per second. Between each frame we have these few milliseconds in which complex calculations are performed. Several machine learning models are used to detect faults that we already know and recognise. And this is recommended to Network Rail in literally one minute, with a video showing the location and a detailed photo of the problem we are detecting. This is such advanced technology. ▶

? Is the owner of the locomotive interested in this? Because he can say: what do we care about the route? We pay for using the railway route, so let them monitor it themselves?

Yes. This is a little more advanced. This is a very difficult topic, especially in the relatively fragmented railway structure in Great Britain. At the beginning it was difficult to introduce these systems because of this problem. Who will be responsible for this? Who will benefit from this?

? I remember that the operators were supposed to pay fines for not running trains or delays, but the cause of the events was the poor condition of the infrastructure. Therefore, the operators had financial problems, so everyone lost. But despite this, convincing the owner or operator to cooperate requires some effort?

Yes, but it is happening. Angel Trains, who own the trains, have such a great working relationship developed with Network Rail that this is the first time they have simply combined their efforts. And both companies, the owner of the infrastructure and

the owner of the trains, cooperate closely. This is, of course, in the interest of both companies. And it's happening.

? Because if the rolling stock is not in use, the lesser has to pay a penalty and everyone loses?

Because later repairing the infrastructure and improving it causes such a thing that there is no penalty and it is simply much better. A better system both for the infrastructure and for train owners who do not have problems with notorious pantograph damages, for example.

? But there is still always supervision over the technical condition of the rolling stock itself?

This is an independent matter and remains.

! Thank you very much for the information and I wish you much success!

The interview was conducted by Hermann Schmidendorf.

"Trains with brains": In the middle is the camera with windshield wipers, next to it are the tiny "smart bugs."



PJM: Testing, measuring and monitoring in rail freight transport from a single source

CARGO FREIGHT JOURNAL: Mr. Petschnig: Your company is called PJ Monitoring. What are you monitoring?

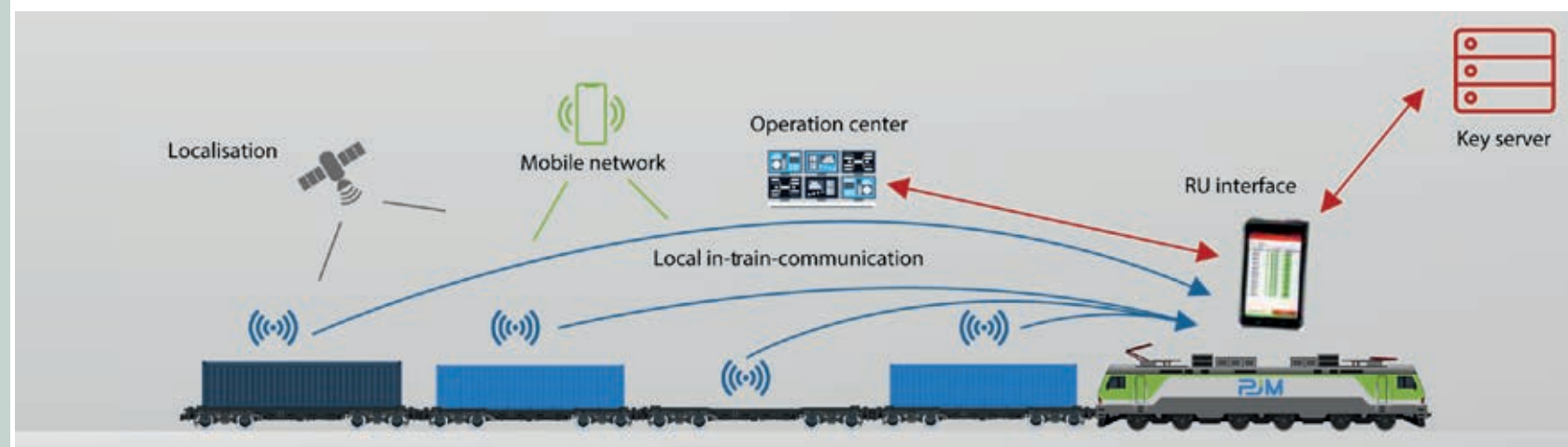
Günter Petschnig: Our product in freight transport, WaggonTracker, is a complete system solution in which it is possible to integrate monitoring and automation in one system. The strength of our system lies in the self-sufficient power supply using an axle generator, so that we have enough energy to be able to carry out our tasks. In the monitor area, we are currently very focused on the topic of load weight monitoring, support frame monitoring, brake monitoring, and derailment diagnosis. In the area of automation, we are market leaders with automatic brake testing.

We see demand in this area increasing sharply. The realisation that the introduction of the digital automatic clutch DAC is still some way away means that customers are already focusing on digitalisation and are therefore also very relevant. This year, together with SBB Cargo, we were able to submit the overall system approval after seven years of development. In the monitoring area, in the loading weight area, the topic of correct loading, preventing overloading and the associated increase in efficiency is an important topic that our customers value more and more and use more and more. A completely new topic is monitoring the brake system while driving, that is, we monitor the correct functionality of the cylinder pressure depending on the remaining pressure, we monitor the braking energy, how much energy is generated, which is an indicator of the wear of

The graduate engineer in mechanical engineering (TU Graz) Günter Petschnig (left in the picture) has been Managing Shareholder/CEO of PJ Messtechnik GmbH/PJ Monitoring GmbH since 2006. In an interview with the CFJ editor-in-chief, he explains the latest digital developments solutions for rail freight transport.



Credits: Hermann Schmidendorf



The overall system from PJM offers maximum availability and an encrypted, secured connection using in-train communication.

Graphics: PJM

the brake system. How much energy is generated per unit of time is an indication of utilisation levels and overload.

We look at the release times. And in combination with our in-train communication we want to make it possible in the future for the train driver to have an assistance system on the wagon so that if he wants to drive away on signal, he can then check again whether the brakes are released. In-train communication is also very important for us in order to be able to diagnose derailments, which we are currently testing in operation with our Italian customers. In general, in-train communication is an important factor in transporting all train-relevant data that the system provides.

CARGO FREIGHT JOURNAL: It used to be said that Italian railway authorities were generally sceptical about railway technology from abroad. What are your experiences?

We experience it differently. For us, it is our Italian customers who really drive innovation a lot. We have a very strong position there and we also particularly implement the use cases that you have. With Mercitalia Intermodal we have a very strong partner in intermodal transport, which means we are very focused on the topic of intermodal, and we use exactly the technologies mentioned in their current equipment, i.e. automatic brake testing, i.e. brake monitoring. The Italian partners want to know how the brake works. They want to see that there is no problem. They want to detect this preventively,

they want to see whether the brakes are overloaded, because the trains simply have to be able to move. The aim of monitoring is to see damage preventively and then to avert it.

I also see this with the support frame monitoring, where I also get feedback from our customer. Every time there is an incorrect operation, the customer receives an email notification via our system that someone has made a mistake. This will be forwarded to the terminal. And then the staff is trained and made aware of what needs to be paid particular attention to. Since the system has been in use there, errors in treatment have decreased and damage has been reduced accordingly. So we really see the connection between the Wagen Station and improving the availability of the system.

CARGO FREIGHT JOURNAL: This is of course great. So can you say that many of these tasks that you are now working on were brought to you by customers?

Our core customer is the railway company that runs operations. We analyse together with our customers where they have problems, how much these problems cost, and where the system can be improved with a technical measure, an operational measure. This means that all of our use cases are very focused on the customer and the loader, and we only enter the race with use cases that also have a post benefit.

CARGO FREIGHT JOURNAL: And what about the approval relevance? Do you have to involve state authorities?



Credits: Hermann Schmidendorf

The results of an automatic brake test can be read for the entire train in just a few minutes on a handheld.

Approval is of course a key issue, especially when it comes to automation. As I said, we developed the brake test with SBB Cargo the last seven years, are now undergoing final approval at the Federal Office of Transport in Switzerland. But we are also in contact with the European Railway Agency ERA, which really supports ensuring that freight transport continues. And we can then use an analogue procedure, as it is called there, to establish the system in such a way that every transport company across Europe is allowed to use the brake test, for example, in the way that their home country can use it.

? Because this is a solution for Europe that is important for the rail system?

Yes. The alternative would be to obtain national approval in 27 member states. That would be the death of any solution.

? You are also a testing and testing company. You have other departments, perhaps a few words about these tasks. Do you also do noise

measurements and the like?

Gladly. The second part of our company is PJ Mess-technik. We are an accredited testing centre for rail vehicles. We are active worldwide with the leading manufacturers of rail vehicles such as Siemens, Stadler, Bombardier, Alstom, with all relevant manufacturers, and we are very focused on measuring in the field, in operational use, in the area of operational stability, running technical tests, and brake tests. We also have our own measuring wheel set technology. If anyone needs a measuring wheel set, they have come to the right place. We are currently tackling the issue of power collectors so that we can finally include them in our portfolio. So, our goal as a testing centre is that we can provide overall approval as a company. We have a good partnership with others, for example with the ÖBB measurement group, with whom we work very closely. We are now very established there and are proud of what we do there.

? Due to ever-increasing requirements, testing is of course becoming more and more financially intensive in order to maintain the necessary equipment. I spoke to a testing institute in Poland that carried out fire protection tests years ago. The institute then gave up this area because they lacked the capital for the latest equipment and necessary spatial changes. You then have to have enough customers to amortise it.

It is indeed important to have customers in order to be able to offer your service, your portfolio. As a testing centre, we probably have well over 100 standards that we test, and measurements in these sectors have to take place every one or two years in order to be able to maintain this. It gets more complicated. The entire approval process is certainly more complicated. You have to get it done at the end of the day. If you didn't have the capacity, you would have to stop it. But we want to expand, we want to get bigger and stronger.

We also have a NoBo-DeBo position in-house with whom we work very well. And we are now also on the way to establishing ourselves in the consult- ►

ing sector, so that we can offer a complete package for the customer. Our testing centre is also incorporated into our freight transport products because we are trying to develop the system in such a way that the testing centre essentially travels with the freight wagon at all times. This is the big advantage for us, that we have an understanding of what the normative landscape looks like and what the requirements for wagons are. What is the expectation? This of course helps us in product development, and that is also one of our advantages.

? And you can certainly extend the life cycle of such a vehicle significantly through a good inspection?

Yes, we can definitely recognise the damage, we can try to ward off the damage with our systems, and the customer can then rely on real-time data as

part of maintenance and of course plan, optimise, stretch their maintenance process better everything possible. These are parts of the monitoring area to determine what can be improved. Away from time-based maintenance towards real-time recording to easily optimise and better plan maintenance. Planning is very important because I want the car somewhere near a workshop and don't want to be suddenly surprised at an inopportune time that the car is broken.

! Thank you very much, that was a very interesting conversation! I wish you much success with your future work!

I also say thank you and look forward to next time!

The interview was conducted by Hermann Schmidendorf.



Make aviation more climate-friendly with SAF

? **CARGO FREIGHT JOURNAL:** Ms Menge, I was electrified when I received a press release from you and your European Parliament colleague Anna Deparnay-Grunenberg (Greens/EFA), in which something good was reported about the airline industry from a green pen. Because of the harmful exhaust gases, you usually hear critical comments about flying from Greens. What made you so pleased that your colleague even calls it a “big hit”?

Susanne Menge: Whether in shipping, aviation or on trains and on the road, if improvements can be achieved towards climate-friendly transport, this is of course to be viewed positively. That’s why we also rate it positively that there has been a breakthrough in aviation and that the EU has achieved a legal obligation to refuel in a more climate-friendly way. Of course, the member states then have to adhere to

this obligation, and this is indeed a groundbreaking development for climate protection.

The annually increasing proportion of Sustainable Aviation Fuels (SAF) added to the fuel also minimises the non-CO2 effects, the so-called contrail cirri. Contrails are formed from water vapor combined with the soot particles emitted by aircraft. After a short time, ice crystals form them. These contrails can later develop into cirrus clouds. They cause warming radiative forcing, another element of climate warming. This effect is also significantly reduced by adding SAF. So it’s great that this is now possible. Of course, we are not overly pleased about the low proportion of admixtures, which are expected to gradually increase from 2 percent to 70 percent by 2050. But this is finally an important step. ▶



The student councilor (Carl von Ossietzky University of Oldenburg) Susanne Menge has been a member of the German Bundestag for Alliance 90/The Greens since 2021 and is, among other things, a member of the Transport Committee. Before that, she was a member of the Lower Saxony state parliament for the 17th and 18th electoral periods.

AIR TRANSPORT

And that promotes above all the production of e-fuels. Now we have to take advantage of the opportunities on the German market to be pioneers. We have to do everything we can to ensure that production takes place here and that we achieve technological leadership so that others don’t take it from us.

