

ANNUAL REPORT 2023



# European Rail Supply Industry



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# Message from Michael Peter, UNIFE Chair

In an era where progress resonates against a backdrop of economic and political dynamics as well as climate change, the UNIFE Annual Report 2023 serves as a chronicle and a compass. It is a chronicle that captures the outstanding collective efforts that brought us many achievements and milestones. And it serves as a compass to guide our industry to the urgent priorities ahead. Therefore, it is a great honour for me to introduce UNIFE's Annual Report 2023 for the first time as UNIFE Chair.

Looking back at 2023, it was characterized by two main trends: decarbonization and digitalisation. 2023 is now confirmed as the hottest year on record and efforts for transformative climate action like COP28 have picked up speed. The evidence has never been clearer that boosting rail transport plays a crucial role in this pivotal phase of transformation. The unprecedented advancement of digital technologies, especially the incredible potential of Artificial Intelligence, offer great possibilities to accelerate this transformation.

In 2023, we have made many breakthroughs, and I am pleased to summarise and share the highlights:

- In our efforts to promote decarbonization in transport, we put rail on a more level playing field with other modes of transport and accelerated the deployment of alternative fuels: The review of the Alternative Fuels Infrastructure Regulation now includes rail and will encourage EU Member States to roll out the infrastructure for alternative fuels on our networks.
- Tangible progress is being made to ensure that the shift to rail is not only pursued within Europe's borders but also beyond them via the EU Global Gateway initiative. As an important milestone, UNIFE has been selected to join the Global Gateway Business Advisory Group. Here we can press ahead for the best value-for-money in procurement and the promotion of European technology like the European Rail Traffic Management System (ERTMS).



- Advancing digitalisation in rail requires wide-spread deployment of ERTMS as an essential building block. To promote ERTMS deployment and to overcome challenges such as authorization procedures, we recently launched an important sector initiative. We should see the first deliverables of this initiative in 2024.
- The digital transformation of Europe has also been on top of the regulatory agenda with a number of blockbuster legislations like the EU Data Act, the AI Act or the EU Cyber Resilience Act being concluded over the last months. Thanks to our joint efforts, important changes were made to these regulations to adapt them to the needs of industrial sectors like the rail supply industry.

Looking ahead, 2024 is critical to drive the agenda for our industry, even more so with the upcoming EU elections. At UNIFE, a major priority will be to deliver on the rail targets set out in the Sustainable and Smart Mobility Strategy: To double traffic on high-speed rail by 2030, tripling it by 2050 as well as doubling rail freight by 2050.

To succeed, we need to forge ahead in three key policy areas:

- Firstly, to lay the foundation for further digitalisation of the sector we urgently need to expedite the deployment of ERTMS and replace legacy systems. A strong focus needs to be on network-wide implementation, closely aligned with national deployment plans.
- Secondly, funding for rolling stock and rail infrastructure needs to be increased to accelerate the decarbonization of the EU transport sector. This includes funding for key technologies like ERTMS, the Future Railway Mobile Communication System (FRMCS) and Digital Automatic Coupling (DAC).
- Thirdly, we need a joint effort to simplify EU rail authorisation and foster a true Single European Railway Area. Procedures and diverging national operational rules are cost drivers that restrict growth.

In summary, the European Rail Supply Industry is essential to the EU Green Deal, and one of our key levers to contribute to the achievement of those targets is digitalisation.

All of our accomplishments have been driven by our collaborative efforts and the fine work of the UNIFE secretariat. Many thanks to the entire team for your dedication to numerous initiatives this year. I am eager to support this momentum to ensure the competitiveness of our sector and help us to attract the best talent for rail.

Finally, I would like to express a special gratitude to Philippe Citroën who completes his mandate as UNIFE Director General in 2024. Philippe has steered UNIFE expertly for twelve years with a clear vision and commitment to technology, innovation, and stability in regulations to ensure UNIFE is the trusted voice of the EU rail suppliers. Thank you, Philippe. You have built us a fine legacy and foundation that we can all build upon.



