

InnoTrans 2018 Report



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THEME
IN FOCUS

RAILWAY
TECHNOLOGY

Rail becomes all digital

Digital technologies enter all areas of life. They capture the rail sector for the benefit of customers in freight transport and of people using passenger services.



3 Breakthrough will radiate out
Volker Schenk, President of the German Railway Industry Association comments the free-trade agreement between Europe and Japan.



7 Guidance in tunnels
Swiss enterprise GIFAS equips Rhaetian Railway's tunnels with modern LED handrail systems for the lighting of escape ways to ensure a safe emergency evacuation.



8 Mobility Cleaning Circle
A new event format at CMS 2017 in Berlin provided a platform for exchange for the international rail industry and the cleaning sector.

Blueprint for the future: the intelligent freight train



SBB Cargo wants to test open standards for the European freight transportation with the intelligent freight train.

Photo (edited): SBB Cargo

Communications and cloud solutions poised to simplify train preparation.

The rail freight business is undergoing a fast digitalisation. Customers are increasingly requiring telematics and sensor technology services in railborne freight transportation. SBB Cargo, Rail Cargo Group (RGC) and PJ Messtechnik (PJM) are jointly working on a partially automated train preparation system. In the near future new dedicated communications and cloud solutions combined with matching sensor technology shall substantially simplify train preparation, but furthermore a new kind of freight car of the future shall be implemented. Jürgen Mues, Head of Asset Management of SBB Cargo, told Railway Technology Review (Eisenbahntechnische Rundschau 7+8/2017 p. 71 et seq.) as an example that SBB Cargo was working at a partial automation of the production of the last mile to the customer with an automated brake test and an automated coupler. He added that the prototype of a remote-controlled locomotive with a collision warning system for shunting services already exists. But, as Jürgen Mues further explained, the

core project is the intelligent freight car to be integrated into an intelligent train by 2018. The first four of these refurbished "freight cars of the future" have been presented by SBB Cargo this summer. The cars that are now starting for a four years testing phase shall be lightweight, produce a lower noise level and provide a longer running performance. The so-called 5L-train or "freight car of the future" has been developed jointly between SBB Cargo and the Technical Innovation Circle Rail Freight Cargo (TIS), the Swiss Federal Office for the Environment (FOEN) and several industrial partners.

The abbreviation 5L stands for:

1 **Low noise**

The objective is a significant reduction of the noise emissions of a rail freight car.

2 **Lightweight**

Thanks to a lower dead-weight the freight car shall allow for an increased payload.

3 **Long-running**

Reduction of failures and downtimes, for example by radially steered wheelsets in the bogies and disc brakes in order to increase the running performance of each single freight car.

4 **Logistics-capable**

The freight car itself will be integrated into the supply chains in order to optimise the service quality.

5 **Life-cycle cost oriented**

Savings in operation and maintenance with their subsequent faster return on investment shall ensure the economic viability of the investment over the life-cycle.

In the framework of this project SBB Cargo has put an innovative freight train consisting of a total of sixteen container wagons on its rail network. They are already equipped with a multitude of innovative components such as, for example, radially steered wheelsets, at the bogies, disc brakes, automatic couplers, telematics, noise reduction measures and sensor technology.

The objective

Less noise, less wear and reduced energy consumption.

The innovative freight car is a tessera in the automation strategy of SBB Cargo. This strategy relies on the deployment of various different sensors at the freight car or along the track for the supervision of the transport as well as the equipment of 5,000 freight cars with RFID chips (radio frequency identification) until the end of 2017.

Thanks to the RFID tag it will be possible at any time to identify the location of the freight car as well as its load. In the same way as in parcel tracking customers will be able to follow the path of their rail-bound freight and will, for instance, be precisely informed, when the train will arrive.

Jürgen Mues anticipates that the test train will not only guarantee interoperability but its aim is also to test open standards for the European freight transport. The first generation of the intelligent freight train is foreseen to be in productive operation in Switzerland and Austria in the second half of 2018.

COMMENTARY

Market conditions must become fairer



Dr. Jochen Eickholt, UNIFE Chairman

Photo: Siemens

Railway industry markets are currently undergoing a major reshuffling – with new market players, with fundamentally new technologies of digitalisation, but above all due to the growing transport volumes in passenger as well as in freight transportation. This entails two major tasks from the perspective of the European railway industry. On the one hand we have to insist on the establishment of a level playing field in global competition – it can, for example, not be admitted that European enterprises are prevented from acquiring more than minority participations in joint ventures in many areas of the Far East – while European companies can fully be taken over by enterprises from these same areas. These are no fair market conditions, and jointly with our partners in the field of politics we will endeavour to achieve fairer market conditions. On the other hand we aim at using the new digital technologies in such a way as to be able to cope with growing transport volumes – and this without adding any environmental impact. We master the technology. The challenge is now – again in cooperation with our political partners – to create the regulatory frame conditions. There are already successful achievements such as the ETCS that has been developed in Europe and has now become a global standard. The European railway industry is rich in tradition as well as in success – and this is what we want to keep in the future.

INTERVIEW WITH ...