? I was at an alternative fuels conference a few months ago. The representative of an airline said that so far only 0.3 percent of the demand would be produced if conventional kerosene were to be completely replaced by such alternative fuels. Even an addition of 10 percent would not work at the moment. Which refineries and which manufacturers are now being considered? Has there already been feedback from which you conclude: With this determination, we know that we will sell this, so we will now produce more?

This regulation will apply from 2025. There is therefore time to answer exactly this question. However, I very much hope that we don’t make the same mistake we made in the era of combustion engines that we only rely on global players who process oil. We should now approach it with a different standard, i.e. also take social and ecological factors into account in order to be at the forefront of production or be a leader.

? The Austrian partly state-owned chemical and energy group OMV wants to be heavily involved in this area. Maybe it would make sense across Europe to look there too and motivate people to get involved?

There are many who come to our office and say that they are on it, they are doing something, they want to implement something. In fact, building these systems is so expensive that the question has to ▶

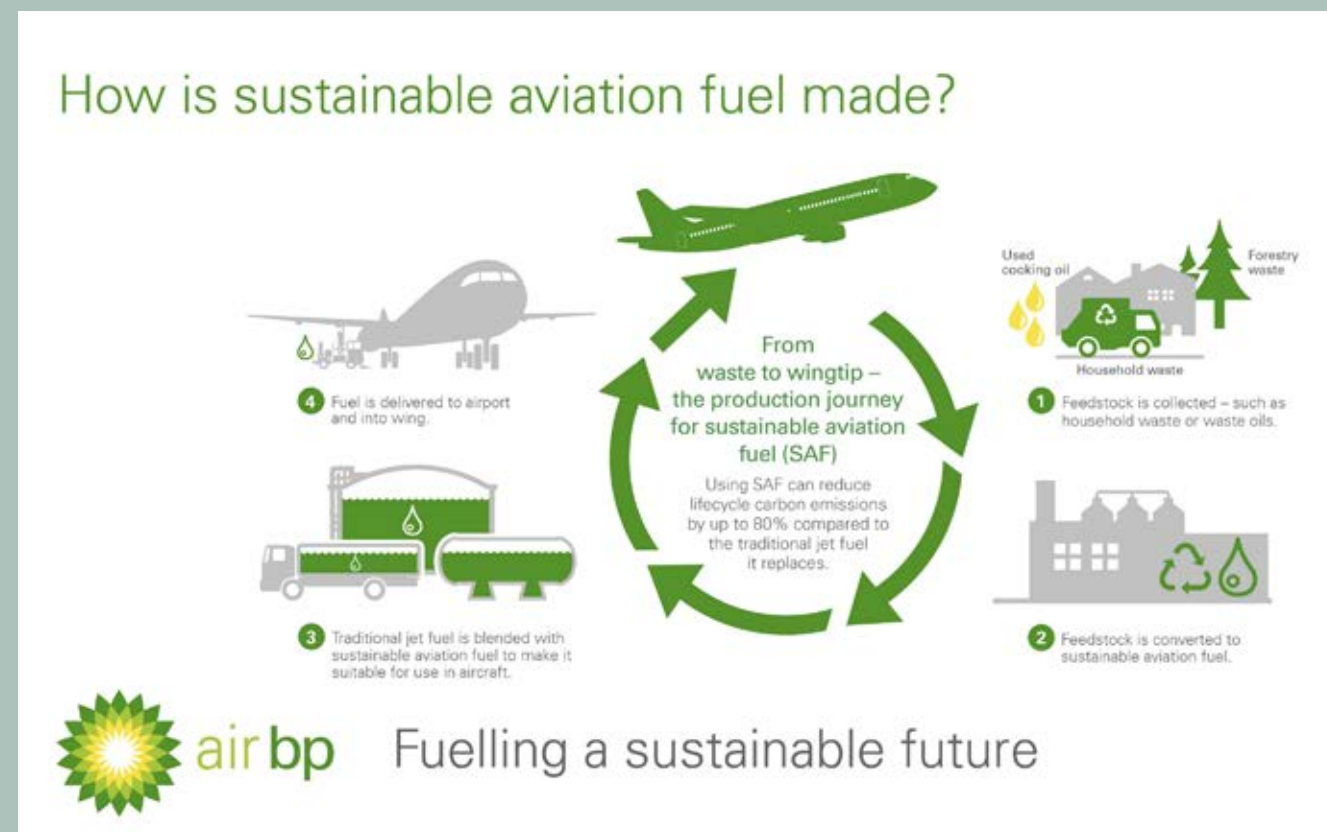
THE DECISION OF THE EU TRANSPORT COMMITTEE IN DETAIL

- 90 percent of all kerosene refueled at EU airports must contain gradually increasing quotas of Sustainable Aviation Fuels (SAF) from 2025. Proof of this must be provided. This is intended to prevent airlines from refueling outside the EU.
- Sustainable Aviation Fuels (SAF) are, on the one hand, biologically based fuels, i.e. made from biological residues and waste materials from agriculture and forestry, algae and organic waste. On the other hand, so-called e-fuels or hydrogen also count as SAF, i.e. synthetic fuels on a non-biological basis.

The proposed new law provides for a sub-quota for them: from 1.2 percentage points in 2030, the quota increases to up to 35 percentage points in 2050.

from 2025:	At least two percent SAF
from 2030:	At least six percent SAF
2030 to 2031:	including 1.2 percent synthetic fuels (e-kerosene)
2032 to 2034:	including 2 percent synthetic fuels (e-kerosene)
from 2035:	at least 20 percent SAF including 5 percent synthetic fuels (e-kerosene)
from 2040:	at least 34 percent SAF including 10 percent synthetic fuels (e-kerosene)
from 2045:	at least 42 percent SAF including 15 percent synthetic fuels (e-kerosene)
from 2050:	at least 70 percent SAF including 35 percent synthetic fuels (e-kerosene)

Anna Deparnay-Grunenberg, MEP, and Susanne Menge, MP



be: How can we make this happen? Can we achieve this, for example, in a public-private partnership solution? There is no decision on this yet. We have to clarify that now. This is the next important step so that we can implement this and so that we maintain our technological pioneering role, especially when it comes to e-fuels. There is a need for us to have green electricity and a need for us to also be able to provide the other raw materials. This will not be possible without cooperation with foreign countries or with EU member states.

Maybe the debate about climate protection and e-fuels is finally one that makes more cooperation instead of competition and more cooperative cooperation possible in this area, instead of just saying we want to be the first. Now I've just argued this myself, but it's really about the know-how in research and science, about this facility. We are also talking about a pilot plant to realise this. But that has nothing to do with the fact that a nation state like Germany could completely exclude itself when it comes to international

cooperation and cooperation. I believe that offers a chance, and we depend on it.

? Also from our point of view, it is a great thing that there is now such a decision across Europe. This also concerns an issue that has been raised frequently by the Greens, namely the lack of taxation on aviation fuel. Energy in land transport is taxed, but not kerosene. It was always said that we couldn't introduce a kerosene tax nationally because then our airlines would fall behind compared to other European airlines. And no taxation could be enforced across Europe. So now there is an EU-wide solution for the addition of SAF. What will it look like if a non-EU airline comes into the EU area? Will it be forbidden to fly through our country in transit without the admixture in the tank? Does this then also have to participate in the desired relief effect for the environment?

It is obliged to comply with and support these quotas. The good thing about this regulation is that the airlines you just asked about have been given ►

the same consideration, and that is anchored in this regulation. This type of possible negative behavior should be avoided.

? Then we can only congratulate our European politicians for getting it done! But kerosene taxation probably still has no chance?

You know our position, it's different. But we should not get caught up in this coalition in areas that are necessary but unfortunately cannot be enforced in this coalition. I would like to leave it at that.

? There is also the option of using e-fuels or environmentally friendly hydrotreated vegetable oils (HVO) on the road. Also diesel rail vehicles could run with HVO as a bridge solution until new vehicles all run on batteries or hydrogen on non-electrified routes. A formal approval of e-fuels as a fuel on the road still needs to be decided. But Deutsche Bahn already partially uses HVO as a diesel replacement. What do you think of it?

The situation for aviation and also for shipping, which we can take into account, is such that they have no alternative to e-fuels and SAF if they want to protect the climate. This means that you have to look at the market and see who will give the rare commodity of these alternative fuels to so that we can achieve our climate goals. Aviation and shipping have no alternative to using a climate-friendly, I expressly do not say climate-neutral, climate-friendly fuel. However, cars and buses have an alternative, as do trains and buses with overhead lines and electrified routes. And that's why we have to bring this rare commodity, e-fuels, to places where this alternative doesn't exist. I assume that the industry sees it the same way. Both the CEO of Lufthansa and automobile manufacturers say this. This argument that cars should be filled with e-fuels because we don't have enough electrically powered vehicles and because there are still vehicles with combustion engines only works when there is enough green electricity and e-fuel available.

? And there are corresponding refueling systems, which would then become obsolete

again if there were no longer any combustion engines?

Exactly. The point of this discussion is whether the automotive industry will accept this and continue to produce combustion engines relying on e-fuels, even if we have set limits at the EU level and said that there should be no more new vehicles Combustion engine from a certain date? But I think the industry understands it. In the conversations we have here, it is always very clear that the industry is much further ahead than some political discussions.

? And those shunting locomotives that run on factory or company premises where there are no overhead lines? DB Cargo wants to use HVO as a replacement fuel as long as these diesel locomotives are still available.

This is where advanced biofuels make sense. As I said, this is now the effort that those who ramp up this production have to sort out. Then you have to see who offers it and in what quantity. However, it must be regulated that those who have no alternative are delivered first. For the other areas of application that still use diesel, you have to think about how much longer will this last? How long does this diesel locomotive still have to be fed? Of course I know this discussion, that this is a classic model and that it is difficult for many people to bear that there will be no more diesel locomotives. But we are in a different age. We have to make sure we get these smoking, smelly parts out of circulation.

? But we can convert the noise of a diesel engine as an aggregate into a battery powered locomotive?

Exactly! The automotive industry is already doing this.

! Thank you very much, Ms. Menge, for this interesting conversation!

The interview was conducted by Hermann Schmidendorf.



The hydrogen locomotive at INNOTRANS in Berlin 2022.

Credits Hermann Schmidtendorf

Hydrogen strategy in Poland:

PESA’S HYDROGEN SHUNTER NOW RUNS FOR ORLEN

The partially state-owned Polish energy company ORLEN is working on the implementation of its HYDROGEN EAGLE investment program. An international network of ten hydrogen hubs is to be operated using renewable energy sources. As part of this, over 100 filling stations are to be built for private, public and freight transport. The company wants to invest 1.67 billion euros by 2030. The program covers Poland, the Czech Republic and Slovakia. Through its implementation, the Orlen Group aims to achieve a hydrogen production capacity of approximately 50,000 tons per year by 2030.

Three hydrogen hubs are to be built in Poland,

two in the Czech Republic and one in Slovakia, which will be powered by renewable energy sources. This includes the implementation of an electrolysis plant that is supplied with electricity from the Baltic Power offshore wind farm. The total capacity of the electrolysis plants powered by renewable energy sources should be around 250 MW. The program also includes three innovative plants for processing municipal waste into zero- and low-emission hydrogen in Płock, Ostrołęka and the Czech Republic. By 2025, a laboratory for testing and research in the areas of quality, cleaning, storage and transportation, and hydrogen production will be established at the ►

Plock Research and Development Center.

The hydrogen locomotive from the Polish manufacturer PESA (Bydgoszcz) of the SM42-6Dn class plays an important role in this concept. This was based on the SM 42 class locomotive, which is very popular in Poland for shunting work and short-distance services. 1,156 units of these locomotives were built between 1964 and 1999, and 700 units were delivered to the industry. 268 examples were also produced for use in passenger transport. There had been several modernisation projects for this locomotive in Poland in the past. But mostly more modern diesel engines were installed. Now, for the first time, PESA has created a completely modernised locomotive with a new optical design and very extensive equipment. These include driving autonomy, remote control, additional work lighting, regular and thermal monitoring, a kitchenette and air conditioning.

Above all, it is the first hydrogen-powered locomotive in Poland. It was formally approved for rail operations by the Warsaw Railway Authority UTK in mid-June 2023. “This case was unique because neither European nor national regulations specify requirements for hydrogen propulsion in a rail vehicle.

So it was a very interesting experience for UTK. I hope that there will be more and more hydrogen-powered rail vehicles, because this has made the railway more environmentally friendly,” explained the President of the UTK Dr.-Ing. Ignacy Góra according to a PESA statement.

