

# wascosa infoletter

Latest news for the freight wagon industry



## Intermodal transport: Ready for change?

During a virtual roundtable discussion in March 2024, **Gilbert Bal**, Business Manager of the Port of Rotterdam, **Don van Riel**, Managing Director of Trimodal Europe BV, **Karl Schauer**, Director of Operations LKW Walter, and **Pieralberto Vecchi**, CEO of Ambrogio Intermodal, discussed the current challenges in intermodal transport. The discussion was moderated by **Ole Nygaard** and **Paolo Califano** of Wascosa.

**Intermodal transport went through a significant slump in 2023. Is there a reversal to that trend already in sight?**

**Pieralberto Vecchi:** The business in Italy remains critical: Due to inflation and rising energy costs, railway companies have increased their prices. We cannot pass on these additional costs to customers. After all, competition is too fierce, especially on the north-south corridor. On top of all this, the Frejus tunnel is closed. We have therefore been forced to divert traffic from the south-west of France to Italy via Switzerland. We don't know how long this situation will continue. However, we do not

expect costs to fall any time soon. The only leverage we currently have is to utilise all trains to their full capacity as far as possible. If a train is not utilised to more than 95% of its capacity, it means a loss making situation.

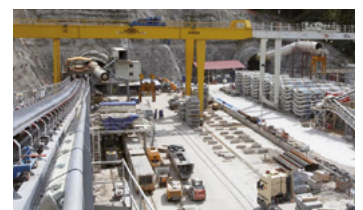
**Gilbert Bal:** Here at the Port of Rotterdam, we handled 7% less overall in 2023. At the same time, outgoing rail transport has fallen by 3.4% compared to the previous year which is less than I expected. However, I am encouraged though by the fact that

*Continued on page 2*



Big Four are taking over our market

6



New opportunities towards the Atlantic

8



Setting new standards together

13



Dear readers,

The cyclical decline in demand for intermodal transport in Europe that has been ongoing since the middle of last year should be a wake-up call for us all. As was made clear by our roundtable discussion with industry experts, new solutions are needed to get rail-borne combined traffic back on the track towards growth. In the words of Don van Riel of Trimodal Europe: If we work together and all pull in the same direction, the opportunities are tremendous!

There are many possible solutions: The best example is the Port of Rotterdam, which by investing today in infrastructure expansion and digitalisation, is laying the foundations which should enable rail-borne container traffic to double by 2035 (p. 4). The solutions that the Atlantic Corridor in Spain will bring for all of us in Europe are just as promising (p. 8). Against this backdrop, it is hardly surprising that the UIRR (p. 10) predicts a positive future for intermodal transport.

As we move forward, focusing on the customer is a key value for us. Of course, it's particularly gratifying when customers such as Rail4ward (p. 13) encourage us in this endeavour. When it comes to freight wagons, safety (along with harmonisation, digitalisation and standardisation) remains the top priority in our industry. Technical innovations can help us move forward, especially in the intermodal sector. One concrete example that we at Wascosa are focussing on: The inspection of wheelset components using phased array ultrasound (p. 11).

At Wascosa, we are also committed to innovation and creativity when it comes to attracting young skilled workers. But I'll leave it to Flexo, our freight-wagon robot, to introduce you to our world of work (p. 14).

We hope you enjoy reading this issue and that you'll find it inspiring,

Iris Hilb

Continued from page 1

the decline is mainly due to coal transport which after a huge increase due to the energy crisis in 2022, plummeted by 50% in 2023.

**Karl Schauer:** At LKW Walter, we maintained our capacity for intermodal transport in 2023, although costs have risen dramatically, and road transport has once again demonstrated its enormous flexibility and price elasticity. Energy costs normalised in the first quarter of 2024, but at the same time the subsidies for intermodal transport were cut by the German government. This means that we have been and still are making huge financial investments to maintain our network. We are convinced that as soon as the economy recovers, our customers will need intermodal capacity to transport their goods in the most environmentally friendly way. We believe we are in the turnaround phase right now.

**“The biggest bottleneck is the large amount of infrastructure work currently being carried out in Europe. I don't see this as a problem, but as an absolute necessity. We need new tunnels, longer tracks, etc., all across Europe.”**

Pieralberto Vecchi,  
Ambrogio Intermodal

**This is encouraging. How about the reduction in CO<sub>2</sub> emissions? Are customers aware of this major advantage of rail over road transport?**

**Karl Schauer:** We notice that customers are increasingly focussing on this topic. We are also issuing more and more emissions certificates for companies. However, greater awareness amongst customers is not yet leading them to pay more for rail transport. This will only happen, in our opinion, in one to two years' time, when the issue has gained further momentum.

**Pieralberto Vecchi:** I couldn't agree more. For almost 20 years, we have been hearing from customers about how important it is to reduce CO<sub>2</sub> emissions. At the end of the day, however, price is usually the deciding factor in terms of which transport solution is chosen.

**Gilbert Bal:** I do think that environmental awareness has increased. Larger companies in particular, such as IKEA, are already

trying to reduce their CO<sub>2</sub> emissions because they know that they can't afford to wait for the new CSRD directives to come into force in 2025. But especially in the Netherlands, there are still many companies that have no idea about the advantages of rail. That's why I think there's a lot of work to be done to convince smaller companies in particular, which have lower volumes and are used to booking lorries, to use rail instead.

**So customers are not yet prepared to pay more for rail transport. What will it take to make combined traffic more competitive?**

**Karl Schauer:** If we want to have more intermodal transport in the future, we have to provide more benefits. For example, in the weight of the loads. But also in the direct contribution of rail freight transport to decarbonisation. If society wants to be free of CO<sub>2</sub> by 2050, it must be prepared to promote rail transport.

**Pieralberto Vecchi:** But if we want to make transport more competitive, we need more government subsidies.

**Don van Riel:** Yes, there is still too great an imbalance between shipping, road and rail transport. While in the Netherlands, for example, lorries drive for free on the motorway network, we are saddled with high infrastructure costs. In addition, we lack trains with a standard length of 740 metres in the Netherlands. This is a basic prerequisite if we are to reduce the costs per train unit in the long term. We also need to push ahead with rail connections to the east. First and foremost to the Czech Republic, Poland, and Hungary, but also to Ukraine. A lot depends on the Port of Rotterdam. It is the only port in Europe that can handle ships with a draught of 24 metres around the clock.

**There are currently fewer rail transports leaving the Port of Rotterdam than at any other European port. What are you planning to do to change this, Mr Bal?**

**Gilbert Bal:** Together with our partner Pro Rail, which owns the tracks in the Port of Rotterdam, we have developed a logistics strategy that outlines how we want to improve the port's rail infrastructure by 2040. The Caland Bridge, a new crossing on the main harbour line, is already available to

**“If society wants to be free of CO<sub>2</sub> by 2050, it must be prepared to promote rail transport”**

Karl Schauer, LKW Walter





Thanks to the Caland Bridge, rail transport to and from the Port of Rotterdam is now possible without restrictions. / Source: Port of Rotterdam

trains (see image). New railyards on the "maasvlakte" are also planned. They will connect the existing railyards nearby. This will make shunting to and from the terminals easier and eliminate bottlenecks.

#### While we are on the subject of bottlenecks: Which are the most significant in intermodal transport at the moment?

**Pieralberto Vecchi:** The terminals certainly represent major bottlenecks. There is a lack of parking for trains along many routes. Time and again, trains have to be turned back because the terminals can't accommodate them. However, the biggest bottleneck is the large amount of infrastructure work currently underway in Europe. I don't see this as a problem, but rather as an absolute necessity. We need new tunnels, longer tracks, etc., all across Europe. However, this also means that rail transport will have to put up with major construction works for the next 20 to 30 years. This is especially true for Germany, as everyone has to pass through the country, no matter where they are travelling to. It is therefore not enough to simply provide new terminals and tracks; we also need locomotives, wagons, staff and enough locomotive drivers to operate the trains on the alternative routes.

**Karl Schauer:** I'm of the same opinion. The most significant bottlenecks are certainly the terminals, because quite it's here where it takes the most time to sort these bottlenecks out. But until the bottlenecks in staffing, track maintenance or locomotive routine maintenance are resolved, there will be no boom in intermodal transport.