PEDRO FORTEA

Director of the Spanish Railway Association MAFEX



Photo: Alen communication y marketing

? **InnoTrans Report: Mr Fortea, the participation of Spanish exhibitors at InnoTrans has been rising for many years. What do you think is the reason?**

Pedro Fortea: The Spanish railway industry has strongly increased its international presence in the sector over the last decades and has taken a lead-

MAFEX – an association firmly committed to InnoTrans and global competition

The number of Spanish exhibitors at InnoTrans has continually risen for many years. When the exhibition was held for the 11th time last year the Spanish participation reached a new peak. The Spanish Railway Association MAFEX has played an important role in this successful development. Its director Pedro Fortea speaks about InnoTrans 2016 and about current and future challenges for European enterprises of the sector.

ing role in the industry. This is also reflected by its strong presence at InnoTrans, as the world's leading trade fair for railway transport technology acts as a mirror of the sector. The strong participation is also to be understood as a firm commitment of the association to InnoTrans and to global competition.

? **From your point of view, what are currently the major challenges for the European railway sector?**

Pedro Fortea: One of the major tasks of the European railway sector in the coming years will be the challenge to main-

tain its worldwide leading role. At the same time we should keep in mind that the liberalisation process in Europe has to be continued. The competition from other continents is strongly increasing in terms of volume and quality. Therefore the framework conditions to enable companies to provide better products and more advanced services must be created. To achieve this the demand for rail solutions must be enhanced in Europe as well as globally, and in the latter case we have to achieve an increased market entry in order to match local competition. Much has to

be done in the field of energy efficiency as well. Competitive advantages in comparison to other means of transport with their heavier impact on the environment and their reduced sustainability have to be generated. A decisive factor is the investment in the training of our professionals in order to promote innovations in the sector and to turn trends into reality. In this context issues such as the digitalization, Industry 4.0, advanced production methods or cyber security have to be named. One has to understand that it is important to supply the best and not only the cheapest

products and services to end customers. And, of course we have to continue to decisively support small and medium-sized enterprises. At the same time a major paradigm change in politics has to be promoted in order to favour the use of railway transportation and new financing concepts, so as to increase the attractiveness of railways for the end consumer.

? **What fascinates you personally at InnoTrans?**

Pedro Fortea: I have personally participated eight times already at the trade fair. From event to event I was more and more impressed by how dynamically the exhibition grew in the past regarding the numbers of exhibitors and visitors and how it is still enhancing its international position. One has always the feeling that there is not enough time to make all the contacts, to participate in all the meetings and to make all the visits that one has planned at the beginning of the exhibition. I would compare it with those cities that offer so many new things to see, to experience and to learn that one would never like to leave them. Nobody leaves InnoTrans without being impressed.

Bus Display will start into its second round in 2018



A worldwide unique concept: the Bus Display is an exhibition space and a test roadway at the same time.

With the repeated participation of Solaris, Sileo and VDL, electromobility will again characterise the Bus Display in 2018.

■ Last September InnoTrans inaugurated the Bus Display on its Berlin Fairgrounds. The dedicated exhibition space for buses offered exhibitors a new presentation concept in the centrally located "Sommergarten". For the first time international bus manufacturers were given the opportunity to show their vehicles not only in the Static Display but also to showcase them on a directly connected 500 metres long Demonstration Course. Trade visitors could take a ride and

enjoy the experience of up-to-date technology. This special combination of an exhibition surface with an adjacent test quit is hitherto unique on trade fairs.

Numerous manufacturers of urban transport buses recognised the added value of the exhibition and took advantage of the premiere, among them VDL Bus & Coach bv, Sileo GmbH from Germany and Solaris Bus & Coach from Poland. Companies participating in the second edition of

the Bus Display in 2018 have already registered. "The participation at InnoTrans 2016 was a full success for Solaris. Our Urbino electric in the bus display found a big interest from public transport operators, potential customers and passengers", summarised PR Director Mateusz Figaszewski the exhibition presentation. "We have been observing that the urban rail industry and the bus industry are increasingly complementing each other and belonging together. Manufacturers of urban rail vehicles focus on emission-free transport systems. We have therefore decided to exhibit again in Berlin in 2018 as InnoTrans is not only the world's

leading trade fair for the rail transport sector but also for the whole mobility sector." E-mobility will also determine the focus of the Bus Display in 2018. The Sileo company has already announced the emission free double articulated bus Sileo S25. According to the manufacturer the 25 metres long bus has an outstanding performance characterised by a highly efficient electric traction system with batteries that facilitate a high range and offer a more than average rate of electric energy recuperation. "The core of the traction drive is the single-cell-loading-battery system. Its 800 single supervised and controlled battery cells offer a capacity of 600 kilowatt-hours. This battery storage allows for a distance of up to 300 kilometres to be ridden" says Sven Bohnstedt, Sileo's Sales Manager.

The Sileo loading technology that is adapted to the battery system as well as the load procedure and the bus can also be inspected directly on-site by the trade visitors.

Outlook InnoTrans 2018: World's leading trade fair in high demand

The deadline for exhibitor registrations is already closed and booking levels are currently 25 per cent higher than comparative figures for the last event. An increased international participation and a wish for more exhibition space are currently the most important trends. From 18 to 21 September 2018 InnoTrans will again offer a comprehensive overall view of the product and service offerings of the international transport sector.

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