PESA presented its new locomotive for the first time in 2021 at the TRAKO railway trade fair in Gdańsk. Afterwards, extensive testing and improvements took place. The locomotive received a refueling module supplied by Orlen, ensuring a problem-free connection between the locomotive

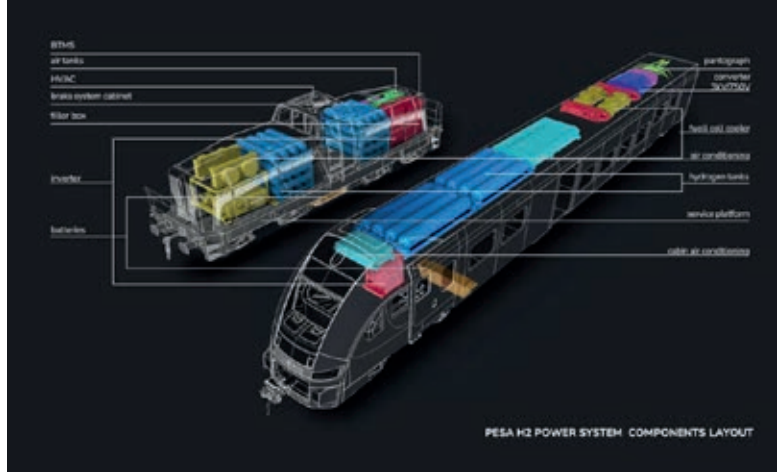
THE PESA HYDROGEN LOCOMOTIVE IN FACTS

Built on the frame of a diesel locomotive of class	SM42
Name of the new locomotive class	SM42-6Dn
Manufacturer of the original locomotive	Fablok, Chrzanów (Typ 6D)
Axle arrangement	Bo’Bo’
Traction engines asynchronous	4 x 180 kW
LTO battery capacity	167 kWh
Hydrogene tanks pressure	350 MPa
Capacity type III	175 kg H2
Refueling speed – time up to 120 g/s	max. 30 min.
Two hydrogene cells manufacturer	Ballard
Performance of one cell	85 kW
Operating weight	approx. 70 t
v/max	90 km/h
Tractive power	approx. 3.200 t
Hydrogene consumption	0,08 kg/kWh

and the Orlen gas stations. The locomotive was exhibited at the INNOTRANS trade fair in Berlin in 2022 and now again at the TRAKO in Poland in 2023. The hydrogen locomotive has now been formally purchased by Orlen. Orlen President Daniel Obajtek explained the importance of this step: "Through this investment, we will gain the necessary competencies to create a comprehensive offer for supplying the railway market with hydrogen fuel. Our activities truly contribute to the transformation of Polish railways through the use of cutting-edge technologies. At the same time, we are investing in the development of emission-free public transport by building more publicly accessible hydrogen filling stations in Poland and abroad."

PESA President Krzysztof Zdziarski commented: "Now it's time to test the usability, but we can only check that with the customer. We will be able to make any corrections and improvements in later copies because I am confident that we will sell them. We are grateful that Orlen purchased our locomotive and is helping us further develop our hydrogen project." The experience gained during the development of the SM42-6Dn will be used in another hydrogen project. To this end, PESA is developing hydrogen and electric multiple units (HEMU) based on its Regio160 platform. The overhead line is intended to feed the train's electric drive. The hydrogen drive is intended to be used on non-electrified lines.

According to PESA, several regions have already expressed interest in such a train. There are also said to be



several other interested parties for shunting and short-haul locomotives from the SM42-6Dn class. No wonder there was an enthusiastic atmosphere at the PESA stand at TRAKO in September. "We will show tomorrow that our locomotive runs really well," PESA Communications Director Maciej Grześkowiak told CARGO FREIGHT JOURNAL. "We are traveling to the Hela peninsula with passenger cars behind the locomotive!"

The railway line between Gdańsk and Hela is around 95 kilometers. But due to the poor condition of the route, such a train journey takes around two and a half hours. This is probably also a key reason why in Poland, traction vehicles with hydrogen instead of batteries are seen as a replacement for diesel traction. The railway lines in Poland without electric overhead lines are often simply too long for battery operation.

And indeed: the special trip of the hydrogen locomotive on September 17, 2023 went smoothly and calmly. The locomotive traveled at a speed of 90 km/h – with significantly faster acceleration than a conventional diesel locomotive. And, of course, the journey took place without emitting any harmful fumes. PESA CEO Zdziarski commented happily: "The battery lasts a long time and the hydrogen consumption is lower than expected. So we are happy with how the official debut with passengers looked."

An unspectacular process – refueling the PESA locomotive with hydrogen, here on the Polish test site in Żmigród.



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The 5th DEKRA Future Congress

CLIMATE-FRIENDLY,
CONNECTED AND SAFE

The 5th DEKRA Future Congress for Commercial Vehicles discussed the road freight transport of tomorrow.

Commercial vehicle technology, digitalisation and the last mile – these three thematic pillars were at the center of the **5th DEKRA Commercial Vehicles Future Congress on October 30th and 31st, 2023 in Berlin**. Experts and practitioners from politics, industry, research and the transport sector debated the potential of innovative technologies relating to the commercial vehicle of tomorrow. The Future Congress takes place every two years, the next edition is planned for autumn 2025.

“Future-proof freight transport remains essential for our economies and for society as a whole,” explained the **managing director of DEKRA Automobil GmbH Jann Fehlauer** at the start. Once again, the event underlines its position as a central platform for the entire transport and logistics industry: “In view of the transformation of road freight transport, it is par-

ticularly important now that everyone involved sets the right course together.”

The focus of the lectures and panel discussions were topics such as automated driving as a contribution to reducing the number of traffic accident victims, the potential of alternative drives for climate protection in freight transport, digital solutions for everyday logistics and load securing, strategies and concepts for more sustainability on the “Last Mile”, cyber security in the office and in the vehicle or artificial intelligence in the transport sector.

Freight traffic on the road will increase significantly again by 2050, it is said. This means that the challenges for commercial vehicle manufacturers and their suppliers, for the transport and logistics industry as well as for politics and science continue to increase. **Hartmut Höppner, State Secretary in the German Federal Ministry for Digital Affairs and Transport**, recalled the Federal Government’s Climate Protection Act. According to this, greenhouse gas emissions must be reduced by 65 percent by ►

Continuation on page 54.



“Freight transport is important!” DEKRA Automobil Managing Director Jann Fehlauer at the future congress.

Credits DEKRA

New rules for trucks

TRAILER TIRE PRESSURE:
MEET THE LAW AND
SAVE MONEY

Since July 2022, there has been no new type approval for truck trailers without a tire pressure monitoring system. From July 2024, this will also apply to new trailer registrations. This is determined by the legal amendment to the UN ECE R 141 regulation, a set of rules from the United Nations Economic Commission for Europe. It applies not only in the EU, but also in Great Britain, Turkey and all Eastern European countries, among others.

If a pressure loss of more than 20 percent or a system malfunction occurs, the driver must receive a warning within ten minutes. With tire pressure control systems, a pressure deviation of five percent must be automatically compensated for within ten minutes. The warning signal must be transmitted to the driver’s cab via cable or wirelessly. Correct tire pressure is intended to improve the climate efficiency and driving safety of a trailer.

In order to comply with the new rules, there are now a number of providers of corresponding devices. But there are also devices that not only send signals to the driver, but can do more. Caren Freudenberg, product manager at BPW in Wiehl, points this out: “It’s good to detect a pressure loss on the go – but it is better if it’s regulated automatically. This is a gain in uptime that really pays off. We therefore recommend that all vehicle operators order their trailers now with the AirSave tire pressure control system.”

The manufacturer praises the reliability and long-term quality of its product – and its financial savings



A small tube between the wheel hub and tire shows that this vehicle always runs with optimal tire pressure thanks to the AirSave system.

Credits BPW Bergische Achsen

potential. For a three-axle vehicle with a mileage of 120,000 kilometres per year and an average pressure deviation of ten percent, AirSave brings a cost advantage of more than 800 euros simply through fuel savings (around 250 litres) and the longer service life of the tires. And this applies year after year and for every single trailer. Given the high fuel prices, this is certainly an interesting argument.

The German Federal Office for Logistics and Mobility has been launching the De-mininis program for several years. It provides financial support for road haulage companies with heavy commercial vehicles that implement measures to promote safety and the environment. As part of this funding program, AirSave also supports up to 80 percent of the purchase price, but a maximum of 2,000 euros per vehicle or 33,000 euros per fleet.

b/hfs



2030 compared to 1990.

Electric trucks perform better

Martin Schmied, head of Department I at the **German Federal Environment Agency**, presented a new study by the Federal Environment Agency. It is important to also take into account the emissions that arise during production – right through to recycling. But it is also important how green the electricity the vehicles use is. An electric truck uses the most raw materials in production. However, if you take greenhouse gas emissions into account, electric trucks perform better over their service life than trucks with hydrogen or diesel engines. E-mobility therefore brings a clear climate advantage. Synthetic fuels also help. However, they remain scarce and consume four to six times as much energy. That's why they should primarily serve air and shipping traffic.

Plea for technological openness

Thomas Fabian, commercial vehicle director of the **European vehicle manufacturers association ACEA**, called for a much faster development of a comprehensive Europe-wide charging infrastructure instead of focusing on new regulatory regulations such as the Euro 7 emissions standard. Numerous

presentations confirmed that gas drives, alternative fuels and hydrogen propulsion should also be considered. Suppliers from the electrification, automation and digitalization of commercial vehicles are also making their contribution.

Regarding the safety of commercial vehicles, DEKRA Managing Director Jann Fehlauer emphasised that driver assistance systems such as lane departure warning or emergency braking assistant could save lives. What is crucial is that they are as widespread as possible in the fleet. They should make the most of what is technically possible, cannot be manipulated and should function permanently. Extensive testing of such systems takes place, among other places, at the **DEKRA Technology Center in Klettwitz**, Brandenburg, explained Uwe Burckhardt, head of testing and events at the DEKRA Lausitzring.

DEKRA experts guarantee security

DEKRA was founded in 1925. First of all, it should ensure road safety through vehicle testing. Today, DEKRA is the world's largest independent, non-listed expert organisation with a much broader range of activities in the areas of safety and sustainability. In 2022, DEKRA achieved sales of almost 3.8 billion euros. Almost 49,000 employees work in around 60 ►

countries on five continents to provide qualified and independent expert services. In recent years, DEKRA has created Europe's largest independent test site for automated and connected driving on a total area of around 550 hectares at the Lausitzring.

The most recent milestone was the inauguration of special city courses at the end of June 2023 in order to test automated driving functions in an urban environment as realistically as possible. "With the help of this ultra-modern technology, we can put vehicles in almost any complex situation in order to subject their automated driving functions to the maximum test challenge," explained Uwe Burckhardt. In so-called swarm tests, up to twelve moving objects can be used in the vicinity of the test vehicle. Such objects can represent a wide variety of other vehicles as well as pedestrians and can be controlled with centimetre precision. According to the DEKRA expert, this means that the same test sequences can be reproduced again and again, so that systems and functions can be tested under the same conditions. This also applies to the reaction of an emergency braking assistant to the end of a traffic jam or a pedestrian suddenly crossing the street, as well as the behaviour of a turning assistant to a cyclist in the blind spot.

The focus was on questions such as: Which new

services increase the efficiency of tachographs? How can artificial intelligence optimise route planning in commercial vehicle fleets? How can load securing be improved by digitalising individual processes? What is the status of the refueling and charging infrastructure for the last mile? Last but not least, the topic of cyber security was omnipresent in Berlin. The desired increase in efficiency can only really be achieved if the data is secure and protected from attacks. The future congress also showed promising solutions on this point.

German Telematics Prize 2024

Efficient fleet management requires digital support, especially in the area of telematics. With the German Telematics Prize, ETM Verlag offers comparability, transparency and orientation in a confusing market. The prize was awarded as part of the Dekra Future Congress for Commercial Vehicles 2023 in Berlin. In total, there were more than 40 systems to choose from in ten categories. The prizes were awarded in the categories of asset management, bus/public transport, driving management, vehicle technology, field service, location/tracking, real-time visibility platforms, bus/public transport, special vehicles, trailer/swap body technology and transport management. d/hfS

#3 in sea freight, #5 in air

CMA CGM GROUP TAKES OVER BOLLORÉ LOGISTICS



Credits CMA CGM

On July 11, 2023, the Bolloré group announced that it has signed the share purchase agreement to sell 100% of Bolloré Logistics to the CMA CGM Group. The purchase price would amount to 4.650 billion euros, prior to calculating debt and cash on the completion date. The completion of the sale remains subject to obtaining antitrust and foreign investment clearances in the relevant jurisdictions.

The French shipping company CMA CGM is number three on the world's oceans after MSC and Maersk. Exactly a year ago, the Swiss CMA competitor MSC took over Bolloré's logistics division in Africa. He paid 5.7 billion euros for it. However, the remaining business that is now the focus is almost three times as large, with sales of 7.1 billion euros.

