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The latest news & reviews from the industry



Inside:

Rail Baltica – Building a New Economic Corridor ...p.10

DIT – UK-Australasia Rail Delegation ...p.22

&



9-12 JUNE
STOCKHOLM 2019
GLOBAL PUBLIC
TRANSPORT SUMMIT

...p.67


RAILTEX

Issue Two 2019 – Railtex Special



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Letter from the Editor

Dear Readers, Railtex 2019 is now just two weeks out. This year marks the 14th time this international event for railway equipment, systems and services is taking place. Spanning 3 days (14–16 May), the exhibition will be accompanied by a plethora of supporting events.

For example, visitors will be able to attend the Seminar Theatre, where leading industry figures will give keynote speeches that will address the challenges and opportunities of the rail industry. Confirmed speakers will come from companies and organisations such as Siemens, the Rail Supply Group, Unipart Rail, Hitachi, Network Rail, British Steel, Alstom and more.

You can read "Global Team Delivering for UK Passengers" by Nick Hughes, who will be giving the talk on behalf of Hitachi, in this issue of the Railway-News magazine. Nick Hughes will be speaking at the Seminar Theatre at 12:30pm on Wednesday.

Another Railtex highlight is the Knowledge Hub. The programme of events taking place here has been designed together with the Railway Industry Association (RIA). Topics include the Sector Deal between the UK government and the rail industry and the decarbonisation challenge in the context of the Electrification Report. There will be two talks on international opportunities – Rail Baltica and investment in Turkey.

If you want to find out more about the Rail Baltica project, you can read "Rail Baltica – Building a New Economic Corridor" by Timo Riihimäki, CEO and Chairperson of the Rail Baltica Management Board in this magazine. The International Opportunities 1 event discussing Rail Baltica will take place at 3:15pm on Tuesday.

If you want to learn more about RIA's activities at Railtex, look no further! Katherine Anchorena from the Railway Industry Association provides an overview in "RIA at Railtex: Bringing even more of the industry together than ever before". David Clarke, Technical Director, RIA will

present the Decarbonisation Challenge talk at 10:30am on Thursday.

Staying with RIA but looking further afield, Ian Barnett in the Department for International Trade discusses the opportunities for the UK rail sector to invest in the Australian market, following a UK rail industry visit to New Zealand and Australia organised by RIA and the DIT earlier this year. He writes, "As an association, [RIA] have decided that Australia is the primary focus market outside of the UK".

Baroness Rona Fairhead, Minister of State for Trade and Export Promotion at the Department for International Trade will speak at the Opening Ceremony at 10:30am on Tuesday (Seminar Theatre). She will also deliver the keynote speech at 11:50am that day, entitled "Railway as a Business".

Our next issue, due to be published on 3 June 2019, will focus on Rail Live, held in the United Kingdom (19–20 June). As always, we will keep you informed of all the highlights of the show. If you would like to be represented on our website or in our magazine, please contact Andrew Lush at al@railway-news.com.

Please enjoy our 2nd issue of 2019!



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If you would like your company to join Railway-News's online platform, please contact **Andrew Lush**.

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Contents

p.7 Railtex en route for NEC return next month

p.45 RIA at Railtex

As one of the event's key partners, the Railway Industry Association presents its activities at the show, including the RIA Hub, the Future Focus conference and opportunities for SMEs to pitch their innovations

p.16 FEATURED SUPPLIERS & ADVERTISERS INDEX

EDITORIAL FEATURES

p.10 Rail Baltica – Building a New Economic Corridor

Timo Riihimäki, CEO and Chairperson of the Management Board at Rail Baltica, discusses the major rail infrastructure project

p.22 UK-Australasia Rail Delegation

Ian Barnett, Senior Trade Development Manager at the Department for International Trade's Melbourne office believes Australasia is a key market for the UK rail supply industry

p.34 Global Team Delivering for UK Passengers

Nick Hughes at Hitachi Rail gives readers an update about the Intercity Express Programme (IEP), their Class 385 electric trains for Scotland, their bi-mode technology and their digital expertise

p.59 UPCOMING EVENTS

May 2019 – July 2019



The banner features a dark blue background with a stylized high-speed train in light blue and white. On the left, there is a logo for the Railway Industry Association and the 'FUTUREFOCUS CONFERENCE' logo. Below this, social media icons for Instagram, Facebook, and Twitter are followed by the text '@railtex #Railtex2019' and the website 'www.railtex.co.uk'. On the right, the word 'RAILTEX' is written in large, bold, light blue capital letters. Below it, the dates '14 - 16 MAY 2019' and the location 'NEC, BIRMINGHAM, UK' are displayed in white capital letters.

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RAILTEX en route for NEC return next month

On 14–16 May 2019, Birmingham's NEC will play host to Railtex, the industry's definitive exhibition of railway technology and services.

Over the course of three days, more than 8,000 rail professionals and 400 suppliers will be in attendance, with thousands of products on display from organisations demonstrating the latest industry technology and innovations.

For more than 25 years, Railtex has been the rail industry's favoured meeting place, and the 14th occasion is set to bring together a host of visitors and exhibitors, new and returning, to meet, network and do business in the heart of the Midlands.

New technologies on display

With organisations spanning the full range of sectors, including rolling stock, manufacturing, engineering, signalling, telecommunications and more, there promises to be a wealth of new technology on display throughout the three days.



Electrical safety specialist **Bender UK** will be showcasing state-of-the-art monitoring technology, including RS4 signalling fault location systems.

One of the world's leading HMI providers for the rail market, **EAO Ltd** (the UK subsidiary of Swiss firm **EAO AG**) will be launching the passenger interface innovative phone charging system with iBeacon location technology and will also showcase EAO's market-leading HMI switching products, along with the latest in LED lighting solutions.

Izhevskiy Radiozavod (IRZ), a leading provider of innovative rail technology solutions, will be showcasing its latest technology, **RADIUS**, a frequency shift repeater for GSM, GSM-R, UMTS and LTE networks. The product minimises the need for expensive base station equipment and infrastructure, providing the same network coverage and network capacity but with significantly lower capital and operating costs.

Turbo Power Systems (TPS) specialises in the design and manufacture of ruggedized power conversion solutions for the railway industry. In the spotlight at Railtex, TPS is bringing one of its brand-

new innovations – the ground-breaking APS unit built for BT Central Line. The new APS units are naturally cooled and require minimum maintenance. The next-generation units use cutting-edge SiC technology to improve efficiency, reduce size and weight, and cut down power device losses whilst contributing to a greener use of energy.

These are just a small sample of the many innovations that will be on show at the NEC in May. A full list of exhibitors can be found in the official show preview and at www.railtex.co.uk.

What's on – Education

Registration for Railtex 2019 includes entry to a comprehensive educational programme taking place every day. Speakers will include leading industry figures,





senior managers responsible for the implementation of current UK rail projects and representatives of organisations taking part in the show. A new conference area will feature a range of interactive forums, topics and discussions while keynotes will be provided at Seminar Theatre and the Knowledge Hub will host a selection of project updates and industry briefings from key figures. Railtex is once again working closely with the Railway Industry Association to offer all show attendees an outstanding selection of project updates and industry briefings. Speakers already confirmed include HS2's Mark Lomas and Robin Lapish, and Innovate UK's Kelvin Davies, who will all take to the stage at the show's Knowledge Hub. Other speakers still to be confirmed include representatives from Network Rail, RSSB, Rail Supply Group, Midlands Engine and many more.

The Railway Industry Association will also host a special one-day conference on Wednesday 15 May, which is also free of charge to pre-registered visitors. This new Future Focus Conference will facilitate dialogue between those responsible for major project delivery and the supply chain and will offer insights and discussions around a number of pressing issues for the future of rail, including high-speed rail, the digital railway and sustainability. Registration for Railtex 2019 also gives visitors access to a range of

industry keynote speeches, project updates and technical seminars that are accredited by the CPD Certification Service, meaning they can be used by attendees and their professional bodies towards annual Continuing Professional Development.

What's on – Displays

With hundreds of exhibitors and thousands of innovative products on display, the show promises to give audiences a hands-on experience of the best technologies on the market. The **On Track Displays** will be placed in the main hall on the exhibition floor and will provide the setting for products displayed in situ as they would be seen in the field. Products on show will include those from British Steel, TSP Projects Ltd, Peli Products (UK) Ltd, Hird Group and Asset International Structures (A Division of Hill & Smith Ltd).

At the **RIA Hub**, members of the Railway Industry Association will be promoting their products, services and innovations in a dedicated area of the hall. Exhibitors include EnerSys Ltd, Eurofins York, Frazer-Nash Consultancy, Hird Group, Jewers Doors Ltd, Kilfrost Ltd, the Railway Industry Association and Viper Innovations Ltd.

Digital rail to be placed under the spotlight

The Birmingham Centre for Railway Research and Education (BCRRE) has announced it will be presenting leading digital innovations and technology as part of the DIGI-RAIL project, a scheme part-funded by the European Regional Development Fund (ERDF) which aims to establish a cluster of digital rail demonstrations to showcase long-term innovations and provide support to SMEs developing digital

products and services within the rail industry.

The Birmingham Centre for Railway Research and Education will present the DIGI-RAIL project amongst other research and development tools which will support organisations working in the industry's supply chain. The BCRRE will be exhibiting alongside the Rail Alliance, with the two organisations ideally placed to provide leading support to SMEs in the manufacturing and rolling stock sectors.

A new Digital Rail Forum will also be held for the first time, merging project management with the supply chain to allow a collaborative review of the digital rail programme, through thought-leadership, insight, sense testing, qualitative engagement and cross-fertilisation to ensure its goals are met. With keynote speakers set to be announced soon, this forum

will help establish what a future digital railway could look like and achieve with the support of the broad scope of industry sectors represented.

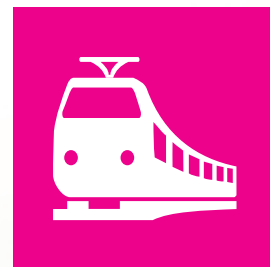
Free registration until 13 May

Entry to Railtex 2019 is free of charge if you pre-register online ahead of your visit. You can do this up to 13 May, the day before Railtex opens. To do so go to **www.railtex.co.uk** and click on the 'Register Now for Free' button. For non-registered visitors there will be a £20 entry charge payable on arrival at the NEC.





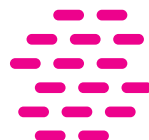
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RAIL BALTICA

– Building a New Economic Corridor

*By Timo Riihimäki, Chief Executive Officer
and Chairperson of the Management Board*



project. However, the project benefits span way beyond the Baltic borders. Once completed the the missing link in the European railway system will finally be added, closing the existing gap and bringing countries closer than ever.

Many infrastructure and mobility policy goals are reached with the Rail Baltica project on the European level, starting with providing a link between the East and West of the EU, bringing Member States and regions closer to each other, ensuring a sustainable way of transportation and moving cargo distribution from roads to rail.

At the beginning of April, the annual Rail Baltica Global Forum welcomed more than 700 rail enthusiasts and experts in Vilnius, the capital city of Lithuania. 40% of the participants arrived to the forum by plane, another 30% – by car. These proportions are expected to significantly change in 2026, when the Rail Baltica high-speed train will be launched in the Baltic States and Europe.

Why is Rail Baltica important?

The Rail Baltica Global Project – an 870km railway line that will connect the Baltic States, Finland and Poland with the rest of Europe – will create opportunities for people in the region to increase their prospects and it is already doing so in the design and construction phases of the

Current megatrends – urbanisation, digitalisation and sustainability – are all in favour of Rail Baltica, which will provide efficient transportation solutions for passengers and freight and will help the region to address challenges posed by the climate change.

Rapidly moving forward

The Rail Baltica project has reached maturity and is being implemented at full speed. Significant progress has been made by concluding the key studies – the cost-benefit analysis, the operational plan, and the infrastructure management study; and procuring detailed technical designs of the main line. Moreover, the intergovernmental agreement has been ratified by the parliaments of the Baltic States committing to finish the railway line by 2026. In addition, the European Commission approved the Rail Baltica Implementing Decision in 2018.

So far 824 million euros are secured for the implementation of the railway, which includes the allocated 683 million euros from the EU's Connection Europe Facility (CEF) financing instrument. Overall the project realisation will

require 5.8 billion euros with up to 85% of financing coming from the EU funds. The rest will be supplemented by the state budgets of Latvia, Lithuania and Estonia, making it possible to accomplish significant economic benefits in the region.

Efficient procurement practice

The project stakeholders have entrusted RB Rail AS as the central co-ordinator of the Rail Baltica project with the responsibility of ensuring a common procurement practice. This involves the complex task of developing and improving a common procurement policy spanning three countries with different legislation, practice and supply dynamics. At the end of 2018 the various policy documents were combined into one updated project procurement policy, which

is now also available on the project website as 'The Common Procurement Standards and Guidelines for the Rail Baltica Project'.

To gauge how the quality of the procurement practice is perceived by the supplier market, RB Rail AS has undertaken a supplier survey for the second year, conducted before the Rail Baltica Global Forum 2019. This showed that almost 70% of RB Rail AS suppliers are rating the procurement practice at a level of 'high' or 'very high', indicating the level of professionalism that has been developed within the organisation. We are proud of the success to date and will continue with the efficient, fair and transparent procurement practice. With regards to the many exciting opportunities that will be coming up for suppliers, this year's list of planned tenders is available at the project website.

Rail Baltica

— High Speed
— Night Train
— Freight



Design activities on the agenda

A significant milestone in the project is that the first detailed technical design contracts have been signed and 7 out of 11 tenders for design services have been launched in the Baltic States, covering 57% of the entire Rail Baltica line. Recently, the first contracts were signed for sections in Estonia and Lithuania, while Latvia will follow in May.

Right now, it is important to maintain an active dialogue with the stakeholders and provide information that would help in making long-term investment decisions. It is expected that during this phase the local know-how will increase, and direct spending will give a boost to the economy.

This year, the key focus of RB Rail AS together with the implementing bodies will be on starting timely delivery of the

detailed technical designs, which is a precondition for strengthening the project maturity and on applying for next phase of funding to start construction works on the main line.

Until the end of the year several significant studies will be carried out to help with decisions regarding energy supply; railway maintenance facilities; control, command and signalling; and safety. In addition, it will be explored how to ensure synergy between the 1435mm and 1520mm railway networks to unlock the full commercial potential of the Rail Baltica line in the future. In 2019, the procurement system of construction supply materials and construction logistics will be explored to accelerate a resource-efficient project implementation.

Apart from the technical aspects, RB Rail AS's priorities are to deepen co-operation with Finland and Poland, to aim to secure the

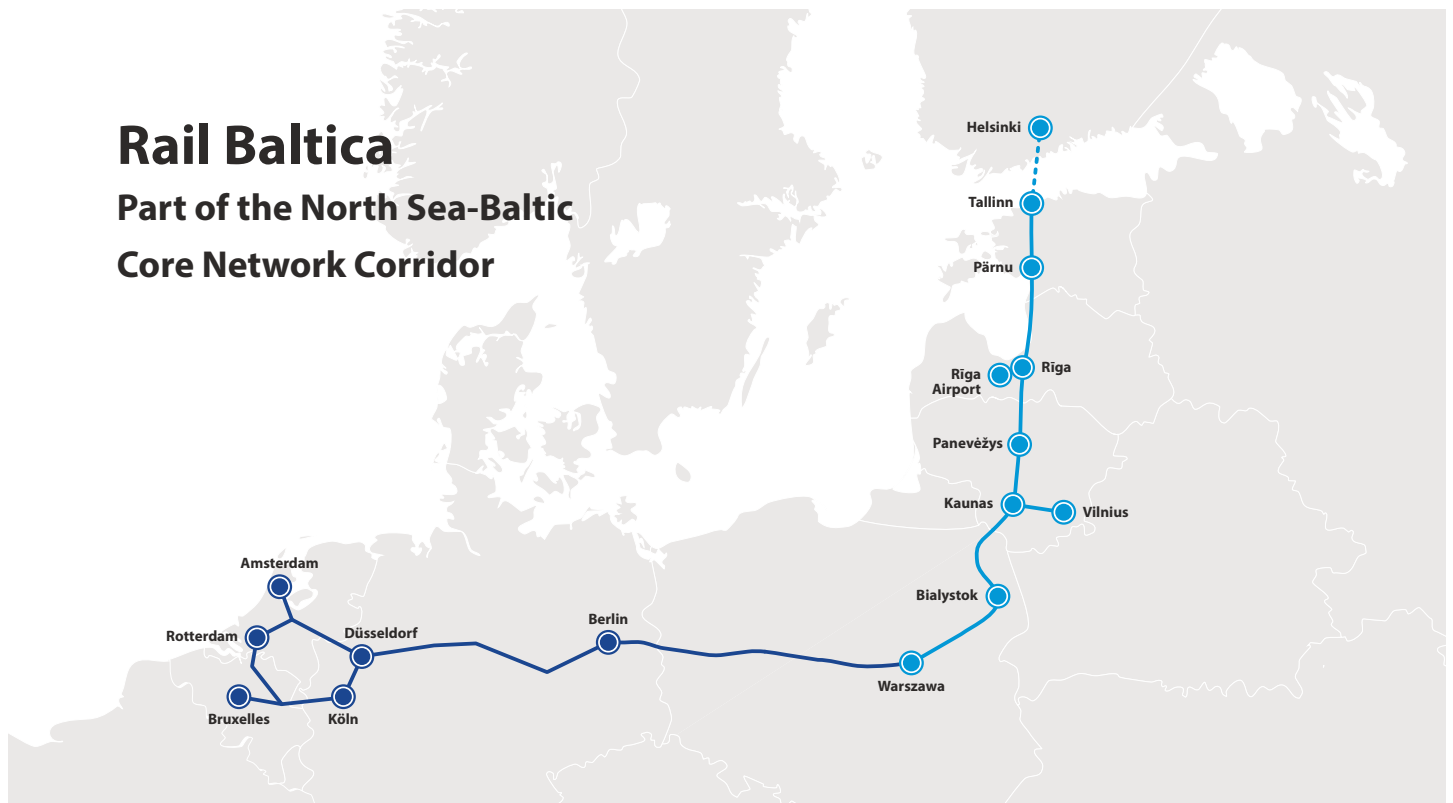
project's sustainable financing beyond 2023 and to enable the development of local infrastructure facilities. We are very pleased of the decision of the Finnish government to join RB Rail AS as a shareholder.

New intermodal transport solutions for passengers

On the passenger side the Rail Baltica route alignment foresees links to central business districts and airports, ensuring convenient connectivity for seamless future business travel. Rail Baltica will provide a platform for the creation of integrated passenger travel solutions that have never been available in the Baltic States before.

Currently, the journey from Vilnius to Tallinn by car or bus takes at least 10 hours, but the train will be able to cover the same distance in four hours. Moreover, reaching

Rail Baltica Part of the North Sea-Baltic Core Network Corridor



Warsaw when going from Vilnius by car takes seven hours, but with the creation of the high-speed railway it will be possible to reach the destination almost twice as fast.

According to the Operational Plan, Rail Baltica high-speed trains from Tallinn to Warsaw and from Tallinn to Vilnius will run four times per day once the line is launched and up to six times per day within 10 years of operation. Additionally, up to ten trains per day will run on the Vilnius-Kaunas-Warsaw route. As a result, Rail Baltica will provide a fast rail connection between the Baltic capitals every two hours.

Additionally, two night-trains on the route Tallinn-Riga-Kaunas-Warsaw-Berlin and Vilnius-Kaunas-Warsaw-Berlin are planned, enabling passengers to comfortably travel further to other destinations in Europe.

Freight logistics development

By integrating the region's key transport infrastructure elements – ranging from sea ports and inland logistics facilities to airports and city terminals – into the Rail Baltica ecosystem, the project will pave the way for the development of new intermodal and multimodal logistics solutions.

Baltic States will not only strengthen their ability to facilitate trade with neighbouring countries and with the rest of the European Union – accounting for three quarters of their total trade volume – at more favourable and competitive transportation rates, but also position themselves along the major European and global supply chains of today and the future.