**Don van Riel:** Yes, the infrastructure bottlenecks are what currently present us with the greatest challenges. This is also reflected in the planned construction work in Em-

merich Oberhausen on the Betuweroute: This line has always been regarded as the main connection to the east. From mid-2024, one or two lanes will be closed to traffic for 80 weeks. Yes, you heard that right! Not 80 days, but 80 weeks! This means that enormous restrictions will be placed on freight transport. In order to shift more freight from road to rail, we must first and foremost eliminate these bottlenecks. To achieve this, we need to work more closely together and try to shape the market to our needs. After all, the opportunities are tremendous.

#### How do you view these opportunities at the Port of Rotterdam in the coming years?

**Gilbert Bal:** Intermodal transport at the Port of Rotterdam will grow in the future: APM Terminals will expand the number of tracks beneath its terminal from four to eight. The four scenarios drawn up by our strategy department in collaboration with Oxford University also support the prediction that hinterland rail transport at our port will increase significantly by 2050 (see chart on the next page). In Scenario 1, which is based on the European Green Deal, we expect the volume of container transport by rail to almost double by 2035 compared to 2019. With more droughts in summer and more floods in winter, rail freight is the best modality to support high volumes and short transport time.

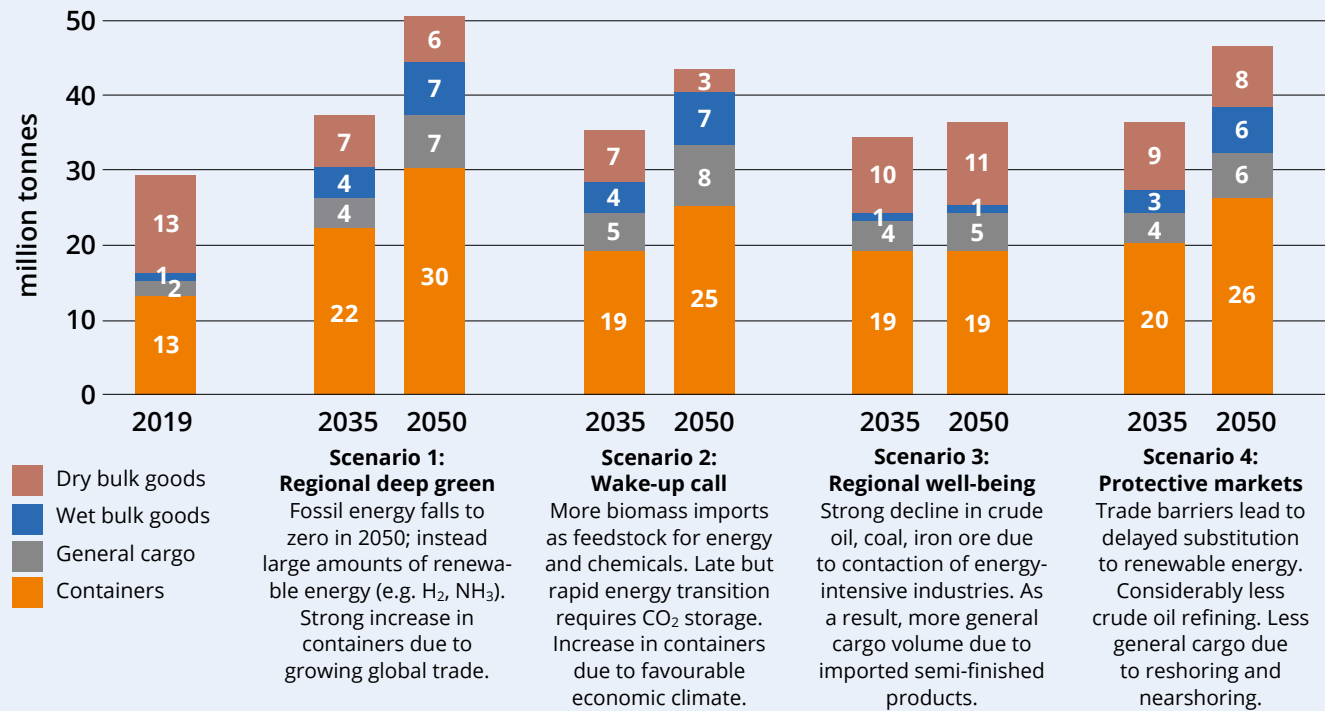
**"To shift more freight from road to rail, we need to work closely together and try to shape the market to our needs. After all, the opportunities are tremendous"**

Don van Riel, Trimodal Europe



Terminals are one of the biggest bottlenecks. Ambrogio Intermodal operates a total of 7 in Europe. / Source: Ambrogio Intermodal

### Growth scenarios for hinterland transport by rail until 2050 at the Port of Rotterdam



**Scenario 1: Regional deep green**  
Fossil energy falls to zero in 2050; instead large amounts of renewable energy (e.g. H<sub>2</sub>, NH<sub>3</sub>). Strong increase in containers due to growing global trade.

**Scenario 2: Wake-up call**  
More biomass imports as feedstock for energy and chemicals. Late but rapid energy transition requires CO<sub>2</sub> storage. Increase in containers due to favourable economic climate.

**Scenario 3: Regional well-being**  
Strong decline in crude oil, coal, iron ore due to contactation of energy-intensive industries. As a result, more general cargo volume due to imported semi-finished products.

**Scenario 4: Protective markets**  
Trade barriers lead to delayed substitution to renewable energy. Considerably less crude oil refining. Less general cargo due to reshoring and nearshoring.

Detailed information on all four scenarios can be obtained by clicking on or scanning the QR code.

Source: Port of Rotterdam

**Don van Riel:** The increasing unpredictability of inland shipping will certainly be a boon for rail transport. But the constant congestion on roads also plays into the hands of intermodal transport. I also see great potential in the transport of liquids and gases such as hydrogen or refrigerated transport. I anticipate that intermodal transport will play an important role here in the future. However, the growth will occur in the east: In the Czech Republic, Slovakia, Hungary, Romania, but also in Turkey.

**“In our Scenario 1, which is based on the European Green Deal, we expect the volume of container transport by rail to almost double by 2035 compared to 2019.”**

Gilbert Bal, Port of Rotterdam

trains, I don't see this as a big change. We need trains that run smoothly and reach their destination on time and are reliable. In our view, this is where the greatest leverage lies.

**Karl Schauer:** Yes, I can only agree with Mr Vecchi on this: What we need is top-quality rail transport. This means that trains must be able to run punctually and reliably. At least 95% of the time. Below this threshold, combined freight transport does not function or simply cannot break even.

#### And what role will technical developments play in intermodal transport?

**Gilbert Bal:** At the Port of Rotterdam, we have just launched the “Rail Connected” programme. The objective is in the future to digitally connect all relevant companies, as is already the case at airports. The programme, which is co-financed by the Dutch Ministry of Infrastructure, aims to optimise rail freight infrastructure, consolidate local services and increase punctuality. This will also strengthen intermodal transport.

**Pieralberto Vecchi:** Technical innovations such as digital automatic coupling, telematics and artificial intelligence will certainly help the industry progress as a whole. But for those of us who only operate block



Trimodal Europe's Maasvlakte Shuttle runs eight times a week in the Port of Rotterdam between the Rail Service Centre on the south side of the Waalhaven and various deep-sea terminals on the Maasvlakte. / Source: Trimodal Europe



As a result, we are dependent on a high level of standardisation. This applies in particular to wagons. It's for this reason that we are still rather sceptical about technical innovations. Because if we have to change our systems every five to ten years, we will never achieve economies of scale. I am not saying that there should not be any innovations in the future, but they cannot be superficial and must offer tangible added value. Because, as I said, the biggest problems with intermodal transport at the moment are not the wagons, but the quality of rail transport.

**Ole Nygaard und Paolo Califano:** Thank you very much for the interview and for your interesting insights into the current situation of intermodal transport and its future. The predicted growth is a great opportunity for all of us, but the next few years will be challenging. We need to be ready for the infrastructure construction work and the changes that growth will bring.

**“What we need is top-quality rail transport. This means that trains must be able to run punctually and reliably. At least 95% of the time. Below this threshold, combined freight transport does not function or simply cannot break even.”**

Karl Schauer, LKW Walter

More information on the expansion of the rail infrastructure in the Port of Rotterdam is available in a video by clicking or scanning the QR code.



