wascosa

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INFOLETTER

LATEST NEWS FOR THE FREIGHT CAR INDUSTRY

NOISE REDUCTION IN EUROPE – A MAJOR BACKLOG

The reduction of railway noise is an issue that affects all parties involved in rail freight traffic: wagon keepers with their wagons, railway undertakings (RU) with their locomotives and infrastructure managers with their rail tracks. It is important to take a holistic and practical approach to the topic of rail noise and to reconcile the concerns and contributions of all the players.

The noise problem has become more and more important over the past few years. The increasing density of the population in Europe and their growing awareness with regard to traffic noise mean that demand-driven solutions need to be found.

DANGEROUS GOODS BY RAIL

Dear Readers,
It is a fact that rail freight transport is 43 times safer than road freight transport. This means that the transport of certain products by road is completely prohibited. However, new conclusions are being drawn, from the Hazardous Incident Ordinance for example, that state that the rail transport of dangerous goods, such as chlorine, in densely populated areas represents an increased risk and should therefore be restricted or completely prohibited. However, for a country like Switzerland, which no longer produces chlorine itself, there are no alternatives to the transport of chlorine by rail. Since the Viareggio rail accident in 2008 safety measures for freight wagons have been set to a new level. These measures have once again significantly increased the safety level of freight rail transport. The costs of this have been borne by the private sector. Ultimately the greatest safety risk still remains the human factor, as shown by all statistics. As long as people are involved, there will always be a residual risk, and this applies to all means of transport. It is vital to choose the smallest possible residual risk. And this is why dangerous goods should be transported by the safest transport carrier – the railway.

Philipp Müller
President of the Board of Directors

Most noise is generated by wheel-rail contact. There are a number of measures for reducing this noise, including installing anti-noise barriers, deploying sound absorbers or special noise-absorbing paint, regularly grinding rails, using disc brakes on freight wagons, replacing cast iron brake blocks with LL brake blocks or converting to K brake blocks.

The installation of synthetic blocks reduces the roughness of the wheel, which in turn rapidly improves the noise level. However, the use of synthetic blocks and the resultant damage on the running surface of the wheels dramatically increases the amount of reprofiling required, which makes rail freight traffic significantly more expensive. Furthermore, synthetic blocks are many times more expensive than conventional cast iron brake blocks, not least because there are currently only a limited number of providers.

Lack of equal treatment

The different requirements of European countries and the lack of mutual coordination between funding schemes constitute a significant issue when it comes to rail noise. In addition, these funding schemes frequently provide little incentive for affected wagon keepers. However, the main problem consists in the fact that the three causes of noise – rails, locomotives and wagons – are not treated equally. Different maximum or even a complete lack of noise levels are a key point.

It should not be possible for one locomotive to generate as much noise as ten low-noise freight wagons, and it is also unacceptable for there to be absolutely no noise regulations for the track. The infrastructure must also make its contribution towards reducing «wheel-rail» noise. On average, current low-noise locomotives generate 85 dB. In contrast, freight wagons generate 79 dB.

This sounds to the human ear like practically double the noise and cannot serve the cause of noise reduction. This unequal treatment of locomotives and freight wagons undermines the major effort and investment made by wagon keepers, as the noise reduction effect of a freight train is rendered largely pointless by a loud locomotive at the front – and with it the millions invested by private wagon keepers. In this instance, there is an urgent need for action by authorities and a policy of equal treatment for locomotives and freight wagons. Switzerland is moving forward with a practical solution and rewards wagon keepers with a noise bonus, which compensates to some extent the additional operating costs.

«The main problem consists in the fact that the three causes of noise – rails, locomotives and wagons – are not treated equally.»

Shorter maintenance intervals for wagons with LL brake blocks also contribute to additional costs for keepers. New, technically advanced solutions, such as disc brakes, have still found limited acceptance among many players in the market, as the initial additional costs of procurement prove an obstacle to their application.

Ten low-noise freight wagons together generate the same amount of noise as one locomotive that has not been equipped for low noise.

A lack of information on the relevant mileage of wagons leads to ultimately to further costs, as it means the cost-optimised renovation of wheelsets is impossible. This is an important reason why WASCOSA has decided to equip its entire fleet with telematics systems.

Major backlog for many wagon keepers

It has now become clear to all players in the rail market that the noise problem cannot simply be ignored. Quite the opposite: for many wagon keepers, wagons that have not been renovated to low noise represent a major backlog. In order to comply with the legal regulations and deadlines in Switzerland or in Germany by 2020, it is today essential to have a concrete conversion programme over the next four years, i.e. 2016–2019, for the wagons to be renovated.

Efficient conversion programmes are essential

Shipping agents and RUs are encouraged to work together with freight wagon keepers to agree consensual solutions, which allow the additional costs for noise-compliant wagons to be sensibly distributed. This particularly concerns the transformation of existing freight wagons into low-noise wagons with the minimum additional expense and the greatest efficiency. Only when wagons are renovated for low noise as part of planned periodic maintenance can the costs be optimised.

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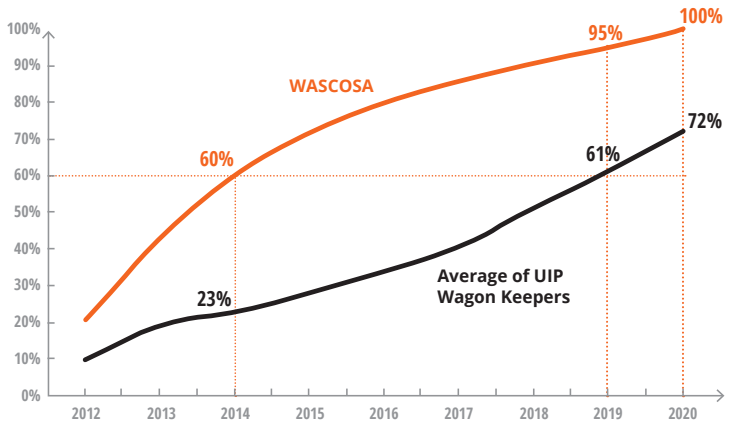
ON OUR OWN BEHALF

WASCOSA LEADS THE FIELD IN NOISE REDUCTION

For well over a year the proportion of noise-compliant wagons at WASCOSA has been 60 %, which is around three times the European average. This ensures that WASCOSA is taking a leading role for noise reduction in Europe.

