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# Raiway-News



### Coronavirus

- Rail Is Proving Its Worth beyond Its Green Credentials. It Deserves Support... p.19



Through the Storm and Forward: Rail CX Transport at the Time of COVID19... p.31

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## Letter from the Editor

Dear Readers, We published our first issue of 2020 – to coincide with RailLive! in Madrid – a day before the show had to be postponed due to coronavirus measures by the Spanish government.

Since then many more rail events have been postponed, cancelled or moved online, including the industry behemoth InnoTrans. But we've also seen the rail industry shine as a key sector. And we've seen services resume as restrictions ease, to accommodate rising passenger numbers.

Manufacturing activities have started up again after plans have been put in place to maintain social distancing and other health measures.

The rail industry doesn't work on short-term contracts of course, and this current crisis, though a spanner in the works, has not put a stop to new orders for rolling stock, signalling, track and civil works. A couple of recent examples are HS2 Ltd launching its search for track systems suppliers for Phase 1 and 2a of the project in the UK and Stadler winning one of the biggest delivery projects ever in Europe when it signed a framework agreement with Berliner Verkehrsbetriebe worth up to 3 billion euros in March.

For this issue we have taken a look at how the coronavirus pandemic is affecting the rail industry and how it should move forward. We interviewed rail advocacy group Allianz pro Schiene about measures it has called for from the German government to support rail through the crisis.

Tommaso Spanevello from UNIFE discusses rail transport in this time of COVID- 19, both with regard to passenger and freight operations. He examines a way forward for rail in the post-crisis world.

We spoke with private rail freight operator Lineas, whose white Heroes locomotive is a gesture to thank all the key workers going the extra mile during this crisis.

And lastly, we spoke to HS2 Ltd and about the state of the project moving forward, having received the Notice to Proceed.

We are publishing issue 3 of our magazine at our scheduled time in September.

Please enjoy our 2nd issue of 2020!

Josephine Cordero Sapién, editor-in-chief

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# Issue Two 2020

#### **Editorial Features**

**p.7** Going the Extra Mile – A White Locomotive to Say Thank You We ask rail freight operator Lineas about its special locomotive to celebrate all the key workers across all the different sectors going above and beyond during the coronavirus pandemic.

#### p.19 Coronavirus – Rail Is Proving Its Worth beyond Its Green Credentials. It Deserves Support.

Our editor, Josephine Cordero Sapién, interviewed Allianz pro Schiene's Executive Director Dirk Flege on the measures the association wants to see from government to help rail through this crisis and lead to a decarbonised future.

### p.31 Through the Storm and Forward: Rail Transport at the Time of COVID19

Tommaso Spanevello from UNIFE takes a look at the rail industry in the EU in the context of the coronavirus pandemic and asks how passenger and freight rail move forward in a post-crisis world.

#### p.47 Notice to Proceed and Coronavirus – HS2 in 2020

HS2 is the UK's flagship rail infrastructure project, due to free up masses of desperately needed capacity on existing main lines. We ask how the project is progressing under the current circumstances and what lies ahead.

#### p.37 UPCOMING RAILWAY EVENTS

We've given you our top pics for rail webinars taking place this month along with a few real-world rail events still scheduled to go ahead over the summer.

#### p.61 Save the Date...

A handy at-a-glance reference of the new dates for the world's biggest rail shows, including InnoTrans.

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### Going the Extra Mile – A White Locomotive to Say Thank You

R ail freight has been one of the sectors at the forefront of keeping society going during the coronavirus pandemic, supplying supermarkets, hospitals, power stations and ultimately consumers with vital goods.

The passenger rail sector has helped keep key workers on the move and infrastructure managers have performed essential repairs and have staffed control centres to keep the railways working behind the scenes.

In April Lineas launched its white Heroes locomotive to say thank you to everyone, not just in rail, going the extra mile. We spoke to Lineas about their Heroes locomotive and how the coronavirus pandemic has affected operations.

**Railway-News:** To start, could you tell us a little bit about

Lineas and where your main areas of operation are?

Lineas: Lineas is the largest private rail freight operator in Europe. Our purpose is to convince customers to modal shift their transport from road to rail, thereby improving their own supply chain and contributing to a better climate and mobility. We run a pan-European end-toend logistics network. Our Green Xpress Network provides daily, fast and reliable rail connections between major European hubs





#### 📣 Railway-News

and is completed with first and last mile services. It combines different types of cargo (intermodal, conventional, single wagonload) into one train.

We employ over 2,100 people and own a fleet of 250 locomotives and 7,000 wagons. We have our headquarters in Belgium and sites in France, Germany, the Netherlands, Italy and Spain.

**RN:** The coronavirus crisis is affecting all of us, including the rail sector and here different parts of the rail sector are facing slightly different challenges. What has been most challenging for Lineas in this crisis?

L: As transport is vital to keep society going, European countries have not put limitations on rail freight within and through their territories.

Of course, many of our customers have had to decrease or stop production temporarily. This affected their transport needs and led to a drop in transport demand of 20–30 percent.

Operationally, there were some minor challenges in the beginning to cross borders and to drive in different countries that have imposed different measures. In France, for example, the network was for a large part not available. However, our teams and partners have been able to overcome these obstacles.

We've also had to change our ways of working within the company. Where possible, our people are working from home; we have imposed extra health measures for people on the ground, etc.

**RN:** Have there been positive developments too?

L: Overall, we've been able to drive all our or planned trains with high quality. Our Green Xpress Network is proving to be a stronghold solution that provides the necessary flexibility for many existing and new customers to keep their goods moving.

Furthermore, we see that some customers are looking for alternatives to road transport. Where trucks are often stuck at borders or cannot drive because of lack of drivers – rail continues.

**RN:** You recently launched a white locomotive to thank those who are helping defeat the virus and keep society going. Can you say a little bit more about that?

L: We wanted to show our appreciation for people at the forefront of this crisis. Of course the medical staff saving lives. But also people working in other sectors that continue to keep society going during the crisis, transport being one of them. Pharmaceutical products, food, disinfectants... many essential products are transported by rail. Our own teams and those of our partners and customers are going the extra mile to keep companies, hospitals, stores and consumers supplied.

So we wanted to thank all these heroes of today for their continuous efforts. And how better than with a locomotive? This special edition white



locomotive is hauling goods all over Europe. We hope it boosts the spirit of everyone who sees it, whether that's on social media from the safety of their homes or during a shift in the stations, terminals or rail track where it passes.

**RN:** Earlier this year Lineas joined ERFA, the European Rail Freight Association. What are your main objectives that you want to achieve for the rail freight sector in the EU?

L: At Lineas, we believe that private rail freight players will make the difference in Europe, as they are dynamic, nimble, innovative and able to really offer what the customer needs. Private companies have a unique customer-centric mindset to deliver the products that convince companies to shift from road to rail.

In co-operation with the other ERFA members, we will have a key role to play in the creation of a truly liberalised and competitive European rail freight market.

**RN:** One of the things people have appreciated during the coronavirus pandemic is the cleaner air and the reduced number of vehicles on our roads. Do you think we will emerge from this with a stronger push for fighting the climate emergency and – in rail freight – to achieve a meaningful shift to rail? Can you talk about this also in the context of the Rail Freight Forward coalition? L: The Green Deal is a major opportunity to push the modal shift to rail. We know that rail is nine times better in carbon emissions, eight times better in terms of air quality and six times more energy efficient. We have to double rail freight volumes if we want to reach the EU climate targets.

The European rail freight operators have joined forces under the Rail Freight Forward coalition to push this modal shift to rail. We have developed a plan that outlines the actions railway unions, infrastructure managers and governments in Europe should take to achieve our ambition and as such substantially contribute to our climate objectives.





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# Covid-19: Staying Ahead of the Curve through APC Data

By Charles-Gabriel Deslauriers, Jr. Eng. & Data Analyst at Infodev EDI

Whilst transit agencies and operators from around the world are responding to COVID-19 and are adapting to the changing situation, the key question we are all trying to answer is: what's next?

- What should the new schedules be in the coming months?
- How will riders respond to the reopening of the economy?
- Will passengers be back overnight or is some of the lost ridership permanent?
- How do we handle back-to-school? Overcrowding? Schedule adherence?

Although answers to these questions will vary by region and populations, here's how you can get those answers: through data. Science-based decisions have been the number one solution in this pandemic. Therefore, data science has an essential part to play in helping to protect people. Through our Automatic Passenger Counting (APC) technology, installed all over the world for over 25 years, we've been looking at ridership data and how the situation is affecting transit operations. Our expertise has been to make the most of ridership data and help decisionmakers with accurate and reliable information.

For this reason, Infodev would like to share with all transit

agencies some insights, ideas and solutions on how to respond to this unprecedented crisis. With the benefit of our accumulated experience, our team of experts in collaboration with clients has come up with answers to some of these questions.

#### How Ridership Insight Can Help

Health officials are saying: if we want to know how the virus will spread, we need to know how people are applying the recommended measures.

In fact, many of our clients have listed Infodev on their essential service-provider list because informed decisions are the best way to fight the virus. Upper management and executives are reviewing every day the information provided by our systems to guide their decisions. Since the propagation of the virus is strongly associated with person-to-person transmission, understanding the movement of people throughout the transportation network is now an essential part of health and safety for organisations.

APC systems are specifically designed to monitor and report the statistical behaviour of passengers in public transport and are an essential tool for transit and public health officials to get information regarding the flow of people and social distancing. This information



can be accessible quickly and can help transit authorities and managers make the right decision or evaluate the impact of measures already taken. Furthermore, Infodev's new Al-based Seat and Space Occupancy will be helpful in managing passenger flow and distribution in real time.

Counting people may seem like an easy task, but the accurate counting of people can have far-reaching implications, more so in these times when transit is changing at an unprecedented rate. At Infodev, we have been tackling this challenge for decades by reporting when, where and how many people are using transit. APC is not just for counting passengers, it reveals the flow of passengers mapped through time and location. Furthermore, Infodev can give you access to your ridership data in real time allowing you to react and adjust your operations almost instantly.