LKW Walter organises more than 7,000 full truck loads (FTL) every day either by road or in combined transport. / Source: LKW Walter

### Company portraits of the panellists

**Ambrogio Intermodal** was founded in Piedmont in 1969 and is one of Europe's leading companies in combined road-rail transport. With 7 private rail terminals in Italy, France, Germany and Belgium, and a fleet of 400 freight wagons and over 1,800 intermodal units, the company delivers efficient and reliable door-to-door service to customers. Additional information: <https://ambrogiointermodal.com/>

**LKW Walter Internationale Transportorganisation AG** is an Austrian transport company. Its core business is the organisation of full truckload transports in Europe as well as to and from Russia, Central Asia, the Middle East and North Africa. In addition to normal road transport by lorry, the company also offers combined rail/road transport and short sea shipping. Further information: <https://www.lkw-walter.com/>

**The Port of Rotterdam** is the largest port in Europe. The Port of Rotterdam Authority is responsible for managing, operating and developing the port and industrial area of Rotterdam. It is also responsible for the safe and expeditious handling of shipping. Additional information: <https://www.portofrotterdam.com/en>

**Trimodal Europe BV** was founded in 1995 by a Dutch clothing sorting company with the aim of optimising freight transport. As a logistics service provider and rail agent, Trimodal Europe focuses on both intermodal and conventional rail transport as well as on the marketing, coordination and tracking of transport flows by road, water and rail. Additional information: <https://www.trimodal-europe.com/en/>



Gilbert Bal,  
Business Manager  
of the Port of  
Rotterdam



Don van Riel,  
Managing Director of  
Trimodal Europe BV



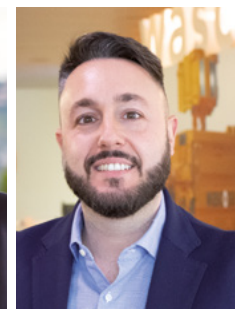
Karl Schauer,  
Director of Operations  
at LKW Walter



Pieralberto Vecchi,  
CEO Ambrogio  
Intermodal



Ole Nygaard,  
Director of  
Special Projects,  
Wascosa AG



Paolo Califano,  
Sales Manager Italy,  
Wascosa AG

# Reorganisation of transport flows in Europe

Supply chains are currently undergoing a major upheaval which will have far-reaching consequences for freight transport. In the following article, the authors explain how these changes are currently affecting transport flows and why the Big Four will increasingly dominate the European rail market.



Maria Leenen,  
Managing Director  
SCI Verkehr GmbH



Tobias Blätgen,  
Legal Representative SCI Verkehr GmbH  
and supervisor of the study "European  
intermodal rail freight market 2023"

Rail freight transport in Europe is in a state of profound crisis: As capacity utilisation rates for the major wagon leasing companies continue to decline, so do the transport and revenue figures for the railway undertakings (RUs). Meanwhile, transshipments at ports are recovering, but only slowly. These are the results of our study entitled "EUROPEAN INTERMODAL RAIL FREIGHT MARKET, Networks – Players – Outlook 2023", in which we compared the most recent figures with those from the same assessment periods in previous years.<sup>1</sup>

When considering the current effects of changes in supply chains and their implications for (future) freight transport flows, it is important to bear in mind that there may be an underlying weakness in the economy and therefore also in the demand for transport services. This applies to all freight groups, albeit to varying de-

grees. In view of the current situation at ports, hinterland terminals and major rail freight corridors, however, the focus is particularly on intermodal transport. This is not only because it accounts for around 24% of continental European freight transport, but also because of the high growth expectations that have been and continue to be placed on it.

### Dominance of the Big Four

In order to maintain their efficiency, but also to expand their influence, the large shipping companies are currently evolving into all-in-one service providers offering shipping, port handling, road and rail transport. This trend will continue to intensify in the near future and fundamentally alter supply chains.

The four largest global players (MSC, MAERSK, CMA CGM and Cosco Shipping) will acquire partnerships, shares or even entire companies in the very financially strong logistics chains. Their influence will only continue to grow each time they gain access to ports, hinterland terminals, rail or

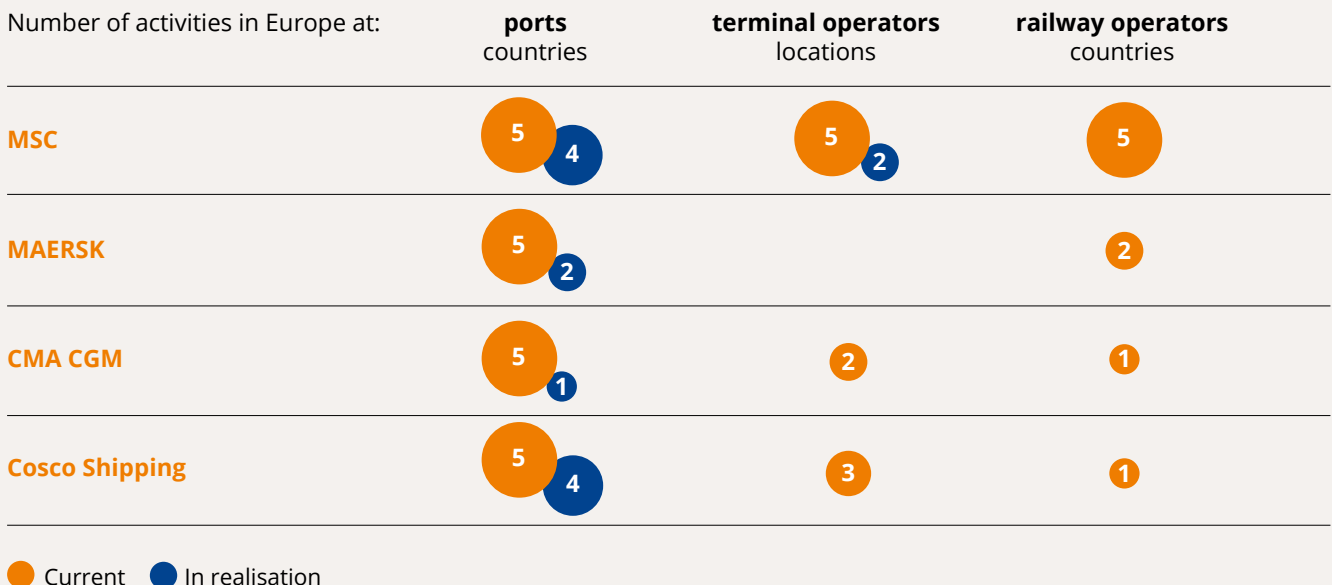
**"These changes are also reflected in transport flows: Transport from east to west, but also from central Europe to the south-west and south-east, is becoming increasingly important."**

Tobias Blätgen

<sup>1)</sup> The study "European intermodal rail freight market 2023" is available in English from SCI Verkehr GmbH

## Big Four Shipping Companies

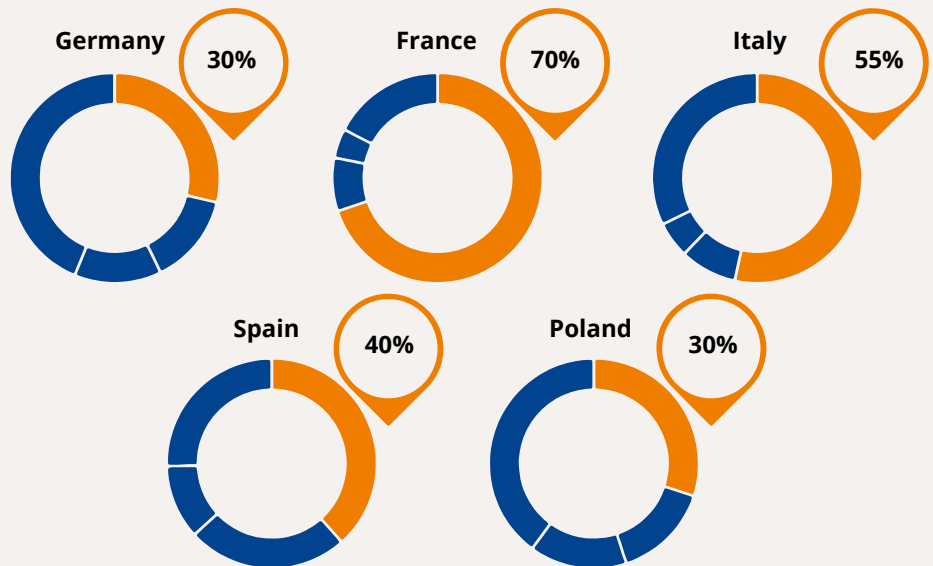
Number of activities in Europe at:



## Market shares on the European intermodal market are changing drastically

Whereas the four major shipping companies (MSC, Maersk, CMA CGM and Cosco Shipping) and networks continue to make significant gains, the (former) state railways have lost considerable market share in the past. This trend is likely to continue in a business-as-usual scenario. In France, Fret SNCF will have to relinquish routes worth around 20% of its revenue following an order from the EU Commission. In Germany, DB Cargo is facing various challenges, which may also exacerbate developments here. In Italy and Spain, the established companies (Mercitalia, Renfe) have extensive partnerships with MSC which allow them to share operations and/or cooperate on services. In Poland, the former state company PKP Cargo continues to lose ground to other operators such as DB Cargo and PCC Intermodal.

### Market shares of (former) state railways in intermodal transport 2022 for selected countries (tkm share by competitor in %)



Source: SCI Verkehr

road operators. Within their own systems, service networks provide the necessary flexibility by determining volumes, routes and by combining transport resources in Europe without relying on suppliers or competitors.

Within the rail and logistics industry, the growing influence of the Big Four will reorganise the fundamental conditions for competition. With control over logistics and transport chains, their own strategic considerations will increasingly dominate to the point of being beyond political interference. In future, the focusses of the large, networked companies will no longer be on national or European policy objectives (such as climate protection, mobility and connecting peripheral regions), but increasingly on controlling European import and export flows, which will secure margins for the respective players.

#### Shifts in traffic flows

While decarbonisation strategies are leading to shifts between modes of transport, decentralising trends are altering the shifts between European ports. International freight flows are also being reorganised: For instance, imports of finished products such as cars are increasing, whereas exports tend to be decreasing. Furthermore, transport units are becoming increasingly flexible. This also means that more and more products are being transported in

containers. Additionally, new supply chain laws and decarbonisation trends require active management by shippers and carriers.

These changes are also reflected in transport flows: Transport from east to west, but also from central Europe to the south-west and south-east, is becoming increasingly important. At the same time, the new players are particularly active on the Iberian Peninsula and in south-eastern and central-eastern Europe. However, this development will also benefit transport operations along the EU's well-known rail freight transport corridors. All this means that the combination of several corridors (e.g. from north-east France to Barcelona) as well as the hinterland networks of the Big Four will grow substantially: Instead of

travelling from Rotterdam to northern Italy in one train before being distributed locally, goods will in future be transported from the nearest port to the respective recipient via a shipping company's existing network.

#### Collaboration is becoming a must

In addition to the digitalisation of the supply chain (including the booking of parking spaces, for example), the automation of terminals and the increased flexibility of wagon and loading systems, the availability of handling and parking space capacities will be a key requirement in the intermodal segment. Companies that cannot afford or do not wish to implement a comprehensive M&A strategy will have to be prepared to work together. The industry would therefore do well to create joint offers, and not just in relation to the rail component of the transport route. Technical solutions can shoulder some of the load, but it will be up to those responsible to drive change in the industry. Particularly in view of the market power of global players with their integrated processes and increasing control of the transport chain, it will be essential to look beyond one's own niche sector.

**“Particularly in view of the market power of the Big Four with their integrated processes and increasing control of the transport chain, it will be essential to look beyond one's own niche sector.”**

Maria Leenen

2) The export platform Klusii, a product of SCI Verkehr GmbH, facilitates the digital transformation of the rail sector. Learn more by visiting: [www.klusii.de](http://www.klusii.de)



# Atlantic corridor: towards a new era

New transport corridors are bringing the countries of Europe closer together and creating new opportunities. One of these is the Atlantic Corridor in Spain. In future, it will connect Portugal with France and Germany via Spain. At the same time, disadvantaged regions will benefit from an unprecedented economic growth.



*José Antonio Sebastián Ruiz,  
Atlantic Corridor  
Commissioner*

A discussion of the development of European transport corridors is a discussion of the very foundations of transport in the present and future. It is a discussion on decarbonisation, efficiency and competitiveness. These corridors expand the economic, social and territorial cohesion of the states through which they travel. This obliges us to create a seamless, high quality network; something we have a great deal of influence over. And this extends from each individual country to the European Union as a whole.

## A modern, multimodal transport network

Two of the network's trans-European corridors pass through Spain: the Atlantic and the Mediterranean. Multi-modal, multi-country and multi-product corridors that, when complete, will shape a unique and standardised network for goods transport. These are rail corridors, but also encompass ports, airports, roads, terminals and urban nodes. And consequently, all the goods and passenger services these infrastructures may offer. Bringing them to fruition, as we are doing, means moving towards an interoperable infrastructure, with electrified ERTMS that allow the passage of 740-metre trains, as well as implementing standard widths on our tracks. In short: 21st-century infrastructures. This is

why we are working tirelessly on this essential transport network, to achieve the objectives set out by Europe for 2030.

## Unprecedented growth and more sustainability

The Atlantic Corridor is multi-modal, and spans 13 of Spain's 17 autonomous communities. Its cohesive approach, therefore, remains in little doubt. These regions generate around 778,000 million euros; 63% of the national GDP. This means that the investment efforts involved in implementing the infrastructure and its services will have a direct impact on 65% of the country's population.

This particular railway artery stands out for its maritime connectivity and contribution to regional development: it seeks to improve port connections, facilitating the transport of goods and passengers. It is an essential component of international trade and tourism, connecting regions that may otherwise be disadvantaged and promoting economic and industrial growth and job creation. All of which translates into increased competitiveness and improved sustainability.

## Expansion of the service offering

Such potential dictates that the implementation of infrastructures is far from the end result. Rather, we aim to serve as a connecting link between the transport service user companies, thus maximising their use. The services within the Atlantic Corridor are essential elements of bringing to fruition this trans-European project and

our objective as a country. It is clear that we must improve and adapt - both rolling stock and nodal structures across different locations - and even prompt a shift in mentality amongst all actors who play an important role in the sector, because the participation of all stakeholders is key. The good news is that we are already working hard on it.

As mentioned before, this is a multi-modal, multi-country and multi-product project, with everything that entails. It encompasses all productive sectors, and it has an exponential impact on economic growth. It is for precisely this reason that advancing cross-border connections between the different member states covered by the corridor is essential. Failure to do so would mean failing the main objective of the corridor: territorial cohesion and a single-network operation.

## High investments for exponential economic growth

The global investment effort the Atlantic Corridor requires from Spain's Ministry of Transport and Sustainable Mobility is 49,406 million euros, of which 33,325 million euros have already been implemented. To continue with this commitment, new construction works will be carried out up to 2030 to a value exceeding 12,000 million euros, in order to achieve the objectives we have set ourselves. Another important element of this endeavour is that we will undertake renovation works, also until 2030, to the value of almost 4,000 million euros. This is because we aim to have all our networks in perfect condition, at all times.





## 9 EUROPEAN TRANSPORT CORRIDORS

- ATLANTIC
- NORTH SEA - ALPINE
- NORTH SEA - BALTIC
- SCANDINAVIAN - MEDITERRANEAN
- BALTIC SEA - ADRIATIC SEA
- RHINE - DANUBE
- MEDITERRANEAN
- WESTERN BALKANS
- BALTIC - BLACK - AEGEAN SEAS



To the north-west, the Atlantic Corridor (shown in yellow) connects Spain with Porto and Lisbon in Portugal; to the south, through Spain, it establishes a connection with Paris and Germany.



If you have any questions, please contact the Wascosa sales representative  
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# Combined transport at a crossroads

Combined transport in Europe is a success story to be continued. UIRR - the Industry Association for Road-Rail Combined Transport - is therefore at the forefront of efforts to bring about progressive changes to the regulatory framework and to advance the cause of standardisation and harmonisation. Despite a world in flux, UIRR is convinced that intermodal rail freight transport will continue to flourish in the future.