The renovation of the rest of the fleet to low noise is well under way and the wagons will continue to be renovated to low noise over the next four years as part of the next maintenance action and the entire WASCOSA wagon fleet will be completely low noise by the end of 2019. It is intended to adjust the rental prices to partially cover the additional costs when the renovation to low noise is carried out.

In this way, WASCOSA ensures that there are no unnecessary downtimes or additional costs for customers and the renovation can thus be carried out as efficiently as possible. This is because later conversion would lead to additional costs for all parties involved, caused by increased demand for or even scarcity of LL brake blocks and workshop capacity. Without even mentioning the additional costs of cleaning, freight costs and rent losses due to additional decommissioning.



Source: UIP

WASCOSA ASSET INTELLIGENCE DAY

The aim of the WASCOSA Asset Intelligence Day which recently took place in Lucerne was to provide all interested parties with comprehensive knowledge about the strategic aspects and operative success factors of telematics on freight wagons. At the same time, it also aimed to engender a spirit of optimism regarding telematics on freight wagons in participants.

The conference firstly consisted of a market place which allowed the nearly 300 participants from 17 countries to meet numerous providers of telematics solutions from Europe and North America and to get an overview of their products and services. Secondly, it provided several progress reports on how and why renowned players in the field of rail freight transport are tackling the topic of telematics on freight wagons and what benefits they expect. And thirdly, there was an interactive part during which small groups of participants performed an initial individual requirements analysis for the use of telematics systems.

«Today there is an easily implemented rail telematics solution for every problem.»

It was clear that in comparison to road, rail has currently fallen far behind and a forward strategy for all players in the rail sector is now urgently required. Furthermore, today there is an easily implemented telematics solutions for practically every problem in the rail

The WASCOSA Asset Intelligence Day on the topic «How can we make rail transport more intelligent? – Telematics on freight wagons», with over 300 participants from 17 countries, met with a great response.

The integrated marketplace event gave conference participants the opportunity to meet numerous important providers of telematics systems from Europe and North America.

Speakers from North America reported on their experience from over 15 years of practical implementation.

Prof. Markus Hecht informs decision-makers about rapid and reliable rail freight transport thanks to telematics.

sector. There is no longer any reason to be cautious with telematics on freight wagons, as the advantages and the operational benefits clearly predominate. However, the multitude of possibilities requires that freight wagon keepers consider very carefully beforehand which tasks and which operational benefits a telematics systems needs to provide for them.

«There is no longer any reason to be cautious with telematics on freight wagons.»

The telematics systems available on the market today make it possible to implement solutions tailored to specific requirements or the platform-neutral NIC-base (trademark), which can integrate different proprietary telematics systems as well as diffrent modes (road, rail, water or air).

Additional productivity improvements in rail freight transport require the use of telematics systems and almost intelligent freight wagons. It is only thanks to up-to-date, i.e. better, information on both the rolling stock used and the transported freight that freight wagons can be managed more proactively, additional efficiency gains can be achieved and rail freight transport can be generally made even safer.

«In 2016/17 WASCOSA is equipping its entire intermodal fleet with telematics.»

As a clear commitment to telematics, WASCOSA has therefore decided to equip its entire intermodal fleet with telematics systems in 2016/2017.

WHAT IS THE ROAD DOING?

A refrigerated transport with an extremely sensitive cargo, en route from Switzerland to Morocco, is on its way somewhere in Spain. The vehicle dispatcher is sitting in an office more than a thousand kilometres away. Suddenly he receives a message that the temperature in the semitrailer is slowly starting to increase. This is not an uncommon scenario.

Using the location signal the vehicle dispatcher can pinpoint the immediate location of the truck and inform the driver of a suitable garage to repair the defective cooling unit. Within a very short time, a message is send to the truck's on-board computer to notify the driver. In this way, unnecessary and expensive damage can be prevented thanks to intelligent systems.

Telematics – essential for road transport

Thanks to integrated telematics, which make up a significant proportion of our modern road transport companies, we can monitor a very wide variety of components in real-time. The technical evolution, which has also included the truck equipment, has now achieved fully digitalised networking. Trucks can be continuously monitored, wherever they happen to be. The vehicle dispatcher is able to see the remaining driving time for the driver and can therefore predict the punctuality of individual orders. Any possible order changes can be communicated to the driver at any time and truck stop times are also always visible. Cooling swap bodies can always be located, even when travelling by rail. Additionally, thanks to two-way technology, we can set the temperature from the office and the customer automatically receives a report containing the quality certificate on temperature fluctuations. We always have an overview of the service data of individual trucks, which means we can implement foresighted maintenance planning for the fleet with limited downtimes and high efficiency. Thanks to driving performance analysis, we can ensure effective and personal driving training for our drivers.

«The technical evolution has now achieved fully digitalised networking.»

There is currently no limit to the further development and in the future it could generate an abundance of data (big data). It will then be critical how all the data can be rendered useful and used to generate value. The less dependent on location a fleet is, the more important fleet digitalisation becomes.

Thanks to telematics, the vehicle dispatcher always knows where a given truck is, and for cooling swap bodies, he also knows the temperature and if the doors are opened.

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is the CEO of Dreier AG, which owns multimodal transport equipment and one of the most up-to-date and well equipped fleets of trucks in Switzerland.