Estimated origin – destination travel times by high speed train service

	Tallinn	Pärnu	Riga	Lidosta "Riga"	Panevėžys	Kaunas	Vilnius
Pärnu	00:40						
Riga	01:42	01:00					
Lidosta "Riga"	01:52	01:10	00:08				
Panevėžys	02:39	01:57	00:55	00:45			
Kaunas	03:18	02:36	01:34	01:24	00:37		
Vilnius	03:38	02:56	01:54	01:44	00:57	00:38	
Warsawa C.	06:47	06:05	05:03	04:53	04:06	03:27	04:07



It is estimated that 2–3 cargo trains with a maximum speed up to 120 km/h will run on the Rail Baltica line every hour. The permissible axle load of trains is 25t and length – 1050m. To facilitate freight movement on the line, three large-scale multimodal terminals are being developed – in Muuga (Estonia), Salaspils (Latvia) and Palemonas (Lithuania).

It is expected that 80% of freight trains on Rail Baltica will be intermodal trains, allowing logistics operators to move freight from road to rail, by putting containers and trucks on wagons. Important reductions to air pollution and road traffic congestion as well as improvements to overall road traffic safety are expected.

Catalyst for economic growth

The logistics industry is not the only sector which will experience tangible benefits. Other businesses will be able to use Rail Baltica's freight transport and multi-modal logistics

opportunities to break into new markets, making companies from the Baltic region more competitive on a global scale.

Alongside the improved movement of goods, service industries will be able to quickly and easily work across the entire region to take advantage of the new growth opportunities. On top of that, the project will generate 37,000 new job opportunities in its construction phase. This means that Rail Baltica will serve as an important catalyst of continuous economic development of the Baltic States – in the construction and operational phases.

We are moving forward with confidence and great willpower to begin the construction of the Rail Baltica project. It is the largest Baltic-region infrastructure project in the past 100 years. And by removing the logistical bottleneck that currently exists in north-eastern Europe it will provide the missing link in European transit networks.



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Case Study: Axminster Carpets on the TransPennine Express

Axminster Carpets was recently involved in producing a carpet for all 51 three-car Class 185 trains in the TransPennine Express fleet that were originally manufactured in 2005/06. These Siemens DMUs underwent a major refurbishment in 2017/18. Axminster Carpets collaborated with DGDESIGN in Derby to create a carpet that had a fresh, modern feel with a stylish geometric pattern. The choice of blue is the perfect addition to the leather seats in first class.

Anita Brennan, Head of Customer Proposition for TransPennine Express, said:

"We are delighted to have worked with Axminster Carpets on the refurbishment of our trains. The upgrade has completely changed the look and feel of what we can offer to our customers who travel across the North of England and Scotland with us. The Axminster carpets are a big part of this, and we're pleased to have supported them to help create something special."

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Railtex 2019

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SUPPLIER	STAND/PAGE NO.
Armacell	p. 58
ADLINK Technology GmbH	W54
Axminster Carpets	B16 / p. 14
Baultar	p. 64
Bender UK	H91 / p. 74
British Cables Company	p. 56
British Steel	R50
Camira Fabrics	p. 4
Capitol Industrial Batteries	p. 103
Cisco	p. 28
CML	p. 17
Daktronics	S11
Dyson	p. 104
ELeather	p. 18
FirstClass Safety & Control Ltd	W50 / p. 99
Frauscher Sensor Technology	G37
Mechan	N10 / p. 88
MTM Power	J03 / p. 78
Nomad Digital	B17 / p. 84
Parker	p. 44 / p. 81
Phasor Inc	p. 52
Polarteknik Oy	G02 / p. 96
Propex GeoSolutions	B14 / p. 104
Sensit	p. 9

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Sika Ltd	J61 / p. 48
Socomec UK Ltd	N50
Staubli Electrical Connectors Ltd	V57 / p. 25
Telegärtner UK Ltd	A41
Times Microwave Systems Inc.	M02 / p. 63
Treadmaster Flooring	p. 30
Windhoff Bahn- und Anlagentechnik GmbH	N81 / p. 71
Zetica	p. 38
ZÖLLNER UK Ltd	M69 / p. 40
Zonegreen Ltd	S10 / p. 92



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Changing the Fabric of the Rail Industry

As train companies strive to improve the overall passenger journey, they are increasingly recognising that a single carriage design simply cannot meet the needs of every traveller.

To improve customer experiences, they must address a broad range of needs. It's inevitable that the needs of a business traveller, for example, will be very different to those of a young family.

Having identified the different types of travellers, and their respective needs, rail companies have started looking at new ways to enhance customers' travel experiences.

A glimpse of the future

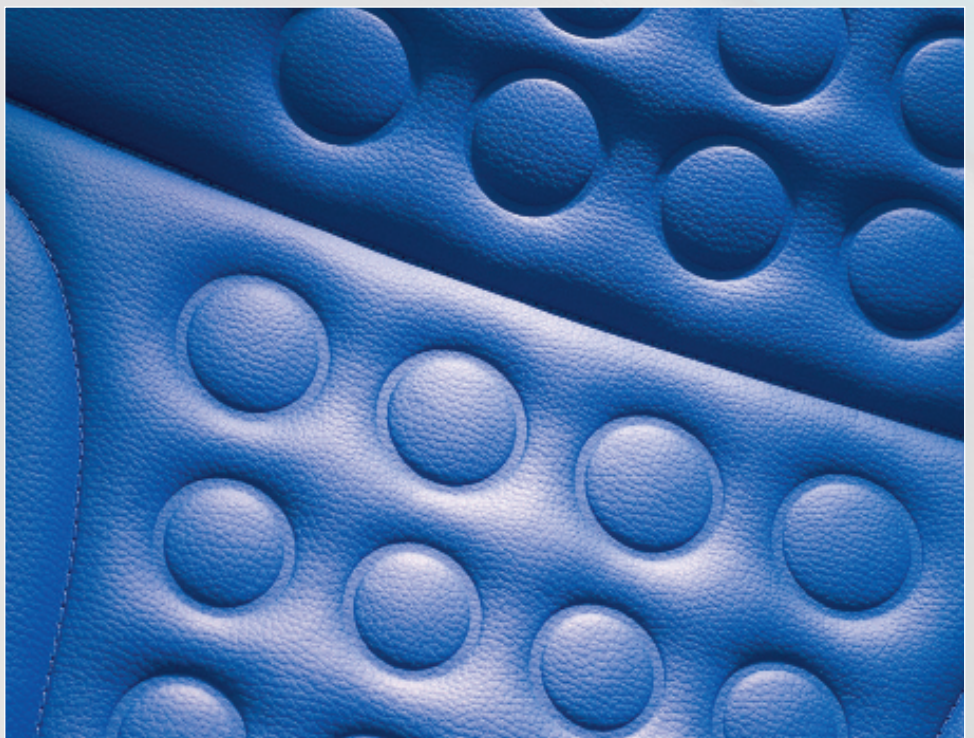
Concept trains are not a new phenomenon for the rail industry. While some ideas may be viewed as outlandish PR stunts, others offer a real glimpse of what the future may hold.

When Deutsche Bahn's Ideenzug ('Ideas Train') was first unveiled in November 2017 and displayed at InnoTrans 2018, it included carriages with privacy pods, noise-cancelling chairs, children's play areas and even a fitness studio.

British organisation ELeather was one of a number of partners involved in implementing the ideas. A selection of the concepts developed as part of the Ideenzug project have since been confirmed to be added to commercial services in Germany by 2020.

Smart design

In recent years we have seen a rise in modular carriage design. Having recognised that not all passengers want to travel in the same way, the industry has started creating designated spaces for work, relaxation and children's play. Comfort and practicality are key.





New technology innovations and installations often steal the headlines when the industry looks at changing carriage layouts. However, this misses some of the fundamental points around comfort and practicality that must always be considered. When designing new cabin areas, it's important not to underestimate the importance of selecting the right materials and fabrics that are used to create them. A children's play area for example, requires resilient, easy-to-clean, non-porous surfaces. From seats to surrounds, if the right materials aren't used, the carriage will quickly show signs of wear and tear. For business travellers there are different needs to consider. Passengers expect a more luxurious experience to justify a higher fare. The fabrics used for the seats and surrounding cladding must reflect this.

Anyone who's travelled on suburban commuter trains or on underground rail services will have, at some point, experienced the impact of a bad material decision. Dirt. Dust. Damage. The list goes on. Many traditional fabrics and materials simply don't stand up to the level of use that they will inevitably endure.

Organisations such as ELeather, the pioneer in engineered leather, are changing the way that the industry addresses these challenges by creating materials that increase performance while enabling brands to create extraordinary customer experiences.

Changing customer demands

Like all sectors, the rail industry is experiencing evolving customer needs and rising expectations. A survey from the consulting firm Walker found that by 2020 customer experience will overtake price and product as the key brand differentiator. Through social media, these experiences are being shared faster and wider than ever before. It has never been more important to deliver consistently high standards.

It is also important to consider the impact that other industries can have on rail customers. In the aviation industry for example, budget airlines are increasing the number of seats on their flights as part of the ongoing battle to keep fares low while maintaining profits. The impact of this is of course less cabin space for passengers. The quality of the cabin space becomes more important than ever. This has led providers to reconsider the materials that they use and the experiences they deliver.

Eco-conscious travellers

Rail transport is widely recognised as the most environment-friendly way to travel. The greenhouse effect of gas emissions per kilometer on railway transport is 80% less than cars. It's worth considering, however, that customers opting to travel via rail in an effort to help protect the environment will not welcome carriages fitted with unsustainable materials. In a recent survey, when Deloitte questioned young luxury shoppers it found that nearly a third considered a brand's ethical credentials before making a purchase.

Global government targets are also forcing the rail industry to take a closer look at their environmental footprint. 'Green' targets cannot be ignored.

A bright future

ELeather has changed the way the rail industry thinks about fabrics and materials. Its revolutionary production process transforms unused leather into advanced materials while achieving a significantly lower environmental footprint. ELeather reduces waste, increases performance, and enables brands to create extraordinary products and memorable customer experiences, while improving sustainability.

Used in over 12,000 rail vehicles and compliant with industry standards EN45545-2 and BS6853, ELeather is highly experienced in the nuances of the rail industry – and continues to develop solutions that solve the challenges of today and the future. With customisable grains, textures and colourways, ELeather can help rail providers deliver multi-purpose carriages, differentiating areas by class or usage and delivering an optimised travel environment – providing flawless functionality. The durability of engineered leather helps maintain quality for longer, enables easier maintenance, and reduces the lifetime cost of ownership. And its sustainable nature means operators can be safe in the knowledge they are doing their bit for the environment.

The needs and demands of rail passengers will continue to evolve and change over time. To keep thriving, it's important that the rail industry moves with them. Engineered leather is set to play an important role in this exciting future.

UK-Australasia Rail Delegation

In March Railway-News reported that a delegation of representatives from organisations in the UK rail industry visited New Zealand and Australia on a trip arranged by the Railway Industry Association and the Department for International Trade (DIT).

The governments of both countries are increasing investment in rail projects. The purpose of the visit was to discuss opportunities for suppliers to enter these growing markets. The focal point of the meetings in Melbourne and Sydney was the signing of a Memorandum of Understanding for future collaboration by RIA and the Australasian Railway Association.

In this article Ian Barnett, a Senior Trade Development Manager at DIT's office in Melbourne, tells Railway-News why this agreement is so important for the industries in the UK and Australasia:

Australia is currently receiving a renaissance of funding in infrastructure across all sectors. Around ten years ago, the Australian economy was very



Ian Barnett DIT



Tour of the brand-new multimillion-dollar Rail Operations Centre in Sydney

focused on putting resources into the mining industry, so the majority of new infrastructure being built was in some way related to this sector. Currently, the government, particularly the federal government, has made a conscious decision to invest in transport infrastructure. The two key projects they are investing in are the Sydney Western Airport and the new Inland Rail. The Inland Rail will create 1,700 kilometres of railway line connecting Melbourne, up through inland Australia, to Brisbane. These projects have put Australia in a unique position where there will be two decades of funded projects ahead. This means there is now industry certainty around upcoming projects and investment in skills

and training, which massively increases the opportunities for investment in Australia. There is tremendous demand for skills in Australia and New Zealand and the role of the DIT is to help UK companies access that demand. Across the UK, RIA has 240 members representing companies that belong to the rail sector. As an association, they have decided that Australia is the primary focus market outside of the UK. This has presented a great opportunity in terms of the demand in Australia and the desire of the UK to access it as a market. If you look at Australia, it has been 50 years since an underground rail system in Sydney or Melbourne has been built, which means there has not been the continuity of projects required for skills to

remain in-country. This is why rail missions, such as this one, are crucial in giving visibility to UK companies of the opportunities in Australia and New Zealand.

The companies spent two days in Auckland, New Zealand where they had a change of government in 2018. The new Labour-led government recognises the need to invest in rail and public transport. There is a new light rail system being proposed for Auckland which is still in the planning stage, making it the ideal time for UK companies to hear about the upcoming project and how they could be involved. The underground City Rail Link in Auckland is also being developed.

This trade mission was a



collaborative effort between DIT and RIA and consisted of two days in Auckland, one day in Melbourne and one day in Sydney. The programme was organised by DIT and involved meeting with High Commissioner in New Zealand, Consuls General in both Melbourne and Sydney, local rail company site tours, speaking with manufacturers, meeting with industry experts and UK companies who had already established themselves in the market and many roundtable discussions with government departments who are securing large infrastructure projects. For example, in Melbourne the companies met with Rail Projects Victoria, Public Transport for Victoria and Melbourne Metro who run the train system. DIT provided the delegates the opportunity to meet with these government departments who are not only procuring the projects and bringing them to market but also the chance to meet with the contractors and designers who are responsible for these projects. This included meeting with UK companies such as Lendlease who are in Melbourne building part of the new Melbourne Metro and similar work in Sydney. These meetings were a very important part of the programme as it gave the delegation the opportunity to speak directly to the people who would be buying their products or using their services to work in the country and to see how companies similar to theirs had already gone through the process of entering the Australian market. If we return to the comment that Australia has not built a new underground rail system in the past 50 years – the UK has, and it has developed a dense ecosystem of skills alongside this which has gone into developing infrastructure projects



like Crossrail, also known as the Elizabeth line in London. In Australia and New Zealand these skills are needed to fill in the gaps in areas such as systems and engineering to successfully and efficiently complete these new rail projects, and the UK is very capable of providing those resources.

In Sydney the group went on a site visit of the new Central Station which is very similar to King's Cross Station in London. The architect John McAslan who designed King's Cross Station is also working on rebuilding Central Station. The mission further went on a tour of the brand-new multimillion-dollar Rail Operations Centre in Sydney which has only been open for several weeks and is managed by Sydney Trains. Here they had presentations with Sydney Trains and Transport for New South Wales. A clear highlight of the programme was the evening reception in Sydney at the British Consul General and Director General of Trade and Investment in Australia and New

Zealand's residence, Michael Ward. At this reception, a Memorandum of Understanding (MoU) was officially signed between RIA in the UK and the Australasian Railway Association (ARA). It was announced last year that the two industry bodies were looking to sign an MoU at InnoTrans in Berlin. This understanding recognises the mutuality of how rail works in the UK and in Australasia and is a wonderful step towards reinforcing the already strong relationship the two countries have within the rail sector.

This was a very comprehensive programme that gave UK companies valuable insight into the tremendous opportunities to invest in both the Australia and New Zealand rail infrastructure markets and gave visibility to the UK supply chain. It is a very exciting time ahead for the rail industry.

Additional writing by Zoe Cunningham



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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.



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MPC – Modular power connector

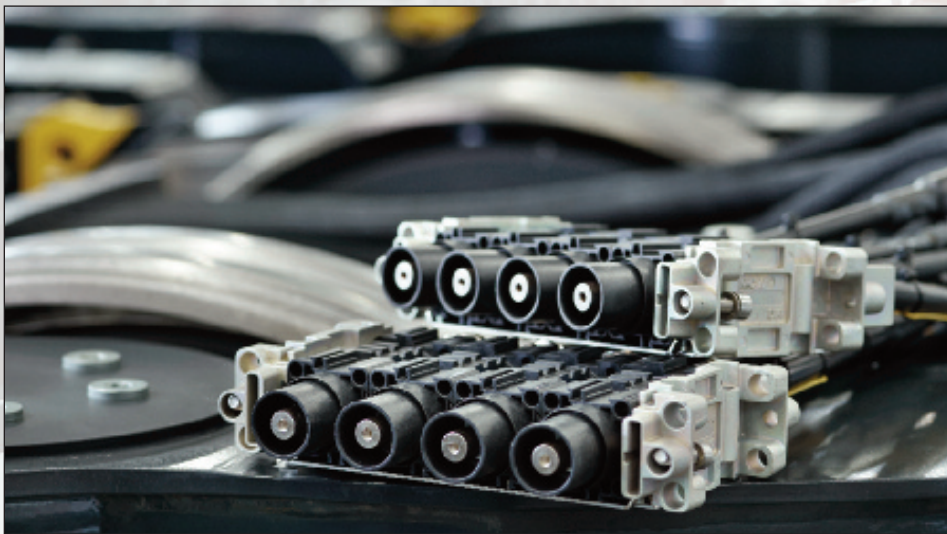
Multi-Contact

MC

STÄUBLI

CONNECTIONS: A Key Link in the Railway Transport Chain

Stäubli Electrical Connectors



Stäubli, a market-leading company, continually pushes for innovation, addressing the current and future needs of various industries.

As global leader in advanced connection solutions for all applications – fluid, gas and electrical – Stäubli pursues the following strategies: to develop and deliver high-performance solutions that are tailored to

specific business requirements; and to understand and anticipate the trends shaping each branch of industry.

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. To meet your requirements and specifications we offer appropriate and

competitive solutions as well as co-ordination and planning.

Among Stäubli's strengths are customised solutions for all types of railway vehicles. Electrical connection systems have always been the specialty of our subsidiary, Multi-Contact. The company, which is also based in Switzerland, has now come a little closer to its parent company. Since the beginning of 2017 it has been operating under the name "Stäubli Electrical Connectors".

A Connector System for Numerous Applications

The "Modular Power Connector", MPC, is an internationally sought-after product for railway applications. This modular system makes it possible to configure very specific connection solutions to fit in every customer application. Two sizes of insulating bodies, in straight or right-angle versions, combined with several, useful options make a wide variety of

different configurations possible. Different contact diameters are available for cable cross-sections from 10 to 240 mm².

"We need solutions that reduce maintenance and repair times in both railway cars and locomotives. It must be possible to connect and disconnect interfaces very quickly in order to shorten the downtime of a train," said Michel Schmitt, Business Development Manager at Stäubli Electrical Connectors.

The benefit of the MPC system clearly lies in the system's practicality and user-friendliness: thanks to the modular nature, only multi-pole connectors are connected instead of several single-pole connectors. Being compliant with every relevant railway standard and with ratings of up to 3600V / 700A, the connectors are suitable for many high-current and high-voltage applications. The application areas include the connection of the transformer, traction motor, converters and batteries, as well as

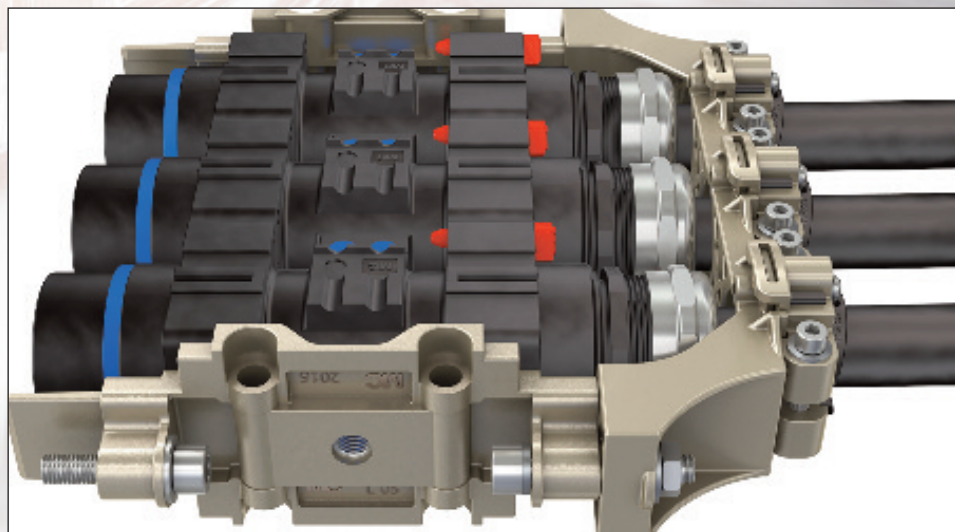


Figure 1: Modular Power Connector MPC with Dynamic Cable Option DCO as strain relief

the power connection between the cars.