*Eric Feyen, Technical Director, UIRR s.c.*

The history of combined transport in Europe goes back to the oil crises of the 1970s, followed by the environmental crises of air pollution and acid rain in the 1980s. The European Community recognised the need for a sustainable and efficient freight transport alternative to trucking as early as 1975, when the first Combined Transport Directive was adopted.

The current Combined Transport Directive of 1992 led to an average annual growth rate of 6-7%, which lasted for almost two decades. Combined transport transformed itself from an interesting niche to a mainstream solution, mainly thanks to the standardisation of assets (wagons, intermodal loading units) and digitalisation, as well as national support programmes for terminal construction and innovative European funding schemes for modal shift.

## World in flux

30 years on, the intermodal sector has run into unpredictable turbulence: an energy crisis followed by war on Europe's eastern flank, disruptions ranging from

the collapse of the Rastatt Tunnel to the derailment inside the Gotthard Base Tunnel, natural disasters such as the landslide along the Lyon-Turin line and disruptions to the world trade caused by the COVID pandemic, the closure of the Suez Canal or the recent attacks on merchant vessels in the Red Sea.

Europe's economic model is changing as new supply chain concepts are emerging. Climate change and air pollution are more visible than ever, while geopolitics and security occupy our considerations again. Greater energy efficiency, enhanced safety, sharply reduced environmental impact, advanced labour efficiency as well as a better work-life balance are the requirements of the day.

## Eco-sustainability advantages dissolve into recurrent railway disturbances

Door-to-door intermodal transport stands out from among the various solutions offered in every category: 60-70% better energy efficiency, up to 90% lower carbon footprint, sharply reduced pollutant and

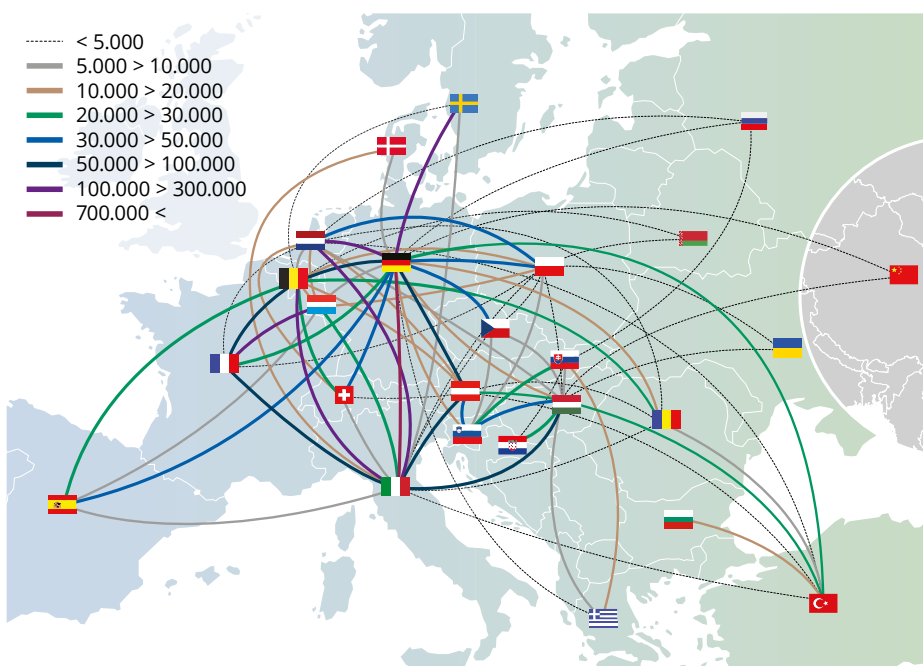
noise emissions, superior safety and labour efficiency, while minimising dependence on imported fossil fuels are the basic attributes.

Yet disruptions caused by excessive rail infrastructure works, strikes and slowly changing regulations, coupled with fundamental reorganisation of major players such as SNCF Fret and DB Cargo, are hindering progress. The EU's Greening Freight Transport Package came late for the legislative process to be completed before the end of the European Parliament's mandate in June 2024. Member States are behind schedule in rolling out the new EU legislation, as reflected in numerous ongoing infringement procedures.

## Technology and digitalisation as key drivers for success

The intermodal freight sector is pinning its hopes on the fading away of the impacts of one-off disruptions, while technical and infrastructure progress enable further efficiency and competitiveness gains. Digitalisation, such as the launch of the electronic Freight Transport Information (eFTI) Platforms, or the TAF-TSI compliant communication between actors using RNE's Train Information System (TiS) will bring efficiency, transparency and reduced complexity to the customers of intermodal rail services.

UIRR, the Industry Association of European Combined Transport operators and terminal managers, is at the forefront of the efforts to achieve progressive changes to the regulatory framework and to advance the cause of standardisation and harmonisation. Technical developments and best practice dissemination on top of this will facilitate a bright future for European intermodal rail freight transport.



*The UIRR country matrix illustrates the aggregated number of combined traffic consignments transported by rail between two countries in the year 2022 (excluding pre- and onward carriage by road). Detailed tables: [www.uirr.com](http://www.uirr.com)*

**Brief explanation:  
The codification system  
of the UIC and UIRR in  
combined transport,  
see page 16**



# Better, faster, and more versatile: Semi-automatic phased array testing on wheelset components

Service, repair, and continuous improvement are essential tools in the routine maintenance of wheelset components. So too is non-destructive material testing! The use of phased array technology, recognised in the medical field, offers significant advantages.

*Dr. Ingo Poschmann, Managing Director, W.S. Werkstoff Service GmbH*

Wheels and shafts are critical safety components. Their high level of safety is achieved through high-performance materials, advanced manufacturing processes, durable design and modern routine maintenance methods. This is complemented by regular non-destructive material testing (NDT), which is used to detect damage that could arise from unexpected operating conditions.

## Further development of previous ultrasonic testing

Ultrasonic testing has been an established test method for wheelset components for decades. As part of the inspection method, Phased Array Ultrasonic Testing (PAUT) technology, recognised in the medical field, has been further developed in recent years. This technique combines high reliability with short inspection times.

Figure 1 depicts a mobile, PAUT-based scanning system for wheelsets. PAUT technology is an imaging technique: Signals generated by a defect or by the geometry are depicted as coloured displays with direct reference to the component geometry. This is particularly useful if drawings are imported into the test device and the

contours of the component compared with the PAUT signals during the test. This is clearly shown in Figure 2. Comparing the displays of the inner and outer wheel seat edge with the shaft contour allows for quick orientation for testing staff and an immediate check of the test results.

In this example, the test area is a wheel-shaft interface fit, i.e. the connecting line between the two wheel seat edges. All PAUT signals that have become visible on this line indicate cracks. This imaging signal visualisation greatly assists the inspector and facilitates the detection of defects.

### Other advantages of such a test system include:

- 1. Modular design:** Various inspection concepts can be implemented with a single hardware and software base, including mobile manual inspections and test benches with several simultaneously operating probes.
- 2. Shorter inspection times:** Excellent defect detection goes hand in hand with a significant reduction in inspection times compared to conventional manual inspection. A single scan with PAUT can replace many conventional inspection processes.
- 3. Automated report generation:** The software of modern PAUT systems allows customisable and paperless inspection reports to be generated automatically.
- 4. Raw data acquisition and storage:** As PAUT probes are operated in conjunction with displacement transducers, all test data can be recorded and stored with pinpoint accuracy.
- 5. Separation of testing and evaluation:** If raw data is recorded and the correct coupling of probes is verified, then testing and evaluation can be separated in terms of time. This makes it possible to increase the effectiveness and flexibility of the testing process.
- 6. Increased POD:** The hardware and software of the PAUT systems make it possible to significantly increase the probability of detection of defects (POD) compared to conventional UT systems.