In 2019 CMA CGM acquired a majority shareholding in CEVA Logistics. According to Bolloré, CMA will now link the former Bolloré logistics activities with CEVA. The Bolloré Logistics brand is likely to disappear. The combined operations of CMA CGM's logistics activities — centred on Ceva — and Bolloré Logistics would produce revenue of approximately \$24bn (24,11 billion Euros), based on 2022 results, and generate in excess of two million teu of sea freight and

800,000 tonnes of air-freight, while warehouse space would increase by more than 900,000 m2, in addition to the 10.3 million m2 already managed by Ceva. Analysts do not expect a major overlap in freight forwarding between the two companies, as Bolloré is more exposed to pharmaceuticals and luxury goods, while for Ceva it is automotive and electronics. So there should not be significant job cuts.

In 2022, CMA CGM Air Cargo was launched and supplied with a fleet of six freighters – two Boeing 777Fs and four Airbus A330-200s. In April 2023, the carrier undertook the maiden flight for a new air cargo route between Paris, France and Guangzhou, China. In August 2022, Bolloré Logistics completed its 100% acquisition of Lynair Logistics to expand its footprint in Australia.

In 2021, the latest figures available from consultant Armstrong & Associates, showed Bolloré Logistics ranked number 10 in terms of annual airfreight volumes with 656,000 tonnes, while CEVA occupied the number 14 spot with 474,000 tonnes. If the two companies were to be combined, airfreight volumes would reach 1.13m tonnes (based on 2021 volumes).

This would make the combined entity the world's fifth-largest airfreight forwarder, knocking Expeditors out of the top five and closing the gap on the leading four forwarders: Kuehne+Nagel (2.2m tonnes), DHL Global Forwarding (2.1m tonnes) and DB Schenker (1.4m tonnes), A&A state. *b/m/hfs*

Railway

DEUTSCHE BAHN SUBSIDIARY ARRIVA GOES TO I SQUARED CAPITAL

Deutsche Bahn has sold its foreign passenger transport subsidiary Arriva to the US infrastructure investment fund I Squared Capital. This became known on October 16, 2023. The deal is expected to be completed in 2024 after receiving all the necessary approvals from the committees involved. Arriva was taken over by DB in 2010 for around 2.7 billion euros including debt. The sales price is expected to be 1.6 billion euros, with one billion euros in debt being transferred.

I Squared Capital has historically been involved in energy and water infrastructure in the US, China, India and South America and now appears to be looking to expand its exposure to transportation. In 2023 it made a bid for the British bus and train company First Group, but was rejected. Arriva suffered heavily from the pandemic because commuters stayed away as travelers. In the first half of 2023, Arriva delivered an operating profit of 43 million euros; before that there were temporary losses.

The German transport politician from the Green Party, MdB Matthias Gastel, welcomed the DB management's decision: "It is a first step to end the megalomania of the DB as an international transport giant. The proceeds generated must flow into strengthening the railways in Germany, for example to renovate the ailing DB Cargo." Deutsche Bahn currently has a mountain of debt of around 30 billion euros and is also examining the sale of its logistics subsidiary DB Schenker. However, this company is a stable profit generator for the group. The chairman of the German railway union GDL Claus Weselsky commented negatively on the deal. Arriva is "sold for an apple and an

ARRIVA transports 1.5 billion passengers annually in 10 countries, has 34,600 employees, 565 trains and trams and 12,633 buses. These still run on diesel and will therefore have to be replaced with ecological buses in the next few years.



Credits Deutsche Bahn AG

egg", i.e. for a price that is far too low. Weselsky had already spoken out against an Arriva sale in 2019 and described the company as valuable "table silver" for the DB. The general secretary of the British railway union RMT Mick Lynch was outraged. Its members "have not received a salary increase for over three years". Now DB is selling Arriva to an investor who is registered in the tax haven of the Cayman Islands, "where there is even less control and even more wealth can be extracted from our railways."

In contrast, I Squared partner Mohamed El Gazzar told Handelsblatt: "We want to invest two billion euros in Arriva within the next few years. This is primarily about decarbonising the fleet, i.e. switching to electric buses." *hfs*



Credits Gebr. Weiss

Rail and road work together: the Gebr. Weiss location in Hall/Tyrol.

Optimisation of the logistics network

GEBRÜDER WEISS IS EXPANDING WITH A GROWTH STRATEGY

The family business Gebrüder Weiss, based in Lauterach / Vorarlberg, Austria, looks back on over 500 years of history. In addition to land transport, Gebrüder Weiss also offers air and sea freight transport as well as logistics solutions at 180 locations worldwide. In October 2023, the company announced: After taking over the Bayreuth logistics company Wedlich, it will take over the Konradsreuth location of the Amm forwarding company in Upper Franconia at the beginning of 2024. In the future it will operate under the Gebrüder Weiss brand.

The location near Hof will continue in its current structure of the German general cargo cooperations

Cargoline and NG.network. In addition, it will be connected to the Gebrüder Weiss Pro.Line network. Ralf Amm, the current owner of the Konradsreuth location, will concentrate on the further development of the Amm Group in Nuremberg. At the beginning of 2023, Gebr. Weiss took over the forwarding company Rentschler Transport + Logistik in Altensteig in the northern Black Forest. Here, too, in interaction with their own existing locations, it is about bundling effects for transport and access to a broader range of services.

With an annual turnover of three billion euros, around 8,000 employees and 180 company-owned locations, Gebrüder Weiss is one of the leading ►

transport and logistics companies in Austria and Europe. On October 19, 2023, the company suffered a heavy loss. Long-time co-partner and company director Heidegunde "Heidi" Senger-Weiss died at the age of 82. Together with her husband Paul, she ran the Gebrüder Weiss company from 1968 to 2004. In doing so, she promoted the general internationalisation of the business, the expansion of the location network, technical modernizations and expansion of the service portfolio.

The current CEO of Gebrüder Weiss, Wolfram Senger-Weiss, says that Gebrüder Weiss is not one of the big players in the industry, "but one of the medium-sized ones". This is a good position to offer your own global network, but still be "closer to our customers and employees". The benefits for the workforce include flexible working hours, job tickets for local public transport and e-bikes at favorable conditions. This is intended to motivate employees and bind them to the company in the long term.

The company's philosophy is also aimed at the future, namely to invest more in e-mobility and sustainability. This is also evident at the Hall in Tirol location with its locations in Innsbruck, Wörgl and Langkampfen. Photovoltaic systems were installed on an area of approximately 9,000 m² at all three locations. At the Hall location, the lighting system was completely converted to LED in 2023. The site should also be better prepared for e-mobility by putting an additional transformer station into operation. In Langkampfen, a 6,500-pallet high rack on 3,000 m² of handling area including production area was put into operation.

Branch manager Günter Schmarl explained this in the economic service www.offeneswerkstor.at: "We are currently evaluating the expansion of the TSSU terminal here in order to further promote the shift from road to rail." The terminal is to be made craneable and additional tracks are to be installed become. This would increase capacity and improve the environmental footprint of the site. w/hfs

Rail Freight Forward:

LINE MOVES FROM
ÖBB CARGO TO DB CARGO

**RAILFREIGHT
FORWARD**
EUROPEAN RAIL FREIGHT VISION 2030

Wistful memories came to mind in May of this year when the ÖBB Rail Cargo Group invited people to its stand at the transport logistic trade fair in Munich. The thoughts revolved around the beginnings of the Rail Freight Forward (RFF) alliance, moving forward with rail freight transport.

The COP24 world climate conference in Katowice, Poland, in December 2018 was the reason for several freight transport companies to send a train with artistically painted containers on a trip to Europe. The train under the biblical-sounding name "Noah's Train" was intended to call for saving the global climate by giving rail freight transport a higher share of the total freight volume. By 2030 it should be 30 percent. From the very beginning, the CEO of the Austrian Rail Cargo Group GRC Dr. Christian Först headed the RFF initiative. Under his leadership, the coalition gained significant momentum.

Today they support the rail freight carriers BLS Cargo, CD Cargo, CFL cargo, CIT, DB Cargo, Fret SNCF, FTE, Green Cargo, Lineas, LTE Group, LTG Cargo, MEDWAY, Mercitalia, Ost-West Logistik, PKP Cargo, ÖBB Rail Cargo Group, Renfe Mercancias, SBB Cargo, and ZSSK Cargo. Promotion is provided by the associations CER, UIC, EFRA and VDV. Representatives of the Luxembourg freight transport company CFL Cargo made a particularly outstanding contribution and were therefore also recognised by name.

At transport logistics, RCG boss Först handed over the leadership of the coalition to the head of DB Cargo Dr. Sigrud Nikutta, also DB board member for freight transport. Först emphasised the common goal: "Traffic is a significant part of the climate problem, the

railway is an elementary part of the solution." Nikutta promised a willingness to move forward and full commitment: "A 30 percent share of freight trains in the continental traffic mix is feasible – with digitalisation and automation of rail transport." A key to increasing rail freight transport is uniform European standards: "Modernising rail is a Herculean task!"

An important project supported by the RFF initiative is the test train with several versions of the Digital Automatic Coupling DAC. On May 3, 2023, the organisers declared: The digital freight train completed the test runs in various weather and temperature conditions "with flying colors". Within about one and a half years, the test train covered a total of 10,000 kilometers in seven European countries. The test phase was extended with an additional seven million euros from the German Federal Ministry for Digital and Transport (BMDV). Now the test train, consisting of 18 cars and 40 DAC prototypes, will collect test data in other European countries.

hfs



Credits: Hermann Schmidendorfer

Only real with this signature! DB Cargo boss Dr. Nikutta signed this container at the ÖBB Cargo stand, a symbol of the Rail Freight Forward alliance.



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Nuremberg location: The Geis Group is modernising its pharmaceutical division.

Credits Geis Group

New vehicles, new IT

GEIS IS RESTRUCTURING PHARMACEUTICAL LOGISTICS

“The healthcare sector is about handling highly sensitive pharmaceutical products,” says Patrick Ortner, forwarding manager for service logistics at Geis Eurocargo Nuremberg. “This requires a maximum of flexibility, cleanliness and quality.” That’s why the logistics service provider was pleased to announce an optimisation in October 2023. The Nuremberg transshipment facility, which is used exclusively for healthcare services, has been fundamentally modernised and, among other things, equipped with temperature sensors.

This means that a temperature window of 5 to 35 degrees Celsius can be strictly maintained along the entire supply chain and documented for each individual shipment. The handling, transport and interim storage of the sensitive pharmaceutical products were then certified according to the European Commission’s Good Distribution Practice (GDP) guidelines. Geis also implemented special IT for complete documentation of temperature data from acceptance to delivery to the recipient and expanded its own healthcare fleet to include nine reefers with lifting platforms.

Geis is also committed to growth outside of the

pharmaceutical sector. In August 2023, the antitrust authorities approved the takeover of 66 percent of the shares in Quehenberger Logistics by the Geis Group. The previous majority owner Christian Fürstaller continues to hold the remaining 34 percent. “We are pleased that the largest acquisition in our company’s history has now officially been completed,” said managing partner Hans-Wolfgang Geis. The logistics service providers Geis and Quehenberger operate in related business areas, but mostly in different countries. This means that they complement each other, both partners agree.

According to Geis and Quehenberger, a total of around 10,000 employees now work at around 200 locations in 13 countries and generate sales of around two billion euros. Both companies want to expand further together and, according to Geis, “actively exploit the interesting growth opportunities in the South-east European market”. The country organisations in Russia, Belarus, Kazakhstan and Ukraine are excluded from the takeover. In 2022, these companies were spun off from the Augustin Quehenberger Group into their own holding company, CF Logistics. *g/hfs*

Integrated logistics services

TANK CONTAINER BUSINESS GOES FROM KÖPPEN TO HGK SHIPPING

On October 25, 2023, Köppen GmbH in Duisburg transferred its operational tank container logistics business to HGK Shipping, a division of Häfen und Güterverkehr Köln AG HGK. Europe’s leading inland shipping company is thus expanding its business area to include the pre-carriage and on-carriage business for tank containers. This creates important synergy effects for customers in the chemical industry.

Köppen uses around 1,000 tank containers. This makes it an important service company for the chemical industry in intermodal transport to destinations further inland. Tank container transport by road will continue to take place in close partnership with Köppen. It was agreed not to disclose the purchase price. HGK Shipping takes over the three locations in Duisburg, Hamburg and Ludwigshafen.

The expanded service portfolio will include intermodal transport for liquid and temperature-controlled chemicals as well as the transport of compressed gases – integrated and needs-oriented logistics offerings including the transport modes of inland waterway, rail and truck from a single source. The production facilities of the most important centers of the chemical industry are to be efficiently connected to the container terminals in the region and in the ARA ports (Amsterdam, Rotterdam, Antwerp).