**Michael Peter**  
UNIFE Chair



# Message from Philippe Citroën, UNIFE Director General

As Europe continues to chart a path out of uncertainty and into a more hopeful and brighter tomorrow, our association has been persistent in producing a strong vision of the rail supply industry, and broader European rail network. We have been steadfast on what our vision for the future holds - a commitment to technologies, innovation and regulatory stability, which will ensure **a modal shift to rail, while achieving a level-playing field in Europe and third countries** with foreign competitors.

As we enter the **last months of the European institutional cycle** (European Parliament, European Commission), many of our projects, plans and responsibilities are entering a crucial phase. It's not just the rail sector and community which we will spend this time advocating for developing a multi-modal transport system for Europe, which aims at achieving the broader goal of climate neutrality - we also believe it is vital the voters of Europe receive the transport solutions they need.

In the enabling of greater competition, next generation technologies, and revitalising Europe's industrial might, we have the opportunity to start the careers of a range of new rail professionals, while also playing a major role in meeting Europe's future challenges and commitments, such as the **EU Green Deal Industrial Plan** - a strategy designed to ensure Europe's global leadership in green technologies while supporting the bloc's net zero ambitions.

Throughout 2023 the **European and Member States policymakers persistently worked in putting the continent in a stronger position**, as global headwinds continue to pose a range of challenges for the European industry and businesses. Inflation provided on-going challenge, alongside Russia's war against Ukraine, which provide on-going tests for supply chains.

The consistent vision UNIFE outlined in all its forums, whether it be gatherings such as the **32<sup>nd</sup> UNIFE General Assembly in Madrid**, continuous consultation with industry and policymakers or in the press and online, our message is clear: **rail can and will play a major role in shaping a more self-reliant and sustainable future for Europe.**

We continue to be optimistic our industry can follow through the **2022 World Rail Market Study** predictions of growth while waiting for its 2024 projections that will be made available at **InnoTrans 2024**. Through the **EU National Recovery plans, the Connecting Europe Facility and Structural Funds**, rail has many potential avenues to continue to be part of the post-COVID recovery infrastructure plans of EU Member States, with UNIFE playing a key role in facilitating this.

On that front, UNIFE has been insisting on co-operation. Not just greater co-operation within Europe's borders, but also beyond them, as a member of the **Global Gateway Business Advisory Group** (transport sub-group). Despite geopolitical tensions creating significant barriers to resolutions, we are still supportive of dialogue to enable access to global markets for European companies.

Further to this, we also believe that the instruments brought in by the European institutions will ensure fairer competition and a level-playing field, which will enable protection of international trade norms. With the entry into force of **EU's autonomous tools** - the **International Procurement Instrument**, the **Foreign Subsidies Regulation**, and the **Anti-Coercion Instrument** - we have been working closely with our members to ensure these regulations are understood and feasible to ensure fairness for the European rail supply industry.

With 2023 themed the **European Year of Skills**, UNIFE has been working with the European institutions and our members, on crafting, designing and implementing the strategies to attract and retain the rail workforce of tomorrow. Further to this, we continued working on **STAFFER, Rail's Blueprint for Skills**,

undertaken with our partners at the **European Commission**, the **University of Genoa** and other members of the rail sector. UNIFE has been present in delivering a range of events, talks, forums and media coverage on the issue, while refining policy strategies, which we intend on delivering as the Final Recommendations of the program are released next year.

There was also encouraging further progress through our **Gender Equity Policy**, which seeks to diversify and **broaden the current and future talent pool** for the rail industry. This includes activities such as chairing the Gender Equity Working Group, and undertaking deliverables, such as the **Barriers Encountered by Women in Rail survey**, policy development and broader advocacy on the issue.