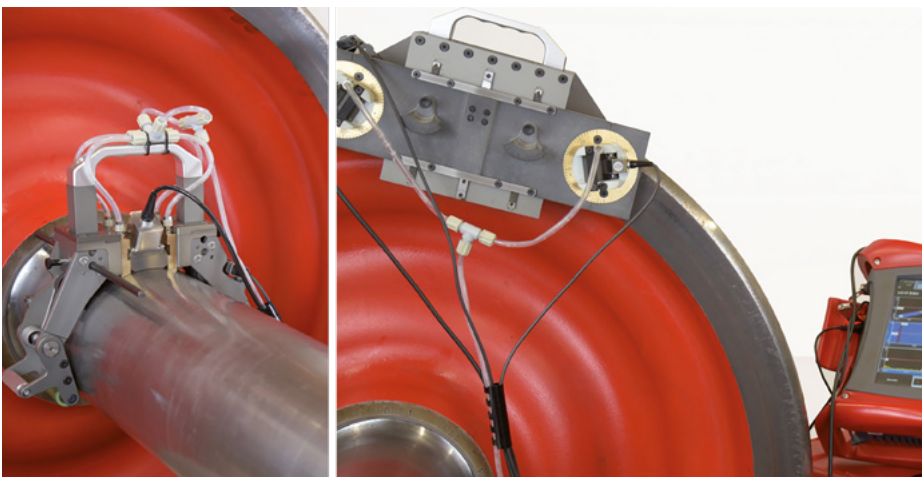


Figure 1: Mobile PAUT scanning system for wheelsets, left for the press fit, right for the wheel rim.

### Full strength when coupled with web transducers

PAUT systems demonstrate their strengths in particular when they are coupled with position encoders. Figure 3 depicts a reference wheel with artificial defects of varying depth  $D$  and length  $L$ . These defects are distributed in groups over the running surface and intended length of the wheel. The PAUT probe (not shown) is located on the inner face of the wheel.

Figure 3 shows the recorded scan, which covers the whole tread over the entire intended length. All artificial defects are detected in a single scan lasting around one minute, even though some of them are

very small. In addition, this scan allows the length and depth of the artificial defects to be estimated on the basis of the display length and the colour-coded signal height.

Figure 4 shows a setup for testing the interference fit with the two probes working simultaneously. A phalanx of several reflectors is located very close to the outer edge of the wheel seat.

The test head positioned on the shaft only faintly recognises these reflectors. The reason: The reflectors are virtually "outshone" by the echo from the outer edge of the wheel seat. In contrast, the outer wheel seat corner is practically not a reflector for the probe on the leg. The phalanx can therefore be recognised clearly.

**Multiple probes maximise information gain**

The advantage of testing with two probes working simultaneously is obvious: Both probes constantly support and corroborate each other. In this way, you get maximum information and significantly improve the POD.

Our conclusion: Testing with phased array ultrasonic offers maximum safety. This includes high testing speed, full access to reliable test data and flexible use of the testing systems.

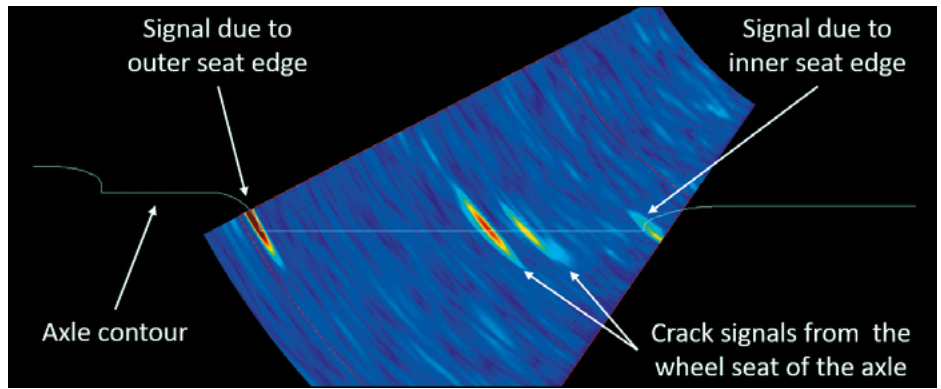


Figure 2: Imaging signal visualisation is one of the advantages of PAUT.

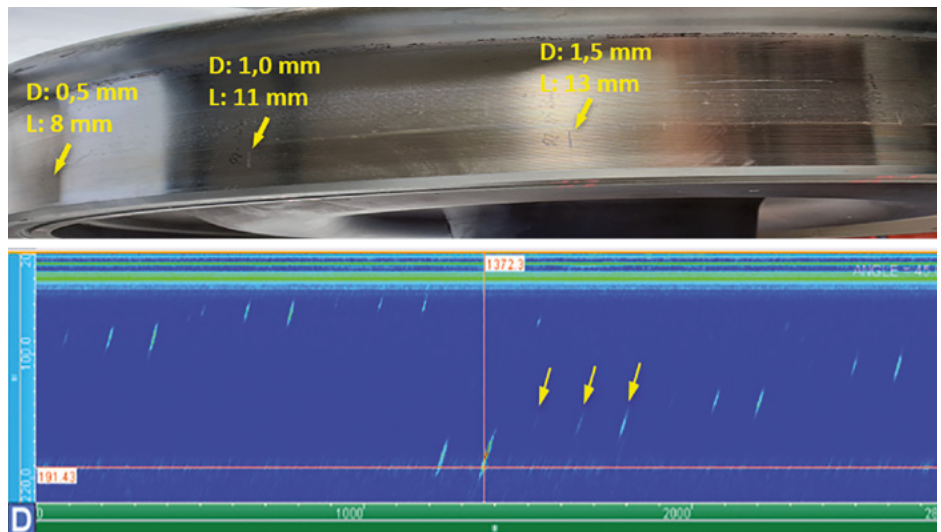


Figure 3: PAUT tread testing across the entire intended length.

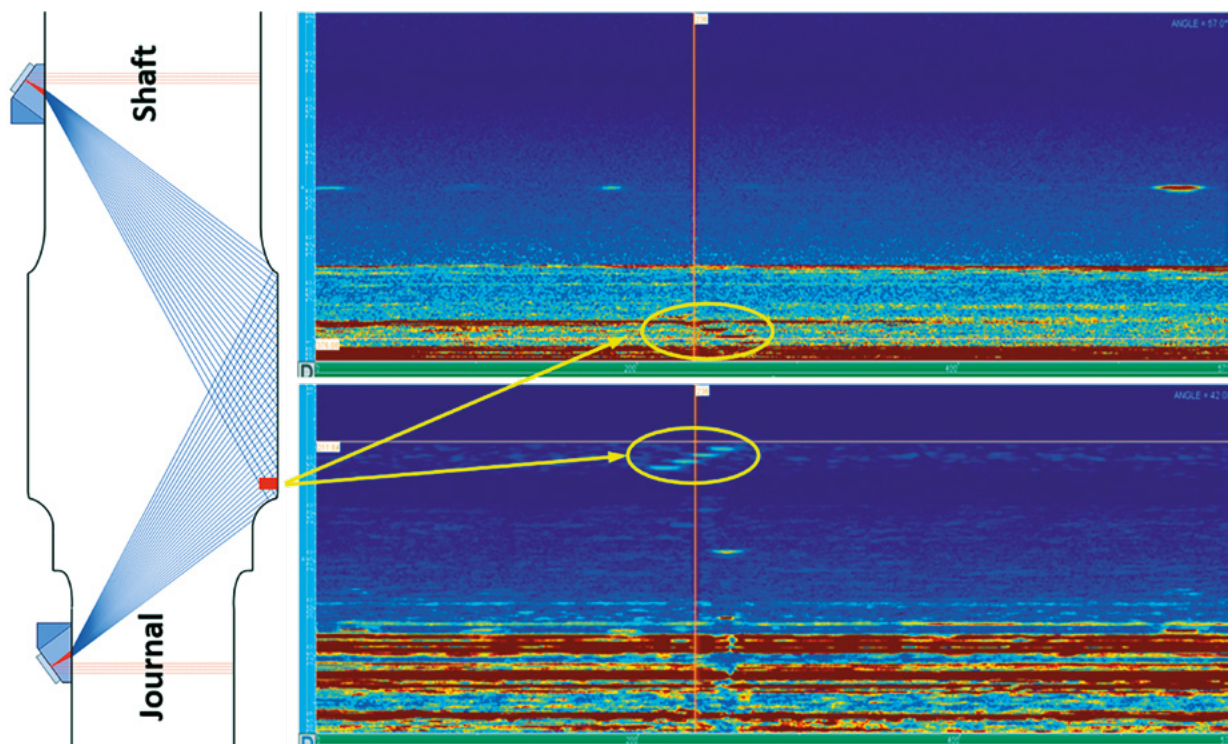


Figure 4: PAUT enables simultaneous testing with multiple probes.