In the future, Köppen wants to concentrate on the further development of the core competencies of storage, cleaning and repair of tank containers at the Duisburg location and on the transport operations in Duisburg and Dessau. *k-h-hfs*

Credits Köppen



“Promoting the common interests of Europe and China”

? **CARGO FREIGHT JOURNAL:** Mr. Chancellor Kern, in addition to your economic work, you also hold honorary positions. A volunteer position that is of course linked to your interest in world events and global economic developments is the management of an economic forum for contacts between Austria and China. You were also a member of the supervisory board of the Russian state railway RŽD until February 2022, but then gave up this position when Russia began its military involvement in Ukraine. I understood this to mean that, as a representative of the Austrian state's rationale of neutrality, you cannot work for a state-owned company that inevitably has to represent military state interests, regardless of whether you call it Specoperacija or war. But your work at the Russian State Railways was of course also interesting for your commitment to China, because the New Silk Road is based heavily on rail transit through Russia. In this respect, it is of course a pity that you cannot participate in the RŽD at the moment?

Mag. Christian Kern: I would judge it even more harshly. What began in February 2022, this Russian aggression against Ukraine, was in no way excusable. The Russians have thus placed themselves, if you will, outside of Western civilisation. It was unthinkable to continue working here. You're right, the idea was actually to put more freight traffic from China to Europe on rail. Russia has played a central role in this, and it has been quite successful. But with this step that Putin took, he not only triggered a catastrophe in Ukraine, but also caused enormous

damage to his own country. It was clear that we would no longer be able to be there.

As far as relations with China are concerned: This is indeed a difficult relationship that is currently being discussed at various levels. But if we look around briefly, we have to say that we have the conflict with Russia, we have conflicts in the Middle East. We see that many economies are becoming more and more protectionist, if you think about India or the United States. And we in Europe have the problem that we are currently losing our business model of combining cheap raw materials from the East with highly qualified work and technology and being successful on the world markets. In this situation we obviously have to ask ourselves, can we allow ourselves another conflict? I am convinced that this is not the case and that we would not bear a hostile attitude towards China because it pushes our strength and capabilities to the limits of what is still possible. And if we also see prosperity as the basis for our democracy, then I think we have a great concern to manage relations with China soberly, sensibly and with a sense of proportion. It doesn't have to be euphoria, but hostility would certainly lead us into a ditch.

? There is also currently a debate in Germany about which direction foreign policy should take? There we talk about value orientation. But there is also a nice quote from former Chancellor Helmut Schmidt, who once said that we should of course uphold and protect the own values of European democracy, the own substance of how we want to act and live. But it would be wrong to see this as an export factor. This has been seen often enough in different regions and countries. The so-called export of our understanding of democracy can lead to chaotic, bad conditions. Would you say that Chancellor Schmidt's quote would also be appropriate now in relation to China?

Yes absolutely. We have all learned the lessons from the Arab Spring. There was huge euphoria, there was a great spirit of optimism. We suspected that the democratisation of these countries would ►



Credits: Hermann Schmidendorf

Christian Kern, who has a master's degree (journalistics and communication sciences at the University of Vienna, postgraduate training at the St. Gallen Management Center), since 2019 has been president of the founded by the business association CEATEC (China Europe Association for Technology and Economic Cooperation) European China Business Council and president of the Board of Trustees of the Austrian Chinese Business Association. From May 2016 to December 2017 he was Federal Chancellor of the Republic of Austria and from 2016 to 2018 he was party leader of the Austrian Social Democratic Party SPÖ. He has been CEO of the European Locomotive Leasing Group (ELL) since September 2022. From 2010 to 2016 he was Chairman of the Board of the Austrian Federal Railways (ÖBB) and from 2014 to 2016 Chairman of the Community of European Railways (CER), based in Brussels. Since March 2023 he has been deputy chairman of the non-partisan "Citizens Forum Europe".

be possible. But in the end we harvested the Islamic State. And I think, against this background, you need a lot of pragmatism, you need a good understanding. Of course, you also have to demand that your partner accepts our boundaries and certain social standards that must be adhered to. But we have to realistically assess what can we actually achieve and at what cost. We should coexist, should understand that these are two different systems that are nevertheless condemned to cooperate with

each other – in the best common interest, that is a mandatory requirement.

We are now complaining about inflation. One of the reasons we had such low inflation was that globalisation made a number of products cheaper, thereby reducing inflation. We know that the export-oriented industry, especially in Austria and Germany, has benefited massively from our access to the Chinese market. And conversely, we have seen that ►



the Chinese have benefited massively from being integrated into a global economy. That means both sides have a lot to lose. And my hope is that there is enough perspective to understand this. I also have certain hopes, because the Chinese political system is not comparable to the Russian political system. In the end, there should also be a realistic view of the partnership on the Chinese side, that there are checks and balances, and I believe we should avoid anything that involves escalation and polarisation here.

? And the railways, the Silk Road, the shipping routes, should these be developed further? How do you currently see the possibility of further expanding this railway connection, which has always worked better? Maybe with that middle corridor too? Is this a variant if things are currently more difficult?

Undoubtedly. Because we know that we will only be able to achieve our green deal goals and our strategies to prevent climate change if we make

traffic cleaner. This is the only sector that has shown increasing CO2 emissions in Europe since 1990. We really have a problem here. We didn't achieve any of our goals. And I know very well that climate change is also seen as a major challenge in China. Despite all the discussion about new coal-fired power plants there, one should not overlook the fact that China is now the market leader in the areas of renewable energies, electric cars and also battery storage. That means there are many points of contact and common interests. And we will only achieve this debate, this fight against climate change, together and not against each other. In my opinion, the railway is a crucial means of achieving this. And with that in mind, I think it would be really worth investing in these initiatives. There is interest on the Chinese side, and there is also great interest on the European side. The potential is far from being exhausted.

! Thank you very much, Mr. Chancellor, for this inspiring conversation!

The interview was conducted by Hermann Schmidtendorf.



European Silk Road Summit is the biggest event about the New Silk Road in Europe. It brings together over 300 rail freight professionals each year. The 7th edition runs under the title 'All roads lead to Budapest'. It is held from 29 November to 1 December 2023, this time in Budapest, Hungary.

Why should we attend this important congress? The organisers, the Dutch ProMedia Group, give the following reasons: 1. Connect with over 300 professionals from the Eurasian community. 2. Listen to keynotes from companies such as KTZ, GEODIS, DP World and Deloitte. 3. Hear the latest facts and figures about the New Silk Road and Middle Corridor. 4. See the awarding of RailFreight Ambassador 2023. 5. Join the site visit to METRANS Budapest-Csepel Terminal (BUCS)

While the main route continues to exist, the last couple of years have given room to alternatives, by-passes and new cooperations, explain the organisers. While the Eurasian corridor dominates, connections are made between the north and south as well. At the European Silk Road Summit 2023, we look at the **main route** and the **Middle Corridor**. We look at the CEE region and the Balkan region. We take a look at the multiple gateways of Europe, upcoming markets such as Central Asia and how geopolitics shape today's corridors.

Special attention will be given to the Middle Corridor: "The main route on the New Silk Road is still the most consumed route for freight trains between China and Asia. However, the volumes have dropped

significantly in the past two years. This has given rise to other routes, most notably the Middle Corridor. In the opening session, we look at the latest figures, growth rates and shift of balance of the corridors. We also discuss the shift of focus of the European Union, which has increasingly realised the potential of the Middle Corridor."

One of the numerous special guests is **Yerzhan Nauruzbayev, Director of the Business Transformation Centre, KTZ (The National Railways of Kazakhstan)**. Is the Middle Corridor growing or losing the interest of the logistics industry? It depends on the perspective. From Central Asia to Europe, the volumes are growing. According to the National Railway Company of Kazakhstan – KTZ, the corridor has a lot to offer. But there are bottlenecks as well. In his presentation, Yerzhan Nauruzbayev will talk about the opportunities and challenges of the corridor from the perspective of Kazakhstan. Other issues to be discussed are transshipment on the Caspian Sea and the Black Sea, hyperloop technologies, and latest developments on the main route.

Event venue is the 'InterContinental Budapest'. Information and registration via: <https://www.silkroad-summit.eu/> hfs

Rhenus: “The middle corridor is becoming increasingly important in freight traffic with Central Asia!”



Credits: Hermann Schmidtendorf

The computer scientist / business informatics specialist (Karlsruhe University of Applied Sciences HKA) Heinrich Kerstgens worked for the subsidiary Contargo of Rhenus SE & Co. KG for almost 27 years, most recently as managing director. Since January 2022, Kerstgens has been the corporate representative for Asian traffic in the parent company and managing director of Rhenus Assets & Services GmbH & Co. KG.

? **CARGO FREIGHT JOURNAL:** Mr. Kerstgens, you are busy with long routes at Rhenus, with projects that, roughly speaking, connect Europe and Asia. There have been quite a few upheavals recently due to global political influences. Please explain to us what this means for your business and logistics in general, even over long distances in this area.

Heinrich Kerstgens: We have of course been dealing with the topic for a long time. But because the geopolitical situation has changed so much, there is now a lot of pressure on the so-called middle corridor. And that affects a structure that is not yet ready to actually meet the demand for quantity. Thank God we are still lucky that what travels on the northern corridor today can continue to transit easily through the Russian Federation. Volumes are of course declining because not everyone wants to get their goods via the Russian Federation anymore. But it's still the case that you get this insured, and to

that extent it still happens.

We are working together with the neighboring countries of Kazakhstan, Uzbekistan, Turkmenistan, Azerbaijan, Georgia and Turkey to get the middle corridor into a stable situation where, on the one hand, it is possible to drive with quality, but also of course with the necessary volume. Today, the middle corridor is by no means ready to actually transport the necessary quantities or the quantities that are required. There's still work to be done on it. This won't happen overnight, it will take some time, and for that long it will be the way it is now. We still have very large quantities at sea, and it should stay that way. And the northern corridor will always play an important role, depending on the political situation of course.

But the middle corridor is becoming increasingly important, also because, on the one hand, due ▶

to the new geopolitical structure, the EU says we want to diversify our sourcing, which means that all raw materials are no longer bought in China and Russia, but also in Kazakhstan and Uzbekistan and in Central Asia in general. This creates traffic, prosperity and economic growth there. Traffic will then not only start and end in China on the middle corridor, but increasingly traffic will start and end in Central Asia, the Caucasus and also between these countries. In addition, the energy transition is also taking place in these countries. They also want to be CO2-neutral there by 2060. That means there is a lot of investment there in the areas of wind energy and photovoltaics, including from foreign companies. A lot of energy will also be generated there because these are large countries with excellent wind conditions, for example in Kazakhstan. And that means that the transport of energy will also be an issue in 2030 and beyond.

All of these effects together actually result in a need for transport between these countries, between Central Asia and Europe, Europe and Central Asia, so that the middle corridor, deviating from the growth forecasts that we get for the northern corridor, will also have its own justification. There will never be these large quantities, but I assume that 1 million TEU will be transported on the middle corridor in 2035. Not necessarily from China to Western Europe, but certainly from the Trans-Caspian Sea. The ports will be affected and then it will spread. That's one thing we're starting from and we want to work on it now.

? Are you completely of the opinion that you rely on existing offers from transport companies, or is it perhaps part of the concept from time to time that you purchase certain means of transport yourself?

First and foremost, we work with existing transport systems and partners. But we have also been on the road ourselves for many years and also operate our own large fleet of containers through our Rhenus Intermodel Services. We have had our own office in Kazakhstan, Uzbekistan and Azerbaijan for many years, and are growing rapidly in Turkey. We are

represented there, we work there, we now have over 25 offices in China, so this will generate even more transport in the future. And where we don't find anything, we are quite prepared to invest ourselves. Where we have existing structures that we can build on, we are very interested in working in partnership with the existing structures. And we do that too.

? How has business generally developed recently?

The deal was certainly through the pandemic very difficult, the lockdowns. There was a backlog of containers being returned because ports in China were closed and they got stuck somewhere. There have been difficult situations for a long time. Traffic continued to run during the Corona measures. As you know, in 2021 we had the maximum of almost 1.5 million TEU on the northern corridor during Corona. Of course that was more effort. We had the routes, trains were disinfected, but the transit services ran smoothly, with all the difficulties that came with it. The middle corridor of the new Silk Road was greatly helped by the very high price level of sea freight, so that the middle corridor also became competitive not only in terms of time but also in terms of price. That's different now. The Silk Road, especially the northern corridor, has to prove itself again in terms of transport duration and quality because they are now more expensive than sea freight.

? The transports via the middle corridor also have to go across a lake, the Caspian Sea, before they can then be processed further in Azerbaijan. New ferries have been built in the last years, but that's probably a bit small, if a lot more is supposed to happen now, more ferries need to be built?