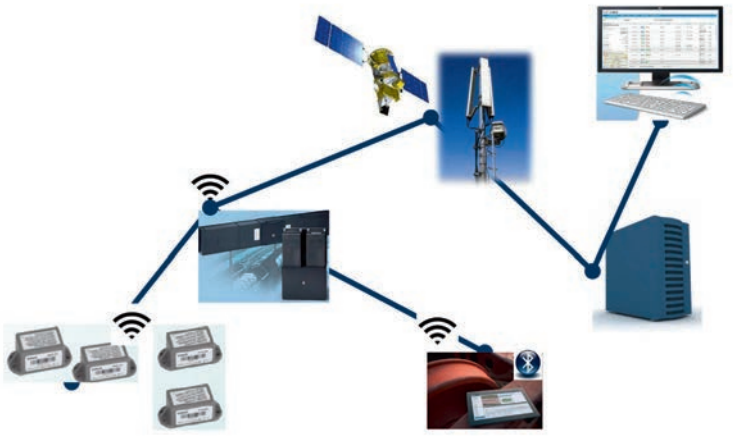
«Fascinated by the possibilities of telematics.»

FREIGHT WAGONS ARE BECOMING INTELLIGENT – WHAT IS NOW POSSIBLE?

Still in a siding ...? Today wagon keepers barely know what is happening with their freight wagon assets in operation. They only have secure access to information during scheduled statutory inspections and revisions in the workshop. All other action for the wagon/cargo and events (technical transfer inspections, repairs, loading/unloading, operating events, etc.) often remains a big question mark.

In 2001 Deutsche Bahn installed the first large and heavy satellite navigation devices on part of their freight wagon fleet, to monitor position and itinerary. Other keepers tested various devices, including those with solar cell power supply or explosion-proof design for tank wagons.

15 years later and the intelligent freight wagon has finally come of age: The devices have high performance batteries with a long service life, transmit their data via GSM and GPRS to servers and an associated visualisation platform, and can receive data from sensors wirelessly via WLAN or Bluetooth and forward it to mobile end devices.



Intelligent freight wagons have come of age

Encouraging market survey

A comprehensive market survey, including operational testing, executed by WASCOSA of the available solutions for freight wagons proved encouraging: 25 years after the introduction of navigations devices in the automotive sector, there are several good and rail-appropriate solutions for making freight wagons «intelligent». Shortcomings seen only a few years ago, particularly in the field of power management, were no longer detected for any of the manufacturers. Whether lithium batteries or hub generators are the better solution for power supply depends solely on the individual requirements profile and the operating conditions.

Information is key, as it also is for freight wagon management. As the actual mileage is not known, the most expensive wheelset maintenance phases with stock reconditioning are today frequently performed far too early. If mileage information was known, possible maintenance intervals could be exploited much more efficiently, and subsequently the number of cost-boosting interventions could be reduced over the wagon lifetime and wagon availability for customers could be increased. WASCOSA has therefore performed a «Total Cost of Ownership» consideration and as a result has decided to equip their entire freight wagon fleet for intermodal transport with telematics. This does not simply consider the costs of procuring hardware and transmitting data, but also the costs of equipping wagons and data management via the neutral platform NIC-base from Kasasi.

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SUMMARY

Proactive management («Navigation») is now possible for freight wagons and their cargo!

«Reaction is a thing of the past.»

TOP 10 BENEFITS OF THE VALUE OF RAIL TELEMATICS

What started as a security solution for knowing where all hazardous rail shipments were at any time has now evolved to provide additional benefits including:

TOP 10 LIST

1. Reductions in inventory safety stock by knowing what's where
Inventory planners can now be more confident that a shipment or raw material delivery will arrive on time by providing shipment visibility at any given time. This capability has resulted in reduced inventory and moving less restock.

2. Customer focus improvements through visibility of shipments
Similar to how package delivery companies, such as DHL, UPS and Fedex, allow customers to see where their shipments are at any given time, rail telematics enable customers to see where their rail deliveries are at any given time. Additionally, rail customers can choose to receive email or text alerts once a rail car has crossed the 'geofence' established for them. This could be 24 hours prior to arrival, at the time of arrival or any other desired criteria or business rule.

3. Monitor-by-exception approach: build in business rules that alert upon violation or occurrence (delays, arrivals, exceptions to norm, etc.)
Monitoring all shipments can be a huge undertaking. By building in business rules that cover your critical issues or concerns, you can be alerted only when one of your shipments violates a rule. All types of rule violations can trigger an email or text message enabling the responsible person to take action.

4. Advantages of sensor technology
The ability to utilise sensor technology to monitor key mechanical, security and environmental conditions while your rail equipment is out of your immediate control provides you with extended capabilities that can provide sustainability for your company and have the potential to lower your operating costs.

5. End-to-end visibility through visibility technology and data communication
Knowing exactly 'what is where' on a scheduled basis as well as the ability to 'ping' a rail car at any time and receive a response within 12 minutes ensures that you have the optimum ability to respond to any situation and to plan more effectively.

6. Security improvements
The ability to remotely monitor Toxic Inhalation Hazard (TIH) shipments and to respond to alerts indicating that someone may be tampering with a shipment while en route or on a rail siding provides the level of security needed to ensure community safety and the security of the shipment. The installation of GPS tracking devices and communicators, use of wireless sensors and a capable software backend have all paved the way for what is considered by the United States' Department of Homeland Security to be 'Best Practice'.

7. Sole source supplier arrangements
Having the capability to utilise telematics equipment for your own benefit and that of your customer can provide the 'value-added benefit' that ensures your customers prefer your company over another. This could ultimately lead to sole-source contracts or business agreements that can provide long-term value for both you and your customer base.

8. Cash flow improvements through automated billing
By setting up geofences around your customer delivery locations, or establishing a business rule that the rail car has arrived within the customer's 'geofence' once the rail car is opened, an invoice for the material could be automatically generated.

9. Improvements in asset/fleet utilisation
Your telematics solutions can provide you with analytical information to better analyse the under-performing aspects of rail cycle time, carrier performance, how long customers are holding on to your equipment and overall fleet utilisation, which can help you to make better decisions.

10. Transaction automation and ERP solutions
Integration of data from your telematic deployment into your ERP solutions (such as SAP) can further automate data input and improve punctuality and data accuracy.