As we are slowly reopening parts of society, officials from various departments (health, education, economy and transit) are using data provided by our systems as a key performance indicator in their decision-making process.

#### Essential Tools for Smart Cities

We offer various software and tools for transit agencies and operators. Within the portfolio of tools two of them are particularly suited for this situation:

#### Daily Report and Trends Analysis

After the data is automatically collected by the vehicles, it can be viewed, aggregated and analysed through our reporting software suite. Dozens of analyses can be used for different purposes or usages. Right now, **'overcrowding/ underutilised trips'** and **'schedule adherence'** are reports analysed on a daily basis to support decisionmaking. Planners, schedule makers, management and people reporting transit data are using these reports to monitor the impact of measures associated with the fight against COVID-19.

#### **Real-Time Information**

Dashboards, including graphs, maps and tables, offer a unique capability to monitor overcrowding, schedule adherence and general operational performance in real time. People with experience in our systems are capable of predicting issues and reacting to them based on the information available within a webbased environment. Supervisors and operational managers are especially interested in these capabilities as they allow for a rapid response to problems. Furthermore, critical information can be communicated live to all interested parties, including passengers, ensuring a cohesive approach to transit.

Our solutions can be fully standalone or integrated, functioning and reporting 24/7 so that you never miss a thing.

#### A Glimpse into Ridership Data & Future Trends

The first few weeks have been difficult for all transit agencies: our systems have been reporting that ridership is down around 80% in buses and 90% in trains in large urban areas. Ridership is significantly affected by the various measures put into place by governments, regardless of the country, mode of transportation or city size. While some of the ridership will probably return to normal in the long term, two questions remain:

#### When Will Passengers Feel Comfortable Going Back into Crowded Vehicles?

We can't know for sure. Think of it this way: everyone has been told by their government for weeks to avoid at all cost being physically close to other people. In their mind, public transit is associated with being in close proximity to other people twice a day for an extended period of time. High-density areas are even more affected by this.

So when will people feel comfortable coming back? Probably when the authorities tell them it's okay with proper guidance. Regardless of personal protective equipment or hygiene measures, making sure you plan to avoid overcrowded vehicles is essential prior to reopening. Reducing the service and reducing the number of passengers per vehicle are opposite elements, so achieving a workable balance is key here.

#### Will Some of the Lost Ridership Be Permanent and How Big Will That Loss Be?

We expect some decrease in ridership even when the economy if fully back on track. With the work-from-home phenomenon, some workers are starting to enjoy this new daily routine. Avoiding crowded buses or trains, being more relaxed, adapting their schedule and enjoying more time



with their family will certainly lead to at least some part of the workforce changing their habits in a permanent way. Some of these workers might go back to the office only two or three days a week or only during certain periods of the day. However, other societal trends might compensate for this phenomenon. Ridership changes will be driven by multiple factors and how quickly society can adapt will depend on accurate data. This is why having the ridership information aggregated over regions and time is necessary to detect trends in different populations. A best guess will never beat an accurate measurement and that's why Infodev can help you

and your team get the ridership information needed.

We invite you to share with us any questions or suggestions you may have on how we can assist you to get the most out of your APC data, either provided by us or other sources. Together, we will get through this difficult time.

We invite you to read a more detailled technical article regarding the use of APC ideas applied to mitigate effect of covid-19.



### Visit www.infodev.com/covid19

# Long History Between Daktronics and SBB Leads to Long LED Display Installation

ailwav

he traveling experience in Switzerland has been completely transformed when it comes to railways. New, crisp, vibrant signage is now catching the attention of passengers, sharing vital travel information and generating additional revenue for railway stations. The transformation for Schweizerische Bundesbahnen (SBB) began late in 2014 and had continued through the years.

Today, Switzerland's largest travel and transport company has installed more than 50 LED video displays at nearly 20 locations. All of these signs have one thing in common – Daktronics. Most recently, in 2019, a massive LED display featuring 4-millimetre line spacing was installed at Lucerne Station. The display is 1.27m tall (4 feet) and 99.54m (326.5 feet) wide. That's nearly the length of a professional football pitch!

This is an additional display to support the flow of travelers from the train to the outside of the station with information for connecting local travel options. The flexibility of LED technology allows the station to show a combination of train schedules, travel information, advertising, emergency messaging and more.

SBB was the first public transport company in Europe to embrace LED technology with largescreen, central displays across an entire network of stations. The LED technology isn't only flexible with regards to the content, capable of changing the messaging at a moment's notice; it is also easier to control and service, and ensure that clear, visible information is reaching all viewers.

After the first 50 LED displays were installed, Daktronics received SBB's Infrastructure Partner Award for excellence in the installation of the first two displays, which are in the town of Neuchâtel. The company also received SBB's Best Supplier 2015 in the quality category.

SBB stated that Daktronics helped to achieve the goals of SBB in a timely and flexible manner.

"The quality they delivered in the software exceeded my expectations. Together, we worked as an 'international' team and in the end have a solution that will work well for SBB and makes it possible to bring much more information to the LED displays for our customers in the future."





SBB visited Daktronics facilities in Brookings, South Dakota, USA, in order to perform a formal audit to fully understand the production process of their products and the details of their specific project.

"This is a very exciting project for Daktronics and we are pleased to provide SBB industry-leading solutions to assist commuters in receiving up-to-date, accurate information," said Rolf Bauer, Daktronics Regional Manager.

"During testing phases, Daktronics was able to display everything SBB asked for and according to their specifications, providing them with confidence in our products. Daktronics will also

### *provide SBB a lower total cost of ownership for the lifetime of the displays.*"

The installation at Lucerne Station extends the Daktronics and SBB partnership of delivering quality LED display products in a timely manner to help the communication efforts at SBB's railway stations.

It also continues the versatile communication the LED system allows, not to mention the return on investment LED provides by working together with an OOH (out-of-home) company that is promoting advertising content on the LED installations.



Destination 2.66 Genève Nyon Morges Lausanne Brig 1.06 Genève Nyon Morges Lausanne Brig 1.09 Genève Biel/Bienne Basel SBB 1.24 Genève Nyon Morges Lausanne Brig 1.36 Genève Bern Zürich HB St. Gallen 1.54 Genève Nyon Morges Lausanne Brig 2.06 Genève Lausanne Bern Luzern 2.09 Genève Olten Zürich HB St. Gallen 2.24 Genève Nyon Morges Lausanne Brig 2.36 Genève Bern Zürich HB St. Gallen 2.36 Genève Bern Zürich HB St. Gallen 2.36 Genève Bern Zürich HB St. Gallen 2.36 Genève Lausanne Bern Luzern 2.06 Genève Lausanne Bern Luzern Remarque groupes sec. D





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Railway-News

Passengers wearing masks © Deutsche Bahn AG | Oliver Lang

# Coronavirus – Rail Is Proving Its Worth beyond Its Green Credentials. It Deserves Support.





R ecently, industry bodies including Allianz pro Schiene, an association that promotes rail as a safe and environmentally friendly transport option and that counts 24 non-profits and 150 rail industry companies as its members, called for more measures from the German government to support the sector through the coronavirus pandemic.

Our editor Josephine Cordero Sapién interviewed Allianz pro Schiene's Executive Director Dirk Flege to find out more.

**Railway-News:** The coronavirus pandemic – Allianz pro Schiene, together with the Netzwerk Europäischer Eisenbahnen, the Verband Deutscher Verkehrsunternehmen and the Verband der Güterwagenhalter in Deutschland, says the German federal government must do more for the rail freight sector. You suggest a 'stability fund'. Who specifically is it meant to support? What are the major challenges for rail freight during this pandemic?

Dirk Flege: The federal government rightly expects rail freight undertakings to reliably ensure the supply of vital goods to the population. The sector must fulfil this important task, even when fluctuations in demand caused by the coronavirus create high additional costs without corresponding increased earnings. The sector has fully met the high, but well-justified expectations of government. The rail freight sector is a stabilising factor in this crisis. There must be compensation for this effort. The German government has provided general support to companies across all industries with measures to secure liquidity. This is important, but it's not enough. There must also be a stability fund that comes into effect when a crisis creates additional burdens. These include things like storage and interim parking costs. Allianz pro Schiene, along with other associations, suggests that the financial framework for the stability fund should be in the region of several hundred million. The exact figure would depend on the duration and severity of the crisis as well as on the restrictions.

**RN:** Germany is setting a positive example in that railway undertakings don't have to pay cancellation fees for services not run. But you're also of the opinion that the federal government should increase its funding of track access charges to 100 percent. The ERFA and UIP have demanded the same from the European Commission. Has progress been made here?

**DF:** The conversations are taking place on the political level. And we can feel a lot of support for our requests, both nationally and on the European level. In Germany in particular the automobile lobby is very powerful. That's why we have to continue fighting for government to pay sufficient attention to rail as an environmentally friendly mode of transport as it makes decisions about the crisis measures. The demand that the track access charges subsidy is increased from, currently, 47 percent to 100 percent and that this is done quickly is one of the top 3 industry demands in response to the coronavirus crisis. It is a way for government to provide targeted support for rail transport from the existing budget.

**RN:** You also say that electricity costs are a financial burden for railway undertakings and that they mark a loss of competitiveness, since the fall in the oil price benefits lorries. Can you say a bit more about what you propose here?

**DF:** The coronavirus crisis has led to massive distortions on the international oil markets. This is pushing down prices for petrol and diesel to levels we've not seen in years. Government must prevent the





environmentally friendly rail freight sector, which runs almost entirely on electrified track, to be at a financial disadvantage. Quite generally, and regardless of the current crisis, it is important to get rid of competitive disadvantages for the rail sector that exist in the form of fees and taxes on energy. Railway undertakings pay an electricity tax, a green tax, a renewable energy contribution and they have to pay for 100 percent of the carbon dioxide certificates in emissions trading. That's a substantially greater burden than competing transport modes endure. Therefore the federal government must reduce the tax and fee burdens in these areas. They are currently hitting electrified rail freight undertakings twice as hard in light of the significant drop in diesel prices.