Yes, more ships need to be built. That is also clear to everyone. The current question is, which type of ship is the ship of the future? Especially because ships tend to get a little older, they are operated for 40 or 50 years. What will an optimal Caspian Sea ship look like? That is a question that is now being discussed. Will it be a ship that we build somewhere else and that will then fit through the Volga-Don Canal, or will it be a ship that will be built locally, optimized in terms of draft, because the Caspi- ▶

an Sea is especially in the northern area and in the Coastal areas are very flat? Will it be a ship that has been optimised for this? This is also a question that still needs to be asked. But it is definitely clear that the quantities can only be transported if the appropriate shipping space is available. And we're not talking about just two ferries or coasters – I think that's the more efficient way to transport larger quantities. Especially when it comes to issues that have to do with water levels, you shouldn't transport so much dead iron. In this respect, it is important that a significant number of ships are added there.

? There is now technology in Georgia for the automatic re-gauging of wheelsets. This means that if there were corresponding freight wagons with a standard-gauge light gauge profile that would continue to travel later, they could drive to Georgia before the automatic gauge change. From my point of view, this saves time and effort, i.e. money. You don't have to reload, you don't have to have several batches of freight wagons in parallel. You drive from China to Duisburg or Hamburg with the same cars. There are now special designs available. However, I have not yet heard that there was an investor for it. The shipping companies or a consortium would have to buy a block train and say, let's get into the topic. What do you think of the idea – is it worth the effort?

I recently visited the Akhalkalaki facility in Georgia. There is a re-tracking. This was originally intended for Stadler passenger cars. This is sometimes done, sometimes not done, and conventional wagons are re-gauged on a very small scale. These facilities do not exist on a Chinese-Kazakh border.

? But that could be built there?

Yes. But I am of the opinion that this will make the wagons more expensive. We already have a bottleneck in rail wagons for so-called platform wagons, that's what they call them there in Central Asia, and we have to take what is available in large quantities today as the standard. And then I think it would be more efficient to build heavy-duty cranes that would then place two trains next to each other and

handle the trains. Then you have the optimal fleet of cars with the optimal locomotive for the respective train system and you don't have to work with compromises, which are also expensive and not available in quantity. So, in the freight sector, I personally don't think too much of retracking. This is a solution to a problem that we don't actually have. The power of the number of cars ultimately determines the system.

? You just said that energy transport will also become increasingly important. You need special transport containers for this. What's going on in that area?

In my opinion, energy can be transported between Kazakhstan and Europe in several ways. One is by ship, including via the Volga-Don Canal. We have a bit of a problem with ice in the winter in topic: Okay, how stable will the Russian Federation develop in the future? Then there is the possibility of doing this with wagons, essentially tank wagons, special tank wagons of course, and you can do the whole thing in a standardised way with tank containers that can be transported on standard platforms. This means there are fewer transshipment processes, especially for substances such as hydrogen or ammonia, which are not without their problems in transshipment. We will see how this will crystallise later. We are talking about the periods 2030, 2032 and subsequent years. These are things that are now being discussed. I think two or three systems will emerge that are, on the one hand, technically feasible and, on the other hand, economically viable afterwards.

? What possibilities do you see for making existing ship transport, which you also use, as you say, even more ecologically viable? It is now possible to fill up with HVO, these substitute fuels made from waste materials of organic origin, with consistent quality. How do you see this development, also with regard to the reliability of transport?

That is entirely possible. HVO is definitely a fuel that works. The question is, in what quantity will it be available? Are there better uses for HVO? I'm thinking about this in the area of kerosene and ►



Credits BWA/ Stiftung Wissenschaft und Politik, IIWF, UNCTAD, GTAI

air transport. And of course the final question for us in shipping is always the price. Today we are used to being able to use untaxed fuel, similar to air transport, and ultimately we have to ensure that we remain competitive in this regard. So, we are very open to technology at this point. There is the possibility of continuing to use existing engines, and there is also the possibility of converting ships. There are many opportunities. We presented our latest development at the transport logistics trade fair, a hybrid ship in which standard diesel engines drive dynamos. At the same time, we are also working with hydrogen fuel cells there. These things will now be further developed and this will ultimately result in the best and most economical technology for the future.

? How do you see the possibilities for road transport? Driving with a battery up to 400-500 kilometres, or with hydrogen for longer distances? Is that a variant?

We'll have to wait a little longer. We have been working with battery trucks up to 40 tons for five years and have noticed that the batteries make huge progress in their performance every year. We are trying out hydrogen trucks and battery trucks. The question that arises for me is, in three years' time will there be a truck with a battery with a maximum battery weight of two tons that is capable of lasting a truck driver's entire shift? Because trucks are also

getting better and better, we're talking about batteries between 600 and 800 kilowatt hours. These are already possible today, but not yet economical. At some point they will probably be economical. At the same time, it is said that the very long routes should be taken by train if possible – this is also something that we are increasingly trying to achieve in our company, and a great deal of persuasion is also necessary with customers. If we can do that, then it may well be that trucks will go green faster than shipping.

? This is definitely easier because you don't need a port to refuel in time?

Both hydrogen and batteries naturally have the issue of refueling. Charging stations and available voltage for the battery sector, filling stations appropriate for hydrogen, all of this is not available across the board. There isn't really a master plan for this yet, neither in Germany nor in Europe, and an urgent effort is needed to get this done. You can't say that we'll do everything by train, leave trucks behind and just increase the toll. You also have to think ahead at this point and turn things around now so that they can work in five years.

! Thank you very much, I hope we'll talk to you again soon!

The interview was conducted by Hermann Schmidtendorf.



The pivotal point in the Silk Road rail traffic, an important freight hub for Europe: the Duisburg port of Duisport.

After his time as a career officer in the Bundeswehr, Michail Stahlhut (Dipl.-Ing. TU Hamburg-Harburg, Strategic IQ Harvard Business School Executive Education) worked in leading positions at DB Cargo, Eichholz, OHE and Arriva. From 2010 to 2018 he was CEO of SBB Cargo International. He has been Managing Director of Hupac Intermodal SA since 2018 and also CEO of the Hupac Group since 2020.

Credits: duisport



Credits: Hermann Schmidtendorf

FOCUS II: NEW SILK ROAD
Interview

HUPAC Group: Hubs as gateways to the world – “Duisburg is a good end to the Silk Road!”

A CFJ conversation with the CEO of the Hupac Group and Managing Director of Hupac Intermodal.

? **CARGO FREIGHT JOURNAL:** Mr. Stahlhut, in the first part of our conversation we talked about various transport relations between east and west and north and south. We also talked about you, as you say, “new little kid in our network”, the

latest big hub in Brwinów near Warsaw. Do you also think that significant traffic can run from the further defined north via Warsaw if Rail Baltica from the Baltic states to Poland will soon be operational? ►

Michail Stahlhut: I just spoke to someone about this. I believe that everything that creates permeability, regardless of the limit – if I have **one** system with **one** track width, it's easiest for me to start with it – that's advantageous. And then I have a power system. Okay, we have technical solutions. As an engineer, I am happy when I have a lot of pantographs on the locomotive. But as a payer of the system, I'm not happy about that because the locomotive will be very expensive. If I only have one security system like the European ETCS system at Rail Baltica, then that is advantageous. And if I then of course connect the Baltic states with a security system and a track gauge, that would be brilliant! This is how we connect Europe. We, who are slightly older, are preparing a networked Europe for the younger generation. That is our task.

? In the first part of our conversation you mentioned the keyword Duisburg, Duisport. Recently there have been complaints about the unreliability of Deutsche Bahn's infrastructure when it comes to and from German ports, including in Duisburg. Cosco quietly withdrew from the joint investment in Duisburg. How do you see Duisburg's position for logistics?

Duisburg is extremely important for development on the north-south and east-west axes. I am a child of the Ruhr area. Now I'm even speaking for my own homeland! Anyone who looks at the infrastructure knows that this hub, this location, is necessary in order to have transshipment capacity in strong economic regions. The strongest economic regions ►

calculated in GDP (Gross Domestic Product) are the Rhine-Ruhr area and northern Italy, Lombardy and Piedmont. These are economic regions with 500 billion GDP. That means if we don't invest in more terminals, we would all be stupid. We counted around 20 terminals in the Rhine-Ruhr area. And they are already full today, we need more. Anyone who says you don't need it or interprets it that way is interpreting it incorrectly. We just want to do more there. That's why we also spend money there. The partners can decide for themselves which partner will be there and whether they will focus on Hamburg or Duisburg. We decide to be there because we believe in this location.

? Despite the inadequacy of the German rail infrastructure?

We have to be careful not to give the impression that, as participants in this rail environment, we are the only ones suffering. Everyone tells coram publico why the world is so bad. The world is not bad, the world is what it is. And we will only change the world if we believe that this system has a future. I believe 120 percent that this system has a future. For this we need doors into the system, i.e. the terminals – no matter where they are, whether in Warsaw, Istanbul, Barcelona, Duisburg, Cologne or Milan. We need more doors, and we will always be there at these doors, always trying to create this intermodality. And of course we need a well-functioning infrastructure. This is currently restricted in Germany. But when I listen to the infrastructure operator DB Netz, they are doing everything they can to put ideas on the table and hopefully put shovels and screwdrivers on the table to improve things. What I hear from DB Netz is the way.

? The new CEO also put me in a positive mood, Doctor Nagl.

Me too!

? This is the first representative of the Deutsche Bahn board who has actually offered for years in railway-related internet forums that you can ask him questions and he gives answers. And he actu-

ally answered my questions that I wouldn't have gotten answered from the normal DB press office, based on his technical expertise.

That's great when you have such a people-oriented CEO!

? Exactly! I really liked that, and the gentleman responded quickly. So, if this becomes the new style for Deutsche Bahn's infrastructure, then we can only congratulate them.

I wish that, I wish that! Mr. Schmidtendorf, I don't want to take up a lance for my colleagues at DB Netz, because in the end we use the network ourselves, and we also have difficulties from time to time. But in the end the system is of course also complex. 20 years ago, when we were both a little younger, the decision was made to take the railway public on the stock exchange, and at that time there was a massive cut in costs. Infrastructure is sufficient. But at some point it will take its toll. Now, let's face it, we all have to pull our heels together and try to get through this misery. This can only be done by making better use of what is there, such as the Alsace route. And perhaps also in Germany the eastern corridor, which is the Stendal-Regensburg fall line. If we use this route: This eastern corridor is so awesome! It has a lower gradient than today's running route over the Kassel mountains. We can drive more tonnage over it with the same traction. We're just missing a little overhead. I say a little because in the end that is just "a little" guidance compared to a European perspective. Let's take the money into our hands and use what's there. If we keep coming back to the discussion that we have to rebuild everything, then it will take 10, 15 or 20 years. And of course it's easy to talk about the day after tomorrow because I can't solve today. But I have to solve this today. So: less gradient, a bit of overhead lines, more tonnage, same train. How brilliant is that!

? Do you think that this new Wendlingen-Ulm line will also play a role in freight transport? There were comments that the gradient there isn't that favorable for freight transport either.

Everything that limits us, where we have to run ►

trains that are underutilized, where I have to think under 2,000 tons or under 1,600 tons, I would think about whether that can really be transported. It's certainly important to think in standards, to think in powerful move parameters. And for me that means 740 metres of train length, even if not everyone in Germany wants to hear that, and at least 1,600 to 2,000 tons as train weight. Then we can create more on this infrastructure. That's our goal. Do more with what is there. And hopefully we'll both experience that. And I'm sure, along with my colleagues who are now actively working on infrastructure in Germany, that they have the right view of the future and, above all, have their footing in the present. Because without today there is no tomorrow.

? Your company has the term Intermodal in its name. What distribution of the various modal transports would you see as optimal from the perspective of your company and also for other stakeholders in the future?

I follow the guidelines of politics. Here in Germany we are talking about a 25 percent rail share in the modal split by 2030. I would like us to have 35 percent in 2035. We will certainly need new infrastructure for this at some point. But I believe this 25 percent is affordable if we all want it. And 30 percent is also affordable if we build something like curves so that the trains have to make less headway, some overhead lines, using what is there. That works.

? And sidings that are longer than they are now so that your trains can fit there?

Exactly. Of course, an overhaul track or a siding is actually superfluous. We want to roll, we don't want to stand, we want to drive.

? But for the construction period on the German infrastructure that is still to come, would it be helpful if we had more of it?

I think it's even helpful to know the bypass routes. In Germany we have bypasses for all major corridors that are now due for renovation, parts of which we can prepare. So we also have to think about this. And

then we may even have to think not just in Germany, but with partners abroad in order to possibly also travel abroad on a corridor that needs to be renovated. For me, this is part of intelligent preparation. Also think in terms of by-passes, also think in terms of resilience. Resilience doesn't start on the actual route. Resilience also begins when I avoid a problem route.