Find out more about the broad range of Stäubli solutions for use in every type of rolling stock and how the products ensure continuous electrical contact, the highest reliability and outstanding performance even under the most demanding environmental conditions:

Learn more:

<https://www.youtube.com/watch?v=Zp8GZK7yHiU&t=111s>

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Treadmaster Flooring – we're all over the place!

Safety and Style

In rail, fire standards are much more stringent than for land-based buildings, but the fundamental principle should always be the same – safety should never be compromised over costs.

As of 2018 the New European Rail Fire Standard EN45545-2 is mandatory across the EU and has taken over from existing national standards such as BS6853. The key focus of this is to harmonise rail fire standards across Europe, making it easier for European companies to access the wider

European market without having to meet all of the previous existing national fire standards.

In some quarters the new EN45545-2 standard is acknowledged as being less stringent than some existing national standards and as a consequence, some materials that didn't meet old national standards may now meet the new European standard.

Specifiers and operators should not feel pressured to reduce costs by using materials that would not

have previously met a national standard but now meet the European standard.

Fortunately for specifiers Treadmaster can offer robust rail-compliant floor coverings, as our TM7 flooring meets the BS6853 Cat 1a and EN45545-2 HL3, whilst our TM8 flooring meets BS69853 Cat1b and EN45545-2 HL3.

Treadmaster flooring has a long and well-established reputation for manufacturing high-quality, long-lasting floors that exceed even the most stringent fire





Routemaster-interior

retardancy requirements within the transport industry, but we also operate in other markets and have provided quality bespoke flooring to some very unusual projects. Recently we provided flooring to the elevator floors within the newly opened Vessel building in Hudson's Yard, NY. London Designers Heatherwick were looking for an extremely hard-wearing floor that would continue to look great for years to come, despite extreme levels of footfall. Of course, safety with regard to fire retardancy was paramount but they also needed a floor that would perform in all areas, and a manufacturer that could produce bespoke sizes and shapes to exacting dimensions.

Other unique projects we have been proud to provide flooring for are the New Routemaster London Buses, built by Wright Bus of Northern Ireland. Again designed by Heatherwick, they utilised a very similar product (TM3) to that supplied by us on the original Routemaster in the 1960s.

Another high-profile project supplied with Treadmaster flooring is the Studio City Golden Wheel in Macau. As the website states, ***"Let your fortunes soar to new heights on the world's highest figure-8 Ferris wheel and admire the breath-taking views of the city 130 meters up in the air. Born from an epic Hollywood-inspired tale of two asteroids careering through Studio City's two Art Deco hotel towers, the iconic landmark features 17 spacious Steampunk-themed cabins, each accommodating up to 10 people"***.

The project capsules installed by Poma Group had to meet strict criteria with regard to fire safety, wear resistance under very high



traffic and, of course, look amazing for many years.

Treadmaster also make Marine-specific safety flooring for use on anything from yacht decks and RIBs, to cruise ships and tankers – so you see, we're not just on trains, we're all over the place! For more information visit **www.treadmasterflooring.com** or email **rail@treadmasterflooring.com**



Global Team Delivering for UK Passengers

In the UK, Hitachi Rail is best-known for our train factory in the North East of England and our Japanese heritage. *By Nick Hughes*

Our £100million investment in our County Durham train factory has brought train building back to where it all started. Having our factory just a stone's throw away from where Stephenson's Rocket once ran is a defining moment for our industry.

By harnessing Japanese-bullet train technology, the trains we have built in the UK are strong,

sleek and aerodynamic. This iconic look really captures the public's imagination. Every time I scroll through Twitter, there is a host of images of our trains around the country from excited passengers.

However, we are more than just a train manufacturer. What we offer in the rail market is expanding. Proven digital solutions which



improve reliability and the passenger experience and which are well established in other markets, are now at the heart of our UK business. The recent full acquisition of Ansaldo STS consolidates our place in the digital rail and signalling markets. This Italian company ensures that we continue to innovate and offer a range of integrated products that improve railways across the globe.

This business growth is mirrored by our expanding global footprint, which now encompasses 30 countries and over 14,000 employees worldwide. We are a truly global integrated company, able to draw on facilities, knowledge and skills in North America, Europe and Asia. Numerous UK projects are benefiting from this global expertise.

Steady drumbeat of delivery

With over 180 trains carrying passengers in the UK, we are now a vital cog in Britain's railways. It all began over a decade ago with the introduction of 29 Class 395 trains on the HS1 route. Despite being 10 years old, they remain the UK's only high-speed passenger service. Running at 140mph between London and Kent, they have transformed the regional economy and consistently secure some of the highest passenger-satisfaction figures. This project has become the blueprint for our future endeavours.

To date the largest and most significant UK rolling stock project is the government-funded Intercity Express Programme. Once complete, both our Japanese and British factories will have delivered a total of 122 new



intercity trains for the East Coast and Great Western main lines. The second of these fleets will be entering into service shortly on the East Coast, with the operator LNER accepting and preparing the new Azuma. These intercity trains are leaving our County Durham factory on a nearly week-by-week basis. The new fleet will enter into service on the London to Leeds route, before making their way up to Scotland. It is truly fantastic having trains travelling through the North East and servicing passengers only a few miles from where they were built.

It is our work with on GWR which truly epitomises the benefits of a global integrated train manufacturer. We were tasked with delivering 93 new intercity trains ready for spring 2019. To do this, we used our UK, Japan and Italy factories.

Out of these 93 trains, 57 were ordered by the government and delivered by the end of 2018. These 57 trains, known as the Class 800, are already over 30% more reliable than the trains being replaced, offering passengers 10,000 extra seats per day on the busy Great Western main line. Our County Durham factory did most of the heavy lifting on building this fleet, working in tandem with our Japanese train-building colleagues.

However, in order to deliver additional trains for GWR's West of England route we also used our Italian factory, because our UK factory was over-capacity. Being able to use factories around the world ensures we can meet operators' needs and passengers get their new trains sooner, rather than later.



Our team in Italy are highly experienced and recently delivered one of Europe's fastest trains – the Red Arrow (ETR1000). Therefore, GWR knew they were getting a train built to the same high standards – no matter where the factory is located.

Even though our Italian team is based in picturesque Tuscany, we imported parts from our extensive UK supply chain. This ensured the same quality build throughout but also created export opportunities for UK suppliers. For example, the fleet used floors from Cornwall and braking systems from Wiltshire. We wanted to guarantee a train truly for the West of England.

Passengers along the Great Western route are enjoying the modern intercity fleet, which offer more seats, greater levels of comfort and faster journeys. In no time, these intercity trains will be seen right across the UK. There is

a steady drumbeat of delivery which will transform journeys on LNER, TransPennine Express and Hull Trains.

Most recently, we are pleased to confirm a new order for 25 intercity carriages from First Group open access service on the East Coast. It just goes to show how popular our proven intercity express train model has become!

New trains with new technology: bi-mode

Whilst delivery is paramount, we strive to produce a train that is pioneering and market-leading. Our bi-mode intercity trains are precisely that!

Bi-mode technology allows trains to change seamlessly between electric and diesel power at speeds of up to 100mph. This

technology means new intercity trains can reach destinations which are not electrified. Communities previously cut off from receiving new trains, no longer have to wait thanks to bi-mode technology.

Our bi-mode trains can run at speeds of up to 125mph in diesel and 140mph in electric mode.

The Hitachi engineers have devised a train which does not require a power car. Instead, modern and quiet diesel powerpacks are placed underneath the train, maximising space for more passengers. Even when running in diesel mode, our modern trains cut harmful PM20 emissions by up to 90%.

First regional train for the UK

Last year saw our first regional train enter service in Scotland. Our

Class 385 electric train is running on the newly electrified Edinburgh to Glasgow route. It is currently the fastest train in Scotland from 0–100mph and is offering over 100 extra seats per train, which is easing congestion on Scotland's busiest routes.

With over 60% of the fleet now in Scotland, passengers are already feeling the benefits, with almost 9 out of 10 passengers reporting an improvement to their journey. 86% of passengers believe ScotRail's new Class 385s are smoother and quieter. Meanwhile, three quarters have felt the benefits of faster and improved acceleration and over half say their chances of getting a seat has improved.

Being fully electric, the Class 385 trains produce no diesel emissions. This improves air quality and reduces noise pollution in stations and for those working or living near the line. It

also ensures that the ScotRail fleet makes an important contribution to Scotland's progressive climate change goals.

The fleet is performing well and has already carried passengers over 1.5 million miles, which is the equivalent of travelling to the moon and back three times! We continue to work around the clock to deliver the rest of the fleet so we can transform more journeys in Scotland.

Bringing Hitachi's digital expertise to the UK

To get the most out of new rolling stock we need digital signalling systems to deliver what passengers are calling out for – more frequent services and greater reliability levels. This requires a big investment in traffic management systems and in-cab digital signalling.

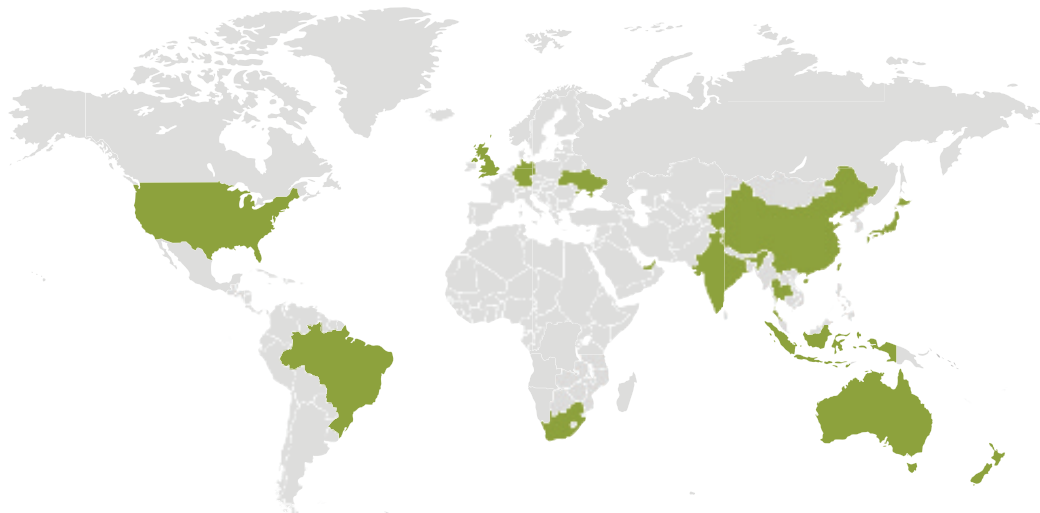
In Japan, we have been pioneering digital solutions for 40 years with the traffic management system for the Shinkansens, which run at unprecedented speeds, safety levels and punctuality.

In the UK, our engineers have already achieved authorisation for our trains to use ETCS as soon as the infrastructure is ready. Our partners at Hitachi Information Control Systems are already delivering a digital traffic management system for the Thameslink Core.

This growth of digital technologies in the rail market is undeniable and this is why all Hitachi trains are 'digital-ready' as standard. Nonetheless, Ansaldo STS joining the Hitachi family has been a hugely significant moment and ensures we continue to be world leader and pioneer in all things rail.



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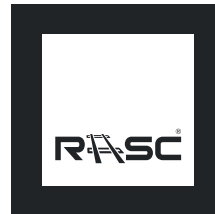
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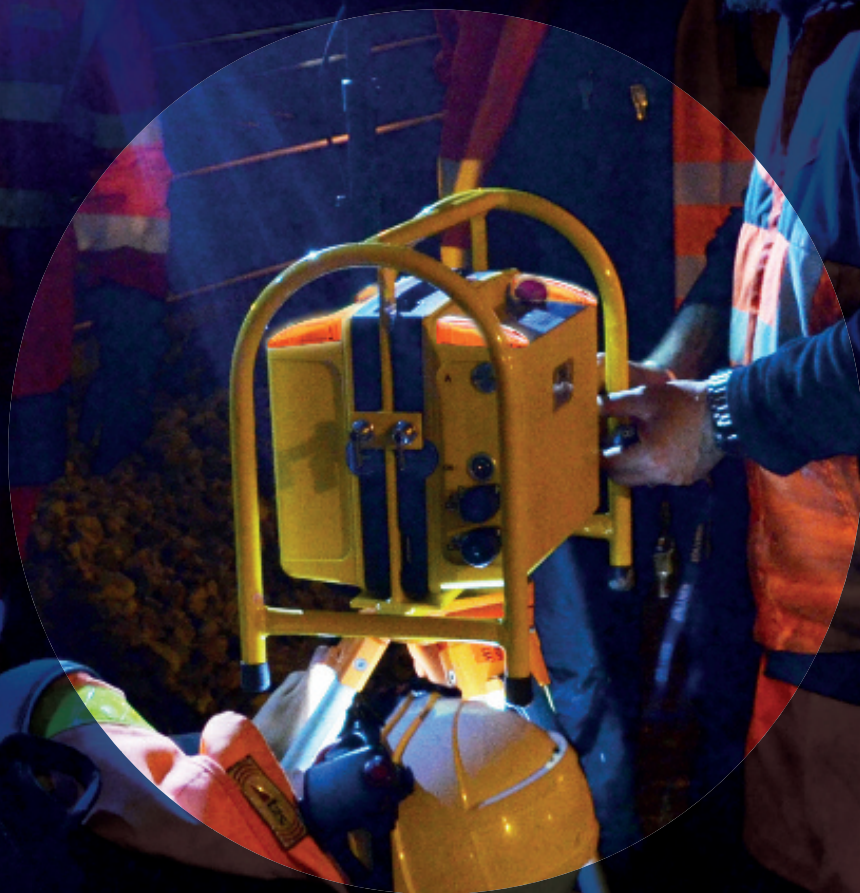
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ZÖLLNER Signal is the world market leader for Automatic Track Warning Systems for Railway worksites.

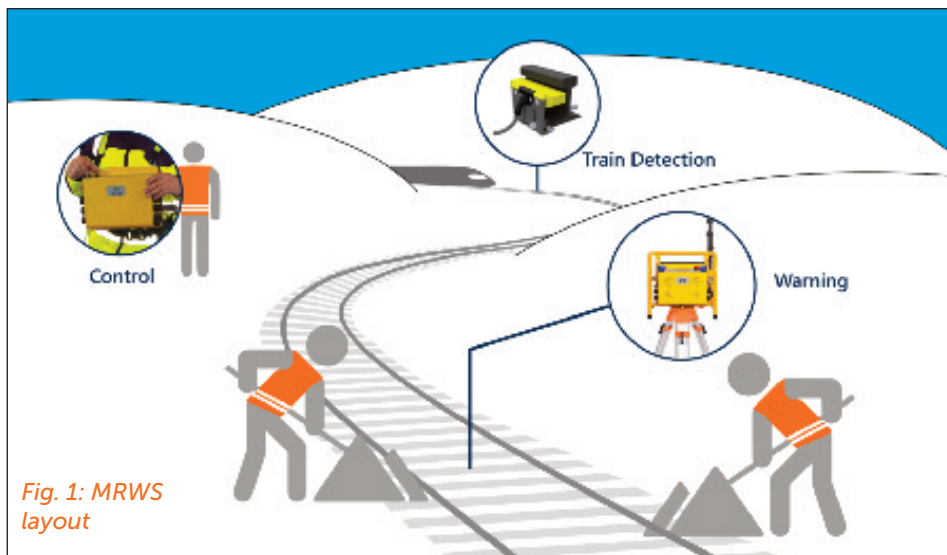


Fig. 1: MRWS layout

Our company develops and manufactures at our main facility in Kiel, Northern Germany. We have subsidiaries in the UK and France in order to offer competent local service, training and support to customers.

Mobile Radio Warning System GB2

Approximately 1000 Mobile Radio Warning Systems (MRWS) have been in use in European countries since 2010. Network Rail approved our 2nd generation MRWS (GB2) in 2014. The 2nd generation MRWS is an evolution of the Autoprowa® first generation MRWS, which is widely used as LOWS in the UK.

The MRWS is a portable system and allows fast set up times for small, mobile worksites and worksites of a shorter duration. Based on bi-directional radio technology on dedicated frequencies, the equipment consists of a control unit, supervising the entire system, one

or more personnel warning devices (ZPW), and one or more radio transmitters (ZFS) that can be used as a stationary transmitter with a train detector, or by a lookout (fig.1 & 2). For very loud sites an additional acoustic warning device (WGH) and optical warning device (WGL) can be added. It should be noted that the WGH can also work as a stand-alone horn; it is then operated remotely by a lookout operator.

Our MRWS is also suited for use in urban areas. People living next to the railway know too well that work performed at night generates a significant amount of noise. Our MRWS allows sound level adjustment (Autoprowa® effect) on each personnel-warning device (ZPW) so that the announcement of trains is only heard by workers on the site, avoiding many complaints from



Fig. 3: ZPW on worksite

neighbouring residents. With the MRWS, the announcement of a train is sent from a transmitter (ZFS) at the sighting point to the worksite site by radio so the sound of the warning is heard only where people are actually working. This makes it possible to preserve the sleep of the people living near a

station or a line where work is in progress! The MRWS also offers the option to select silent mode, thus keeping only the optical warning for a train announcement, while allowing acoustic warning signals in emergency cases.

The MRWS also has flexibility and benefits when the work changes over the course of the day. For example, if a worksite decreased from 150m to 50m and moved so it was necessary to announce trains for only one track instead of two, operators can change the configuration and put the system



Fig. 2: Lookout with mobile ZFS and warning devices ZPW and WGH

back into service in 10 minutes. The ZÖLLNER MRWS can be used with electronic train detectors (fig.4), which are wear-free, light-weight and can be installed in a few minutes. Alternatively electromechanical detectors can be used.