To support the setting-up of the **Single European Railway Area** and further inspire a shift to rail, we continued to advocate for a **more agile, predictable and flexible European rail technical regulation** supporting better the competitiveness of the European rail supply industry. Work has continued on technical regulation, with the publication of **the 2023 Technical Specifications for Interoperability** and on-going implementation of the Technical Pillar of the **Fourth Railway Package** by the **European Union Agency for Railways (ERA)**. High-Level meetings with DG MOVE and ERA continued throughout 2023, in order to highlight the importance of getting a predictable evolution of the European technical framework and to prevent any risks to on-going rail projects.

Regarding **Research and Innovation**, UNIFE has followed closely the work of **Europe's Rail Joint Undertaking**. UNIFE and its members were strongly involved in **Europe's Rail System Pillar**, aiming at designing the future rail system architecture, and improving links to rail research and innovation activities performed in the Joint Undertaking with the evolution of the European rail technical regulation and European standards. UNIFE has also supported its members in Europe's Rail Flagship Projects on the delivery of the first **Europe's Rail Innovation Program**. Linked with Europe's Rail activities, UNIFE has actively supported the **European Digital Automatic Coupling (DAC) Delivery Program**.

UNIFE has also been very active on another priority: **Cybersecurity**. It is of paramount importance for the European rail supply industry to ensure that horizontal and vertical legal instruments are sufficiently coordinated to promote the harmonisation of cybersecurity regulations, but also to avoid potential overlaps. In 2023, UNIFE has notably been very active with the follow-up of the **Cyber Resilience Act** by engaging with co-legislators and stakeholders to adequately convey the main concerns of the European rail supply industry.

On the side of telecommunication, UNIFE has been actively involved in the EU funded research project **5GRAIL**, which concluded in December with successful results, and is well on the way to validating the first set of specifications for the **Future Railway Mobile Communication System (FRMCS)**.

As for quality, following the publication of the specific rail requirements for business management systems under **ISO 22163**, UNIFE published the IRIS Certification Performance Assessment:2023. In conjunction with the IRIS Certification Technology, these establish the **IRIS Certification® Revision 04 system** which will come into force as of 1<sup>st</sup> April 2024. The main aim of this evolution is to simplify the process of certification and make **IRIS Certification** more efficient, streamlined and accessible.

2023 saw also a change at the helm of the **UNIFE Presiding Board**, **Henri Poupart-Lafarge, Alstom CEO & Chairman** has passed the role of Chair on to **Michael Peter, the CEO of Siemens Mobility**. We would like to thank Henri for steering UNIFE during the 3 year mandate, as we wish a very fruitful mandate to Michael. Upon taking the new role **Michael Peter stated that in order to progress we need to make an impact in three areas: the Single European Railway Area (interoperability, acceleration of ERTMS deployment), digitalisation, and making the rail industry an attractive and desirable place to work.**

To help us achieve these goals, **our membership expanded by 14 new companies**, who will be key in reaching our stated goal of sustainable multimodality rooted

in rail: **ABB Switzerland (SW)**, **Bodet Time & Sport (FR)**, **Comtest Wireless International (IT)**, **Megger (UK)**, **Pilz (DE)**, **Škoda Transportation (CZ)**, **Viavi Solutions (FR)**, **Vibratec (FR)**, **Camlin Rail (UK)**, **Cellnex Telecom (ES)**, **DIGAS (LV)**, **The Cross Product (FR)**, **Bode-Die Tür (DE)**.

As we enter the **last months of the European institutional cycle** (European Parliament, European Commission), many of our projects, plans and responsibilities are entering a crucial phase. It's not just the rail sector and community which we will spend this time advocating for developing a multi-modal transport system for Europe, which aims at achieving the broader goal of climate neutrality - we also believe it is vital the voters of Europe receive the transport solutions they need.

Last but not least, you may already know this is **my last year as UNIFE's Director General**, so I would like to take this opportunity to express my gratitude for the fruitful cooperation we have shared, together with the excellent support of the UNIFE team, during my 12 years in this role. Firstly, I would like to thank our members for entrusting me to **drive the European Rail Supply Industry's pivotal role**, as working together on this project has been an incredible experience. Secondly, I would like to thank the rail community, the Members of the European Commission, the European Parliament, and the 27 EU Member States representatives for their significant collaboration. Your engagement in our advocacy initiatives has helped us to take our unique transportation mode to a new level.