**RN:** Rail freight undertakings have some advantages: border crossings are easier to navigate and the operators require much less staff for the same amount of freight. Will this crisis have a lasting effect on a shift from road to rail for freight? **DF:** I very much hope so and I think so, too. The crisis has once again highlighted the advantages of rail freight. The main advantage of rail freight, in both normal times and during this crisis, is that it can transport large volumes with comparatively little effort. Under regular circumstances the good environmental credentials are particularly important. During the coronavirus crisis the low staffing requirements are key. One freight train replaces 52 lorry trips, one train driver 52 lorry drivers. The border closures are also having a much smaller impact on rail transport than on road transport during this coronavirus crisis. Train drivers can switch at borders and the freight can continue its journey. Consequently, freight trains are ready to take over transports that lorries can't perform anymore as a result of restrictions caused by the pandemic. They are also able to make additional capacities available in order to supply people and business during this extreme situation. They therefore ensure that the vital supply of basic

goods for the population and for the economy is maintained. That's something government must take into account even after the current problems are overcome.

**RN:** What is the rail sector managing particularly well during this crisis – both freight and passenger rail?

**DF:** The rail freight sector can fully demonstrate its advantages during this crisis. When it comes to passenger services, the issue at hand is public health during the outbreak. Therefore we support the introduction of the measure to make wearing masks on public transport mandatory in Germany. It is important to us that this requirement is implemented uniformly throughout the country, meaning that there are no differences between the federal states, and that it applies to the entire public transport sector. This includes aviation, taxis and private vehicle services. Expanding public transport is an essential and central







element of all policies to protect the climate. It is also necessary, in order to support quality of life, particularly in urban areas which suffer under high vehicle traffic. We have to be very vigilant that public transport does not emerge from the coronavirus crisis in a weakened state.

**RN:** What would you like to see for the future of rail transport in Germany and Europe? Do you think people will fly less and travel in more environmentally friendly ways instead?

**DF:** I'm convinced of that. If you look at the long-term trends, when it comes to long-distance journeys within Germany, German citizens are increasingly opting for environmentally friendly rail. Aviation, as the transport mode with a particularly big impact on the climate, is losing market shares. That's evident from the data published by the Statistisches Bundesamt, which we evaluated for the five-year period from 2015 to 2019. Domestic flights were already on a downward trajectory prior to the coronavirus crisis. More and more people are opting for rail because they appreciate the advantages of travelling by rail and because they want to protect the climate. The coronavirus pandemic won't change that in the long run. However, we've not made enough progress in order to double rail passenger numbers in Germany by 2030, which is the goal. After the coronavirus crisis, government must increase its efforts in order to drive forward the transport transition as promised.

**RN:** What, in your opinion, are the main issues that government

must address with regards to rail transport in order to achieve the climate transition?

**DF:** Last year public pressure led to progress. The federal government decided to support environmentally friendly rail much more. But we're still waiting for policies that set clear priorities and that give precedence to climate-friendly mobility. As long as this government supports all modes of transport, regardless of their consequences on the environment, it will continue to miss its climate goals in the transport sector.

#### < Railway-News

# Reliability, Accessibility, Maintainability, Safety: IGW Further Invests in Customer Comfort

H aving been active for many years in the railway market, we recently decided that further investments in customer support are necessary.

Besides providing our customers with high-quality engineered newbuild products, we understand that supporting our customers with aftermarket activities is at least as important. Now more than ever, Reliability, Accessibility, Maintainability, Safety (RAMS) as well as life- cycle costs (LCC) are



important aspects of the product range.

Therefore, we recently chose to extend the scope of our supply needs by providing a wide range of aftermarket services for rolling stock OEMs and operators.

A big advantage of this extensive roll-out is that our customers and end-customers won't now have to rely on so many different suppliers and service providers, which in turn makes us an even closer partner. Our aftermarket activities will consist of five main areas: repair, maintenance and overhauls carried out on all rail gearboxes; overhaul of entire wheelsets; supply of spare parts; reengineering; and assembly and test training.

Repair, Maintenance and Overhauls Carried Out on All Rail Gearboxes

Besides providing services for gearboxes produced by IGW, we can also provide a full range of aftermarket activities on gearboxes



made by third parties. We will have a very flexible attitude with regards to major assignments. For example, we are happy to go into the field or receive goods at one of our plants or service locations in order to perform the required aftermarket services. We can further give our customers the guarantee that service contracts can run for the entire lifespan of a gearbox. If challenges require further analysis, we will co-operate with universities or special investigation labs. If IGW is doing the overhaul, maintenance or repair, rest assured that we provide a warranty in line with the works done.

#### Overhaul of Complete Wheelsets

The total cost of ownership related to wheelset-overhaul should not be underestimated. There are a number of factors causing costs to go up for our customers and end-customers, such as logistics



chains, the dedicated project management required, the potential, related quality risks, and customer overheads. Besides all this, customers want to reduce the number of suppliers as part of their efficiency strategy. We are now proud to announce that

we will be able to maintain entire wheelsets as well as just gearboxes. As an additional benefit to our customers, we are thrilled to announce that we have started to install our own wheel presses in each of our plants globally, of which the first one is already installed in our plant in Brno, Czech Republic.



As a planned investment we will have wheel presses installed in our plants in India (Pune), China (Suzhou) and America (Zanesville OH). The installation of the wheel press in each of our facilities will also allow us to enter the market for spare axles and bearing boxes. In short, we are convinced that having our own wheel presses will make the lives of our customers easier as this strongly reduces the total cost of ownership with all its related hurdles. On top of all the advantages mentioned, we can provide a balanced warranty on each and every wheelset overhaul activity we provide.

#### Supply of Spare Parts

This service is mostly aimed at customers who want to perform the maintenance of their rolling stock by themselves, but need the correct and original spare parts to do so. We are happy to offer those customers gears, cases, labyrinths, covers, bearings, bearing bushes and many more original quality parts. On top of that, these spare parts are not reserved exclusively for gearboxes made by us, but also for those made by any other gearbox manufacturer in the world. All of this is aimed at making life easier and more transparent for our customers.

#### Reengineering

Our reengineering service is aimed specifically at gearboxes





not made by IGW. Whenever a customer encounters problems with a gearbox, wants to refurbish a running fleet, do overhauls, needs re-ratio actions and/or requires any possible aftermarket activity on a rail gearbox, we are braced and ready to help by tracking down the problem by reengineering the gearbox. Our expertise in this field allows us to execute all such activities in a trusted and qualitative way.

As an added bonus to our customers, we always design and improve the gearbox design based on the build-in space and technical specifications provided by our customers. In other words, any reengineering process will be customised to that specific customer.

#### Assembly and Test Training

Finally, when customers decide to maintain and repair their rolling stock themselves, we absolutely want to ensure that those customers have the correct knowledge to do so. Hence why we are now ready to train our customers' employees. Furthermore, we can supply routine test benches to our customers and train them to carry out these tests themselves. This way, they are certain that their gearboxes are ready for use upon repair or maintenance.

#### Additional Services

Apart from the abovementioned aftermarket services, we offer several additional services. We can overhaul any brand of existing rail gearbox couplings as well as replace any brand of couplings with IGW couplings that we design, produce and supply in-house.

Furthermore, we can provide IGW bearings as well as rubber and metal elements.

As mentioned earlier, we are available to assist in re-ratio projects. If a rolling stock operator decides to upgrade the motor in vehicles that are in refurbishment, a new gear ratio may need to be implemented into the existing gearbox. That is where we come in to provide them with a high-quality service.

In short, we have introduced a number of aftermarket services to better aid our customers when they want to maintain, repair or overhaul their rolling stock. We firmly believe that this move will make us an even closer partner to our customers. It is another step in the process of making IGW a complete service provider, making life easier for our customers as they will have to rely on fewer different partners.

Are you involved in any aftermarket activity as discussed above and want to simplify your scope of work while reducing your cost and risk? Please trust IGW to support you!





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# Realising the Intelligent Train – True Digital Enablement

By Nick Camara, Global HR Director at Nomad Digital

O ne aim of the intelligent train concept is to provide a single maintainerfriendly view of the train. True digital enablement involves the ability to predict failures, highlight hidden problems and issue real-time alerts when failures happen.

> By using information in a more structured, controlled and repeatable way to plan corrective maintenance, engineers can move towards a condition-based maintenance regime, helping to maximise equipment life, increase availability, reliability

and reduce costs. The key is to identify potential failure warning signs before a failure occurs, as the repair cost is usually typically far lower to handle pro-actively as opposed to after the event.

#### Accessing Data

Train systems generate a huge amount of data – a standard EMU generates in excess of 5,000 signals, equivalent to 2GB of data per train per day, and gathering this data is costly – data transmission could cost thousands of pounds per train per year. We think that about 0.25% of this data is critical from a maintenance perspective, so the secret is smart use of the full data set. This requires the ability to access this data, process it and then have an on-shore backoffice solution that can visualise and analyse it, develop predictive algorithms and integrate procedures into maintenance management. Data can then be compared to understand how fleets are performing relative to each other and, if presented in a standardised form, allow for direct comparisons across manufacturers. A key part of the savings comes from changes in maintenance practices based on the information being generated from the condition-based maintenance solution. +5 12%

#### Connecting Everything

An example of the success of the intelligent train concept is its application to the Portuguese

#### 😂 Railway-News



Railway's Pendolino fleet. Here, 70% of maintenance tasks are now condition-based – in a more controlled and managed environment. This has helped reduce in-service failures by 43%, increase availability by 20%, raise average fleet mileage by one third and reduce instances of 'no fault found' by 40%. Over a 12-year period, maintenance costs have fallen by 57%, demonstrating the significant room for improvement that the intelligent train concept offers.