# Shared values, shared success

Rail4ward and Wascosa share the same values: To find the best possible solutions, we listen to our customers and draw on our wide-ranging expertise. This enables us to be a force for innovation and to set new standards in freight transport.

*Thom Heijselaar, founder and owner, Rail4ward BV*



*Lightweight, reliable and offering an optimal cubic capacity: The 88m3 black tank wagons, leased by Rail4ward, are Zacs from Wascosa. / Source: Rail4ward.*

Rail4ward is a very young company. Nevertheless, we have extensive experience in almost all aspects of the rail freight market. This ranges from international rail logistics, train management and wagons to the specific expertise that we have as a railway operator. The result is that we can offer our customers a comprehensive service.

The majority of our customers are shippers in the dry and liquid bulk commodity markets. Our services are also designed to assist cargo operators in deciding where, when and to whom the goods should be transported, or to help companies tackle the numerous problems involved in rail freight.

## The customer comes first

Understanding what our customers need and why they need it is always at the centre of everything we do. At Rail4ward, the fact that we can call upon individuals with over 25 years of experience with a major commodities trading firm makes it easier for us to achieve this aim. We then look for the optimal solution: The ideal route, the optimum weight, the most suitable transport partner and the best wagon.

When Wascosa entered the grain wagon market over 10 years ago, we quickly realised that we share the same philosophy: Wascosa listens to its customers and this is a quality which ultimately resulted in one of the best grain wagons on the market.

**«Wascosa listens to its customers. This quality ultimately led to the creation of one of the best grain wagons on the market.»**

Thom Heijselaar

## High confidence in Wascosa and its wagons

When transporting dry goods, the low tare weight of the wagons and the resulting maximum cubic metre payload were decisive factors. The way the Tagnpps 95m3 can be loaded and unloaded is also very well thought out. In fact, several terminals have complimented us on how easy the wagon is to use. After all, we know that

there are terminals and customers who prefer to dispatch and receive Wascosa grain wagons at their terminals. Rail4ward is therefore extremely proud to have such grain wagons as well as the various Zacs type 88m3 tank wagons in its fleet for the transport of liquid fuels or vegetable oils. The black tank wagons with the Wascosa and Rail4ward logos have very quickly made a name for themselves in the industry.

**“We know that there are terminals and customers who prefer to dispatch and receive Wascosa grain wagons at their terminals.”**

Thom Heijselaar

Our long-standing partnership is the resounding proof of the excellent working relationship that we enjoy with Wascosa. Of course, just as in any partnership we don't always agree on everything. But like all good partners, we relish the challenge of finding a solution. We will be adding more wagons to our Rail4ward fleet this year which just goes to show how much trust we place in Wascosa. Both in the company's people and in their wagons.

## Rail4ward BV

Rail4ward BV considers itself as a central full-service provider for shippers to help them navigate the complicated but diverse railway world. Rail4ward responds promptly to and examines in great detail every freight enquiry in order to find a pragmatic solution. The Rail4ward team has comprehensive experience across a very broad spectrum and is the link between shippers and railway companies for transport within the European Union.

Additional information:

# Wascosa – My top employer

Wascosa is celebrating its 60th birthday this year! After so many years, the 150 or so employees and agents who work for us certainly have a few stories and anecdotes to share. An event worthy of the big screen is planned for October. But I won't tell you any more about it just yet, as it's supposed to be a surprise. But one thing is for sure: Like all Wascosa customer and team events, this anniversary party is sure to be one that will go down in history!

Iris Hilb (CEO) has been at the helm at Wascosa since January 2023. With a strong team behind her, she is in charge of growing the freight wagon fleet and of promoting digital transformation and automation in line with Wascosa's long-term corporate strategy so that the company can look forward to a sustainable future. Employees from all areas are actively involved in a wide variety of projects which are key to the development of our processes at Wascosa.

When you see me, you probably think of innovation, flexibility and adaptability. This is exactly what Wascosa is all about: lean management, quick decision-making, and rapid responses to a wide variety of situations. In short: One Team – One Goal!

I sense this same spirit in all of our employees. This is true of the young and curious newcomers as it is also of the long-standing and experienced "Wascosians." We're all family members who in their everyday lives, meet for coffee, or for monthly team, sales & agent meetings, or the annual summer or Christmas parties. As part of our internal training courses, we all receive further technical training, learn English and attend our management training courses. Wascosa also provides financial support for various specialised training courses and encourages employees to acquire new knowledge for their daily work.

So could you see yourself working with us? Interns and working students as well as specialists from abroad are all very welcome at Wascosa. We offer a wide range of professions and opportunities. Why not visit us at one of our modern and conveniently located sites in Lucerne or Hamburg? We'll give you a tour of our facilities and answer all your questions so you can get a feeling of what our international business is all about.

By the way, as a newcomer to Wascosa, you'll be assigned a mentor to guide you through your first few months so you can be sure you'll be on the right track!

Hi, my name is Flexo, and I'm a transformative, friendly freight wagon robot with a stylish Wascosa look. We may have already met at the trade fair in Munich? Perfect! – don't you think? Please allow me to introduce myself in this video:



Or would you prefer a virtual interview? No problem. Simply get in touch with Nadine Rohde or give us a call. We look forward to hearing from you!



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Resources  
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Want to know which positions are currently available? Learn more here:



# Calendar of events

Date	Event	Location	Website
15.05.2024	Spring Member's Meeting and BBQ	Oswestry, UK	<a href="http://www.rfg.org.uk">www.rfg.org.uk</a>
15.-16.05.2024	The Rise of IoT & Big Data in Rail	Cologne, DE	<a href="https://iottandbigdatainrail.com">https://iottandbigdatainrail.com</a>
22.-23.05.2024	Smart Transportation Conference & Exhibition	London, UK	<a href="https://transportation-conference.com">https://transportation-conference.com</a>
22.-24.05.2024	International Transport Forum Summit 2024 (ITF)	Leipzig, DE	<a href="https://summit.itf-oecd.org/2024">https://summit.itf-oecd.org/2024</a>
29.05.-01.06.2024	UIP General Assembly & Keepers' Summit	Venice, IT	<a href="https://uiprail.org">https://uiprail.org</a>
06.06.2024	International Level Crossing Awareness Day (ILCAD)	Buenos Aires, AR	<a href="https://ilcad.org">https://ilcad.org</a>
10.-12.06.2024	VDV Annual Meeting	Düsseldorf, DE	<a href="http://www.vdv.de">www.vdv.de</a>
11.-13.06.2024	Multimodal	Birmingham, UK	<a href="http://www.multimodal.org.uk">www.multimodal.org.uk</a>
12.-13.06.2024	UNIFE General Assembly	Brussels, BE	<a href="http://www.unife.org">www.unife.org</a>
19.06.2024	VPI General Assembly & Get Together	Düsseldorf, DE	<a href="https://vpihamburg.de/en">https://vpihamburg.de/en</a>
20.06.2024	24th Technical Information Event	Düsseldorf, DE	<a href="https://vpihamburg.de/en">https://vpihamburg.de/en</a>
26.06.2024	Railtalks #15	Berlin, DE	<a href="http://www.railtalks.com/">www.railtalks.com/</a>
03.07.2023	104th UIC General Assembly	Lisbon, P	<a href="https://uic.org/events">https://uic.org/events</a>
27.08.2024	VAP General Assembly	Berne, CH	<a href="https://cargorail.ch/en/">https://cargorail.ch/en/</a>
28.-29.08.2024	CRSC General Assembly and Information Event	Not yet defined	<a href="https://www.crsc.eu.com/en/">https://www.crsc.eu.com/en/</a>
05.09.2023	RFG Awards Dinner	London, UK	<a href="http://www.rfg.org.uk">www.rfg.org.uk</a>
09.-11.09.2024	RailFreight Connects 2024	Not yet defined	<a href="http://www.railfreightconnects.com">www.railfreightconnects.com</a>
09.-11.09.2024	Project Cargo Summit	Not yet defined	<a href="https://events.railfreight.com">https://events.railfreight.com</a>
11.09.2024	Railtalks #16	Berlin, DE	<a href="http://www.railtalks.com/">www.railtalks.com/</a>
16.-22.09.2024	European Mobility Week 2023	Europe	<a href="https://mobilityweek.eu">https://mobilityweek.eu</a>
24.-27.09.2024	InnoTrans 2024	Berlin, DE	<a href="http://www.innotrans.de">www.innotrans.de</a>
26.09.2024	RFG Annual Meeting	London, UK	<a href="http://www.rfg.org.uk">www.rfg.org.uk</a>
07.-10.10.2024	#EPCA58 Annual Meeting	Berlin, DE	<a href="https://epca.eu">https://epca.eu</a>
15.-17.10.2024	Translogistica Romania	Bucharest, RO	<a href="https://romania.translogistica.eu/en/">https://romania.translogistica.eu/en/</a>
23.-25.10.2024	BVL Supply Chain CX	Berlin, DE	<a href="https://www.bvl.de/en/cx">https://www.bvl.de/en/cx</a>
05.-07.11.2024	Translogistica Poland	Warsaw, PL	<a href="https://translogistica.pl/en">https://translogistica.pl/en</a>
06.11.2024	Scandinavian Rail Optimisation	Stockholm, SE	<a href="http://www.scandinavianrail.co.uk">www.scandinavianrail.co.uk</a>
12.-13.11.2024	Intelligent Rail Summit	Tallinn, EE	<a href="https://events.railtech.com">https://events.railtech.com</a>
12.-14.11.2024	Intermodal Europe	Rotterdam, NL	<a href="http://www.intermodal-events.com">www.intermodal-events.com</a>
20.11.2024	Railtalks #17	Berlin, DE	<a href="http://www.railtalks.com/">www.railtalks.com/</a>
21.11.2024	Logistik Forum Bayern	Nuremberg, DE	<a href="http://www.c-na.de/logfor/">www.c-na.de/logfor/</a>
26.-27.11.2024	Rail Live 2024	Zaragoza, ES	<a href="http://www.terrapinn.com">www.terrapinn.com</a>
27.-28.11.2024	European Silk Road Summit	Vienna, AT	<a href="http://www.silkroadsummit.eu">www.silkroadsummit.eu</a>
13.12.2024	105th UIC General Assembly	Paris, FR	<a href="https://uic.org/events">https://uic.org/events</a>