We look forward to 2024, in which we will continue to work on building the future of rail.



**Philippe Citroën**  
**UNIFE Director General**









**01.**

**UNIFE in  
2023**



# UNIFE Mission

“Promoting Rail Market Growth  
for Sustainable Mobility”

- 1** **Promoting** European policies and programmes favourable to rail
- 2** **Working** towards an interoperable and efficient European railway system
- 3** **Ensuring** European Rail Supply Industry's leadership through advanced research, innovation and quality
- 4** **Providing** UNIFE Members with strategic and operational knowledge



# How UNIFE Works

## I. EU Standardisation & Harmonisation

- **Collaborating** with the European Union Agency for Railways on the definition of rail regulations (including the Technical Pillar of the Fourth Railway Package) and Technical Specifications for Interoperability (TSIs)
- **Supplying** expertise for European and International Standardisation Bodies (e.g. CEN/CENELEC, ISO)
- **Contributing** to the development of the Single European Rail Area

## II. Public Affairs

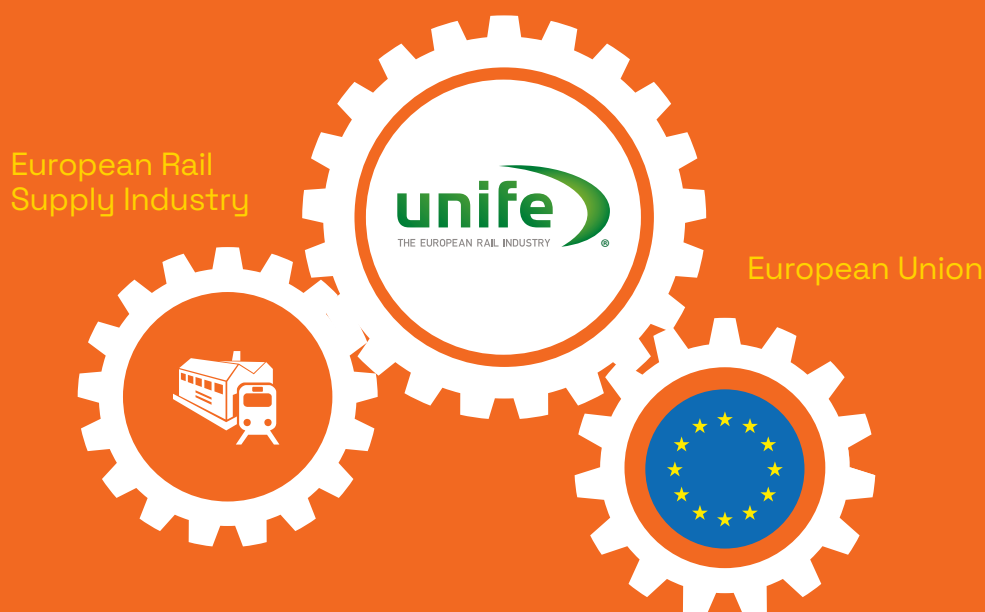
- **Advocating** policies that increase the global competitiveness of the European Rail Supply Industry
- **Supporting** modal shift policies that give priority to rail
- **Encouraging** investment in rail projects
- **Promoting** rail transport as the best solution to meet social challenges of the future

## III. European Rail Research

- **Coordinating** EU-funded research projects
- **Playing an active role** in ERRAC - the European Rail Research Advisory Council
- **Cooperating** with the Europe's Rail Joint Undertaking and contributing to the follow-up of its activities
- **Shaping the future** of rail research & innovation in Europe