? I'm glad that you exude this optimism. This will probably help you to cope with everyday problems and also ensure that Duisburg remains safe for you.

Naturally!

? That means you stick to your opinion, which the Chinese party and state leader Xi Jinping expressed on March 29, 2014: The end of the Silk Road is Duisburg, Duisburg should play a larger role?

We have the same opinion on that!

! Here we are again at the Chinese Year of the Rabbit. May its radiant bliss also spread to all railways and international routes in Europe and the world! Mr. Stahlhut, thank you very much for the exciting conversation!

The interview was conducted by Hermann Schmidtendorf.

Chinese trains for Europe

CRRC: OFFERING THE BEST OPTION WITH ENVIRONMENTAL FRIENDLINESS AND INTELLIGENT SYSTEMS

CRRC is the abbreviation for **China Railway Rolling Stock Corporation**. With numerous subsidiaries it is the world's largest manufacturer of railway vehicles. The sales are greater than those of the holders of second and third place combined, **Siemens** and **Alstom**.

This is a breathtaking success in just a few years. But the success didn't start from scratch. The **first factory for the production of locomotives was built in China in 1881**, in Tangshan in **Hebei Province**. The **Tangshan** plant continued to build steam locomotives for industrial use until 1999, making it the last plant in the world to supply steam locomotives for non-tourist purposes.

Then a fundamental realignment of Chinese transport and production policy began. The railways should become modern and environmentally friendly through electrification - and quickly, through the development of new trains. First, various production sites and railway production companies were combined into the **CNR** and **CSR** groups (**China Northern/South Locomotive & Rolling Stock Industry**). In 2015, both groups were merged to form today's CRRC.

For the first time I had a personal meeting with representatives of CNR at the **INNOTRANS** railway trade fair in Berlin in 2010. I talked to representatives of the company and reported about it on my Pol- ►

Continuation on page 79.



Bi Yupeng (in the photo in conversation with CFJ editor-in-chief Hermann Schmidtendorf) holds a senior position in the Publicity and Corporate Culture Dept., CRRC Corporation Limited, Beijing, China. Credits Franz Sonk

CRRC IN AUSTRIA: WESTBAHN RECEIVES FOUR CHINESE ELECTRIC MULTIPLE UNITS

The Austrian WESTbahn, a private railway company with the French state railway SNCF as a 17% minority shareholder, has ordered from CRRC Zhuzhou Locomotive Co., Ltd., Hunan, four electric double-decker multiple units. The trains are rented. They are already undergoing testing for approval in five countries, including Austria, Germany and Hungary. The Deutsche Bahn subsidiary DB Systemtechnik is involved in the approval work. According to the company, the train was designed by CRRC in collaboration with WESTbahn, and important components were produced in Europe.

The new train was presented for the first time at a video conference on May 31, 2021. It complies with the TSI standard (European Union Technical Specification for Railway Connections) and has a maximum operating speed of 200 km/h. The train consists of six units, has 571 seats and is 158 meters long. Various lightweight, high-strength and corrosion-resistant carbon fibre, glass and other new composite materials were used for the lightweight construction. A 1.4 metre wide single door allows passengers to get in and out quickly. The rolling stock is designed for two power systems AC 15 kV/16,7 Hz and AC 25 kV/50 Hz and can be configured for multiple signaling systems to meet the transport requirements of the European railway network. The train can be delivered in four to eight-car compositions and can be used as an intercity as well as medium and long-distance passenger train. The final approvals for the planned areas of application are expected in 2024. *hfs*

Credits CRRC



CRRC IN GERMANY: LOCOMOTIVES FOR SHUNTING AND NETWORK MAINTENANCE AT DB SUBSIDIARIES

Several hybrid locomotives from the "KleinstloK HH" series are in use on the Hamburg S-Bahn, which is part of Deutsche Bahn. They were designed for shunting work and vehicle recovery on the S-Bahn network. The locomotive is equipped with a combined diesel and battery hybrid drive and can be operated emission-free in sensitive areas. The maximum

speed is 80 km/h. The lithium titanate batteries have a traction power on the wheel rim of 150 kW in battery mode, 400 kW in hybrid power mode and 250 kW in diesel engine mode.

At the S-Bahn Berlin, which is part of Deutsche Bahn, a hybrid locomotive of the type "AZ" works for network maintenance on the TEN network and the S-Bahn Berlin network. It can also use the third rail as a source of traction energy. Equipped with a combined diesel and battery hybrid drive system, it can be operated in emission-free, sensitive areas. The traction power at the wheel rim is 750 kW (third rail) and 750 kW (diesel engine + battery) as well as 600 kW (diesel engine) and 150 kW (lithium battery). Maximum speed: 100 km/h. *hfs*



Credits Franz Sonk



Credits CRRC

ish railway television program **KOLEJWIZJA**. So it was a pleasure for me to be able to speak once again with a representative of the Chinese railway industry at the last INNOTRANS 2022, this time with Mr. **Bi Yupeng** from the **CRRC Publicity and Corporate Culture Department**.

An interesting success was certainly that in 2020, CRRC took over the German locomotive factory, **Vossloh Rolling Stock in Kiel**. "We know that Vossloh is a very traditional German company with many years of experience and technological knowledge", commented Mr. Bi. "We respect this company because it works very professionally in this industry. We think we will bring a lot of positive synergies for our employees on both sides, so we have positive expectations for the future." Mr. Bi added: "We know that Kiel is also a famous industrial location. We want our resources and our collaboration to make a positive contribution to society and the economy."

In our conversation, we also highlighted the CRRC projects for hydrogen as a drive. This year, on June 15, 2023, CRRC presented such a new development in **Datong**. With a modular design adjusting the output capacity from 800 kW to 2,000 kW, the locomotive called "**Ningdong**" can run for up to 190 hours, making it, according to CRRC, the "**world's most powerful**" **hydrogen-powered locomotive**. An interesting project: **The locomotive has been converted to hydrogen power from a diesel-electric locomotive** of the **DF4** (Chinese: 东风4) class, a universal locomotive class first manufactured in 1969. It is the most common locomotive in China and is used

for both passenger and freight services. Such a retrofit might, according to CRRC, replace up to 90% of the 7,800 diesel locomotives operating in China.

"Technologies that mean a lot to us are, above all, intelligent solutions for the future and then also green solutions and environmentally friendly solutions", Mr. Bi stressed in our talk. "And that is what we offer our customers with our products. For example, we offer an **intelligent EMU** for use where there is a 5G network. These multiple units travel at 250 km/h. This train can be operated without human intervention; it can be automatically driven "directly" with video transmission."

Regarding the hydrogen trains, Mr. Bi told us modestly:

"We see that there are already many providers of hydrogen trains. We are one of them. You can see that this trend towards environmental friendliness and intelligent systems is a very important trend in this industry. We would also like to offer environmentally friendly green transport solutions in this direction."

The market in Europe is already very mature. CRRC is well aware of this fact. But the company wants people to be able to choose their products, concludes Mr. Bi: "That's why we attend trade fairs with our competitors and our partners to offer the products. We're actually working together to meet these customer needs to better equip this market. We think that with such a wide selection, customers will choose the best option."

Hermann Schmidtendorf

CRRC ZELC subsidiary Vossloh Rolling Stock on the road to success:

ORDER BOOKS ARE FILLING UP MORE AND MORE

There was a celebratory mood on October 20, 2023 in the business premises of the German locomotive manufacturer Vossloh Rolling Stock in Kiel. The company signed several supply contracts with RAILPOOL for 45 Modula locomotives in two variants with the option for 152 more. Delivery of the permanently ordered Modula locomotives will take place from mid-2026 and run until the end of 2027. The optional locomotive calls will be delivered by mid-2029, with both locomotive variants also being offered with German-Dutch registration.

RAILPOOL is one of Europe's leading rolling stock leasing companies and owns around 500 electric

mainline locomotives. In order to enter the shunting locomotive market segment and achieve the desired growth in the German market, the Munich-based company has chosen the Modula platform in the 1,000 kW hybrid class (dual engine plus battery – BDD) as well as the 2.5 MW EDD-Modula (contact wire plus 1,000 kW diesel) was decided. RAILPOOL CEO Torsten Lehnert praised: "Both Modula versions can run on synthetic fuels and therefore meet the highest environmental standards. Their innovative vehicle designs allow the best possible use of the track infrastructure, and they're also perfectly designed for both heavy shunting work and freight transport." And the Chairman ►

of the Board of Vossloh Rolling Stock Dr. Bernd Hoppe emphasised: "Our shared values unite us. The desire to assure the best availability coupled with the responsibility of making a significant contribution to the shift in modes of transport and make freight transport climate-neutral over the long term form the basis of trust on which our sustainable collaboration is built."

The manufacturer emphasises that the Modula is the "most flexible platform concept on the European market" and is aimed at usage-based maintenance depending on the individual mileage and operating time of the locomotive. Sensors for the essential locomotive components, which evaluate the status of

the systems using limit values and monitoring logic, would achieve low maintenance costs in combination with optimal utilisation of the "lifetime reserve". In the event of malfunctions, the interactive service team can connect to the locomotive and, in combination with the virtual back office from fleet management, engineering or suppliers, ensure that the cause is quickly investigated and a solution is found.

Modula and DE 18 are best sellers

Immediately before the sales success of the Modula, Vossloh Rolling Stock had another reason for satisfaction. Less than four months after signing ►

A DE18 in the Vossloh Rolling Stock production hall in Kiel.

Credits Hermann Schmidtendorf



A Modula EBB transporting containers

Credits Vossloh Rolling Stock



the contract, on October 19, 2023, the BBL LOGISTIK Group ordered five previously optioned DE 18 Stage V locomotives. “We are convinced of the overall concept of the low-emission DE 18,” emphasised Jens Ziese, Managing Director at BBL LOGISTIK. “Thanks to the certified use of environmentally friendly HVO fuel, we can contribute to reducing CO2 emissions even in the area of new infrastructure construction and repairs – i.e. on non-electrified routes.” Managing Director Dr. Bernd Hoppe: “Needless to say, we are delighted to be expanding our cooperation with BBL LOGISTIK so quickly.”

Delivery of the now total of 15 DE 18 locomotives is scheduled for 2024.

The DE 18 Stage V is a four-axle DE 18 centre cab locomotive that, among other things, enables completely emission-free journeys through “zero-emission” areas over shunting operations lasting more than one hour. It has a continuous output of 1,800 kW. In April 2023, the universal locomotive received approval for use on the Italian rail network from the European Railway Agency (ERA). This further expands the operational radius of the locomotive, which can already operate in the Netherlands and France.

Latest generation of engines for increased operational variability

The Stage V engines are characterised by particularly low emissions, which are well below the legal limits even without the use of urea-based or other additives. In combination with the ‘Low Emission’ function developed by Vossloh Rolling Stock, the measured values are further halved. This makes the DE 18 Stage V locomotive suitable for applications in construction sites or areas with special emission requirements, such as tunnels or marshalling yards. Continuing the environmental idea, the engines can also be operated with HVO biofuels without any adjustments, which can reduce CO2 emissions by up to 55 percent.

Duisport rail and DB Cargo

Duisburger Hafen AG, owner of duisport rail, also relies on Modula. Two units of the battery-electric variant Modula EBB are scheduled to go into operation there in 2025. A new container terminal is currently being built in Europe’s largest inland port, which will

be operated largely in a climate-neutral manner. Two hydrogen-powered Modula locomotives will then be used there, explains a Letter of Intent (LoI) that Vossloh Rolling Stock and duisport rail signed at the Munich transport logistic 2023 trade fair. The freight transport company DB Cargo, on the other hand, has opted for 50 hybrid locomotives in 2022 as well as a framework agreement with the option for a further 200 Modula series locomotives. Their delivery and the gradual renewal of the customer vehicle fleet for freight transport within Germany will begin as early as 2024.

The selected DM 20 BDD drive variant has two diesel generator units and a traction battery as energy storage. While the output of both diesel engines of the latest generation is more than 900 kW and optimized control of the second engine at the optimal operating point enables significantly reduced fuel consumption and CO2 emissions, the battery capacity is over 120 kWh. The energy storage device with extremely safe and long-lasting lithium titanate cells can be charged both externally (plug-in) and while driving, e.g. by using braking energy. The agreement is designed in such a way that DB Cargo can even subsequently integrate energy storage and energy generation technologies available in the future into the locomotives.

By moving under the umbrella of the parent company CRRC ZELC, Vossloh Rolling Stock has opened a future-oriented chapter in 2020, the manufacturer says on its website. CRRC ZELC is a subsidiary of the world’s largest manufacturer of rolling stock, China Railway Rolling Stock Corporation Ltd. (CRRC). Given the series of contractual successes, it is not surprising that the parent company is looking forward to Kiel with joy (see the interview in this issue). Vossloh Rolling Stock is apparently on the road to success.