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HOW CAN I MAKE MY RAIL TRANSPORT MORE INTELLIGENT? – A BRIEF INSIGHT INTO THE REQUIREMENTS ANALYSIS

The journey is the reward – today modern telematics systems offer a huge amount of information from rail freight vehicles – among other things on costs, for which it is worth analysing to what extent this information can also provide optimisation measures for your rail transport. How can information be used, if necessary transmitted in real-time, to improve processes, reduce costs, ensure quality or attract new customers? By means of a structured requirements analysis, you can ensure you yourself are able to answer these questions.

Naturally, this requirements analysis is very personal, as every transport company has its own structures, processes, and customer and technical requirements. The top priority must therefore be to examine all the processes and information requirements within the company.

«A telematics solution is only as individual as your company itself.»

The wealth of information made available to us by telematics systems today ranges from geo-data (incl. geofencing) and mileages right up to the provision of all physical values such as pressure, temperature, weight and conditions or events in or on the vehicle. This analysis should always start with the identification of the information requirements for your logistics or transport contracts. This will provide the most important factor not simply for refinancing the necessary operating costs of a telematics systems, but also for positively influencing your business result. In doing this, it is legitimate to let yourself be governed by the concept of «make a wish!», i.e. what information would you like to have, and not be restricted by the concept «What is possible?».

It is also possible to improve business results through the optimum usage of existing rolling stock and by exploiting the technical framework conditions. Technical conditions, such as mileage, can be measured and workshop visits can be better planned. The vehicle fleet analysis includes information such as the utilisation and availability of the fleet, as well as the technical condition of the rolling stock. This forms the basis for equipping the vehicles with the necessary sensors and helps with the tendering process.

The solution that suits your information requirements is then worked out together with telematics provider(s). A telematics solution is only as individual as your company itself!

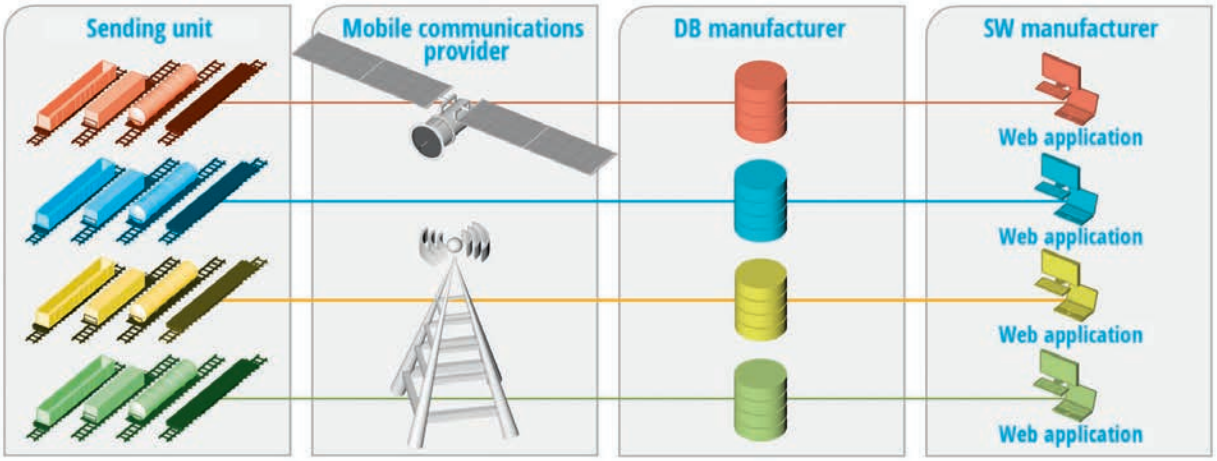
REQUIREMENTS ANALYSIS GUIDELINES

We would be delighted to help you with this process. At the end of the first 2016 quarter, we will make a «Requirements Analysis Guidelines» document available to all interested parties. Are you interested? If so, simply send us an email to telematik@wascosa.ch with the subject «Requirements analysis». We will then provide you with a corresponding download key.

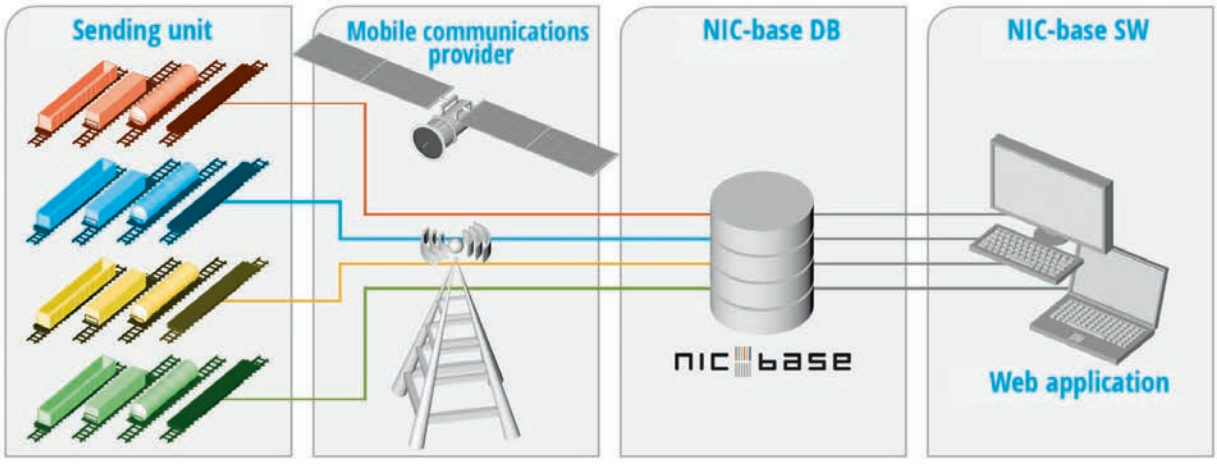
OPTIMISATION AND FLEXIBILITY THROUGH INDEPENDENCE – NIC-BASE TELEMATICS PLATFORM

Over the last few years the use of telematics solutions has been established for road freight transport. Yet it has hardly been considered that it may also be worth using the same systems for transport by air, water or rail.