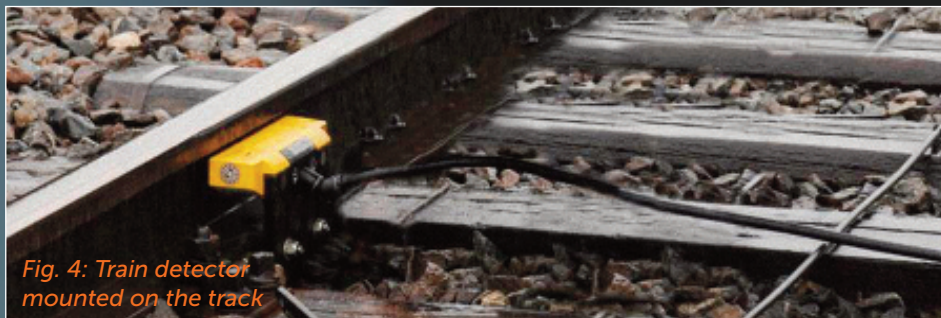


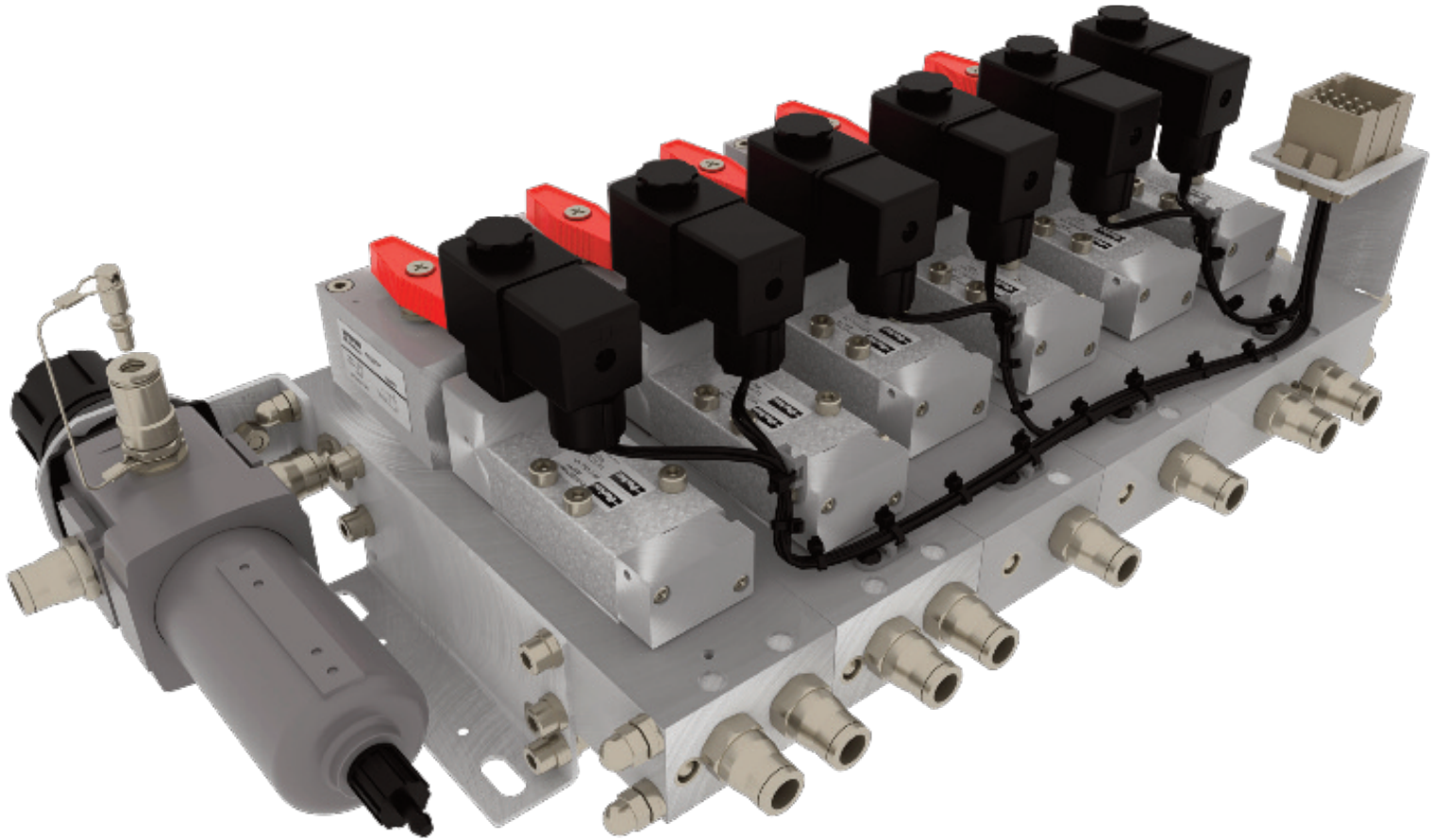
Fig. 4: Train detector mounted on the track

The fact that the MRWS is certified to the highest Safety Integrity Level (SIL4) significantly reduces the risk of human error and thus makes it a safer, more reliable and more suitable system than the conventional warning with lookout. Moreover the MRWS is usable in any weather and all visibility conditions including fog where lookout protection is possible due to required number of lookouts.

Automatic Track Warning Systems (ATWS)

The MRWS has been designed to meet the requirements for a more reliable, better-performing and more cost-efficient system than a lookout operators. It remains today the most suitable system to secure many types of worksites.

The modular design enables the MRWS to provide warnings for worksites from 50 m to 1050 m. Regardless of the worksite length only one person is needed to operate the system because it is a fully automatic system that manages warnings in accordance with the information from the strike-in and strike-out detectors.



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ENGINEERING YOUR SUCCESS.

RIA at Railtex:

Bringing even more of the industry together than ever before

By Katherine Anchorena, Marketing & Events Manager, Railway Industry Association

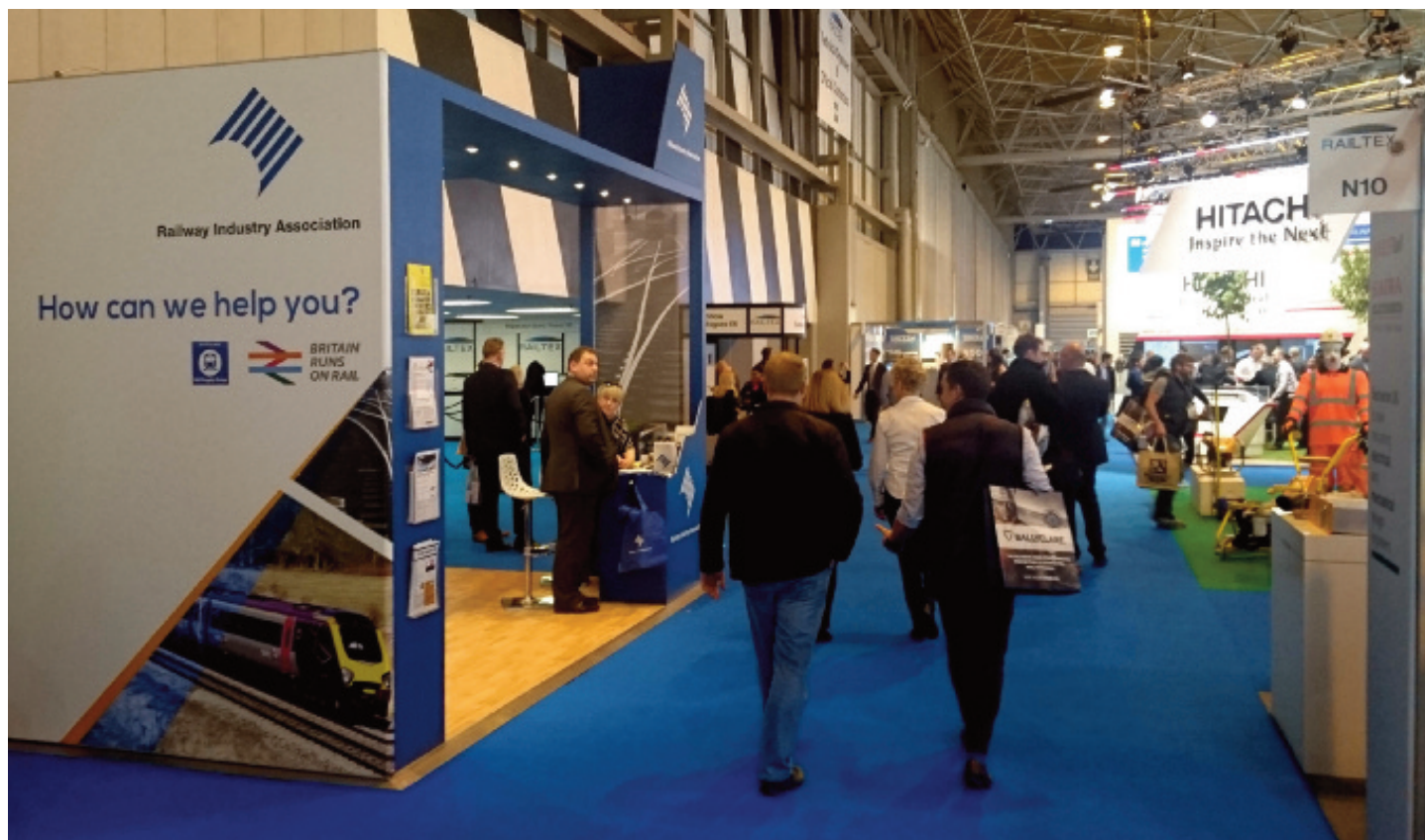


Every two years, the rail industry meets in Birmingham for Railtex, the UK's leading exhibition of railway equipment, systems and services. The exhibition has been running since 1993, and since the very beginning RIA has been involved as an important partner. As we approach this year's show – being held from 14 to 16 May – Railtex looks like it will be bigger and better than ever.

Background

It is a fascinating time to be in rail in the UK. We have just started a new five-year funding cycle for rail infrastructure, known as Control Period 6; there is currently an independent review of the rail system's structure led by Keith Williams; Network Rail and our political system is becoming increasingly devolved; the industry has targets from the government to decarbonise and digitalise the





network and we have a number of major projects at various stages of development – Crossrail, HS2, TransPennine Route Upgrade, Northern Powerhouse Rail, East West Rail and Crossrail 2, to name a few.

What's more, recent analysis by Oxford Economics, commissioned by the Railway Industry Association (RIA), showed that rail generates £36 billion in economic growth and £11 billion in tax revenue each year, whilst employing 600,000 people. With some £48 billion of funding in Control Period 6, which started on 1 April, it's the perfect time for the industry to come together and meet at Railtex.

RIA events and activities at Railtex

Over 400 exhibitors from 22 countries will be in attendance, with products ranging from total railway systems to the smallest

specialised components. The Railway Industry Association (RIA) will be organising a number of activities:

The RIA Hub: This year, RIA will have a dedicated hub – an area of RIA Member stands, located together with RIA's own stand – supplemented with a programme of activities including presenters at RIA's Knowledge Hub, networking drinks reception and a dedicated platform for SMEs to showcase their products and services. There is still time for RIA members to book a stand in the hub, which gives your organisation additional exposure, such as inclusion on the RIA hub website, Railtex and RIA's newsletters and in the Railtex preview show catalogue.

The Knowledge Hub: Organised by RIA, the Knowledge Hub, will be situated within the exhibition hall and will be freely accessible to all attendees. There will be project updates, industry

briefings and forum discussions with influential industry leaders, including Robin Lash, Supply Chain Manager, Rolling Stock, HS2; Clair Mowbray, Chief Executive, National College High Speed Rail (NCHSR); Mark Lomas, Head of Equality, Diversity & Inclusion, HS2; Anna DelVecchio, Commercial Account Director, Amey; Tom Appleton, Director of Work Winning, Morgan Sindall; and many more.

Unlocking Innovation SME pitches: RIA SME members who are exhibiting at the RIA Hub will also be given the platform to pitch their products and services to attendees and clients at the Unlocking Innovation SME pitch sessions. Take part of this session and hear from EnerSys Ltd, Eurofins York, Hird Group, Jewers Doors Ltd Opinsta Ltd, OSL Rail Ltd, Raildiary and Viper Innovations Ltd present their innovations!

The RIA Future Focus conference: This Conference will cover three key topics:

- *High-speed rail, looking at adding capacity and connectivity to the UK rail network*
- *Digital railway, focusing on technology and how the supply chain can engage*
- *Decarbonisation in the rail industry*

The Conference will see the Rail Minister Andrew Jones MP give his keynote address on 10.15am on Wednesday 15 May, as well as presentations from Simon Adams, Head of Commercial and Controls, Crossrail 2; Michael Flynn, Programme Director of Digital Railway and a panel discussion on championing UK high-speed rail internationally.

Meet the Commercial Officer: Together with the Department for Transport, RIA is working on a programme, taking place in the RIA Hub, with the opportunity to



pre-book meetings with Commercial Officers from about 15 countries.

Conclusion

Railtex is the UK's leading trade fair and RIA is strongly engaged in delivering a valuable programme of activities for our members and rail community. It's a great opportunity to make high-quality connections, engage with target markets and demonstrate capabilities and launch new


products. RIA will be organising sought-after events, alongside a number of leading organisations across the industry. With a vibrant and active rail industry, there has never been a better time to go.

If you are interested in finding out more about RIA visit **www.riagb.org.uk** and for more details on RIA's activities at Railtex visit to **www.riagb.org.uk/RAILTEX19** We look forward to seeing you there – RIA will be at **Stand P61!**





SIKA: 20+ Years of Experience in
Sealing and Bonding Solutions
for Rail Assembly Lines



For over 20 years, Sika has been providing rail assembly lines with sealing and bonding solutions for all aspects of the vehicle build. Primerless pre-treatment options are available to fit the needs of a variety of application processes in order to create cost savings and process simplification.

Glass Bonding

Specific Sikaflex® solutions are available to suit cold, warm and hot application processes. Proprietary Sikaflex® materials retain the glass in position following installation, allowing for elimination of secondary fixings and tape. The Sika® Booster range provides the ultimate solution for OEM's seeking excellent mechanical properties with the shortest-possible full cure time. Sikaflex®-268 and Sikaflex®-268 PowerCure are two of the primary options giving designers and engineers the confidence of a product that is well established and will offer improved resistance to typical rail cleaners whilst also offering superior mechanical properties. The Sika® PowerCure system offers all of the benefits of Sikaflex®-268 with the improved curing rates that not only allow for faster manufacturing through-put but also offer a unique and fast product for the aftermarket where rail operators can get vehicles back in service sooner and safely.

Exterior Bonding and Sealing

Rail vehicle manufacturers face complex and varied challenges in the design and assembly of the roof and mask systems for modern rail vehicles. High speeds, harsh environments and aerodynamic structural stresses within the vehicle have to be accommodated when selecting

the correct adhesive solution. Sika offers a range of elastic and rigid bonding solutions to enable rail manufacturers to satisfy these challenging demands. Sikaflex® provides high-performance elastic assembly with easy-to-use one-component formulations. Sikaflex® hybrid technology offers the high performance of Sikaflex® polyurethane systems combined with reduced substrate preparation and improved ecology. Sika® Booster technology offers the high-performance attributes of Sikaflex® combined with rapid full cure and SikaPower® offers improved crash resistance and durability. SikaPower® is a unique two-component epoxy adhesive that can be used where joints require exceptional high strength whilst maintaining significant impact resistance properties courtesy of the Sika® patented SmartCore technology. Improved stiffness and durability can be achieved with this unique offering all whilst commanding the required standards for smoke and toxicity according to BS EN 45545-2 up to the most stringent hazard level rating.

Interior Sealing

Modern rail vehicle interiors need high durability and service life expectancy in order to meet the day-to-day requirements of transporting large numbers of people in comfort and safety. Rail vehicle operators demand high performance and reliability from their rolling stock to reduce down time and remain competitive. Sika® has several solutions capable of providing durable elastic sealing and high-performance adhesive bonding to many common substrates. Sikaflex® polyurethane sealants and adhesives combine simplicity of application with excellent durability. Sikaflex®

Hybrid technology (based on Sika's silane terminated polymer technology) combines the performance of traditional Sikaflex® polyurethane systems, but demonstrates additional benefits such as reduced substrate preparation and improved worker safety. Sikaflex®-821 FR is a one-component polyurethane sealant with great application properties and impressive sealing capabilities. It also has good ageing resistance and excellent hydrolysis stability which tends to be an important attribute for passenger vehicles with high volumes of passengers. Sikaflex®-821 FR will bond to a wide variety of different substrates allowing for a product that can be used in a variety of interior sealing applications.

Underbody Coating

Rail operators and government bodies are demanding ever-tighter standards of interior and exterior vehicle noise. Sika offers high-

technology solutions to facilitate significant reductions in vehicle noise via absorption of vibration within the vehicle body. Sikagard®-6682 can be used for interior or exterior noise damping and underbody coating with excellent sound deadening and stone chip resistance. The product is solvent-free with overpainting an option for areas within the vehicle that are susceptible to high levels of noise. Sika also offer local support with an expert systems engineering team that can support application processes to ensure high quality can be achieved every time.

Intumescent Coatings – Fire Protection

With ever increasing legislation surrounding fire on transportation this in turn increases demands on engineers in global OEMs to be up-to-date with the latest

requirements with passenger safety as the focus. Sika not only offers a wider range of adhesives and sealants that conform to these ever increasing requirements but also have a range of intumescent coatings with exceptional performance capabilities. Sikagard®-831 is a modified epoxy-based coating designed to protect critical metal components within the vehicle build. It provides combined protection from both fire and corrosion and it is easily applied with standard airless spray equipment.

Sika will feature these products at the 2019 Railtex event held in the Birmingham NEC, UK, on the 14–16 May. You can find us at **Stand J61** where one of our expert team members will be on hand to advise and support any enquiries you may have.

www.sika.co.uk/rail





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Underbody Chip Protection with Sikagard®
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Phasor: Ready to Transform Mobile Connectivity

Momentum has been building at Phasor, moving into the second half of 2019.

The Electronically Steered Antenna (ESA) developer has begun a new phase, and is looking forward to the commercial rollout of its ESA products enabling true mobile broadband connectivity for the passenger rail mobile broadband market. With over five years of development behind the Phasor team, the ESA technology will drive transformative change in passenger en-route connectivity and operational telematics datalinks.

Let's track just some of the recent developments from Phasor as it moves towards delivery of a satellite communications mobile broadband terminal for the passenger rail market.

Manufacturing Capability Announced

Phasor has engaged specialist contract electronics manufacturer, Surface Technology International (STI), for the production of their ESA system. STI is a specialist contract electronics manufacturer, serving world-class customers in

high-reliability industries by providing a complete set of electronics design and manufacturing solutions in both printed circuit board assembly (PCBA) and full box-build manufacturing. This crucial partnership will enable Phasor to start production of the Phasor ESA with a company that will be able to scale as demand for the technology grows.

Headquartered in Hampshire, UK and part of the AC Industrials group, STI has decades of experience in manufacturing complex aerospace, military and satcom systems. This will ensure that Phasor can successfully ramp up production as required with a renowned partner that is located within easy reach of Phasor's London Technology Centre. In contracting a trusted manufacturing partner, Phasor can continue to focus on its core competencies in advanced ESA technology development, product design, and market development.

Phasor's Technology Showcased at Mobile World Congress

During the Mobile World Congress in Barcelona, the role of Phasor's land mobile Advanced Compact Terminal (ACT) in connected emergency vehicles was showcased by partner, HISPASAT. Visitors were able to get their first glimpse of the ACT in a demonstrator of a 5G & satellite communications-connected ambulance at the stand of the Generalitat de Catalunya. It showed how future satellite and cellular-based hybrid connectivity will make it easier for emergency medical personnel to receive instructions from specialists in a hospital enabling a full ubiquitous audio-visual connection between the vehicle and the hospital. This will allow the specialist to monitor the patient's status in real time, which may be key to their survival and subsequent recovery.

An ambulance equipped with Phasor's Advanced Compact Terminal, will enable the crew to



connect via satellite so that the first responder team may use applications such as video teleconference, real-time operational telematics links and high-quality internet access during the journey to the hospital, regardless of their location or access to terrestrial networks. The ACT, which is designed and in-development by Phasor in co-operation with HISPASAT, has full electronic steering and enables mobile connectivity services to be efficiently and reliably offered with high bandwidth.

The demonstration involved an ambulance setting where a 'patient' suffering from pneumothorax was urgently transferred to the hospital. In the 5G ecosystem, terrestrial and satellite connections are combined to ensure permanent connectivity of the ambulance during its entire journey so that the specialists can guide the transfer from the hospital and implement the most

appropriate medical protocol based on the critical parameters received.

The ACT is just 5cm tall. It tracks satellite signals electronically in a flat, ultra-low profile design, and is well suited to support traditional fixed satellite networks (FSS), High Throughput Satellites (HTS), Non-Geosynchronous (NGSO) satellite networks.

LEO/MEO-Ready

The ability to transmit to and from Low Earth Orbit (LEO) and Medium Earth Orbit (MEO) is essential for the satellite communications of the future as new 'mega' constellations of small and highly capable satellites are launched to offer broadband connectivity anywhere on the planet. A pre-requisite of next generation antenna systems will be to accommodate these new networks.

In September last year, Phasor and Kepler, a Low Earth Orbit (LEO) satellite operator and telecommunication services provider, conducted successful tests between Kepler's first in-orbit LEO nanosatellite and Phasor's wideband electronically-steered antenna.