We think condition-based maintenance is hugely powerful. But it is only through the insight and intelligence of the engineers and maintainers that use it, that it becomes most effective. As part of our 'connecting everything' vision, and with the advent of IoT, big data and artificial intelligence, conditioned-based maintenance is becoming an integral part of realising the intelligent train. Nomad Tech, our joint venture with EMEF and the Portuguese Railways is focused on this market.

Our solutions allow you to sense, collect and deliver data about the train to the shore and this can be used for a number of purposes such as conditionbased maintenance (CBM), driver advisory systems, to identify energy efficiencies and in support of power electronics.

We've recently won a large contract, which uses this data to improve the operational and reliability nature of the trains. This is being used with a transport authority to ensure that the franchise is delivering the service levels and value that they have promised.

If you would like to hear more about our CBM please get in touch with **marketing@** nomadrail.com.



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A freight train in Italy © Enrico Bavestrello CC licence

FUORIMURO

# Through the Storm and Forward: Rail Transport at the Time of Covid-19

#### By Tommaso Spanevello, Public Affairs Manager, UNIFE

The Covid-19 pandemic has severely disrupted economies around the world as it has forced people's daily lives to a grinding halt.

The coronavirus outbreak is reasonably expected to have lasting impacts on our individual behaviour and lifestyle, particularly on the way we work, consume and travel. In regard to the latter, transport and mobility are at the epicentre of the immediate and long-term challenges posed by the global health crisis. From urban traffic to international trade flow, bustling movement has given way to hushed calm. Many countries have closed their borders and imposed curfews – resulting in sharp reductions in transport demand at both the local and continental level.

Nonetheless, even during such difficult times, transport's fundamental function of moving people and goods has remained an imperative, not a choice. The whole European rail sector, including its supply industry, has been working relentlessly to keep the inevitable economic impact as limited as possible while ensuring that international supply chains best continue to move seamlessly under these unprecedent circumstances.

UNIFE believes that a strong response to the post Covid-19 economic and social consequences must be taken primarily at the EU level, in conjunction with national efforts. To that end, we strongly welcome the Roadmap for

#### Railway-News

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S4 17.15 Salez-S. Rüthi Rorschach St. Gallen 1
Corona-Information Ausflugsfahrten: Bitte verzichten Sie auch an Ostern auf
Ausflugsfahrten mit dem öffentlichen Verkehr und bleiben Sie wenn möglich zu
Hause.

### Recovery "Towards a more resilient, sustainable and fair Europe",

endorsed by Member States in April. In particular, the document includes a strong investment component that welcomingly confirms an upcoming "comprehensive recovery package with the EU budget at its heart" for a Marshall Plan-type investment effort. It also defines key areas for action, including investments in clean and digital technologies, ensuring the strategic autonomy of the EU through a dynamic industrial policy and the crucial restoration of trade flows and supply routes.

#### Perspectives and Solutions for Rail Passenger Transport

Rail and public transport find themselves particularly under pressure as governments worldwide struggle to engineer a gradual, cautious restart of several economic and commercial activities. Arguably, in the short- and perhaps mediumterm, ridership and transport demand are likely to drop for both mainline and urban passenger services as sanitary guidelines continue to recommend social distancing and the limitation of our movements.

Despite the ongoing crisis and its stringent sanitary guidelines, the whole rail sector has not been sitting around waiting. During this time, the rail community has been looking to the future and working on a systematic, sensible and coordinated response. The goal is to put in place a set of measures targeting each phase of a mainline and urban journeys that sharply minimise the risks for the public transport staff as well as for passengers, curbing further the spreading of the infection. Such measures would require an efficient coordination between transport companies and public security and health authorities, as much as their implementation would follow a careful assessment based on scientific evidence. These norms, whenever communicated, must be adequately accessible and understandable by everyone. Additionally, on the supply industry side, European rail manufacturers have made the safety of workers an absolute priority, while making unprecedent efforts to ensure the continuity of the production.

The rail sector has actively followed public health guidelines to help **"flatten the curve"** and inspire public confidence in public transport during this distressing period. For example, it has become obligatory to wear personal protective gear such as masks and gloves and to disinfect vehicles and facilities. Furthermore, the sector has rearranged timetables and reorganised indoor spaces to limit **"peak hours"** and ensure safe distance between users at all times.

Following this further, new digital applications offer public rail transport solutions that will help navigate it successfully through this storm. There exists a plethora of data-driven technologies that can be utilised by health and public transport authorities to facilitate and accelerate their decisionmaking. Locating and tracing passengers in real-time while communicating this information to users simultaneously is a scenario that is feasible due to the recent wave of data-driven innovation that mobility has been experiencing. In a sanitary emergency, such as the world currently finds itself, a clear picture of how, when and where people move would allow authorities to reorganise public transport in an efficient and safe manner.

The European rail supply industry has been leading the way in acknowledging the importance of streamlined data collection and processing to devise actionable insights. European rail manufacturers have been long calling for multi-stakeholder collaboration within the sector. The setting of a framework for data sharing processes across the mobility chain could be a reliable asset for public transport in the present time of the global health crisis. Collaborative research



programmes, such as the Shift2Rail Joint Undertaking, would be crucial in the development of the enabling technologies.

#### Rail Freight: Keeping Europe Supplied

As rail passenger transport is working hard to get through the winding path, it is rail freight which has claimed a central role during this crisis. In fact - especially in the early stage of the infection's surge - the urgency to contain the coronavirus from spreading uncontrollably has caused borders to regrettably reappear across our continent. Suddenly, the logistics chain was abruptly disrupted. Once defined by frictionless border crossing, European freight transportation was suddenly mired by grounded airplanes or endless queues of lorries.

Notwithstanding the gridlock, the European supply chain has kept moving thanks to its railways. Indeed, rail freight transport has provided the lifeline for raw materials, medical equipment, food and other essential products to continue to circulate around Europe. Rail freight has been finally able to leverage to its fullest potential its high capacity, safety and efficiency for the good of the EU. As a matter of fact, rail freight has proved to be a strategic asset for the EU economy, offering reliable crossborder cargo connections for large volumes of goods using minimal human resources. The importance of rail freight operations can be expected to grow even further over the coming months, and is an excellent opportunity to make the logistics chain more sustainable.

In March, UNIFE welcomed the European Commission's adoption of the *"Guidelines for border*  management measures to protect health and ensure the availability of goods and essential services".

The Guidelines set forth **"green lanes"** for freight transport in order to untangle the circulation of goods and ensure the availability of supplies while emphasising the importance of ensuring continuous flows along the TEN-T Network.

#### The Green Deal's Climate Priorities during the Health Emergency

Even before the sudden appearance of the pandemic, the European Union was at a crossroads concerning its future economic and social model. Climate change, in particular, has been one of the most pressing issues to solve.

A way forward would require not only a different political mindset, but concrete steps to enable businesses, industries and citizens to drive forward a transformation of production and consumption based on sustainability and resourceefficiency.

Last December, the European Commission (EC) launched the European Green Deal (EGD) as the hallmark of its mandate, under the responsibility of EC Vice-President Frans Timmermans. The ambition of the EGD is to affirm Europe as the global leader in the transition to a net-zero greenhouse gases (GHG) emissions economy, by reaching full climate neutrality by 2050.

All sectors and industries are expected to proactively contribute this goal by reducing their carbon footprint and will be subject to different measures aimed at supporting Europe's overarching sustainability goals.

As the coronavirus infection surged, UNIFE and other economic and civil society actors firmly advocated for the EU's continued commitment to the EGD priorities and objectives. UNIFE argued that climate neutrality and the green transition should not be watered down or dismissed due to the worldwide sanitary emergency.

In this regard, European rail manufacturers welcome the Roadmap for Recovery, approved by EU Member States on 23 April, explicitly acknowledges the Green Deal as a crucial enabler for Europe's post covid-19 economic recovery. UNIFE fully agrees that the Green Deal is as much an economic growth instrument as it is a climate plan and endorses the call for massive investments to be channelled into the European green transition.

Mobility is built into the architecture of the Green Deal. As the transport sector accounts for nearly a quarter of the EU's greenhouse gases emissions, climate neutrality cannot be achieved without the decarbonisation of transport. Rail stands out as the exception. It is the only mode which has reduced its emissions while improving further its energy efficiency and increasing its capacity – and is therefore essential to achieve the Green Deal's climate ambitions.

Within this framework, according to the European Commission's new work programme, a strategy for "sustainable and smart mobility" is expected to be launched by EU Transport Commissioner Adina Vălean at the end of this year. Modal-shift to sustainable modes such as rail will be key



to accomplishing the strategy's ground-breaking goal to reduce transport emissions by 90% by 2050 – compared to 1990 levels.

#### A Way Forward for Rail Transport in the Postcrisis World

Throughout the present global health emergency, rail public transport has indisputably been facing a number of considerable challenges. It has tested its resilience, resourcefulness and ability to adapt to an extraordinarily unpredictable degree.

However, these weeks have also shown that even when our countries are brought to a nearstandstill, rail and urban rail systems (i.e. trams/metros/urban rail) have continued to ensure the circulation of goods and the continuation of fundamental services.

The circumstances has showed the rail sector's support to national health systems – as seen in the case of special **"medical trains**" to transfer patients from one region to the other – and the transportation of passenger working in **"essential professions"**. This has been made possible thanks to major EU investments in rail projects in the past years, in particular through the Connecting Europe Facility (CEF) and the European structural and investment (ESI) funding instruments, which has modernised European infrastructure, eliminating bottlenecks and bridging missing links.

The strategic role played by rail during the Covid-19 crisis, and its assets as the greenest and safest mode of mass transportation, should convince Member States' governments to direct huge investments towards strengthening future transport systems with rail as their backbone. UNIFE firmly believes that Europe needs a massive infrastructure investment programme as part of the green recovery roadmap, and investments in rail must be at the forefront of this initiative.