Hermann Schmidtendorf

Partner for Vossloh Rolling Stock:

LOCOMOTIVE MAINTENANCE BY IMATEQ

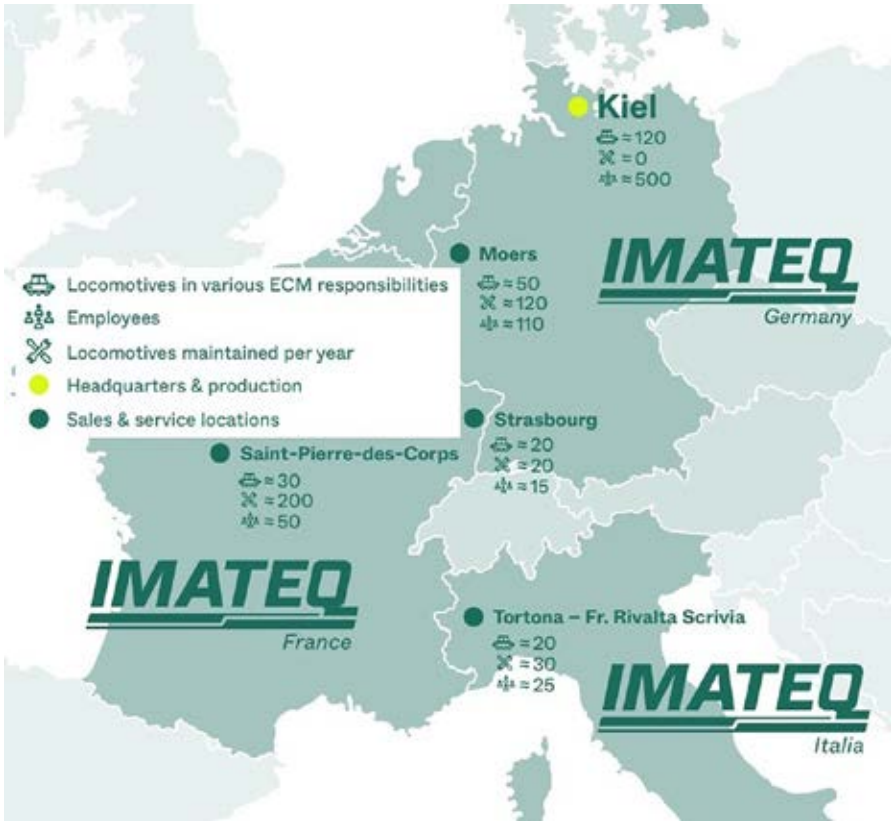
More than 400 Vossloh Rolling Stock locomotives are maintained at various ECM levels each year. The manufacturer refers to its wholly owned subsidiaries IMATEQ Germany and IMATEQ Italy as well as IMATEQ France, a joint venture between Vossloh Rolling Stock France and Socofer. IMATEQ’s comprehensively trained staff carries out all necessary maintenance, repairs and maintenance. The certified range of services ranges from general inspections, accident repairs to modernisation work. “Thanks to uniform processes that we have organised across countries, we offer our customers comprehensive service quality,” says the company.

Since July 2023 IMATEQ Italy offers an extended service. An electrical testing area (ETA) for electric locomotives has been set up at the Rivalta Scrivia site. Thus, the establishment of the first ETA in Italy serves as a “test bench” and excellent opportunity to enter the world of electric locomotives, especially when electrically powered or hybrid variants of Vossloh Rolling Stock’s Modula locomotives are integrated into the service business in the medium term. However, other locomotive manufacturers have already registered their ETA requirements with IMATEQ Italy.

v/h



Credits (2) Imateq





Ukrainian railway companies were also present with a collection stand: a look into one of the TRAKO exhibition halls

Credits Hermann Schmidtendorf (2)

VDEI:

INTERESTING DISCUSSIONS AT THE POLISH RAILWAY TRADE FAIR TRAKO

The **Trako in Gdańsk** is the largest railway trade fair in Europe, which takes place every two years in alternation with **Innotrans**. We shared a stand with our **sister organisation, SITK**, and also had the opportunity to find out about the status of vehicle development and German-Polish rail connections through various discussions and interviews. There are

many interesting topics to discuss with the SITK. The SITK invited us to a first workshop with the **Ukrainian railways** on the topic of intermodal, where we are preparing for a topic that will come to us in the future after peace has been restored there. This is the reconstruction of the Ukrainian railway.

We also had interesting discussions on issues ►

of road safety and the quality of rail transport. A Polish company presented us with solutions to an important, interesting topic: **animal welfare** issues. It's about an automatic device that keeps animals away from a moving train, be it rare bird species or wolves. This technology also plays an important role in the development of the **Rail Baltica** railway project in order to achieve nature conservation requirements.

After completing his doctorate (TU Berlin) and teaching at a university, Dr. Jürgen Murach worked as a manager in the transport administration of the Berlin Senate. Since November 2022, Vice President of the Association of German Railway Engineers. Dr. Murach was awarded the Federal Cross of Merit for special merits to German-Polish cooperation.

We also had to solve similar problems when modernising the **Hoyerswerder-Horka route**, including nature conservation requirements against wolves. And in the Rail Baltica project, the Finnish partners also made us aware that this topic plays a very important role in the Finnish railway system.

Personally, I also had discussions with the **Lower Silesian Railway** Koleje Dolnośląskie, abbreviated as KD. They took over the organisation from the German border of the cultural train, the **"Kulturzug"** from Berlin to Wrocław, which is very successful. This train is actually supposed to be discontinued, but we are trying to find a solution so that it will continue to run in 2024. The KD also informed us that the route **from Jelenia Góra to Karpacz** to the Śnieżka mountains will go into operation at the end of April 2024 at the latest. And maybe we can find a solution so that we can also offer this connection, which is interesting for Berliners, with a wing train as part of the culture train.

The **Association of German Railway Engineers VDEI** also wants to work on new topics. We have identified a new topic with the Europeanisation of Railways network. We want to accompany the discussion about night trains and also work out the conditions so that more night trains can run. But an important focus will be the problems in **cross-border rail traffic**. There are still serious problems between Germany and Poland, Germany and France. We also have a similar network. But we have also identified problems between Germany and Denmark, and that will also be a focus of this new network.

Dr. Jürgen Murach, Vice President VDEI



SITK: Poland has the chance to be an international leader

CARGO FREIGHT JOURNAL: At first, of course, we want to thank you for having sent the invitation to VDEI and UEEIV to attend the TRAKO fair together with you, and to be present at your booth. SITK is a very important engineers' organisation. Perhaps you might tell us a little bit about your work, because you have recently taken over the steer and certainly have much to develop.

Prof. Jacek Paś: SITK is the association which connects people, engineers, technicians, working in the railway business and the road business, the transport business generally. Our cooperation with the Union of European Railway Engineers and VDEI in Germany is our target because we want to entrust

to other countries, not only in Poland. So it is absolutely important that we invite you. Please come to Poland and look around our fair. Maybe we can learn from ourselves the best solution, the best practice, and of course implement them to our organisation, our association. Personally, for most of us, most of our members, SITK is a working organisation, an association which collects people and help them communicate, offer trainings, this is our task.

Olaf Scholtz-Knobloch, what is your aspiration in this respect?

Olaf Scholtz-Knobloch: As the president of the European Union of Railway Engineers Association, ►

CFJ editor-in-chief Hermann Schmidtendorf in conversation with prof. Jacek Paś (left) and Eng. Olaf Scholtz-Knobloch (right).



Credits Piotr Chmczyk

Credits: Hermann Schmidtendorf



A traditional sight on the grounds of the Amber Expo trade fair company: the exhibition of new rail vehicles during TRAKO.

I appreciate your invitation to this nice fair here. And we are practicing the connection between us. We stay in contact. We bring young people, young engineers in contact also with our railway talks, which we have introduced in the internet. We bring people together not only from Poland and Germany, also from France, England, Italy, Romania and many other countries in Europe. And this is very necessary at this time in this particular situation of the world. We must bring the young people together that love to work together.

Prof. Jacek Paś: We also organise conferences, this recent conference that we organised together with the national railway companies like, for example, PKP PLK. During this conference we talk about new solutions in Poland and in Europe. And of course, the people who care about the development of the railways in Poland see here a new proposal for themselves. And everybody of us tries to take the best, the best practice and use for the Polish market.

And this is a clear decision for the future how to develop our products, our infrastructure.

? And how would you put it, how much developed is the Polish railway market? Do we have the European leaders that are more important than others and that give some highlights? Do they need support from state authorities?

Prof. Jacek Paś: I think that the position of Poland on the European map supports us to be a leader of the railway market. We connect East and West Europe. A lot of goods can go by rail through Poland, for example from Ukraine to the ports, to Gdańsk, to Szczecin, and of course, the next step we did recently. The last month we held a conference dedicated to the intermodal transport. So we can develop, we can solve some new problems with the transport of goods. This is our task.

The Interview was conducted by Hermann Schmidtendorf.



Close cooperation: the SITK exhibition stand at the TRAKO with information posters from the UEEIV and the VDEI.

Credits Hermann Schmidtendorf (2)

UEEIV:

ONLINE CONFERENCES SUPPORT INTERNATIONAL COOPERATION OF RAILWAY ENGINEERS

International cooperation between railway engineers is a particular concern for the UEEIV. That's why I was happy to accept the invitation on behalf of our Union to this year's TRAKO railway trade fair in Gdańsk, Poland. When I visited this trade fair for the first time, I immediately noticed that everything here was a more pleasant and clearer size compared to the INNOTRANS trade fair, which takes place alternately in Berlin. But this circumstance turns out to be a real advantage, as it is now possible to visit many of the trade fair stands and conference segments that you have planned for your stay without much effort.

Just like Innotrans, Trako also traditionally has an outdoor area with an exhibition of new vehicles. Locomotives, two-way vehicles, tram vehicles and

railway construction machines are examples of this. What was particularly notable from Germany was the presentation of a Mireo multiple unit from Siemens. This train is now to be marketed aggressively in Poland, and there is already interest from individual potential buyers. Stadler was also represented, interestingly with a FLIRT multiple unit for Serbia. This shows the slightly different orientation of TRAKO compared to INNOTRANS. The exhibitor costs are cheaper in Gdańsk than in Berlin, the travel routes are also closer for some Eastern European countries, so that Trako is particularly aimed at trade fair guests from the Baltic states, Ukraine and southeastern European countries. However, I also got into conversations with exhibitors from Italy, Germany and England, for

example. The exhibitors had a wide range of international provenance.

I spoke with particular interest to representatives of Nemovo and Tracktec. Nemovo is developing a novel system for maglev freight cars and trains. However, these do not require their own magnetic railway track, but should be able to run on the existing conventional rail routes, which should only receive additional magnetic travel installations. For this purpose, a test track is being set up in Poland. The Polish state company Centralny Port Komunikacyjny CPK near Warsaw (combination of train and airport) is offering itself as a testing partner. Tracktec, on the other hand, is a leading manufacturer and supplier of rails, switches and track construction services in Poland and is also an essential loyal partner for SITK, the Polish partner association of the German VDEI and UEEIV. It was fun to see how committed the young engineers from Tracktec were in presenting their latest turnout developments to us and explaining them to us personally.

The Union of European Railway Engineers was founded in 1990 as the European umbrella organisation of national railway engineering associations. Our organisation is dedicated to a variety of tasks: We

Dipl.-Ing. Olaf Scholtz-Knobloch.

EVENT: TRAKO 2023 III
Inspiring meetings

promote and support activities that strengthen contact between the individual European member associations. We also organise conferences, congresses, symposiums and exhibitions in collaboration with our European member associations. In this way, we create a platform for the exchange of knowledge and experiences between railway engineers, railway companies, industry and scientific institutions. In regular "Railway Talks", members present interesting contributions from the railway industry to the international community and there are lively discussions. In the last few months we had an online talk on the topic of "High-speed Railway Development in Poland". SITK representatives also took an active part in this with a presentation. Another online seminar was entitled "Elastic Solutions for Railway Superstructure". Participants included railway engineers from the EU and other UEEIV members, but also engineers from far away countries such as India.

We also support the training and further education of engineers by offering certification as "European Railway Engineers (Eurail-Ing.)". This title represents high qualifications and recognition in the industry. Another important goal of our organisation is the qualification of operators of railway maintenance machines through uniform and independent personnel certification across Europe. This ensures the safety and quality of these machines in rail operations.

Dipl.-Ing. Olaf Scholtz-Knobloch, President of the Union of European Railway Engineers Associations – UEEIV



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