Kepler's satellite, KIPP, launched in January 2018, represents the first example of a wideband LEO satellite to have been auto-acquired, auto-tracked, and communicated with, by a commercial flat-panel, electronically-steerable antenna. Phasor's new antenna successfully acquired, tracked and received transmissions from KIPP as it passed over Phasor's test range facility in the UK. This industry milestone opens the door to a wide range of novel applications that can benefit from phased array antenna technology, which the

duo intend to address. Kepler's customers will benefit from the ability to dynamically and seamlessly switch between satellite networks to optimise traffic management. Some customers also have use cases where mechanically actuated antennas are impractical because of their need to operate in extreme environments; therefore high-gain antennas without moving parts offer great benefits.

Preparing to Serve the Passenger Rail Market

These recent developments illustrate just how far Phasor has come and the team is now in the process of developing its Electronically Steerable Antenna (ESA) for use in the passenger rail market. Its agreement with

satellite operator, Hispasat, to develop a Ku-band ESA will be tailored specifically to meet the unique requirements of certain land mobility applications. In this particular case, it is specified for intercity buses, but the very same principals can be applied to rail. For moving vehicles, the traditional parabolic antenna that we are used to is heavy, bulky, inefficient and prone to failure. Phasor has been working on a lightweight flat panel ESA that eliminates all the problems associated with traditional parabolic antennas on board vehicles.

The terminal will use the same core technology that is found in Phasor's commercial maritime and aeronautical ESA solutions. Phasor's technology is completely unique and ideally suited to land mobile applications due to its very

low profile, automated signal acquisition and tracking, and its reliable and robust delivery of the high-bandwidth services that are so in demand. The ESA can be flat or conformal in design and can be fitted seamlessly to moving vehicles, like trains, easily enabling land-mobile applications. The antenna is also modular allowing the system to be scaled to virtually any use-case requirement, fixed or mobile.

Phasor looks forward to bringing its innovative technology to the rails to enable high-performance mobile broadband connectivity for both passengers and crew.

PHASOR
THE FUTURE OF MOBILE BROADBAND™



Railtex 2017



Introducing the new great British Cables Company, established 1895! Yes, we have actually been around for quite a while. In fact, we were the first successful company in Britain to design, manufacture and distribute specialist cable products throughout the UK. Whilst many will recognise us as the largest volume manufacturer of copper telecoms cables, we now also provide a vast range of cables and accessories for just about every industry sector and application.

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Upcoming Railway Events & Exhibitions

May, June & July 2019

A Practical Guide to Delivering a More Resilient Transport Network 07 May 2019

This one-day conference provides expert practical insight on responding to the major challenges and threats affecting the transport network, including extreme weather conditions, delays, overcrowding and cyber-attacks. The day provides possible solutions to these growing threats affecting the sector, while considering new investment to optimise day-to-day performance.

Event Code: 378RWN (10% Discount)

Event website: <https://bit.ly/2UYU7IY>

Location: Addleshaw Goddard, London

SEE Mobility 2019 08–09 May 2019

The fair encompasses the following areas: road, railway and public transport technologies, railway and public transport infrastructure, interior and exterior in road and railway vehicles with accompanying services and tunnel construction.

Event website: <http://see-mobility.com/en/>

Location: Metropol Palace Hotel, Bulevar Kralja Aleksandra 89, 11000 Belgrade

ATO: Integration to Achieve a Truly Interoperable System 09 May 2019

Hosted with the Institution of Railway Signal Engineers, ATO: Integration to Achieve a Truly Interoperable System addresses the critical issue of technical integration and the importance of signalling and rolling stock engineers working together to optimise performance. Hear lessons learned from UK and international case studies, including mainline and underground lines. Discuss the opportunities ATO holds for the future of the railway with your peers and industry leaders.

Event website: <https://bit.ly/2Vstkns>

Location: 1 Birdcage Walk, Westminster, London, SW1H 9JJ

SafeRail 2019 14–15 May 2019

The SafeRail Congress provides an opportunity for railroads, transit agencies and solution providers to work together to create efficient, secure and reliable networks. Important topics at this year's event include digitalisation, the implementation of positive train control and asset management. For the second year in a row the SafeRail Congress will take place alongside the Transport Security Congress. Speakers include Patrick Warren, Chief Safety Officer, MTA New York, Jo Strang, Vice

President of Safety and Regulatory Policy, ASLRRA and Ken Hylander, Executive Vice President and Chief Safety Officer, Amtrak.

Event website: <https://bit.ly/2HQBapZ>

Location: Georgetown Hotel & Conference Center, 3800 Reservoir Road Washington, DC 20057

Transport Security Congress 2019

14–15 May 2019

In this new digital arena security threats are ever increasing. The Transport Security Congress brings together business and security leaders from different sectors of passenger and goods transportation to unearth and discuss solutions to the evolving security and safety risk landscape.

Event website: <https://bit.ly/2EuHSeo>

Location: Georgetown Hotel & Conference Center, 3800 Reservoir Road Washington, DC 20057

Railtex 2019

14–16 May 2019

Railtex 2019: The complete showcase for the rail supply market

Register online for FREE now!

Railtex is the UK's premier exhibition of railway equipment, systems and services. It creates maximum engagement for visitors by placing thousands of industry professionals together in one place at one time, featuring companies serving all aspects of the infrastructure and rolling stock sectors. Whether you are an established business looking to promote new services or an up and coming organisation looking to make high quality connections, Railtex is the event to showcase your offering.

Event website:

<http://www.railtex.co.uk/2019/english/>

Location: NEC, Birmingham, UK

ElectroTrans 2019

14–16 May 2019

ElectroTrans 2019: 8th international congress and exhibition on electrical mobility, products and technologies for electric transport and subway.

The 2018 exhibition took place in Moscow, Russia, 14–16 May. It was visited by 2000+ experts from 850 companies from Russia, Belarus, Kazakhstan, Moldova, Ukraine, Armenia, Azerbaijan, Latvia, France, Korea, China, Germany, the Czech Republic and the Netherlands. 76 companies took part in the ElectroTrans 2018 exhibition and its business programme.

Event website: <http://www.electrotrans-expo.ru/en>

Location: Sokolniki Exhibition and Convention Centre, 5-Y Luchevoy Prosek, Moscow, Russia

3rd Annual Ticketing Innovations Summit

16–17 May 2019

The 3rd Annual Ticketing Innovations Summit will take place in Berlin, Germany, on 16–17 May 2019. The event will get together with the entire public & private transport community to discuss the future of smart ticketing, passenger information & latest ticketing technologies. Exchange knowledge and informative insights with leading experts and discuss current challenges and dynamics of the transport-ticketing field. The main objective of the summit is to achieve extra knowledge and have a better insight, in a professional and great atmosphere.

Event website:

<https://www.luxatiainternational.com/product/3rd-annual-ticketing-innovations-summit>

Location: Berlin, Germany

Millian Rail Exhibition

16 May 2019

Millian Events have created this exciting exhibition day to help boost business profiles and help you grow your connection networks within the rail industry. Do not miss the opportunity to develop something special. Be sure to secure your place and sign up to their email so you are the first to know of our new events.

Event website:

<https://www.millianevents.co.uk/events/index.shtml>

Location: Runcorn (Heath Business park), The Heath Business & Technical Park, Runcorn, Cheshire, WA7 4QX

Transport India Expo 22–24 May 2019

Indian cities are home to millions of vehicles, contributing to traffic congestion, air pollution and inadequate parking infrastructure and operations. There is a need to address challenges like the inadequate capacity of public transportation, road safety, poor traffic management, parking issues, poor infrastructure and lack of modal options (including pedestrian walkways). Transport India Expo 2019 will address and showcase end-to-end future solutions for smart transport in the country.

Event website:

<http://www.transportindiaexpo.com/>

Location: Pragati Maidan, New Delhi, India

27th Annual Rail Freight Group Conference 04 Jun 2019

The 27th Annual Rail Freight Group will provide the latest leading insight on the challenges, opportunities and disruptors facing the rail freight industry. Attend to hear essential insights on the support and plans for freight development and review the growth opportunities for the sector.

Event Code: 375RWN (10% Discount)

Event website: <https://bit.ly/2Gx6Zfe>

Location: Dentons, London, UK

5th Wheel Detection Forum 05–07 Jun 2019

The 5th Wheel Detection Forum provides an ideal platform for a wide range of railway experts from across the globe to share their latest insights and exchange their experiences. More than 200 senior decision makers from international railway operators and system integrators, as well as manufacturers, consultants, researchers and association representatives will come together.

Event website: <https://www.wdfvienna.com>

Location: Radisson Blu Park Royal Palace Hotel, Schlossallee 8, 1140 Vienna, Austria

Rail Electrification: Rebuilding Confidence 05 Jun 2019

Address the cost and engineering issues facing the industry, and how these are being managed by operators and contractors alike at the Rail Electrification: Rebuilding Confidence. Hear lessons learned from implementation projects to take back to your organisation. This year, presentations will address challenges from the past, how these experiences are shaping current projects and the future of the rail industry and electrification policy.

Event website: <https://bit.ly/2KWzYyt>

Location: 1 Birdcage Walk, Westminster, London, SW1H 9JJ

UITP Global Public Transport Summit 2019 09–12 Jun 2019

On 9–12 June 2019, the international public transport community, mobility decision makers and industry suppliers will come together in Stockholm for the UITP Global Public Transport Summit that proudly remains the world's biggest event dedicated to sustainable mobility. Covering all urban and regional transport modes across the globe, the summit combines a diverse programme of leading congress sessions and an outstanding exhibition full of the latest innovations, solutions and products.

Event website: <https://uitpsummit.org>

Location: Stockholm, Sweden

RailWorx 2019 11–13 Jun 2019

RailWorx is a new-for-2019 outdoor exhibition for the rail civil engineering and systems industries. Co-located with PlantWorx, the Construction Equipment Association's biennial show that attracts over 15,000 visitors on its own, the new joint show will take place at the East of England Arena, Peterborough, on 11–13 June 2019.

Event website: <https://www.railworx.co.uk>

Location: East of England Arena, Oundle Road, Alwalton, Peterborough, PE2 6XE

Critical Communications World

18–20 Jun 2019

Critical Communications World is TCCA's flagship event. It takes place in Kuala Lumpur, on 18–20 June 2019. The event has now been running for over twenty years across the globe, bringing together users, in both the private and public sector, the latest technology services, regulators and many more, to give them unparalleled access to authoritative content and unrivalled networking opportunities.

Event website: <https://bit.ly/2VkJpZ>

Location: Malaysia International Trade & Exhibition Centre (MITEC) | Kuala Lumpur

Rail Live 2019

19–20 Jun 2019

Rail Live is the most comprehensive outdoor event for the rail industry where you can meet more than 5,000 visitors from all sectors of the rail industry, connect with more than 235 exhibitors, giving you access to the leading rail suppliers in the UK and Europe, see in excess of half a billion pounds of rail plant equipment on display, access the latest innovations in the Innovation Zone and evaluate thousands of products on display, including through live plant demos, allowing back-to-back comparisons, saving time and money.

Event website: <https://www.raillive.org.uk>

Location: Quinton Rail Technology Centre, Warwickshire

Transport-Led Development in Wales

20 Jun 2019

Transport-Led Development in Wales returns this year with the latest update on key transport-led projects under development, new areas due to benefit from investment, and discusses future solutions for further unlocking connectivity and growth in the region. Featuring expert insight from the rail, road, port and bus sectors to define a joined-up transport strategy for all of Wales and promoting connectivity throughout the whole transport network.

Event Code: 381RWN (10% Discount)

Event website: <https://bit.ly/2UBjJ9u>

Location: Cardiff, Wales

REIS 2019

01–04 Jul 2019

Electrifying a railway is difficult; it's complicated, time-consuming and expensive, with individual projects often throwing up their own unique challenges.

REIS has been specifically designed to provide you with the fundamentals of railway electrification, equipping you with the necessary skills, knowledge and project management experience to tackle even the most complex of railway programmes.

Event website: <https://bit.ly/2UBjJ9u>

Location: Crowne Plaza City Hotel, London, UK

UK Rail Station Development and Regeneration

04 Jul 2019

UK Rail Station and Development brings together the rail and property sector to explore how to deliver station projects of all scales that maximise the related commercial and development opportunities and create local growth. The event will bring together all parties involved with delivering station improvements to provide insight on how to improve delivery, better align timescales and manage risk throughout the process.

Event Code: 377RWN (10% Discount)

Event website: <https://bit.ly/2Xz1tPY>

Location: Addleshaw Goddard, London, UK

Evening at the Plaza

11 Jul 2019

Millian are proud to link up with the Crowne Plaza hotel to provide an excellent black tie event with great networking opportunities, a motivational and focused guest speaker and a full package of follow-up information to enhance your communications.

Event website: <https://bit.ly/2JlqLdL>

Location: Chester (Crowne Plaza), Trinity St, Chester, CH1 2BD

Innovative RF Interconnect and Over Voltage Protection for your Demanding Rail Transit Applications

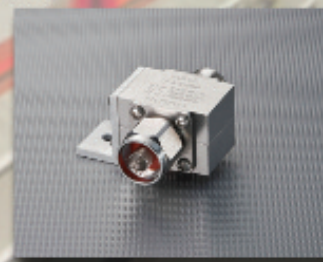
- European Train Control System (ETCS)
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Times Protect[®] RF Lightning Protection

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BAULTAR

Baultar is a Canadian company that creates and manufactures innovative products for the transportation industry (railway freight, railway public transit, buses, infrastructure). Baultar's flooring division offers an advanced flooring system called Abrastop™. The Abrastop™ family of composite products, specifically designed for the transportation industry, ranges from floor coverings to complete flooring systems. It integrates many different options that can be tailor-made according to the technical and design needs of clients. These flooring solutions have two main objectives: to offer superb durability that reduces maintenance requirements and life-cycle costs, and to simplify product procurement and vehicle manufacturing by offering an all-in-one solution that integrates functions seamlessly, maximizing the value for the client.



CUSTOMIZABLE COLOURS



ADVANCED FLOORING SYSTEM

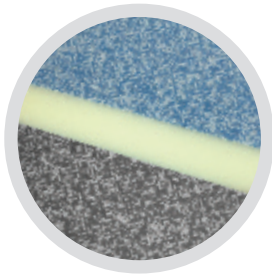


HEATING

The advantages of an Abrastop™ Foam radiant heating floor include: uniform temperature distribution throughout the whole vehicle, superior comfort, thermic inertia that keeps passengers warm even when doors open, elimination of the discomfort caused by drafts from forced-air systems, and energy savings.

ADD GRIP SURFACES

In certain access areas, where additional anti-slip properties are needed, areas and/or bands with custom-made patterns can be integrated. Also, the surface grit can be adapted using a variety of different materials.



PHOTOLUMINESCENT BANDS

Guide and demarcate specific areas with integrated passive high-performance photoluminescent lighting (HPPL) – staircases, walkways, doors, or specific areas with a particular function (such as an area for storing bikes) are just some examples.

3D BANDS AND SURFACES

Alert, guide, demarcate. Raised profiles of many different kinds help alert passengers to upcoming hazards, provide them with guidance for safe passage or exit, and/or delimit a specific area of a vehicle.

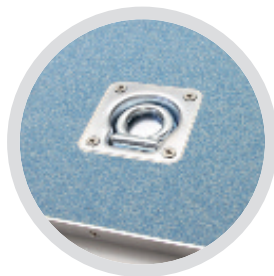


LOGOS

Of any kind or colour, integrated logos are manufactured using the same materials as the flooring panels. Sizes and shapes can also be adjusted for any type of request.

INSERTS

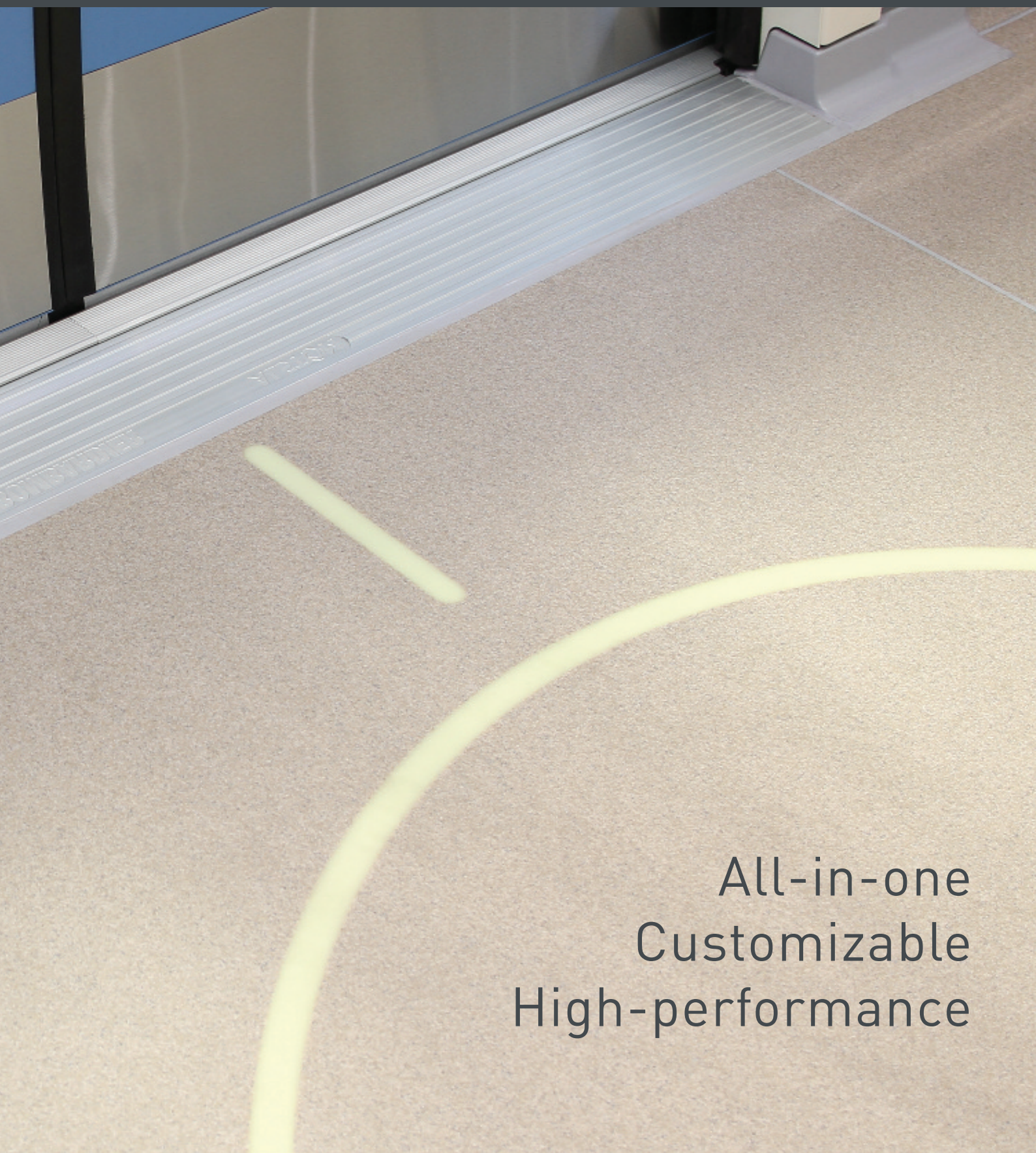
Adding even more durability and adaptability for specific uses. Trap doors, supports, reinforcements, and mechanical fastening inserts, are just a few of the possibilities for fulfilling specific needs with metal pieces.



COVE MOULDINGS

A proper finishing touch and a streamlined look. Can be used for anything from meeting functional needs (such as covering joints, transitioning between flooring and walls, and facilitating cleaning) to serving more decorative purposes, such as fitting different styles.