UNIFE hopes that European institutions and Member States will mobilise ambitious EU and national financial envelopes to relaunch Europe's economy while fostering key climate objectives set by the Commission in its European Green Deal. European rail manufacturers believe that the transition towards climate neutrality must be at the centre of the revised Commission's Multi-annual Financial Framework (MFF) 2021-2027 proposal and the Roadmap for Recovery. Furthermore, the forthcoming "Sustainable and Smart Mobility" strategy in the context of the Green Deal offers an additional opportunity to shape the European economic and social upturn within a long-term outlook based on climate neutrality, resource efficiency and circularity.

Throughout its long history, rail transport has overseen significant economic, political and social turmoil. Its reliability, immovability and safety has got it through those earlier trials and has proved to be a strategic asset for citizens and economies in their pattern to recover. The coronavirus global health crisis has posed unprecedent challenges to which the whole rail community, once again, is working tirelessly to respond. The European rail supply industry reaffirms its readiness to work together with the European Commission, European Parliament and Member States to ensure that rail transport best contributes to both the recovery of the EU economy and the wellbeing IGV Lyria of European citizens.

International high-speed trains DB ICE, SBB Giruno, SNCF TGV Lyria © SBB CFF FFS

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# Upcoming **Railway Events**

#### Online

Since so many events, conferences and exhibitions have been cancelled, postponed or moved online as a result of the coronavirus pandemic, we want to give you the latest information about rail sector events, along with webinars you might be interested while physical events are not taking place. Fraunhof

#### Shift2Rail

"Innovations from the Travellers' Perspective": 12 May 10am CET "Innovations from a Transport Service Providers' Perspective": 14 May 10am CE

#### **RIA Online Mini-Series to Support Rail Exports**

Webinars with DIT Trade Advisors from across Europe will discuss opportunities to UK companies in their respective markets: "Estonia, Latvia and Lithuania (including Rail Baltica update)": 11 May 2020, 1-2:30pm BST; "Denmark, Finland, Norway and Sweden": 27 May 2020, 2-3:30pm BST

#### World Rail Festival & RailLive

Upcoming webinars are: "The Future of Rail. What's on the Horizon?" (20 May, 4pm CET) – Following the Covid-19 crisis, new behaviours will emerge. "The Future of New Mobility & Covid-19: What Will Change and What Will Remain the Same?" (27 May, 4:30pm CET) - The Covid-19 crisis will change the way we live and travel long after lockdown restrictions are lifted.

**RCI Webinar: Prevention Meets Simulation – Rail** Industry in Response to Coronavirus

In this webinar rail professionals will be able to talk to companies from the ECRI network whose innovative solutions tackle the corona crisis: 13 May, 10am-11:30am CEST; "Freight and Logistics Taskforce Webinar" (27 May 10am CET): Shift2Rail **Executive Director Carlo Borghini will** participate in the ECRI event, which will examine how to promote a shift towards multimodality in freight.

#### Rail Africa 2020

Fraunhofer

Still due to be held 25-26 August 2020, the event organisers are also holding weekly webinars every Wednesday at 10am (GMT +2). Upcoming ones include "Closing the Financial Gap: The Necessity of PPPs" (13 May) and "Plunging Sales: The Road to Recovery for Passenger Rail Operators" (27 May).

**NRW International:** Finanzierungsinstrumente für die Bahnindustrie in Nordafrika (in German)

The African continent is attracting more and more international attention and the German government, with its 'Marshall Plan for Africa' and its 'ProAfrica Initiative' is strengthening its involvement in the region. There are many modernisation and construction projects, including in the rail industry, in Morocco and Tunisia. 27 May 10am-12:30pm CEST

#### **COMPRAIL 2020**

The 17th International Conference on Railway Engineering Design & Operation will become an online event, held on 1-3 July 2020. It is still possible to submit abstracts and papers for this conference event. The event is organised by the Wessex Institute (UK), the Polytechnic University of Madrid (Spain), and Kogakuin University (Japan).

# Upcoming Railway Events

### Physical

#### Intermodal Asia 2020

This event was originally due to take place in March 2020 but has been postponed to **14–16 July 2020**, to be held at SWEECC in Shanghai, China, instead. At the time of writing this July date is still in place.

#### RailwayTech Indonesia 2020

Scheduled to take place on **26–28 August 2020** at the JIExpo in Jakarta, Indonesia, this is the fourth instalment of this event. Major rail projects in Indonesia include LRT systems in Jakarta, Makassar, Medan, Surabaya, Bandung and Yogyakarta; metro systems and high-speed rail systems (Bandung and Surabaya).

#### Rail Freight Summit 2020

This event was originally scheduled for May 2020 but has been postponed to **1–3 September 2020**. To be held in Poznan, Poland, it will focus on shifting freight traffic on to rail. Poland has a strategic land position between China and the EU as well as on the north-south axis.



generation of series-hybrid locomotive. Core technol efficient PMSM (Permanent Magnet Synchronous M EN 50129 SL4 compliant SCI8<sup>th</sup> battery, as well as a locomotive design, will be applied. European and working closely together in order to offer a modul fulfills every needs of the operators.



#### < Railway-News

# Measuring and Testing Solutions Safety Is Measurable

Higher speeds, more intensive loads and increasing travel comfort requirements – the demands on modern track construction and a sustainable railway infrastructure are diverse. Our measuring and testing solutions ensure the highest degree of safety and reliability.

A detailed inspection of the track condition is essential to enable predictive maintenance, which will assure the long-term efficiency and reliability of your railway network and rolling stock. Goldschmidt's measurement and inspection technology provides the assurance your operation requires. In addition, our extensive catalogue of measuring and testing devices is capable of detecting and analysing the contributing factors to rail defects. Our precision equipment can be deployed in all rail environments, which empowers you to complete inspections with the assurance of accurate defect analysis.

Goldschmidt offers you measuring and testing solutions together with documentation for the geometry and failure analysis of railway tracks. These solutions enable you to identify deviations and derive preventative maintenance measures to ensure a longer service life for rails, switches and wheels. In the long term, this ensures an optimal condition, lower maintenance costs, higher safety and punctuality.

#### Detect and Evaluate – Geometry and Defect Analysis

There are numerous types of geometry and rail defects that need to be detected, monitored and evaluated early as possible. With its digital and smart solutions, application-specific devices and services, Goldschmidt is well positioned for managing diverse railway track conditions. These solutions enable the precise documentation of signs of wear and defects while taking into consideration the measures necessary for defect removal.

#### Track geometry:

- Cant
- Gauge
- Clearance
- Corrugation
- Twist
- Cross section

#### < Railway-News

#### Track and rail defects:

- Broken sleepers
- Broken rail
- Missing parts
- Head checks
- Squats
- Internal defects

#### One-Stop Shop – The Right Solution for Every Request

Goldschmidt offers you an extensive range of cutting-edge measuring and testing solutions in the form of innovative products and services. Our platforms are the foundation that enables the implementation of individual solutions through our proven technology.

The Goldschmidt product range includes measuring and testing devices for each application area. Whether as a hand-held device or integrated in trolleys, track carts, road-rail vehicles or inspection trains, state-of-theart technologies provide precise measuring and testing results in a uniform format, making safety and quality tangible

This basis allows you to develop maintenance strategies and use suitable Goldschmidt products and services to derive specific measures. By combining our modular technologies we are able to equip platforms flexibly and therefore offer application-specific solutions for many different requirements

Precise Diagnosis of Track and Rail Geometry – Reliable Planning through Condition-Monitoring Geometric parameters are key to be able to analyse the track condition. The measuring and testing results have to be within the permitted technical tolerance range.

Regular measurement of track and switches guarantees your operation will be running safely. The continuous collection and evaluation of data will enable you to implement a preventive maintenance programme for future inspection and repairs. Based on this data you can maintain sections of track where there is increased wear by performing grinding and welding work at an early stage to improve wheel-to-rail contact. By measuring the track and longitudinal rail geometry you can detect an opportunity to reduce noise and wear. In order to achieve the best results, we also provide a measurement of the straightness of the track at your welded joint. The acceptance and review of work performed on the track is also recorded with the respective applications.

#### Precise Analysis of Track and Rail Defects – Making the Invisible Visible

Increasing axle loads, higher speeds and consequently greater







forces being applied to tracks are the leading causes of fatigue and damage to a rail network. Through early detection and preventative maintenance, rail wear, safety and the life of assets can be optimised.

During a visual inspection, surface defects, breaks in the material and missing parts are detected and documented. Inspection procedures are also important for the track safety where internal material defects and hidden damage are detected that cannot be seen with the naked eye and would otherwise go unnoticed.

Eddy current and ultrasonic testing enable you to carry out a complete rail evaluation as well as the classification of surface and internal defects. This allows you to identify, locate and monitor areas highly susceptible to flaws.













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This innovative edge, based on the future-oriented technology of **Dari** <sup>®</sup>, is the special and unique added value offered by our Goldschmidt products. Experience new dimensions at the track construction site. With **Dari**<sup>®</sup> by **Goldschmidt**.

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## **SENSIT**

# Manufacturer of Sensors, Switches and Converters for Railway Vehicles

#### www.railwayvehicles.com

SENSIT s.r.o. has been producing temperature sensors since 1991. The company has been engaged in the development, production and supply of special sensors, switches and converters for railway vehicles since 2004.

### TEMPERATURE SENSORS AND TEMPERATURE SWITCHES WITH DIGITAL OUTPUT FOR RAILWAY VEHICLES

We have extended the range of temperature sensors for rail vehicles with the type of sensors with the **RS 485 / MODBUS** and **CAN protocol / CANopen** digital output. By this, we continue to expand our product range after adding combined temperature sensors, sensors of relative humidity, CO2, atmospheric pressure and VOC sensors with digital outputs.