Regardless of the means used to transport freight using telematics, there is one piece of knowledge, gained through experience, that is worth considering: in place of diverse proprietary telematics solutions from different manufacturers, a manufacturer-independent telematics platform offers clear advantages.



Instead of a chaotic variety of interfaces (above), the independent NIC-base database (below) provides a harmonised view of all applications and functions.



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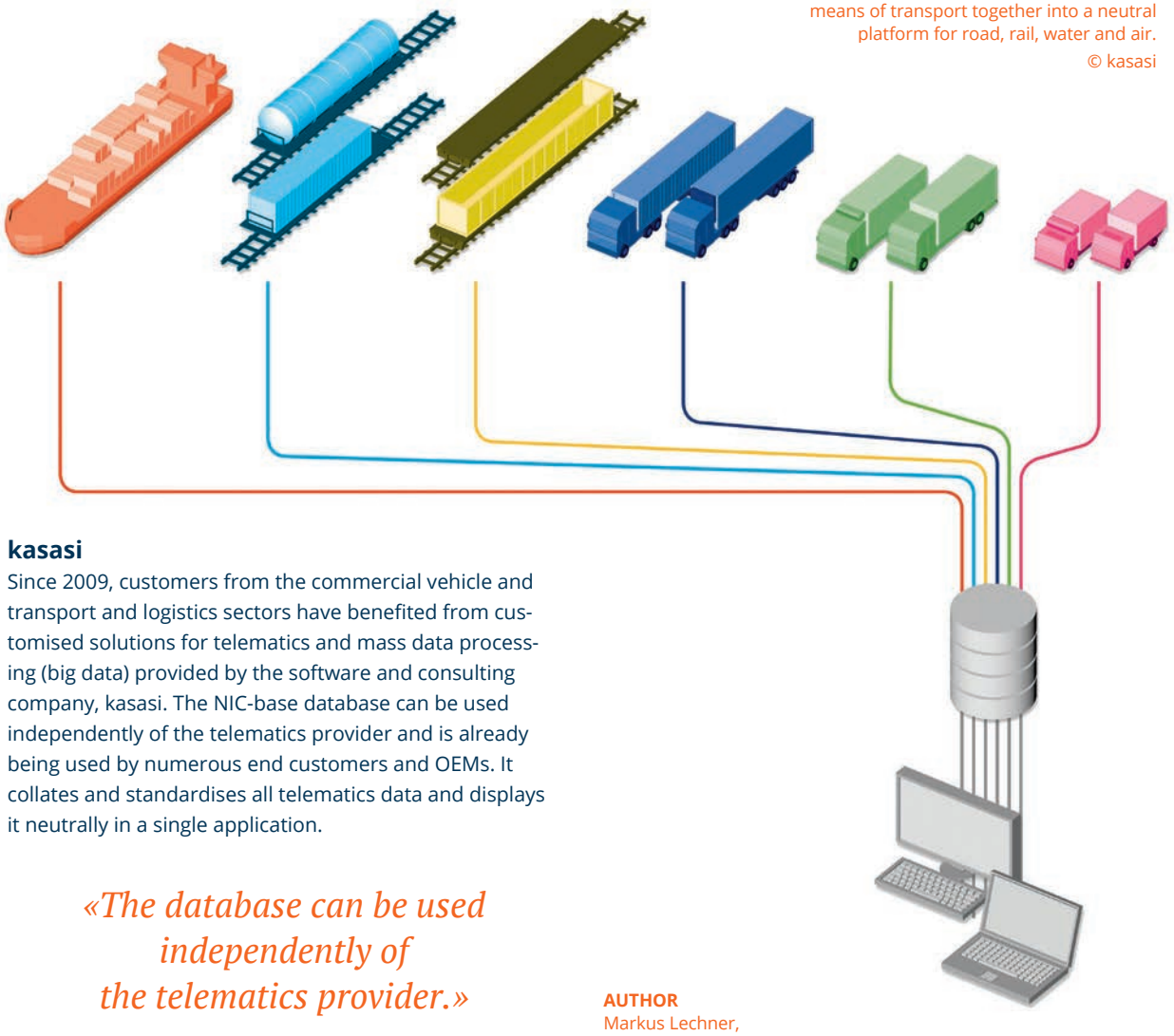

NIC-base makes it possible to bring different means of transport together into a neutral platform for road, rail, water and air.
© kasasi

kasasi

Since 2009, customers from the commercial vehicle and transport and logistics sectors have benefited from customised solutions for telematics and mass data processing (big data) provided by the software and consulting company, kasasi. The NIC-base database can be used independently of the telematics provider and is already being used by numerous end customers and OEMs. It collates and standardises all telematics data and displays it neutrally in a single application.

«The database can be used independently of the telematics provider.»

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Function

Using NIC-base, the relevant telematics data is first collected via an interface from the respective manufacturer or received directly via a gateway. In the next step, the specific data structures of the different manufacturers are neutralised and transformed into a new standard structure, which is hosted in a single database. This data is then simply provided to the user via an online application or forwarded directly to third-party programs.

«NIC-base is also perfectly suited to rail freight transport.»

NIC-base is also perfectly suited to rail freight transport, as bundling different hardware manufacturers into a uniform platform ensures consistency, not just when it comes to the fleet view and reporting, but also for alarm control and administration. In addition, third-party programs or systems can connect via single interface.

ABOUT THE AUTHOR **MARKUS LECHNER**

- is the Managing Director of kasasi GmbH
- believes in the motto: Independence! Independence from the mode of transport, from hardware and from technology, in order to ensure transparency and control for all mobile assets via a telemetry-based platform.

«Our goal is more intelligent and more efficient rail transport.»