ADVANCED FLOORING SYSTEM



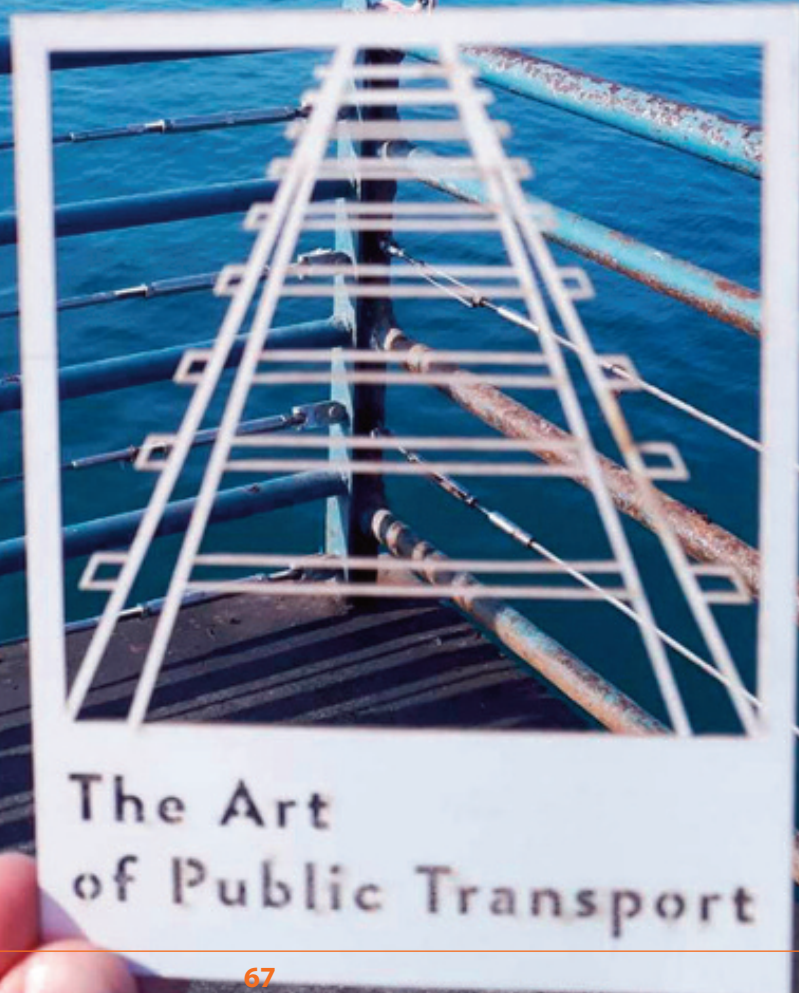
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UITP Global Public Transport Summit

The UITP Global Public Transport Summit (Stockholm 9–12 June 2019) is the largest of its kind in public transport and urban mobility and the event where the sector will gather to discuss the current state of play, and what that future will look like. Leading the debate will be UITP's Secretary General Mohamed Mezghani.





Read all about the next UITP Global Public Transport Summit in our conversation with Mohamed...

The next UITP Global Public Transport Summit will this time take place in Stockholm (9–12 June 2019). What can you tell us about this occasion?

The next UITP Summit will be the biggest edition yet. The summit was last held in Stockholm in 1991, where it was known as the UITP World Congress. The growth and recognition of the summit is

something truly incredible. It has become the largest event of its kind in public transport and urban mobility. In Stockholm we will have 280 exhibitors across 40,000 square metres of space. 2,500 participants and attendees will join us in Sweden with more than 10,000 visitors expected per day. These are brilliant numbers! What makes the UITP Global Public Transport Summit the biggest of its kind is that we cover all modes. We have mass transit and shared modes and new players all under one roof. It is also the global reach that makes the UITP Summit special. Our worldwide attendance will reach up to 90 countries. We will also have a rich programme that covers many sectoral topics and will take place across plenary sessions, lunch sessions, poster sessions and exhibition sessions. The 2019 programme will revolve around seven main topics: customer service excellence, planning and governance for improving quality of life in cities, mobility as a service and the new combined mobility paradigm, attracting new talents and skills, operational

excellence, funding and finance and harvesting innovation. These will be discussed through plenary sessions and panel discussions. Taking part in these discussions will be hundreds of high-level speakers from around the world, including CEOs, political figures and innovators. So far we have leading names from France, Indonesia, China, Australia, Canada, Kenya and Saudi Arabia, to name but a few. The UITP Summit offers something for everyone, at all times.

The theme for the 2019 Summit is "The Art of Public Transport". What does the theme mean to you personally?

The theme for each summit edition is carefully selected. The UITP Summit always has a theme which is relevant and special to the host city. "The Art of Public Transport" is not the 2019 theme by chance! It's inspired by the Swedish metro holding the distinction of being 'the longest art gallery in the world'. However, the theme of the summit is more than just the artistic aspect. We are also encompassing the craft and excellence in delivering public transport; the engineering aspect, the governance of public transport. We will also cover the latest innovations that illustrate this art. It's also important to emphasise the key role of the people who deliver the state of the art public transport around the world. Our industry colleagues, including the very talented UITP staff, are 'mobility artists' – working every day to showcase public transport. The theme will show and reflect their contribution to the sector. The UITP team has been showcasing their abilities as artists by taking pictures around the world with our stencils – not only does this show the global reach of our staff and membership, but also that





'The Art of Public Transport' can truly be found everywhere!

There will be hundreds of exhibitors, speakers and delegates, as well as thousands of visitors in attendance over the three days of the summit. What can they expect to see and experience?

They can expect the opportunity to share the latest public transport developments from all over the world. The sector is changing and these changes will be discussed, alongside the challenges we face. There's a great deal going on in public transport. We have the growing development of new players, the growth of shared

mobility, on-demand modes and more. Digitalisation is also changing the sector and needs to continue to be discussed. It's important to all to meet together to share the experiences of change with members. All of this will be covered at the summit – to share, and learn is very important. There's the also the chance to meet and to listen to many high-level speakers. In fact we have more than 100 CEOs from transport bodies speaking in Stockholm.

And finally, can you tell our readers in one sentence why they should come to the UITP Summit?

There's so much to say about the UITP Global Public Transport Summit that you will have to kindly allow me a lengthy sentence!

The UITP Summit is the unique opportunity to learn from peers and to see the latest technological developments first hand; to see high-level speakers show commitment to public transport and sustainable mobility and to interact in a friendly environment by having fun in a very nice city like Stockholm and enjoy its white nights! I hope to see all of you join us there in June.

Learn more on
<https://uitpsummit.org>



9-12 JUNE

STOCKHOLM 2019

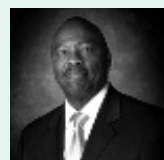
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WINDHOFF Modular Concept: Maximum versatility with the MPV[®] due to the modular vehicle design.

What has become recognised as "WINDHOFF technology" is a system that allows demountable work modules for various infrastructure work streams: a range of hydraulic cranes to give optimised capacity, flexible elevated work platforms & work modules configured for electrification and OLE – or track maintenance.

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- / Rail-Road-Shunting Vehicles
- / Bogie Measuring Devices

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GET BACK ON TRACK FASTER

The WINDHOFF Pit Stop Concept

Between 2017 and 2018, the most complex and technically sophisticated in-floor lifting plant in the world was built in Olten, Switzerland.

It comprises 16 lifting units carrying 40 tons each, with 48 car body lifters and a total length of 180m as well as fully automatic operation. It was designed according to the WINDHOFF Pit Stop Concept for quick bogie replacement and delivered ready to use.

The Pit Stop Concept means: a fast lift – a quick swap – and back on track in no time. Our motto: “get back on track faster”.

A shunting vehicle carefully pushes the trains into the intended position so that they are placed exactly over the in-floor lifting system. The position has been calculated and monitored by the control system. Now the system can start. Up to 150 m multiple units from the latest series are lifted here.

The system currently stores 38 different train combinations – every conceivable variation has been pre-programmed. The system is expandable to accommodate for future requirements ensuring that any modifications can be incorporated quickly.

300 tons, exactly balanced, down to the millimetre, across a length of 150 metres. Even the smallest deviations in precise synchronisation are automatically corrected in fractions of a second. The lift synchronisation works perfectly.

300 tons are lifted effortlessly. Absolutely synchronously across 150 metres safely and quickly as if by magic.

A quick check-up... then the screws fixing the bogie are loosened. All at an ergonomically perfect working height for the technicians. Following that the car body lifters move into position and engage with pinpoint accuracy. Absolute safety for all personnel and materials involved is guaranteed. The technicians can move freely under the train at any time without the need to elevate the train and without additional safety devices necessary. This is



extremely convenient for the technicians and the customer and saves a lot of time and money.

The dismantled bogies are lowered and removed, the new ones are positioned under the wagon, then lifted and bolted together. Lastly, the final inspection... Done!

The train is now sent back to the piste...or...the rail line! After all, it should go back to making money as soon as possible.



Even two shorter trains, regardless of whether they have different configurations, can be placed one after the other and be maintained independently.

An accessible, 4.5m deep installation pit ensures that the subfloor lifting plant can be easily serviced at any time. Stable, trailing pit covers seal the pit automatically, enabling work to be performed safely at all times.

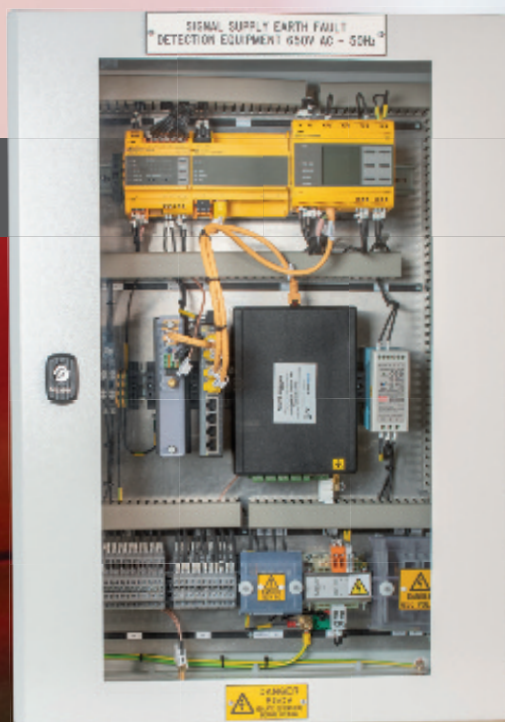


WINDHOFF Bahn- und Anlagentechnik GmbH, Rheine, Germany, is a globally operating manufacturer with a broad portfolio of technologically sophisticated products in the railway vehicles, rail and shunting technology sectors.

RS4 Fault Location Signalling Protection Systems Tier 1, 2 and 3 Compliant Solutions

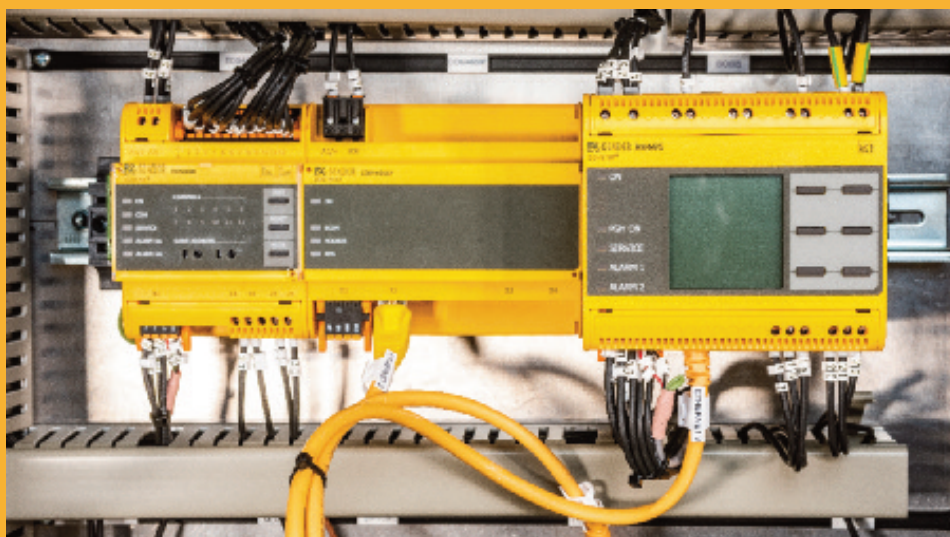
- ▶ New multi-tier insulation monitoring & earth fault location technology
- ▶ For total compliance with NR/L2/SIGELP/27725
- ▶ Increased sensitivity & improved fault location from 20KΩ to 100KΩ
- ▶ Easy to upgrade from previous device variants
- ▶ Compact for use in SIN119 remedial works
- ▶ Bespoke data & communication options available

RAIL TECHNOLOGY



Bender UK RS4 Rail Signal Power Protection

Proven, compliant, retrofit and replace solutions for intelligent rail monitoring and maintenance



Bender UK at Railtex 19 Stand H91 Next-generation Rail Signal Power Protection with increased sensitivity for first fault location and compliance with Network Rail's Insulation Monitoring and Fault Location requirements is the focus of Bender UK Stand H91 at Railtex 19.

Bender UK's Rail Signalling Protection System – RS4 – delivers multiple-tier smart cable insulation monitoring that Network Rail needs to reduce rail downtime and improve operations. The new RS4 steps up the performance of Bender's already proven systems to provide a holistic picture of cable health, along with a rich data set that meets the requirements of

standard NR/L2/SIGELP/27725. The new system employs tried and trusted Bender measuring technology, offering increased sensitivity with improved feeder first fault location from the 20kΩ pre-warning level to 100kΩ and higher, depending on system capacitance.

Proven history and track record

Bender UK's advanced intelligent insulation monitoring equipment has a proven track record with more than 1,000 systems installed across the UK's rail networks over the last two decades.

Bender equipment plays a vital role in the predictive maintenance

and cost-effective fault finding that is essential to minimise disruption. New RS4 Tier 3 and Tier 2 solutions are on trial on several key Network Rail routes in the south of England.

The retrofittable solution can upgrade existing RS2/RS3 installations in minutes without disconnection. It offers cost-effective continuation for legacy equipment that is compatible with existing intelligent infrastructure remote condition monitoring through GSM-enabled data loggers.

Tier 1, 2 and 3 solutions

The Tier 2 solution provides full insulation resistance levels of individual feeders with increased system visibility at minimal extra cost over Tier 3 technology and is fully upgradeable to deliver a Tier 1 solution.

Bender UK's RS4 solution for Tier 1 requirements provides full insulation resistance levels of individual cable subsections and within FSPs (Functional Supply Points). It also offers the flexibility to deliver tailor-made solutions on a project-by-project basis.

Specific bespoke solutions

The RS4 Tier 1 solution is fully retrofittable and compact for utilisation within SIN119 remedial works. It does not require a 650V or earth reference connection for FSP installations making the Bender Tier 1 solution fully class 2. Bespoke customised data and communication options can be achieved and tailored to specific projects – fully integrated with existing intelligent infrastructure. Trackside equipment can be fully integrated into existing FSP architecture and the Tier 1 solution offers remote fault location to FSP or cable length, with precise manual fault finding at 100kΩ.

Rapid and precise fault finding
The advanced RS4 device builds on the technology already proven in use across Network Rail with many Bender rail signalling protection systems already delivering vital information on the status of power supplies.

Alongside enhanced sensitivity for 'first fault' location (100kΩ) RS4 measures capacitance, voltage and frequency delivering data within the standard display options to provide more information to help assess the health of the system.

The ability of RS4 to locate faults more precisely means maintenance teams can respond more quickly, enhancing safety and reducing downtime costs. Bender UK's RS4 system continually monitors insulation values to show the real-time status of the power system. When the insulation resistance (IR) value drops, the system records the fault and puts a test current signal or pulse into the system which is pulled to earth at the point of failure.

Portable technology

A portable Bender RS-PELI device can be used trackside for measuring and analysing a specific section of the power network to prioritise installation programmes. The unit is self-powered through connection to the trackside signal electrical network and delivers live monitoring of the system status. The RS-PELI unit can also be used to provide independent verification of the RS system performance. Significant improvements have been made to the portable insulation fault case EDS3090 – with more sensitive clamps and receiver technology to enhance exact fault location accuracy to up to 100kΩ.

Bender UK Managing Director Gareth Brunton explains: ***"With the support of our expert research and development team in Grünberg, Germany, we have created the cost-effective multi-tier RS4 monitoring solution. It is a response to the new standards set by Network Rail and enables our customers to plan their intervention around their business needs, employing intelligent monitoring to minimise rail disruption. At Bender UK we continually strive to upgrade the performance of our products and services to respond dynamically to the changing needs of our customer, helping them to comply with the latest regulations."***

The RS4 intelligent insulation and earth fault monitoring system is part of the Bender UK range of rail system protection products that includes monitoring of rail switch points heating units and motors, and control voltage network monitoring for railway crossings. For more details visit Bender UK at **Stand H91** Railtex 19, or go to **www.bender-uk.com**





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New Series PCMDS with 400 W

- Output power: 400W; Efficiency: $\geq 92\%$
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- Transient protected, vacuum encapsulated
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- Fire protection acc. to EN 45 545-2

www.mtm-power.com

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RAILTEX 2019
Booth J03



MTM POWER®

MTM Power Messtechnik Mellenbach GmbH

DC/DC Converters with Protection Degree IP65 for Railway Applications

It is a general problem: a failure in the electronics usually leads to a larger problem in the complete system. The search for a replacement for the failed electronic component often is a special challenge. Creative thinking and a little customisation are required if an electronic component fails in an area with special demands on the environmental conditions. This is a scenario that is all too common in the railway industry.

The simple fact is that the rail environment is tough on electronics. So many of the standard devices used in other industries can fail when confronted by the daily operational realities of vibration, dirt, contamination and high-voltage transients.

Take the example of a power supply used to drive an on-board Train Protection and Warning System (TPWS). The unit has to provide a good fit for the system's electrical and mechanical specifications and requires – first and foremost – operational reliability.

The primary-switched DC/DC converters PCMDS150WK-IP65 from MTM Power are specially

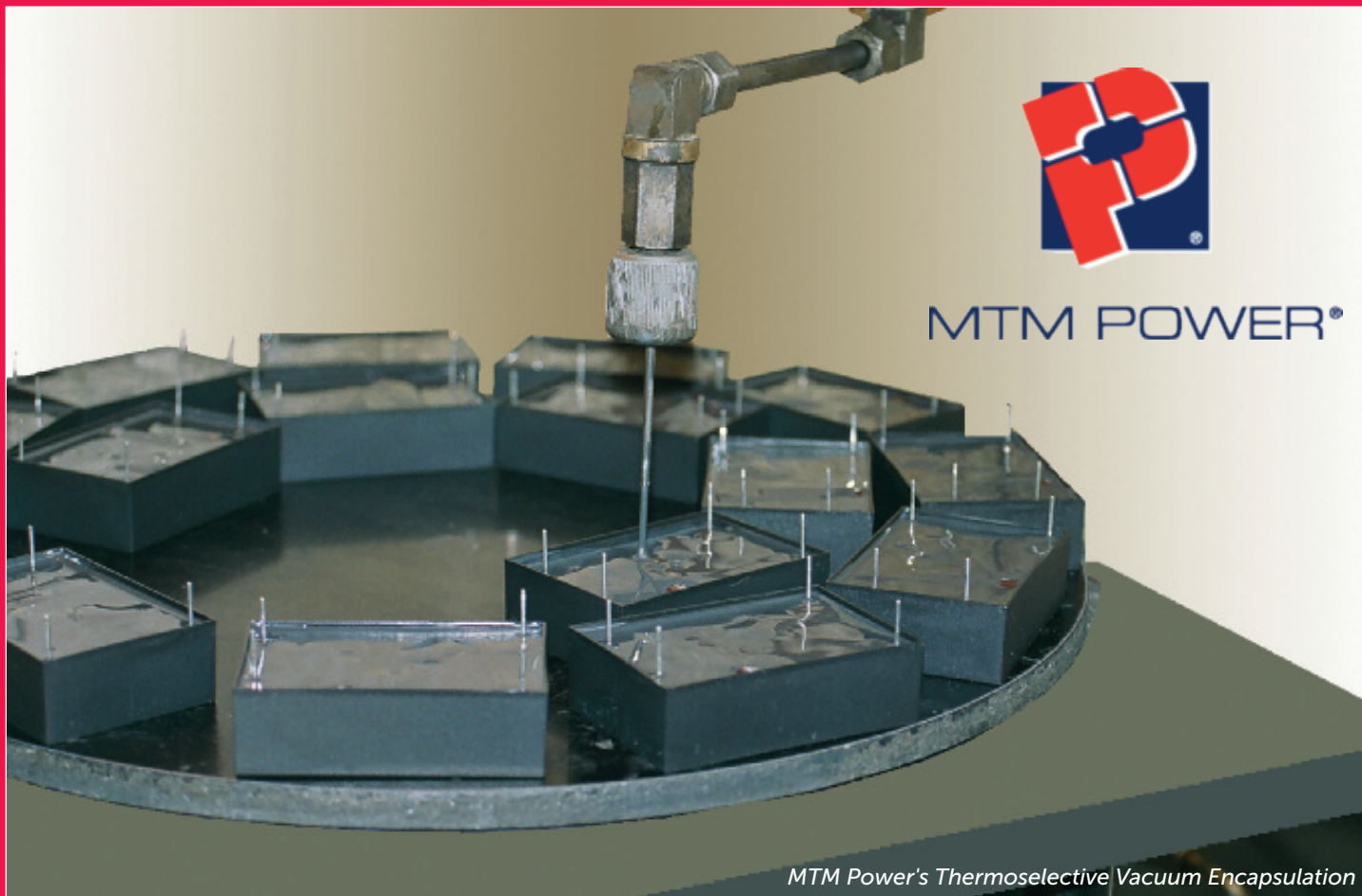
designed for applications in vehicle and rail technology. The standard version of this supply solution features patented thermoselective vacuum encapsulation and an IP65 rating for maximum protection against external contaminants.