- MODBUS/RTU communication protocol, communication via the RS 485 bus
- CANopen/CiA DS 301 communication protocol, communication via the CAN bus

Thanks to this step, we are able to offer a complete range of temperature sensors with plastic heads with different outputs – resistance, current (4 to 20 mA), voltage (0 to 10 V, 0 to 5 V) outputs and newly also with digital outputs **RS 485** and **CAN protocol** in the design:



#### For the INDOOR use

These sensors are designed to measure temperature of gaseous substances in spaces protected against water. In the application segment of rail vehicles, the sensors are mainly used to measure temperature in passenger compartments of train units and carriages and are a part of the temperature control system.



#### For the INDOOR / OUTDOOR use

These sensors are designed to measure the outdoor air temperature or the indoor air temperature. In the application segment of rail vehicles, it is used for example to measure temperature of the air in locomotive engine rooms; it can be a part of the temperature control system in passenger compartments or is used to indicate temperature in the engine room as a part of the fire protection system.



\* 6 2 3

With a **MEASURING STEM** 

These sensors are used for temperature measurement of liquid or gaseous substances. In the application segment of rail vehicles, it is used for example to measure temperature of the outdoor air under the vehicle floor. For this purpose, the sensor is equipped with a stem with high mechanical resistance.



Recently, we have expanded our range of digital sensors with digital converters and switch:

- Converters Temperature RS 485
- Converters Temperature CAN protocol
- Temperature switch with output RS 485
- Combined temperature and humidity sensor with stem with the RS 485 / CAN protocol output



#### Complete range of sensors with the RS 485 / CAN protocol digital output

- Temperature sensors
- CO<sub>2</sub> sensors
- Combined temperature and relative humidity sensors
- Combined temperature and CO<sub>2</sub> sensors
- Combined temperature, relative humidity and CO<sub>2</sub> sensors
- Combined temperature, relative humidity, atm. pressure and VOC sensors
- Combined temperature, relative humidity, CO<sub>2</sub>, atm. pressure and VOC sensors

### All products of SENSIT s.r.o. designed for application in the rolling stock segment meet the specific requirements defined in so-called railway standards:

- Insulation test in accordance with EN 50155
- Shock and Vibrations test in accordance with EN 61373
- Electromagnetic Compactibility in accordance with EN 50121-3-2
- Fire Protection on Railway Vehicles in accordance EN 45545-2 and NFPA 130

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Sailway-News

## Notice to Proceed and Coronavirus – HS2 in 2020

In 2017 HS2 Phase One was granted Royal Assent, 14 years after Britain got its first highspeed line. And just last month the project was allowed to issue the formal approval to construction companies to start work. This Notice to Proceed has now come during a global crisis. We asked HS2 Ltd how they were faring during the coronavirus pandemic and how the project would help the UK's economic recovery. 

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First of all, congratulations on receiving the Notice to Proceed after HS2 got its approval in February. Since the coronavirus pandemic really stated impacting life in the UK in March, can you give us an overview of how the circumstances have affected HS2 so far?

Thank you. Notice to Proceed was a major moment for us. HS2 Ltd awarding the contracts to our four Main Works Civils Contractors is the next significant step of Phase One of the project. An estimated 400,000 supply chain contract opportunities for UK businesses will be created during Phase One of HS2, supporting thousands of jobs on site and many more around the country. Our contractors are continuously reviewing their ability to work within Public Health England's (PHE) and the Construction Leadership Council's guidelines to ensure the health, safety and wellbeing of our workforce and the communities in which we are

working. As a result, some of our sites have paused construction works, although they may remobilise if our contractors are confident they can operate in line with PHE and industry guidance. Those sites still working are doing so because they are confident of operating within PHE guidelines, and will be monitored and remain under constant review.

What's proving particularly challenging? Are there any unexpected advantages?



HS2 is committed to reusing as much of the excavated material it produces as possible. As part of this policy we're studying the presence of sulphates in Mercia Mudstone on a route section near Birmingham to understand whether it is more suitable for embankment building than previously understood. A favourable conclusion to our investigation could result in us reusing around 10% more excavated material on site to build embankments than previously planned; this would reduce road traffic, carbon emissions and disruption to neighbouring communities.

This is a difficult time for almost everyone, in many respects but also economically. Suppliers to HS2 must be glad of the security of that work. Are you hearing from them about their problems with keeping their work going?

We are working closely with our

construction partners to review activity on our construction sites in line with Government and Public Health England advice on dealing with COVID-19. The Government's current Covid-19 strategy makes clear that construction work can continue providing it complies with this guidance.

In response to the Covid-19 outbreak HS2 has challenged our suppliers to develop innovative practices to monitor and operate





in the construction environment to ensure we provide our teams with the right protection and monitoring equipment.

The challenge has received a very positive response from our suppliers with 19 innovations delivered, including: social distancing technology that people can wear; and health screening and contact tracing in the workplace. In addition to the 19 there are another 20 in the testing stage.

#### What impact do you think HS2 will have on the economic recovery of the country?

The HS2 railway is a significant investment both in the near and longer-term economic health of the UK. As we recover from the effects of the pandemic, HS2 will help to drive investment right across our country. For example, cities including Birmingham, Leeds and Manchester are already benefitting several years before the railway opens. Over 3 million people work in the construction sector, most of whom are outside London and the South East. Every pound spent in the sector generates 2.84 GBP in economic activity. HS2 is already supporting around 9,000 jobs. During its 20-year construction it will create over 30,000 engineering and construction jobs – including 2,000 apprentices – directly on its sites and many more thousands in the supply chain around the country. Investment





in HS2 is an investment in the UK's SMEs – the country's engine room. Over 2,000 companies have already delivered work on HS2. 95% of HS2 contracts have gone to UK-based businesses – 60% of those are SMEs.

HS2 remains integral to the plans for Northern Powerhouse Rail and Midlands Engine Rail. As Britain's economy recovers from the effects of COVID-19, it is vital that people of all ages and abilities will be able to access the jobs, education and training opportunities that will rebalance the UK economy and spread economic wealth.

Are there any changes to the way you work that you've implemented that you'd like

### to keep after things return to normal?

We are of course always looking for ways to improve the way we work, but it is too early to tell how the current situation could influence the future working practices of either HS2 or our suppliers.

#### Looking towards the future, what are some of the next key milestones for the project?

At the moment our contractors continue with site preparation along the route between London and the West Midlands ready for major construction to start between the autumn of 2020 and spring 2021. The designs for some of the railway's major structures, including its four stations are being examined by local authorities in whose areas they are to be built.

Our designs for one of them, Curzon Street station in Birmingham, have been approved by the city's authority. Over the next year or so we expect to receive verdicts on designs for the railway in other local authority areas.

#### All the big rolling stock manufacturers put in bids for producing the HS2 trains last June. Will you still be selecting the successful candidate this year?

Our plan is to award the contractor build up to 60 high speed trains at the end of 2020.



### treadmaster flooring

### **Specialised Transport Flooring**

1

Market leaders in high specification rubber safety flooring and assessories for Rolling Stock.





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# Tiflex Brand Treadmaster Flooring Excels in Fire Safety

Tiflex Ltd is celebrating 75 years of specialised rubber manufacturing in the UK.

We have a rich heritage of supplying products across several markets and around the world including oil and gas, marine, leisure and commercial, and defence as well as rail, both track and rolling stock. We operate under several brands including Trackalast, Tico, Treadmaster Marine and of course Treadmaster Flooring.

TM7 is Treadmaster Flooring's highest-grade rubber flooring and was first developed by Tiflex Ltd in Cornwall directly following the King's Cross Tube disaster of 1987 and as part of the subsequent drive from TfL to source the safest-possible products for their London Underground trains, tracks and buildings.

Undergoing many developments and improvements over the following years, Treadmaster TM7 continues to be manufactured from scratch at the Tiflex factory in Liskeard. It has a unique homogenous construction meaning the surface appearance is completely consistent throughout the body of the product. This has meant that the product has maintained its integrity and appearance over several decades and can be

re-worked rather than replaced for light damage. It performs extremely well in terms of wear resistance in most industrial and high-traffic areas and maintains a clean and aesthetically pleasing finish through its entire life. Currently we believe it to be the safest rubber flooring on the market today in terms of fire safety. It easily complies with the British Standard BS69853: 1999 Category 1a and the European Norm, EN45545-2 HL-3 on all substrates, where the British Standard, we believe, is the more stringent of the two.

In 2018 the New European Rail Fire standard EN45545-2 became mandatory across the EU and





has taken over from existing national standards such as BS6853. The key focus of this was to harmonise rail fire standards across Europe making it easier for European companies to have access to the wider European market without having to meet all of the previously existing national fire standards.

In some quarters the new EN45545-2 standard is acknowledged as being less stringent than the existing national standards and as a consequence, some materials that didn't meet the old national standards may now meet the new European standard. We believe homogenous rubber flooring falls into this category and have tried to communicate that to specifiers so they might consider this when choosing products. We have run basic comparative fire tests for ourselves using samples of other prominent rubber flooring manufacturers and it's our opinion that the difference is notable. We believe that specifiers and operators should not feel pressured to reduce costs by using materials that would not have previously met the national standard but now meet the European standard.

Tiflex is a relatively small but specialised British factory and that means that we can be flexible. Our flooring is made from scratch and to the specifiers' exact requirements in terms of length, width and thickness. We can manufacture to almost any colour with other variants including chip ratio and size and several finishes. We operate against a minimum order quantity of just 80 square metres which gives the specifier several options in terms of colour reference, size and finish.

Although we can supply standardised rolls for the installer to cut down on-site, we mostly provide a tailored service, sending full kits out, packaged in such a way that the receiver can offload in order of installation. All our Treamaster Flooring options can now be supplied with a 3M high-bond PSA backing and, in many cases the flooring can be packaged flat, saving further time and money.

We have decades of experience of working with designers, specifiers and installers of highperforming rubber flooring on rolling stock throughout the world, and often provide consultations.