VCI RESPONSIBLE CARE COMPETITION 2015

GRILLO-WERKE AG WINS 1ST PRIZE WITH THE WASCOSA SAFE TANK CAR® DESIGN

The German Chemical Industry Association (Verband der Chemischen Industrie – VCI), a North Rhine-Westphalia regional association, gave awards to three companies for outstanding projects on transport safety. Grillo-Werke AG in Duisburg was honoured with first place thanks to the WASCOSA safe tank car®. This revolutionary car design has demonstrated the Duisburg-based company's commitment to Responsible Care for more than five years and sets new safety standards for pressurised gas tank cars. Second and third places were awarded to the companies Brenntag GmbH and Evonik Industries AG.

© VCI NRW/Galaschek
From left to right:
Garrelt Duin, NRW Minister of Economics,
Dr. Joachim van de Flierdt, Grillo-Werke AG,
Dr. Günter Hilken, CEO of VCI NRW.

The WASCOSA safe tank car stands out for more than its appearance.

VCI had advertised the Responsible-Care competition under the slogan «We've got great ideas for transport safety and logistics». They were looking for ideas that went over and above compliance with the usual regulations. This makes it possible to show how responsible action for the planning, preparation or practical implementation of chemical transportation is understood, regardless of the size of the company. «It is rare that the first prize has been as clear to the jury as it was this year», said a member of the specialist jury. Grillo has set new safety technology standards for pressurised gas tank cars with the WASCOSA safe tank car® design. «We are proud of our pioneering role. Following the theme of Responsible Care and in collaboration with WASCOSA, we have voluntarily invested in the safety of rolling stock and we are delighted to see that this commitment is being imitated», explains the Head of the Grillo-Werke AG Sulphur Dioxide & Derivatives Business Unit, Dr Joachim van de Flierdt.

«Following the theme of Responsible Care, we have invested in the safety of rolling stock.»

Dr. Joachim van de Flierdt, Grillo-Werke AG

ANNIVERSARY OF THE «RULES OF PLAY» – THE GCU IS 10 YEARS OLD

This year the GCU is celebrating its ten year anniversary. A good reason to reflect on the development of the GCU over the past few years.

Number of members per country
Last update: 30/10/2015

Development of the GCU

The introduction of the GCU on 1 June 2006 continued the further development of the private and multilateral contract and firmly established itself as the standard in Europe and beyond. Currently, more than 600 contract companies in 26 countries with more than 500 000 freight wagons use the GCU. There are around 650 000 admitted freight wagons in Europe, so this clearly indicates the acceptance of all market participants. The GCU sets out consistent «rules of play» for all contract partners, whether wagon keepers and/or railway undertakings and offers process reliability for even complex transport chains. This applies for both communication and processing with all partners involved in the transport. The incorporation of legal changes and directives, the further development of regulations or the creation of clear definitions for a common understanding require the continued development of the GCU in the future. This is why in 2016 necessary adjustments have again been made, as presented briefly below:

In **Article 14.2** the rules for the **electronic wagon note** have been more precisely defined and thus support the CIM rules of the new COTIF (valid since 01/07/2015).

Appendix 7 (Spare parts) has been completely revised and now contains instructions for possible customs clearance. Furthermore, for the delivery of spare parts, the keeper must decide beforehand whether the replaced parts should be sent back or scrapped.

The **Damage report** in **Appendix 4** has also been completely revised (a new layout version of the report and completely new instructions for filling out the report). This is intended to improve the quality of the damage report so that keepers receive more information about their damaged vehicle.

In **Appendices 9 and 10,** current **operational and technical improvements** have been included. These include, for example, the integration of minimum knowledge for wagon inspectors, the introduction of new damage codes when using derailment detectors, and the definition of «wheel flat» according to EN 15313.

In **Appendix 11,** a **new wagon marking** for reinforced clutches has been added, among other things.

Topics being assessed and revised

The revision also includes Appendix 6 (Compensation for loss of use) and Article 27 (Principle of liability). These topics are currently being discussed across the association. If you have any suggestions for improvement, please contact your national association or the representatives from ERFA, UIC or UIP.

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BOARDING MADE DIFFICULT

As a wagon rental company, WASCOSA has been making active contributions for greater safety in rail freight transport for around 20 years. Recently, it has dispensed with ladders on tank cars, in accordance with customer demands.

Specialist article from:
«gefährliche ladung», Edition 09/2015

In addition to the safety of the transported cargo, the direct safety of people has become more important to an increasing number of shipping agents in the chemical industry. This is why WASCOSA's «safe tank car» design, presented in 2010, with a transition platform at both ends of the car, has increasingly developed into an industry standard across Europe. Accidents involving shunting personnel can thus be reduced to a minimum. In 2013, the two transition platforms per car were even incorporated by the European Chemical Industry Council (CEFIC) in the new guidelines on tank wagons for chemicals and pressurised gas. There should also now be an end to accidents involving contact with electrified overhead lines. For numerous years, often fatal accidents relating to the boarding of freight wagons have been taking place unabated – involving operational personnel, or involving unauthorised access, predominantly by high spirited young people, often under the influence of alcohol. In France alone, an average of 14 accidents per year have been recorded over the past few years as a result of illegal boarding. According to a statistic from Deutsche Bahn, in Germany this figure is 13 accidents. Most recently, a young man in Hamburg suffered an electric shock on a heating oil wagon at the end of June 2015. Tank cars are affected more than other wagons as they are fitted with ladders: between 2001 and 2012, 21 serious accidents took place in Germany due to unauthorised boarding of tank cars. Five young people were killed and the others all suffered severe burns. They were not aware that being 1.5 metres away from the overhead -lines which are constantly under a voltage of 15 000 volts can cause electric shock. When subjected to electric shock, the human body acts as an electrical conductor and reaches temperatures of up to 20 000 °C.

«The direct safety of people has become more important to an increasing number of shipping agents in the chemical industry.»

In 2013 WASCOSA was the first European wagon rental company to present tank cars without ladders. Since then, WASCOSA has supplied more than 700 new wagons without access ladders.