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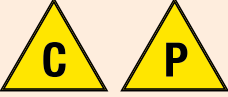

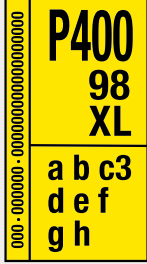
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# Understanding the codification system in combined transport

In combined transport, the upper sections of Intermodal Loading Units (ILUs), i.e. containers, swap bodies, semi-trailers, may exceed the standard loading gauge in most of the European countries when the units are loaded on intermodal wagons or bogies. Their carriage must therefore be covered by the procedure for exceptional consignments set out in UIC Leaflet 502-1. This procedure is cumbersome in that it requires the railway undertakings (RU) to obtain specific authorisation prior operation from all the

infrastructure managers (IM) involved in the transport on their networks. In order to facilitate and speed up the carriage of ILUs in a reliable and safe manner, a codification system according to IRS 50596-6 was established by UIC in collaboration with UIRR. This system, which has been applied by RUs and IMs for several decades, is based on a standardised system of codes for lines, wagons and ILUs.

*Eric Feyen, Technical Director, UIRR s.c.*

LINES	WAGONS	INTERMODAL LOADING UNITS						
An application guide for the codification of lines, freight wagons and intermodal loading units for combined transport was released in December 2023 by the European Union Agency for Railways as part of the 2022 TSI revision package. ❶								
The requirements related to the codification of combined transport lines are defined in the TSI INF.	The requirements related to the codification of wagons are defined in the TSI WAG – appendix H ❷	The requirements related to the codification of ILU are described in EN13044 and in various IRS.						
<p><b>The Combined Transport Profile (CTP)</b></p> <p>The determination of the CTP of a section of line can be based on</p> <ol style="list-style-type: none"> <li>the characteristics of the line and the exact position of the obstacles (e.g. tunnels);</li> <li>the reference profile of the structure gauge of that line or</li> <li>a combination of both methods.</li> </ol> <p>A CTP consists of one or more letters followed by one or more numbers of 2 or 3 digits.</p> <p>Examples</p> <p>“C45” means a CT line that allows the transport of containers and swap bodies with a height of maximum 2.90 m and with a width of maximum of 2550 mm.</p> <p>“P400” means a CT line that allows the transport of semi-trailers with a maximum height of 4m and a width between 2550 and 2600 mm.</p> <p><b>The Map of Codified Lines</b></p> <p>CTPs can be found in the following registers:</p> <ol style="list-style-type: none"> <li>The Register of Infrastructure</li> <li>A European map of codified lines has been issued by UIRR:</li> </ol>	<p><b>The Wagon Compatibility Code (WCC)</b></p> <p>The WCC specifies the type of Intermodal Loading Unit that can be loaded on the wagon. The WCC is determined for all units and assessed by a Notified Body.</p> <div style="text-align: center;">  </div> <p>Examples</p> <p>“C” stands for the transportation of containers and swap bodies; only codified loading units marked with C might be transported on railway lines codified with C.</p> <p>“P” stands for the transportation of semi-trailers; only codified semi-trailers marked with P might be transported on the railway lines codified with P.</p> <p><b>The Wagon Correction Digit (WCD)</b></p> <p>The WCD is the result of a comparison between the geometric characteristics of the unit under assessment and the characteristics of the reference wagons. This comparison must be performed for all units and assessed by a Notified Body.</p> <table border="1" data-bbox="722 1335 1035 1599"> <tr> <td style="text-align: center;">SNCF</td> <td style="text-align: center;">-3</td> </tr> <tr> <td style="text-align: center;">FS</td> <td style="text-align: center;">-2</td> </tr> <tr> <td style="text-align: center;">DB - DSB - NS - NSB SBB - SJ - SNCB - ÖBB</td> <td style="text-align: center;">0</td> </tr> </table> <p>Example</p> <p>Wagons fitted for the transport of containers and swap bodies with negative WCD (less favourable than the reference wagon) and only on lines indicated on marking.</p> <p><b>Additional WCC for pocket wagons only</b></p> <p>The WCC indicates the wagon’s inner envelope. The envelope is the lower space provided by the wagon for the semi-trailer. Each type of pocket wagon receives a unique letter according to the UIC IRS rules.</p> <p>Example</p> <p>Compatibility letter “e” : envelope for P semi-trailers on pocket wagon type 3000e with seating device heights of 113cm, 98cm and 88cm.</p>	SNCF	-3	FS	-2	DB - DSB - NS - NSB SBB - SJ - SNCB - ÖBB	0	<p><b>The codification plates</b></p> <p>A codification plate which includes the key characteristics is affixed on each side of the ILU in accordance with EN13044 or UIC IRS. These yellow codification plates are used to reference the official authorisation file and to ensure the correct loading of ILUs on the right wagons.</p> <p>Example</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="1086 1088 1233 1350">  </div> <div data-bbox="1249 1088 1457 1245"> <p><b>C304 / S304:</b> profile of the ILU  <b>24:</b> length code  <b>2550:</b> width of the ILU in mm  <b>XL:</b> structural rigidity of the ILU</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div data-bbox="1086 1384 1233 1646">  </div> <div data-bbox="1249 1384 1457 1608"> <p><b>P400:</b> profile of the ILU  <b>98:</b> position of the wagon seating device (in cm)  <b>XL:</b> structural rigidity of the ILU  <b>abc:</b> wagon compatibility code</p> </div> </div>
SNCF	-3							
FS	-2							
DB - DSB - NS - NSB SBB - SJ - SNCB - ÖBB	0							
		<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">❶ Application guide</div> <div style="text-align: center;">❷ TSI WAG – appendix H</div> </div>						

**Combined Transport is only possible if the codification of lines and wagons is higher than the codification of the ILU.**