#### YOUR RAILWAY PARTNER

# Connections: a key link in the railway transport chain

As an industry partner and key supplier in the international railway sector for more than 30 years, we have a clear insight into your challenges and expectations, such as service continuity, extreme weather conditions and mechanical stresses. We provide an effective response with optimized solutions, whether for high-speed, main-line, suburban or regional trains, or tramways and underground railways.

www.staubli.com/electrical



MPC - Modular power connector



FAST MOVING TECHNOLOGY

## Interview



Michel Schmitt, Business Development Manager Railway at Stäubli Electrical Connectors, tells Railway-News about the company, its innovations and expertise and why its products are perfectly suited for rail applications.

#### Can you give us a glimpse into the history of Stäubli Electrical Connectors?

Stäubli Electrical Connectors is a leading international manufacturer of high-quality electrical connectors and system solutions for industrial applications. Its product portfolio ranges from miniature to highperformance connectors for power transmission, industrial automation, transportation, test and measurement, and many other industries. In photovoltaics, Stäubli is the global market leader with its MC4 connectors. The core of all Stäubli electrical connectors is the unique MULTILAM contact technology.

We are a part of the Swiss family company Stäubli, a world-leading provider of innovative mechatronics solutions with three specialised areas of activity: connectors, robotics and textiles. The company was founded in 1892.

You've been working in the railway technology industry for 30 years, and you've contributed to many

### innovations. Can you tell us a bit about that?

Yes, that's right. As I mentioned, our connectors are based on the MULTILAM technology. To put it another way: the MULTILAM technology is the core of all of our electrical connector solutions, and provides very high contact quality with minimal power loss. This allows for an exceptionally long service life, making it the essential innovation at Stäubli Electrical Connectors.

In 2012, we designed the first modular power connector system for high-current connections in a traction chain of a train. and introduced it to the market with great success. Another groundbreaking project was our custom fork-plug system for contacts in high-voltage applications. Working closely with CARS (China Academy of Railway Sciences), we developed a bipolar GSR 2.5 fork plug for the latest generation of Chinese highspeed trains. The GSR connects the water-cooled circuit board, where the IGBT module (insulated-gate bipolar transistor) is mounted, with the busbar in the converter cabinet, and allows for fast assembly and

disassembly. Using extremely powerful insulating material, we're able to meet strict industry requirements for mechanical stability and resistance to aging.

### What does quality mean to you?

For us, quality means fully meeting our customers' requirements and expectations, and offering customised solutions for specific needs. Our electrical connectors are designed for demanding applications with high currentcarrying capacity, which makes us a welcome and reliable partner in harsh environments. We provide solutions that are built to last, and that not only ensure our customers' productivity, but actually increase it.

#### What expertise does Stäubli offer for rail vehicles and transport solutions?

As an industry partner and major supplier for the international railway sector with over 30 years of experience, we know the challenges and expectations of this market, including continuity

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of service, extreme weather conditions and mechanical stress. Connection solutions in the rail industry are essential for mobility systems, and for safety as well. We often get involved in customer projects as early as the front-end engineering phase. Thanks to our many years of expertise, we're able to offer custom advice and solutions that are precisely tailored to the customer's specifications, independently of the customer's location and for all types of rail vehicles.

You mentioned safety as an essential concern. How does Stäubli ensure the safety of its solutions? Is this a particular challenge, given the varying climate conditions and different standards in different parts of the world? Complying with international standards is obviously fundamental for us. As a certified manufacturer, we are proud to satisfy all the requirements and local regulations for each market we serve. We're actively involved on the relevant standards committees, which allows us to react quickly to changes.

In the field of railway technology, we're certified ISO/TS 22163, formerly IRIS – the International Railway Industry Standard. It's a reference system that was created at the initiative of major equipment providers and is maintained by the European rail industry association UNIFE (Union des Industries Ferroviaires Européennes) as a tool for continuous improvement and excellence in research.

Our products meet or exceed all relevant industry standards. One example: for the fire safety standard EN45545-2, our products are classified at the highest level – that is, we test our products beyond the limits set by the standard. We attach great importance to field data, and in our in-house test labs, we continuously run very strict tests based on customer specifications, as well as endurance tests. Our test labs are regularly





GSR 2.5 fork plug in an IGBT module in a traction converter © Stäubli Electrical Connectors

audited by international standards organisations around the world, so they're able to ensure a very high standard of quality.

### What's special about your products in this sector?

We offer solutions that reduce maintenance and repair times for railway cars and locomotives. Our products are built to provide the very highest level of reliability and are based on modular systems like our Modular Power Connector MPC. The benefits of the MPC system lie in its practicality and user-friendliness: thanks to the modular system, customers can choose from a vast range of multipole connector designs. And since the connectors meet all railway industry standards and offer nominal voltage/current values of up to 3600V / 700A, they're suitable for many different high-current and high-voltage applications. These applications include connections for transformers, traction motors, converters and batteries, and power connections between cars.

In short, our products offer high current-carrying capacity, a compact and space-saving design, and are perfect for use in hard-toaccess locations. We specialise in customer-specific solutions, and we see ourselves as a solution provider and partner for innovative, high-performance, lightweight and streamlined solutions specifically for harsh environments.

#### What trends do you see in the railway sector, and where do you see Stäubli 10 years from now?

As of today, not all railway lines are electrified, and some countries still rely on the use of diesel locomotives. But there's a strong trend toward alternative electric drive solutions. So we need smart. flexible connection solutions to safely connect with modern systems - like battery systems, for example – and we believe that the trend away from diesel will continue in all major countries and regions in the years to come. Various alternative drive systems are currently under development, including hydrogen, battery-powered systems, and other technologies. For us as a supplier of electrical connectors, it's an ideal situation. Speed is also a key factor, whether that means reducing downtime with a fast, user-friendly connection process, or in terms of high-speed trains that require connectors with a higher load capacity. So yes, we can confidently say that we're ready for the market requirements of tomorrow, and in an ideal position for the future with our products and planned innovations.

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Bridging the Gap Between the Latest Autonomous and Artificial Intelligence Technology and Railway Maintenance Needs Means Significant Cost Savings for Railways

Autonomous inspection technology, artificial intelligence and bigdata analytics offer new paths for inspection without impact on revenue service.

When it comes to successfully identifying derailment risks, railways face two principal challenges: scheduling critical track activities within limited track time without impacting revenue service, and accomplishing that within budget.

Railways are continually tasked with finding creative ways to identify derailment risks and necessary maintenance without taking track time away from revenue cars.

Fortunately, the integration of advanced technology – such as autonomous inspection, artificial intelligence and big-data analytics – offers unprecedented opportunities for planning efficiency and significant maintenance cost savings. By integrating these technologies across the entire continuum of asset monitoring and maintenance planning – from track inspection and data collection to condition trending and data-driven prescriptive maintenance – railway maintenance engineers are realising improved safety and fewer revenue service disruptions.

#### Data Collection: Autonomous Systems Offer a Highly Efficient Solution

Today, autonomous inspection systems deliver reliable, fully autonomous inspection with systems installed on passenger or freight cars that are in revenue service.

One of the most significant advantages of autonomous

inspection technology is that every movement of the host train offers an opportunity to evaluate the track, allowing for more frequent inspections without dedicated inspection vehicles taking up track time.

The use of autonomous inspection technologies can result in earlier detection of track defects, allowing maintenance practices to be preventative rather than reactive. This ultimately reduces the risk of track-related derailments and decreases the cost per inspection.

#### ATGMS: Earlier Defect Detection

ENSCO Rail, a pioneer in the research, development and delivery of track measurement and inspection technologies, has developed the Autonomous Track Geometry Measurement System



(ATGMS). The ATGMS uses the latest fully digital, non-contact measurement technology employed by ENSCO Rail in all of its traditional manned track geometry systems. Measurements are performed every 250mm, up to the maximum speed of the vehicle, and can be performed in either direction. The ATGMS provides real-time transmission of continuous metreby-metre measurement data, as well as exception processing in accordance with the automatically determined class of track.

#### More Reliable Detection through Artificial Intelligence

One inherent challenge faced by traditional autonomous track measurement systems is that certain conditions or track features can mimic defects, when in fact track conditions are normal. To remedy this, ENSCO Rail developed advanced artificial intelligence algorithms that recognise and filter out these false positives. The algorithms are based on human data editors from thousands of miles of actual survey data, from which the ENSCO Rail algorithms learned to edit out false positives for real-time reporting.

#### Big-Data Analytics Offers Condition Trending and Data-Driven Maintenance Planning

Maintenance is a necessary and significant expenditure by railway personnel. Taking a proactive approach to maintenance and asset planning can yield significant savings by reducing manual condition data analysis and unnecessary maintenance expenditures.

New asset condition technology that relies on artificial intelligence, machine learning and data analysis offers the potential for significant reductions in maintenance costs every year while increasing operational capacity through accurate application of maintenance tasks.

#### AMA: Cost Savings through Predictive Maintenance

The ENSCO Rail Automated Maintenance Advisor (AMA) automatically identifies areas of poor track performance, determines trends in track condition deterioration and translates that data into prescriptive maintenance tasks. The result is proactive and data-driven track maintenance planning and sound, efficient maintenance decisions.

Fully automated and cloudbased, the AMA is flexible and configurable to railway customer deterioration trending needs. It operates automatically, routinely assessing track condition data and recommending maintenance tasks based on a specified maintenance strategy. Asset management plans include rail grinding, rail replacement, ballast renewal, tamping and turnout maintenance requirements.

The railway industry is on the cusp of an exciting new era of innovation in the way technology is applied to safety, operations and efficiency. As next-generation track defect detection and software analysis capabilities evolve, these technologies will optimise railway maintenance and renewal planning, reduce risks through earlier identification of track defects and improve rail network safety.

To learn more about ENSCO Rail autonomous track inspection and data management products, please contact us.