In order to significantly reduce the occurrence of such tragic and avoidable accidents, in mid-2012 a large petroleum company decided, together with WASCOSA, to follow a new path and dispense with access ladders from then on. In May 2013, the Swiss company was the first rental company to supply new tank cars without access ladders and has since produced around 700 wagons. As a positive side effect, the innovation has since met with general acceptance in the market and is being adopted by more and more players, including VTG. Since then the WASCOSA innovation of ladder-less freight wagons has also proved popular with such diverse industry associations as the German Petroleum Industry Association (MWV), the International Union of Private Wagons (UIP) and the Association of Privately Owned Wagon Operators in Germany (VPI), whereby it is being actively discussed as a new basic recommendation on a national and even European level (see infobox below).

«Other reasons for dispensing with ladders include changes made by shipping agents and changes to wagon technology.»

Other reasons for dispensing with ladders include changes made by shipping agents and changes to wagon technology. In the past, many loading and unloading facilities did not have upper platforms for operation. However, it was also often only possible to operate the bottom valves of the wagon from above. It was also necessary to be on top of the wagon and to open the dome lids for venting and unloading. Wagon technology and the safety standard for facilities have been continuously adjusted over the past few years.

Warnings on tank cars ladders alone are not enough to prevent accidents caused by unauthorised boarding, for example.

FUNDAMENTAL SOLUTION FOR LADDER-LESS TANK CARS IN SIGHT

The Association of Privately Owned Wagon Operators in Germany (VPI) has been actively advancing the topic of ladder-less tank cars for years, particularly the tank car operators represented in its Technical Commission. As a result, the VPI believes in the reduction of fatal accidents that continue to occur as a result of illegal climbing on tank cars. On this topic, the VPI is working on the topic in close collaboration with the shipping agent associations VCI, CEFIC, MWV and UTV on a fundamental solution that considers the needs of the shipping industry and legal requirements, as well as the accident issue. Consequently, from 2016 there will be a standardised, Europe-wide hitching device for mobile ladders, the latter then being provided to loading/unloading sites. The device, located centrally on top of the tank cars, will be a wide bracket or «ladder stump» which accounts for the curve of the tank and safe distances from the vessel, making it possible to easily climb up from the ground using a ladder equipped with two insertion hooks.
– skl –

IN 1948

8 freight wagons with 3500 cement buckets or 2800 cement bags

THE TRANSPORT OF 140 TONNES OF CEMENT REQUIRED

IN 1953

6 two-axle dual silo wagons

INTERESTING FACTS

FROM BAG TO SILO – A STORY OF SWISS INNOVATION

The new four-axle silo wagons for powdery goods from WASCOSA, as used by JURA Cement, represent the preliminary highlight of a Swiss innovation story. This was made possible by the major construction sites of power station companies and a sophisticated logistics system from the cement industry. And the manufacturers of freight wagons endeavoured to exploit the technical possibilities and thus to save time and money.

It was the major construction sites of the Swiss power station companies after the Second World War that triggered the first innovation boost. Before 1948 cement was packed into 50-kg bags, manually loaded onto open freight wagons and sent on its way to the construction site – even for major construction sites. The first significant increase in efficiency came from buckets with a load capacity of 400 kg, which replaced the bags. The buckets were pushed via rolling racks on to the railway wagons or trucks, and similarly reloaded or unloaded. At the loading site, special ramps were built for the buckets, which were at the same time used as receptacles for reserve stock between the different modes of transport, such as rail, truck or cable car. Thanks to this perfectly coordinated logistics chain, a freight wagon could be loaded or unloaded at the time with 48 buckets, i.e. almost 20 tonnes of cement, in 15 minutes.

«It was the major construction sites of the Swiss power station companies after the Second World War that triggered the first innovation boost.»

By these means, 660 tonnes of cement were brought to Sion for the construction of the Grande Dixence gravity dam each day using 35 open railway wagons.

Compressed air makes it happen

The general construction economy and the construction of further dam walls in the 50s and 60s ensured a constantly increasing demand for cement and corresponding transport logistics, so that the next innovation step followed a mere four years later. The newly developed technology using compressed air for emptying containers made it possible to efficiently

IN 1970

3 four-axle dual silo wagons

IN 2015

2 four-axle dual silo wagons

and rapidly unload ground cement from silos, despite its extremely high density and fineness. Upright dual silo truck bodies were mounted on the two-axle freight wagon underframe commonly used at that time. As has now become normal, the silos were gravity loaded from above and unloaded at the destination using compressed air of max. 2.0 bar in only 15 minutes. The two-axle dual silo wagons were already constructed so that they could operate with a load weight of up to 25 tonnes at a maximum speed of 100 km/h. Thus as early as 1952 came another considerable step forward: from the loading operation in the factory up to the storage silo at the construction site only 15 minutes of human working time was required for each tonne of cement.

«The self-supporting macro cell structure significantly reduced the tare weight of the wagon.»

Four axles mean double the capacity

In order to continue increasing the transport capacity to match the growing demand, the next step was taken in 1970 with the move to four-axle wagons for powdery goods with a doubled load weight of 58 tonnes. The first four-axle wagons of the around 280 wagons that were produced and operated in Switzerland between 1970 and 1990, were based on an axle load of 20 tonnes and did not yet utilise today's maximum gross weight. However, the wagon fleet available in 1990 in Switzerland was finally large enough to cope with demand, so that until 2005 no new wagons for powdery goods were produced.

Swiss innovation – «Made in Germany»

Prompted by the once more strong construction economy, the stock of old wagons beyond their prime and the as yet under-exploited transport potential of the four-axle wagon for powdery goods, in 2004 Holcim allowed the Josef Meyer Transport Technology AG, Rheinfelden, to develop a new, innovative construction and as a result purchased large quantities, together with WASCOSA. The self-supporting macro cell structure on which the reservoir, containing two silos, sits, significantly reduced the tare weight of the wagon, without reducing the stability of the construction. Around 69 tonnes of cement can be transported in the two silos.

The Swiss innovation set a new standard, which is why the German freight wagon manufacturer, Waggonbau Graaff GmbH from Hanover, decided five years ago to buy the construction including the corresponding patents and approval from Josef Meyer Transport Technology AG, which at the time ceased manufacturing freight wagons. Since then, this wagon for powdery goods has been exclusively manufactured in Elze, near Hanover, including the 50 new WASCOSA wagons that are being rented by JURA Materials.