The thermoselective vacuum encapsulation process (EP 1 987 708, U.S. Patent No. 8,821,778 B2) completely and permanently encapsulates the power supply to create a cemented joint to provide

an inseparable link between the potting material and the components. This ensures that ageing, heat, cold, rapid temperature changes and other environmental influences do not result in delamination, cracking or air pockets, which can compromise reliability and potentially lead to failure. Thermoselective vacuum encapsulation guarantees uniform heat dissipation within the modules as well as excellent resistance against environmental



DC/DC converter PCMDS150 110S24WK-IP65



MTM Power's Thermoselective Vacuum Encapsulation

influences such as shock, vibration and moisture. Remarkable features of this DC/DC converter are the profile of the casing made of black anodised aluminium with a heat sink and its connection via special rugged industrial connectors according to protection degree IP65. Thus they are compliant with EN 60 068-2-1/2-2/2-11/2-14/2-30.

The push-pull topology used while developing these converters enables a wide input voltage range with high efficiency. The 150 W converters are available with a wide input range for battery voltages of 24 V, 36 V, 48 V, 60 V, 72 V, 80 V, 96 V and 110 V acc. to EN 50 155. With the help of a transformer and a secondary linear choke, a galvanically isolated output voltage of 24 V is produced which is adjusted by pulse-width modulation according to the current mode

principle. The dimensions are 192 x 115 x 68 mm (length x width x height).

The converters need no ground load and are short circuit-protected by primary and secondary power limiting. The converters are maintenance-free, prepared for the use in devices with Protection Class II and fulfil the low voltage directive. They feature a mechanically and electrically rugged design using SMD technology and undergo an automatic piece-by-piece test. Cooling is achieved by free convection.

In recent years, MTM Power has increasingly developed into one of the largest power supply manufacturers for railway applications in Europe. The decisive factor here is the quality of innovative products and the flexibility and reliability of the

company business. MTM Power products meet all relevant standards and VDE/EN/UL regulations where applicable. The wide range of EN 50155-compliant DC/DC converters with 30 – 600 W are designed especially for vehicle and railway applications. Particularly for the sophisticated use in trains, these devices supply the electric and electronic systems on board and trackside. Besides these rail converters, the product range includes DC/AC inverters, filters and multi-power supply systems.

**MTM Power Messtechnik
Mellenbach GmbH**

Germany

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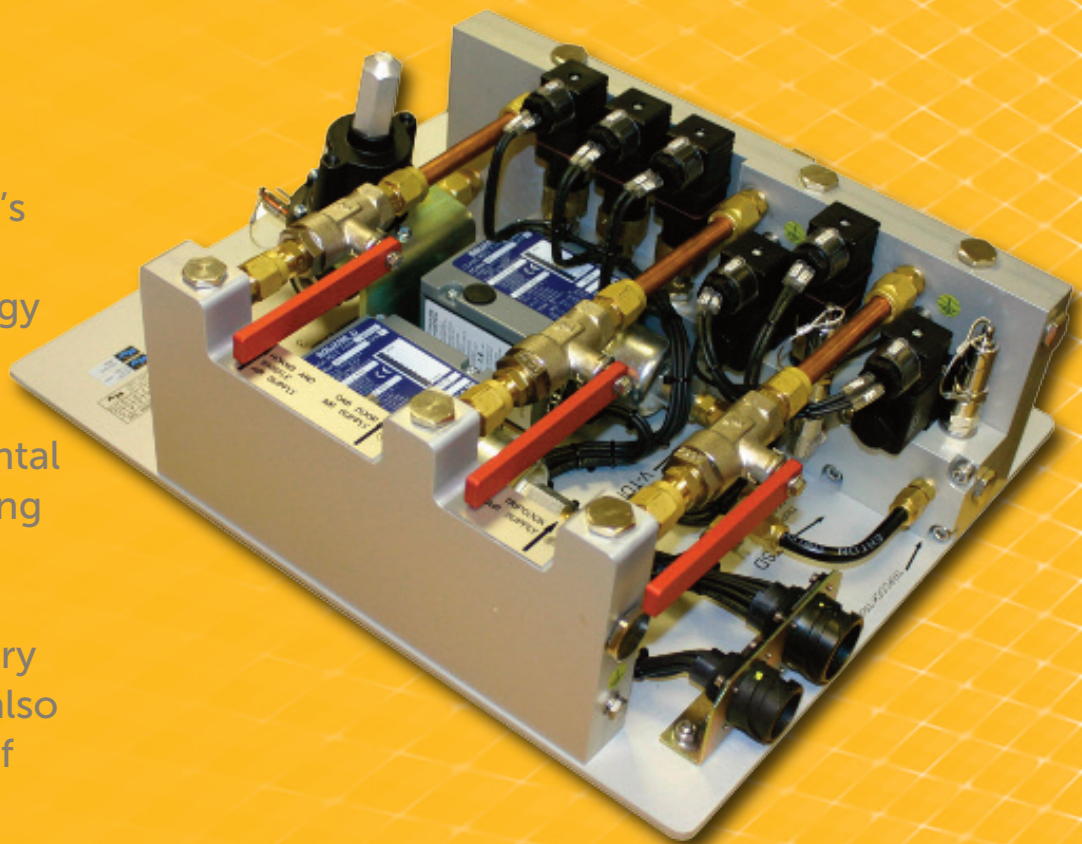
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Innovation – Revolution or Evolution?

When we talk about innovation the discussion often focuses on new-to-world, newly developing or breakthrough technology.

However, it was refreshing at this year's Railway Industry Association Technology and Innovation conference to hear reference to incremental innovation with existing technology. So, innovation is not just related to revolutionary new technology but also about the evolution of current technologies and solutions.

There are certain benefits to both revolution and evolution, and there is undoubtedly both the need and the space for both to



co-exist. Big step changes can be achieved perhaps more readily from new or breakthrough technologies, whereas evolutionary changes may not

always provide such a high impact on their own; however, incrementally they can still create a significant impact and be transformative in their application.

Parker's Ancillary Systems for Rail Vehicles

An excellent example of evolutionary innovation which is quite literally transformative is the new approach to ancillary systems for rail vehicles from Parker's Fluidic Solutions team.

Traditional ancillary systems are typically quite large and weighty and tend to combine control elements for several functions within one unit. There are a couple of key issues that arise as a result: either there is a standard system with the possibility of some component redundancy if not all functions are required; or, a new design of ancillary system is

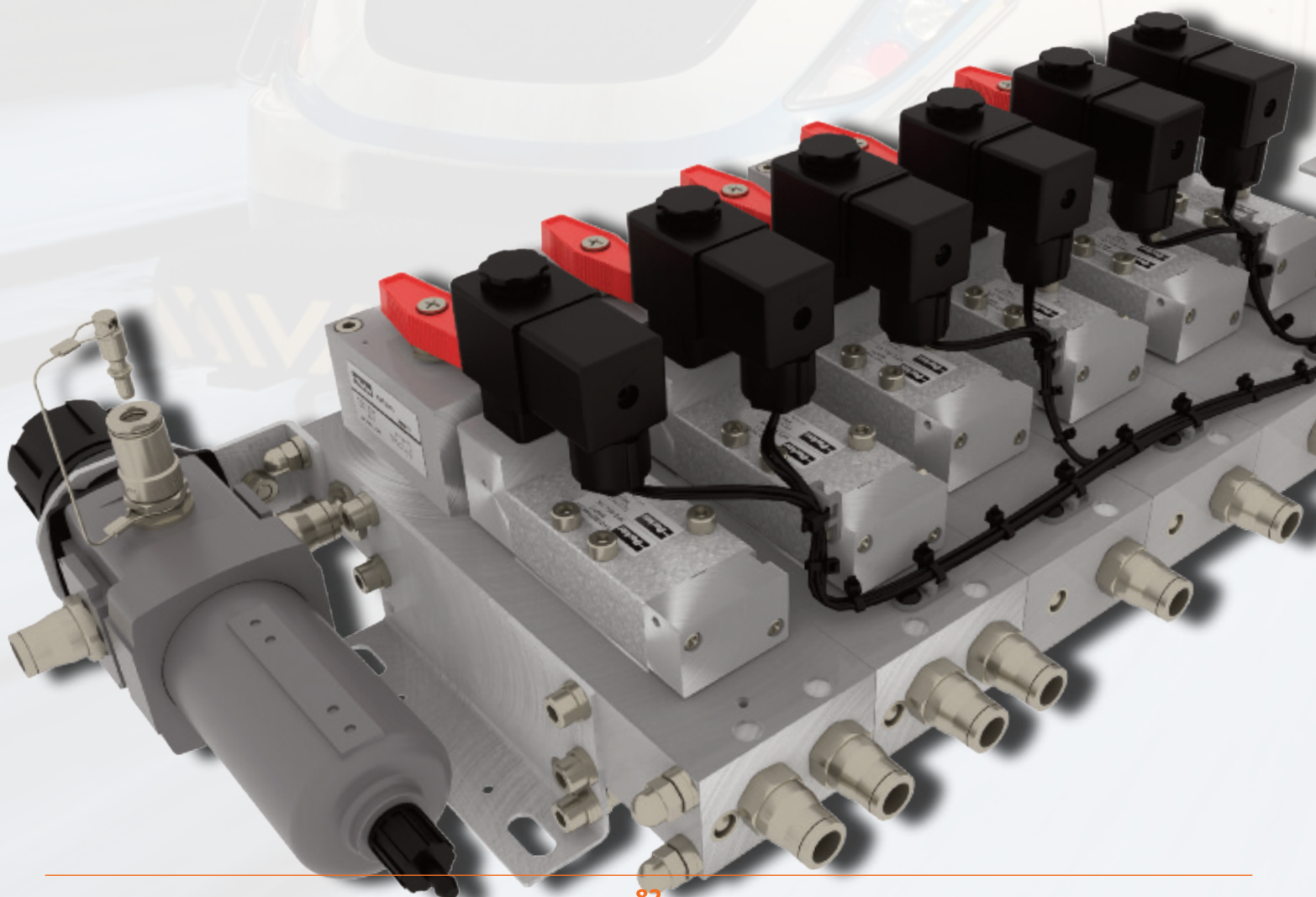
required for each new vehicle contract to accommodate the variations in ancillary equipment controls.

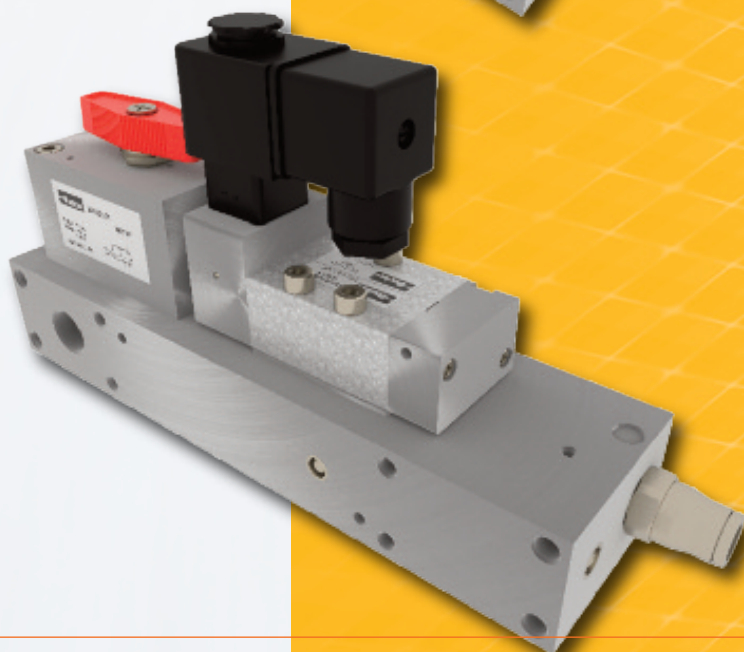
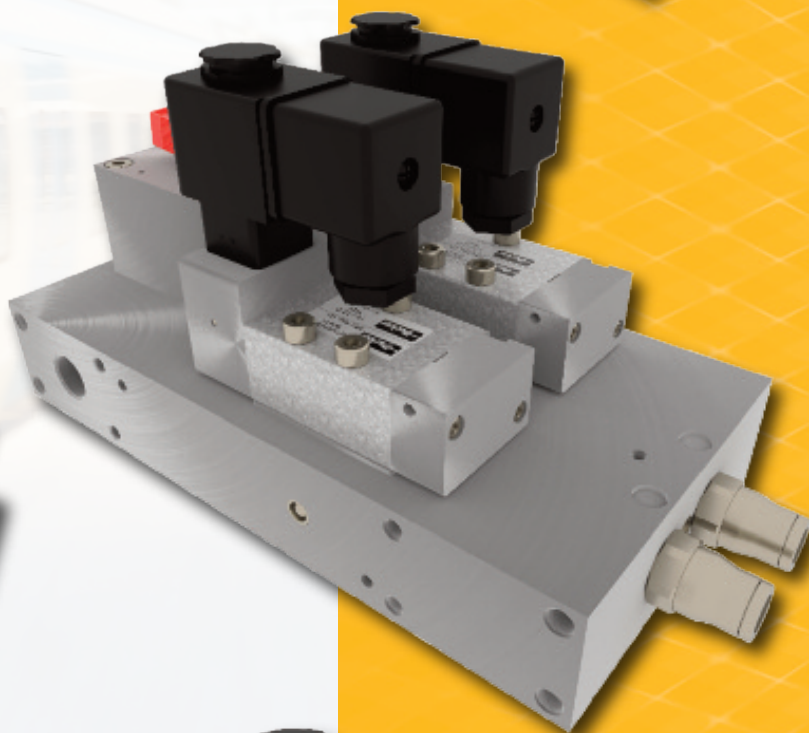
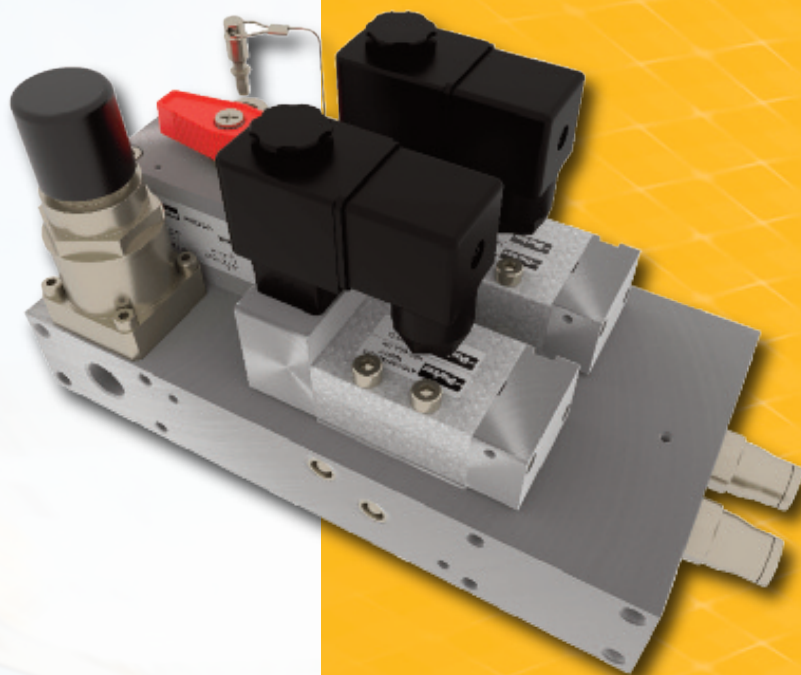
Neither of the above is desirable. Redundancy equals wasted money and new designs come with the full design process costs and timescales. So we considered a new approach which required an evolution of the way to achieve the same outputs from the same inputs, but only the specific ones required for any specific contract variation. Moreover, we wanted to achieve all of this in a reduced timescale with a reduction in the associated engineering costs. Evolution to transform thinking.

And transforming is absolutely at the core on the new approach Parker is about to introduce. The

thought was this: take the common functions and make standard sub-modules to address the specific function control requirements. This led us to design function blocks that can be easily configured into an ancillary assembly, simply identify the functions required and configure them into a fully assembled and tested control system, ready to plug and play.

The first opportunity to see the new products will be in June when Parker will be participating in the Rail Industry Technology Roadshow being run in association the Rail Forum East Midlands and due to run from the 4–12 June. Keep an eye on LinkedIn for updates and details of the scheduled locations.





About Parker Hannifin

Parker Hannifin is a Fortune 250 global leader in motion and control technologies. For 100 years the company has engineered the success of its customers in a wide range of diversified industrial and aerospace markets. Learn more at www.parker.com or [@parkerhannifin](https://twitter.com/parkerhannifin).



Keeping you connected

We're the world's leading provider of innovative, end-to-end, passenger and fleet connectivity solutions.

Enhancing the passenger experience by providing WiFi, portal and on-board infotainment platforms.

Delivering intelligent fleet management through remote online condition monitoring and maintenance solutions.

Passengers benefit from:

- reliable and available internet
- faster connection speeds
- media entertainment
- and real-time journey information.

Fleet operators gain:

- increased customer satisfaction
- lower operating & maintenance costs
- improved fleet reliability and availability
- real time fleet status & monitoring
- higher energy efficiency
- and improved safety.

**Come and speak to our experts
on stand B17 at Railtex**

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E: uki@nomad-digital.com
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Nomad Digital

**Start your intelligent journey
with Nomad Digital**

START

Reliable connectivity has become an 'expected norm'. When people are away from their home or office, being constantly connected is simply expected.

Intelligent technology is all around us covering all aspects of our everyday lives and the perception is: 'why should it stop when we step on to a train?'

Nomad Digital is the world's leading provider of passenger and fleet-management solutions. The integration of Nomad's solutions into the on-train environment improves levels of passenger satisfaction, connectivity, journey information and entertainment whilst increasing the operational efficiency of the fleet.

The driving force behind our

intelligent journey concept and our cutting-edge technology is the Internet of Things (IoT). The intelligent journey is a shared and secure network infrastructure allowing on-board devices to communicate with each other, and with the outside world. Our ground-breaking vision from 2007 remains even more relevant today. Now, the opportunity is not just to connect the passengers, but an



even wider base of stakeholders as this plays a valuable role in enriching passenger experience.

Enhancing the passenger experience

Passengers are crucial to train operating companies (TOCs) – yet train guards, drivers, conductors, caterers and maintainers all serve to enhance the passenger experience too. Bringing together passenger connectivity, information and entertainment will transform a TOC's ability to improve its passengers' experience.