The ENSCO Rail Autonomous Track Geometry Measurement System increases network safety and has the lowest cost per inspection © ENSCO





## Autonomous Inspection. Artificial Intelligence. Big-Data Analytics.

ENSCO Rail—the leader in autonomous inspection—brings them all together for intelligent, data-driven predictive maintenance.

www.ensco.com/rail

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## Save the Date...

Key railway events that have been moved to later in 2020 or 2021.

#### InnoTrans 2020 – Germany

Originally due to take place 22–25 September 2020, InnoTrans 2020 will now take place **27–30 April 2021** at Messe Berlin. InnoTrans 2022 will take place at the regular time.

#### Infrarail – UK

The biannual show that alternates years with Railtex will now take place in conjunction with Railtex on **11–13 May 2021**. This also means it changes venue from London to the NEC in Birmingham.

#### Rail Live! Madrid – Spain

This show in the Spanish capital should have taken place 31 March–2 April 2020 but is now going to take place at the same venue on **30 November–2 December 2020**.



## Social Distancing in Public Transport

A report on the need for social distancing for open-access operators, and how a seat reservation system could offer a short-term solution.

T he COVID-19 pandemic has introduced huge challenges to the public transport industry, with the almost immediate and almost complete shutdown of the (international) public transport systems as the most striking short-term effect.

As countries are gradually seeing the effects of their various measures in an attempt to 'flatten the curve', governments and public transport authorities and operators are starting to consider the post-corona society and the effects that we will experience long-term as a result of these unprecedented events.

This poses tremendous challenges to those public transport operators that follow a so-called 'open access' model. Without upfront knowledge of the capacity and occupancy of train or bus services, ensuring a safe distance between passengers is an almost impossible task. While airlines and high-speed rail operators may see ways to adjust their seating and reservation logic to ensure more distance, the challenge to achieve the same effect is a multitude larger for operators without the luxury of knowing in advance who will be on board.

Switching to some form of a reserved seating model seems unavoidable in order to prevent the public transport system from being overrun during rush hour



while safety regulations in the new reality only allow usage of a portion of the physical seat capacity.

"Social distancing is a

critical element of our

lives. at least until a

vaccine against COVID-19

is widely available and

people feel safe using

public transport."

But how to approach this, as an operator that has limited or even no experience at all with seat reservation on-board their services?

#### Seat Reservation in Several Flavours

Advanced inventory management systems approach this in several ways:

- The 'reserved seating' model
- The 'no seat assigned' reservation model
- The 'contingent based' reservation model

In the traditional reserved seating model, an individual passenger is assigned to a specific seat, and is informed on their ticket or boarding pass about the seat they have been assigned to. They are expected to occupy that seat, and that seat only: in a public transport system that also supports open access, the seat is often even labelled to indicate where and when it is expected to be occupied by a reservation.

In the no seat assigned reservation model, the physical train or bus floor plan drives the calculation of seat availability dynamically (and this availability is decremented automatically for every new booking), but the customer is never actively informed about which precise carriage and seat they should use during their journey. For efficiency reasons, the allocations in the background do actually target individual seats and

carriages: they are just never communicated to the passenger intentionally. The reason why allocation to specific seats still happens is efficiency: with a service halting at multiple stops

(allowing for multiple origin & destination pairs to be booked), this model can capture and optimise seat-reusage, sometimes referred to as cabotage, as much as possible. The fact that the seat number is not exposed to the customer often reflects the operational challenges in actually directing passengers to the right seat during their trip.

In the contingent based reservation model, the capacity reserved for booking is detached from the actual rolling stock used and is configured entirely manually per departure, date, and physical inventory class. The simplicity of the configuration of this model is the obvious benefit, while it is at the same time also its primary drawback: when the rolling stock planning changes and a train is cut in half for operational reasons, the operator must carefully consider the new reservable capacity. In the previous models, the fact that this recalculation is triggered automatically can be considered a significant benefit.

Operators typically also mix these models; for some business-oriented products, a specific guaranteed seat is assigned on intercity trains. For other more affordable leisure products, no specific place is communicated to the passenger (even if it may be assigned in the background). And some commuter services only manage reservable capacity by number, using the contingent approach, without dealing with the individual seats at all.

Whatever the model, each requires a sophisticated inventory management system that is (at the very least) capable of dealing with the challenges of:

- Calculating availability in real-time on origin – destination basis, as train routes and long-distance bus lines have the additional complexity (compared to airlines) of stopping at several locations during their service
- Being able to provisionally lock capacity and release it again, should the customer abandon the booking process prematurely before finalising and confirming the transaction
- Serving accurate information at scale, while

"From an inventory management point of view, seat reservation as a concept does not necessarily imply that every individual passenger is assigned to a specific seat and is informed actively about the seat they can occupy during their journey."



still ensuring the central source of information is up to date (in an inventory management system, at any given point in time there is only one version of the truth in terms of current status of capacity and occupancy)

Operators that already have access to a modern inventory management system can consider themselves (relatively) lucky in the COVID-19 circumstances, as they can meet the social distancing challenges with updated configuration in their seating algorithm, blocked seats on their services, or reduced contingent sizes.

But for open access operators not in possession of such a system today, achieving the same effects threatens to be an operational nightmare involving large numbers of staff on-board and on platforms, and, even worse: a great number of disappointed passengers that are not allowed to board their originally planned departure due to (over)occupancy reasons that can only be observed by the time of departure.

#### Introducing Social Distancing Seat Reservation

The need for inventory management due to COVID-19 does not necessarily introduce a 180 degree change of course for open access operators. A seat reservation system can also be introduced besides the existing ticket sales, payment, and distribution systems. Of course, under more fortunate circumstances, an integrated ticket and seat reservation strategy simplifies the procedures, enhances customer experience, and leads to the highest gains at the lowest cost. But if the luxury of time is not on our side, and acting fast is required, solutions can still be achieved.

Even if that means the seat reservation is not directly related to the transportation ticket as a 'right to travel': many operators in Europe traditionally even come from the situation in which the ticket and the seat reservation were entirely separate entities. Some of the larger operators in Europe, in fact, still work like this. In that approach, the information needed to configure a state-of-theart reservation system is limited to:

- Timetable information for the future departures on the network
- Rolling stock information on the train and bus types that are delivering the service
- Business rules around seat allocation, in order to respect social distancing requirements

In that perspective, integration of ticket validity rules, payment collection for transactions, or even the fulfilment of secure digital barcode tickets, suddenly become less relevant than they would otherwise be in a more integrated approach. As it turns out, one does not need so much to get a reservation system up and running!

Relevant Considerations and Questions "Even with a less integrated reservation system operators could make use of the solidarity of their passengers and the overall willingness to contribute to the health and safety of all, by registering the intention to travel on a specific service departure."

Operators facing these challenging times, should ask themselves several strategic questions going forward. For example, when these challenging times of the COVID-19 pandemic lie behind us, would a reservation system still provide further added value in our business process? (Spoiler alert: yes, it does, in many ways!)

In the short term, in order to be able to at least use seat reservation as the solution to comply with social distancing requirements, the questions are more pragmatic and help to easily identify the scope of a potential system introduction:

- Is integration with the existing sales system and journey planner actually required at all?
- Is the raw data from the operational planning department regarding rolling stock readily available

to assign passengers to specific seats?

- Is a 'labelling' solution in place to ensure passengers can easily identify carriages and seats during their journey? Are the seats physically and visually numbered at all, on board?
- Is it safe (from the perspective of potential abuse of the system) to allow the placing of seat reservations free of charge, as the existing ticketing system is initially not integrated?
- Are passengers allowed to place seat reservations anonymously? And if not, what characteristics are best captured on each transaction to strike the right balance between a smooth operational process and safeguarding customer privacy?

The outcome to these questions may well vary over time: what is acceptable as a short term 'emergency' solution, in these times of great citizen solidarity and willingness to co-operate with regulations and restrictions imposed for the public health and safety of all, may be less accepted by the customer base in the midterm. For that reason, choosing a solution that provides maximum flexibility moving forward, is by definition recommended.

#### Sqills and the S3 Passenger Community

Sqills is a vendor of industryleading reservation and inventory management solutions focused entirely on the rail and bus industry and is currently actively working with a wide public transport operator community to face the challenges of this time.

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Key members of our community are SNCF with OUIGO and TER, Eurostar, Thalys with IZY, BlaBlaBus, Irish Rail, all UK train operators under the Rail Delivery Group, and more. For our existing customer base, our S3 Passenger product offers the toolset to manage this crisis by configuring relevant sales restrictions, and reduced inventory capacity, and Sqills is actively working at this very moment on explicit 'social distancing' features that can be configured by the operators in their deployed S3 Passenger environment. These features will respect the required distance between separate bookings, while at the same time still allow a family to be seated together.

Based on today's challenges introduced in this whitepaper for open access operators, Sqills extends an open invitation to all operators in the industry to join the S3 Passenger community and evaluate in a co-operative teaming mode with our internal subject matter experts as well as our industry partners and members, whether an ultra-fast deployment of an S3 Passenger instance for seat reservation can be a solution to help colleagues in the industry re-start their operations in the aftermath of the COVID-19 pandemic.

Quick time to market is a key benefit of the S3 Passenger

platform, both in terms of the 'rollout' of the system itself, as well as seeing configuration changes through towards all distribution channels. Under more fortunate circumstances, this benefit was often highlighted as a 'unique selling point' and makes the commercial business case of using S3 Passenger more attractive.

It is our honest conviction that in these extraordinary circumstances in the industry, the quick time to market could be of critical importance to operators that need to find their way forward one way or another in the uncertain future of public transport.

Please **contact Sqills** if you feel we can support you with that challenge.





# The leading inventory reservation, and ticketing solution

Rail and bus operators benefit from the complete range of functionalities used by leading public transport operators:

Thousands out-of-the-box features

exceeding expectation

- Proven technology
- A short time-to-market
- Powerful self-service functionalities

S3 Passenger - the established, future-proof software suite capable of powering your public transport business

Join our community of 30 public transport operators. Learn more at <u>www.sqills.com</u>