In Switzerland, the innovative wagon construction from Josef Meyer has become established as the new, modern standard: meanwhile, all Swiss cement manufacturers are turning to this type of wagon and are gradually replacing older wagons still in circulation.

WHEN IT COMES TO A «JUST-IN-TIME» PRODUCT, RAIL IS THE PERFECT OPTION

With JURA Materials, WASCOSA adds another Swiss client to its rental customers. The investment in new powdered goods wagons is a tribute to rail transport. All JURA Cement plants have sidings. This is commonplace in the Swiss cement industry, explains Hanspeter Meyer, operations manager for JURA Materials.

Mr Meyer, a recent newspaper article stated that rail freight transport is the second backbone of the construction industry. Do you agree with this statement?
For our business, i.e. for the transport of cement and gravel, it is undoubtedly true. Whenever we can, we use rail to transport our products.

Has this always been the case?
Yes. The upturn in the cement industry in Switzerland is closely linked to the expansion of infrastructure in the 20th century. Using rail solved the problem of transporting powdered bulk goods and enabled market expansion.

If you were to look at price alone, transporting cement by road would be a more attractive option. And yet JURA Materials uses rail transport. Why is this?
Increasing traffic bottlenecks on the road, night transport by rail and environmental considerations are strong arguments in favour of rail transport. We mustn't forget: cement is a «just-in-time» product. Rail transport takes this aspect into consideration. Trains reach the customer the next day very reliably and with great punctuality. When it comes to environmental protection, we are committed to environmentally and socially responsible production. The cement industry has been able to significantly reduce its CO_2 emissions over the past few years; in part through the use of environmentally friendly fuels for cement manufacture.

A direct siding is indispensable for the cement industry in Switzerland. Does this mean that you will further expand rail transport?
It is critical for us that the infrastructure is maintained and further developed. I am confident that for us the relationship of rail to road will remain the same as it is today. For some customers, particularly large concrete factories and major construction sites with private railway sidings, we deliver directly by rail. We would like to maintain this, even if it is slightly more expensive. These customers have a similar philosophy to us. They also have a siding and participate in the necessary maintenance costs for it.

With the new generation of wagons for powdery goods that you are renting from WASCOSA, you have opted for modern technology and performance. What are the benefits in concrete terms?
WASCOSA provides us with a partner who has been able to offer us an attractive contract. This is important, particularly when we supply a major construction site we sometimes need 20 to 30 additional wagons for up to 2 or 3 years. In any case, we also have the option to buy the wagons later on. Furthermore, it was also time to replace the wagon fleet. The new wagons for powdery goods has a roughly 25 % greater loading capacity, which makes it economically attractive. The wagon also complies with safety and noise requirements. Loading and unloading are also easier for our customers.

JURA CEMENT

JURA Cement consists of two production facilities (Wildegg AG and Cornaux NE) and with a production capacity of over 1 million tonnes of cement, is the second largest cement manufacturer in Switzerland. JURA Cement is a JURA Materials company, which owns several companies in the Swiss construction materials industry. Its activities concentrate in the field of cement production, gravel extraction and concrete manufacture. Since 2000, JURA Materials itself has been owned by CRH, a globally operating Irish construction materials manufacturer, based in Dublin. See more at www.juramaterials.ch and www.juracement.ch

CALENDAR OF EVENTS

2016

DATE	EVENT	LOCATION	INFORMATION
12.5.2016	VAP Freight Wagon Conference	Zurich (CH)	VAP Schweiz vap@cargorail.ch | www.cargorail.ch
31.5.2016	AFWP General meeting	Courbevoie (FR)	AFWP, French Association of Wagon Keepers mclanore@afwp.asso.fr | www.afwp.asso.fr
6.–8.6.2016	VDV Annual Conference	Dresden (DE)	VDV, Association of German Transport Companies info@vdv.de | www.vdv.de
23.6.2016	VPI Technical Information Event	Frankfurt/Main (DE)	VPI, Association of Privately Owned Wagon Operators mail@vpihamburg.de | www.vpihamburg.de
24.6.2016	VPI General Meeting	Frankfurt/Main (DE)	VPI, Association of Privately Owned Wagon Operators mail@vpihamburg.de | www.vpihamburg.de
28.6.2016	VAP General Assembly	tbc	VAP Schweiz vap@cargorail.ch | www.cargorail.ch
End Aug. / Start Sept. 2016	CRSC General Meeting	Fulda (DE)	CRSC Cargo Rail Service Center e.V. info@crsc.eu.com | www.crsc.eu.com
20.–23.9.2016	InnoTrans 2016	Berlin (DE)	Berlin Trade Fair innotrans@messe-berlin.de www.innotrans.de
17.11.2016	VAP Forum Güterwagen	Zurich (CH)	VAP Schweiz vap@cargorail.ch | www.cargorail.ch

2017

9.–12.5.2017	transport logistic	Munich (DE)	Munich Trade Fair info@transportlogistic.de www.transportlogistic.de

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ROLL-OUT OF THE NEW SLIDING WALL WAGON FOR SCHWEIZER POST

WASCOSA IS EXPANDING ITS RANGE OF WAGONS

© Jürg D. Lüthard, Zürich

Habbiillnss type sliding door wagon
63 spaces for Euro pallets in S/SS traffic

Flexible application and high productivity:
- Optimum freight capacity utilisation thanks to moveable and lockable partition walls
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Would you be interested in receiving more information about this wagon? Simply send an email with the subject «Sliding door wagon» to: vertrieb@wascosa.ch

FEEDBACK FORM

TELEMATICS ON FREIGHT WAGONS

Send your reply to
F +41 41 727 67 79
WASCOSA AG
or telematik@wascosa.ch

I would like to learn more about telematics!

We are a

☐ Shipping agent ☐ RU ☐ Wagon owner ☐ Fleet manager

☐ Logistics/forwarding company ☐ .....

I can see myself using telematic applications for the following wagon types

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