New on-board infotainment solutions have the capacity to greatly enhance the passenger experience by integrating real-time journey information and media entertainment together, on a single platform, for a new experience in passenger information delivery. Providing rail operators with a real-time end-to-end solution – which integrates numerous on-board systems and components – is an ever-increasing priority. This enables

operators to perform real-time analysis on-board, automatically issue alerts of impending equipment failures and feed the relevant information in real-time to their passengers.

Keeping passengers informed with the latest journey information is still considered to be in the top three of the biggest challenges facing train operators; it also remains high in passenger complaints when things go wrong. Increasing and maintaining customer satisfaction through communication is key in a world where information is all around us.

Over and above journey information, other digital services are increasingly becoming more important, from both the providers of such services and the passengers themselves. Live news, the weather, infotainment, commercials, media programming etc. delivered directly to passengers as part of their journeys present huge opportunities to improve customer experience.

A train operator's on-board security system should give

passengers a true sense of security during any journey. Nomad's CCTV capabilities guarantee a safe journey with efficient use of a transport operator's time and resources, offering both operators and passengers the reassurance of peace of mind travel.

Completely focused on a seamless customer experience

Nomad has invested heavily, using the latest technologies and insight from our market-leading position, to bring about the next generation of information and infotainment systems. Using the intelligent journey as an enabler: PIS displays (on-platform/in-train), public address systems, and a passenger portal can be driven from the same IP platform, providing a seamless integration of content, advertising and journey information.

Nomad WiFi is completely focussed on a seamless straightforward customer experience. Our expertise and knowledge allow passengers to receive world-class connectivity regardless of location and the number of users. This can range from a simple connection to a fully-managed prioritised service.

Nomad's 5 key connections:

- **Nomad Connect**
- **Trackside**
- **Condition-Based Maintenance (CBM)**
- **Security as a Service (SaaS)**
- **Passenger Experience**

What evidence is there that passengers want an intelligent journey experience?

The continued growth in adoption of on-train WiFi and the proliferation of over-the-top transportation-related services aligns with Mobility-as-a-Service (MaaS) trends. The underlying requirement for MaaS is a comprehensive suite of applications that facilitates the planning and payments for door-to-door intelligent journeys.

The current approach remains fragmented, with few players truly providing an integrated view of the journey. As an example, taxi-booking applications generally are not integrated into live train schedules. Therefore, delays to one leg of the journey are not automatically pushed along the service pipeline (i.e. journey segments remain in silos). As passenger expectations develop, so must service implementations.

What's next for Nomad Digital

IoT is constantly reminding the rail technology industry to push the boundaries of what's possible. The capabilities of on-train connectivity are endless and exciting.

Our vision is 'connecting everything'; this means, you can be assured of a future-proof platform on which to deploy new applications and services and collect and exchange data, allowing everyone to be more connected than ever before.

Please visit us at our **Railtex stand B17** or get in touch with us for more information on our key connections at **uki@nomad-digital.com**

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MECHAN UNITES WITH SUPPLIERS FOR RAILTEX

Rail depot equipment specialist Mechan will be adding a continental flavour to Railtex this year, showcasing its own expertise, alongside some of the European innovations it represents.

Taking centre stage on the Sheffield-based manufacturer's stand (N10) will be its full-size, fully operational demonstration jack, which enables visitors to see for themselves the build quality and technical capability that goes into creating its flagship product.

It has been an exciting couple of years since the firm last visited Railtex. After becoming part of turnkey workshop provider, CIM, in 2017, Mechan has acquired a new management structure and ultimate parent company, Belgium's CMI. The milestones continue this year, as it celebrates 50 years in business and expands its product range, courtesy of developments in-house and at its sister companies.

Strength in numbers

As part of a larger group, Mechan is able to offer a much wider product range to UK customers.



The Mechan team at Innotrans 2018

Joining the firm at Railtex will be representatives from sister company SEG (Sogema Engineering), which designs and manufactures wheel lathes and presses, bringing a new player into a very limited market.

A working model of SEG's renowned wheel press will be on display to demonstrate how they

can be used to quickly and efficiently mount or dismount wheels and other components from wheelsets. The high-performance, high-quality units suit all types of rolling stock, saving maintenance time and improving workshop productivity.

Using a double cylinder configuration, SEG has eliminated



Mechan's flagship Lifting Jacks



*Zwiehoff
E2 Electric Shunter*

the need to reposition the wheelset during pressing; installation can be achieved without civil works. From the ergonomic operator station, the process is controlled by just one user, who has the benefit of auto-diagnostic functions that give clear guidance, should a fault be detected.

Information will also be available about SEG's underfloor wheel lathes. Designed specifically for wheel reprofiling, they suit light rail or passenger and freight trains of more than 20 tonnes, whilst a third option, offering tandem reprofiling, allows all four wheels on a bogie to be machined together.

Like the presses, SEG's wheel lathes are easy to install, use and maintain, providing dynamic measurement of the profile at any point and highly accurate corrective machining if defects are detected. Various optional extras can be added, including a dust and fume extractor or a swarf crusher/conveyor. All products fitted in UK depots can also be supplied with full maintenance

contracts, overseen by Mechan's experienced engineers.

Mechan will be able to provide information on sister company LAF's wide range of couplers and drawbars. This leading European manufacturer is known around the world for its high-quality railway components and has recently secured a contract to supply the London Underground with couplers for new maintenance wagons.

LAF has one of the most reliable production set-ups on the market and boasts unparalleled coupler design knowledge, thanks to investment in research and

relationships with key organisations and industry bodies. Using the latest 3D software, it enables customers to visualise the most complicated parts prior to production, before all of its couplers are subjected to assembly analysis, stress tests and crash simulation to ensure complete reliability.

European partners

In addition to its group connections, Mechan is the sole supplier in the UK and Ireland for a number of European products that complement its in-house heavy lifting and handling equipment.



SEG (Sogema Engineering) Wheel Lathe

The firm will be welcoming to Railtex Austria's NextSense, inventors of the CALIPRI laser measuring device, who will be demonstrating how quickly and reliably the non-contact laser scanner records wear parameters on wheelsets and tracks. Colleagues from Zwiehoff, the German creators of the energy-efficient ROTRAC electric shunter, will also be on hand for some of the event.

The ROTRAC produces zero emissions through the recovery of energy during operation and because it is battery-powered, noise pollution is kept to a minimum. Its compact, simple design and low centre of gravity make the shunter small, yet extremely strong and robust, capable of trailing loads of up to 500 tonnes.

Mechan will also have information about Klein sanding systems and fume extractors from Blashcke, both of which offer significant health benefits for depot personnel by minimising dust and improving air quality.

Lindsey Mills, Mechan's sales manager, will be at Railtex with managing director, Andrew Mott, as well as Younes Salhane and Lucy O'Malley from the Mechan sales team. Lindsey said: ***"We are thrilled some of our European partners will be joining us to meet clients old and new. Their in-depth product knowledge will be a real bonus for visitors to our stand and will enhance the expertise my team brings."***

"It is always a pleasure to catch up with delegates at the show and we are looking forward to highlighting the progress we have made in the last 12 months, not least the introduction of our lightweight jacks."

Jack range expands

Mechan is renowned for its lifting jacks, which grace some of the world's most advanced rail maintenance facilities. Last year it added to its range with the introduction of a cost-effective lightweight version.

Designed specifically for trams and light rail, these jacks are smaller

and more agile than their heavy rail counterparts. They have a different base arrangement and built-in assembly for ease of movement and a lower lifting height to cater for the proximity of car and track.

Like all Mechan jacks, the lightweight versions are available with the firm's unique control system, which allows one user to operate synchronised sets, eliminating decoupling. It is the most flexible and technically advanced in its field, using a portable panel to give the operator freedom to move to the best location to monitor the lift. Constant feedback is provided as jacks are raised or lowered, making it easier to diagnose faults.

Mechan will be on stand N10 at this year's Railtex and will have information available on its entire range of depot maintenance equipment. To arrange an appointment with the show team, or for product details, telephone +44 (0)114 257 0563, visit **www.mechan.co.uk** or follow the firm on Twitter, **@mechanuk**

LIFE IS PRICELESS.



SMART DEPOT PERSONNEL PROTECTION SYSTEM (DPPS™)

Renowned as the global market leading depot protection system, the SMART DPPS™ delivers physical protection from vehicle movements to rail depot staff whilst providing visual and audible warnings.

The Smart DPPS™:

- Protects staff and equipment
- Ensures safe and controlled movement of rail vehicles into and out of the depot
- Allows train maintenance operations to be conducted without endangering the safety of staff or damaging infrastructure

It is:

- Fully configurable, flexible and functional
- Proven in use and installed globally
- Capable of interfacing with third party equipment including signalling systems.
- Adaptable to the safe requirements of the depot

Zonegreen:

Celebrating the 20th Anniversary of Modern Depot Protection

Britain's railways proudly continue to hold the best safety records in Europe, but high-voltage equipment, heavy machinery and moving vehicles make maintenance depots in particular dangerous places to work. It is thanks to the implementation of innovative technologies

that the industry can continue to boast such accolades.

This year will mark the 20th anniversary of the modern depot protection system. Zonegreen's innovative Depot Personnel Protection System (DPPS™), which revolutionised working conditions in rail maintenance depots will celebrate its landmark birthday later in May.

Depot protection has been in existence for many decades; historically, workers relied on primitive safety measures such as stop boards or even red flags to alert train drivers that they were working on the road ahead. Over time manual derailleurs were introduced to provide physical protection to staff; however, these still had limitations and introduced new manual handling health and safety concerns.



Train Authorised to Proceed over Derailer

Dawn of Modern Depot Protection

At the heart of Zonegreen's ethos is the desire to increase safety levels for staff, whilst improving the operability of depots. DPPS™ introduced a modern form of protection and from the outset allowed the safe and efficient movement of trains, without endangering staff or infrastructure. Zonegreen's DPPS™ has transformed the industry's approach to depot safety. The introduction of powered derailleurs (which remove the need for manual handling) with electronic control panels which interface with shunt signals and audible and visual warnings, allow the safe and effective control of vehicle movements within maintenance environments.

In 1999, the first DPPS™ was installed at Alstom's Chester Depot, which was then followed by Longsight, Manchester and Wembley.

These forward-thinking depots saw the potential in the embryonic technology and were thrust to the forefront of personnel protection, demonstrating that better safety in this traditionally dangerous environment did not have to come at the expense of efficiency. As Zonegreen has evolved, depots across the world have followed suit; DPPS™ can now be found throughout the UK and as far afield as the Middle East, Australia and New Zealand.

Continuous Improvement

Zonegreen's team of expert engineers are dedicated to providing cutting-edge rail depot

systems. By developing long-term working relationships with its clients, and through continuous research and development, it is able to ensure its products consistently meet the demands of a rapidly changing industry. The pioneering introduction of electronic personal datakeys with varying authorisation levels, which replaced the physical padlock found in traditional depot protection, saw a marked step forward in the operability of the system. The datakeys are used to operate DPPS™ and identify personnel working in different safety zones. Staff log on to the road end control panel (REP) when they begin work, which prevents the derailler being lowered, therefore providing them with physical protection from train movements.

The launch of the New Generation SMART DPPS™ in 2015 saw the



New Generation DPPS REP



first complete overhaul of the system. Six years of research and development, along with the investment of many hundreds of thousands of pounds, resulted in a system that offers increased intuitive functionality, remote configuration and a graphical user interface that is programmable in any language. The accompanying Depot Manager software offers a complete overview of a depot; it provides key information to make operations quicker and easier to implement, offers comprehensive traceability and makes it possible for users to control train movements remotely, giving greater flexibility.

The Future

In the last 20 years, companies including Alstom, Siemens, Hitachi, Bombardier and Network

Rail, to name but a few, have chosen Zonegreen's DPPS™ to protect their workforces throughout the UK and globally.

During Railtex 2019, Zonegreen will be demonstrating the results of its most recent research and development project. The centrepiece of its display will comprise a working road end panel, and will offer verbal warnings of vehicle movements, making it easier to identify areas of risk.

To find out more about DPPS™, speak to Zonegreen's team on **stand S10**, telephone **+44 (0)114 230 0822** or visit **www.zonegreen.co.uk**





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- **manual doors**

All our products are tailored to customers' specific needs. The service portfolio includes design, installation and commissioning

support, maintenance, modernisation, spare parts and technical support during the lifetime of the fleet.

Polarteknik, a company well known for its expertise in interior door systems in intercity and high-speed and very high-speed classes of railway of rolling stock, is strengthening its position in metros and trams with the introduction of new partition wall products to increase driver comfort and safety.

"We are happy to tie up at all tier levels to make sure the latest technology from new trains, e.g. predictive maintenance and TSI-PRM, is available for refurbishments, overhauls and fleet upgrades."

Polarteknik has a very large number of different products that we have made for customer projects. All of the key components have a strong return on experience and are shared across all product platforms.

Polarteknik is in full control of the design, testing and validation of the products and customers will benefit from the consolidated sourcing regarding key components and obsolescence management that draws from legacy design data.

"We have over the years experienced the challenges of high mix-low volume production and made some considerable investments in production and in-sourced some of the key activities that help us reach our customers OTD requirements," said Tomi Ojala, Managing Director.

Based on a recent customer survey **Polarteknik** is a well-known company in its field. Altogether 96 % of the respondents stated that they knew Polarteknik. In respondents' open comments **Polarteknik** was seen as a professional and reliable company, commended for its customer focus, with good quality products, expertise and an efficient way to operate.

Although supply chain performance is important, where Polarteknik really excels is innovation. We are constantly looking for ways to make the product perform better and provide additional value to different stakeholders.

We are looking into new materials and components and into developing a new control unit to facilitate predictive maintenance and IoT needs even better. ***"We have had data collection for years in new fleets but now we want to provide the same value to older fleets by offering a system that can be retrofitted into older doors as an upgrade or overhaul. We have more than 50,000***



Polarteknik-built doors out there that could benefit from an upgrade," said Mika Korhonen, Business Development Director. Polarteknik is involved in all of the benchmark new build projects in Europe such as ICE4, IEP, Italo Evo, Smile, and Regiolis with a strong view for the future and will strengthen its focus on service, renovation and overhaul to help keep older fleets on lease with new technology.

Polarteknik is again present at Railtex 2019 to meet with customers and partners across the field with a keen interest in innovation, new build and refurbishment.

Polarteknik, a company well known for its capability for innovation, tailoring customer-oriented solutions and dedication to quality, presents its latest innovations at Railtex, the best trade fair for the railway industry in the UK, which will take place in Birmingham 14–16 May.

With many high-profile projects

currently in production, such as ICE4, IEP, TransPennine and Smile, awarded to **Polarteknik** the company stands confidently in a great position to make improvements in production to remain competitive and to invest in innovation to be able to offer great new products for customers. This year at Railtex **Polarteknik** will launch a number of new products, such as the new door control unit with next-generation communications and data management capabilities.

Discover **Polarteknik** innovations and meet with our staff at Railtex **Stand G02**





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A Fresh Approach to Rail Depot Operations

- Depot Safety should not be a chore but a procedure that works with operational activities.
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- Innovative new development of Combined DPS/DCS being showcased at **Railtex 2019**, find us on **Stand W50**.

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FirstClass Safety & Control

A Fresh Approach to Rail Depot Operations

Rising to the challenge of starting a new business following the management buyout of the Controls Division of Beck and Pollitzer in 2017, Mark Meyrick, Managing Director of FCSC Ltd, is confident that the industry is welcoming the fresh approach to depot safety that FirstClass are bringing to the table.

With the main focus of the business being on continuing to deliver safe, affordable, efficient solutions to its customers in many industries, continual improvement is at the heart of everything FCSC does. Alongside several industry-leading depot safety and control technologies being showcased at the NEC during the Railtex exhibition in May 2019, FCSC is looking forward to meeting many existing and new industry specialists over the course of the busy three days.

With 18 years of depot safety experience behind him Mark feels the industry will continue to move away from traditional legacy OEM products / suppliers and embrace the new era in safe depots for everyone who works in or visits them.

Having secured several major

contracts in their first year for operators such as GWR, LNER, Siemens, Bombardier and Hitachi and working with many Tier 1 contractors such as C Spencer Group, Hochtief and Volkerfitzpatrick, FCSC is looking forward to another successful year in 2019 and would welcome the opportunity to develop further operator and Tier 1 contractor working relationships.

Our Depot Protection System and Depot Control System

The FirstClass Depot Protection System (DPS) and the FirstClass Depot Control System (DCS) are integrated solutions, suited to any depot requiring a new system or seeking to upgrade a current system.

Our DPS and our DCS are fully flexible and can be built to meet each depot's individual requirements and budgets. We offer bespoke cost-effective DPS / DCS solutions ensuring we meet all of our customers' needs by choosing from our range of DPS components. Plus, all our systems will be designed to meet the required Safety Integrity Level (SIL), making our tailored systems some of the best on the market.

We create intelligent devices encompassing features such as Programmable Logic Control (PLC) catering for whole depot needs.



Engineer Commissioning DPS for Crossrail at Bombardier, Ilford Depot



Hitachi Train Test Facility at Newton Aycliffe – Test Home Protection System



Primary Protection Derailer for the award-winning GWR Penzance Depot

Our DPS and DCS have been designed around the Allen-Bradley, a commercial off-the-shelf PLC range with Rockwell Automation software. However, we offer the flexibility to use other PLC providers should you have standardised preferences on your site.

This flexibility makes us leaders in the DPS market.

All of our systems are extremely user-friendly for both experienced and new operations staff.

24/7 National & Global Support, Outstanding Training and Aftersales Care

We have a proven track record for quick and cost-effective maintenance support for repairs/upgrades and call-outs.

Our training courses are highly rated by delegates, both operationally and as part of on-going maintenance requirements. We can offer a tailored critical spare parts list for on-going support to give you the peace of mind that you have the materials in the unlikely event that something fails.

Our professional aftersales customer care team offer a full service reassuring you that your depot will receive the prompt support you need.

To find out more about our flexible bespoke DPS / DCS, contact us at FirstClass on **info@firstclass-safety-control.co.uk**

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The Dyson Airblade Wash+Dry hand dryer

Wash and dry hands at the sink. Up to 39% quieter than its predecessor.^[i]



In 1907, paper towels were introduced to washrooms. The electric hand dryer made its first appearance in 1948. But both can be expensive, unhygienic and harmful to the environment. In 2006 Dyson engineers put a century of poor-performing hand-drying methods to rest, with the invention of its Airblade™ technology.

But even with an efficient hand dryer, water dripping on the washroom floor can be a concern – as users transition from the sink to the hand drying

area. And excessive sound from the washroom can also be an issue.

The solution is the new Dyson Airblade Wash+Dry hand dryer. It combines in a single touchless unit a tap and a hand dryer that dries hands in 14 seconds with HEPA-filtered air. The multi-functional design helps to save space in the washroom and reduces the problem of water dripping on the floor as users move from a handwashing area to a separate hand-drying station.

Benefits for Businesses

The new Dyson Airblade Wash+Dry hand dryer costs £34 a year to run. Dyson Airblade™ hand dryers cost up to 78% less to run than other hand dryers, and up to 98% less than paper towels. And just 3.6g of CO₂ is emitted per dry, with Dyson Airblade™ hand dryers, producing up to 79% less CO₂ than paper towels and some other hand dryers.

Find out more by contacting **business@dyson.com**

⁽ⁱ⁾ Average loudness (measured in sonos) reduction compared to Dyson Airblade Tap hand dryers and depending upon variant: Short 39%; Tall 35 %; Wall 36 %.

⁽ⁱⁱ⁾ Pricing based on 2017 global cost averages. For calculations visit www.dyson.co.uk/calcs

⁽ⁱⁱⁱ⁾ The environmental impact of electrical appliances and paper towels was measured by Carbon Trust. The calculations were produced using the software Footprint Expert Pro, based on product use over 5 years and using weighted averages of individual countries of use. Dry times for product were evaluated using DTM 769.

dyson airblade wash+dry

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**Wash and dry
hands at the sink.**

With Airblade™ technology in a tap,
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to a separate drying area, so no
water is dripped on the floor.

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