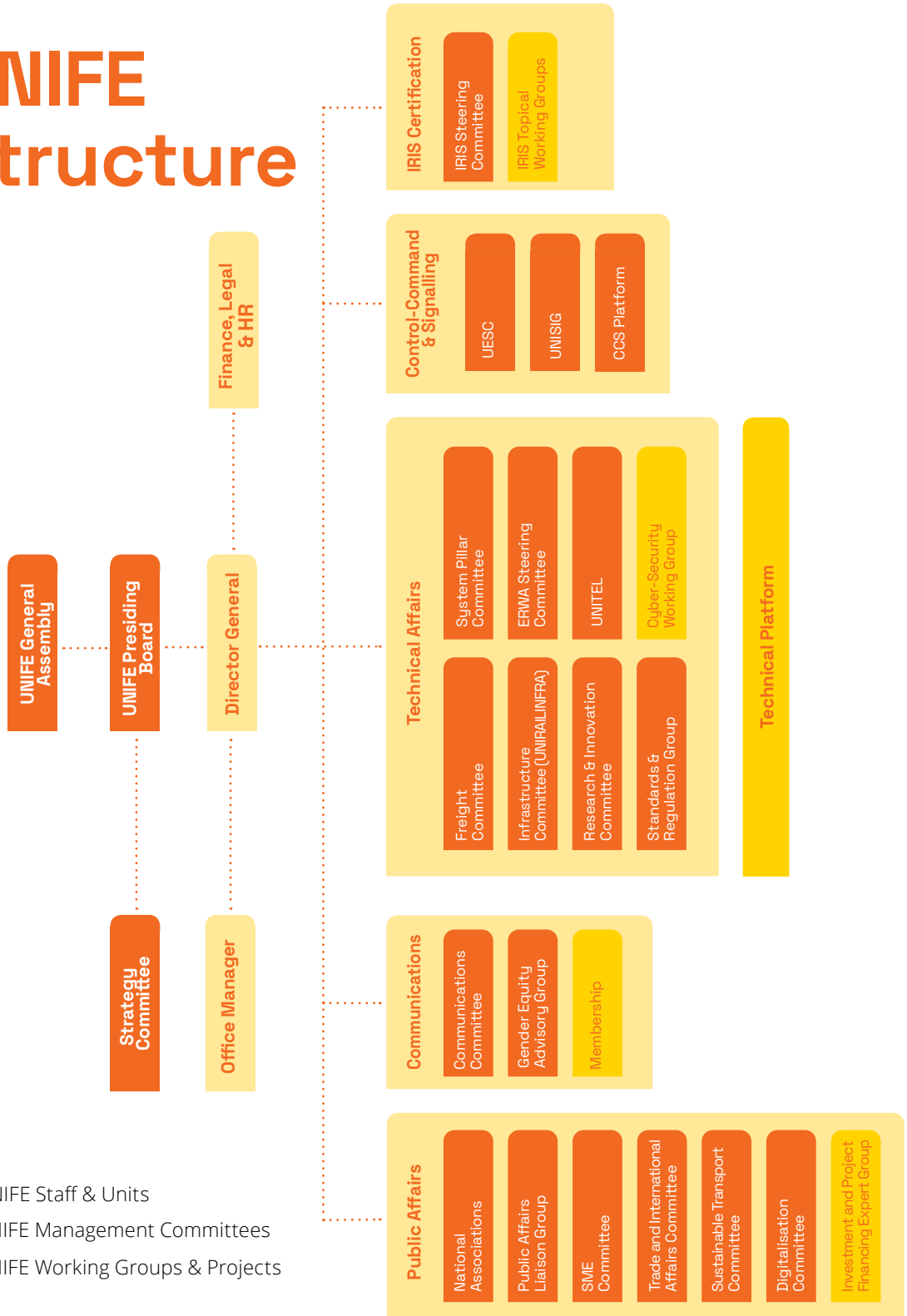
## IV. IRIS Certification®

- **The globally recognised** rail quality management system
- **Enables efficient business** processes and leads to substantial quality improvements and cost reduction throughout the supply-chain
- **More than 2275** IRIS Certification® certificates issued worldwide



# UNIFE Structure

- UNIFE Staff & Units
- UNIFE Management Committees
- UNIFE Working Groups & Projects



2023-2026

# UNIFE Presiding Board



## UNIFE Chair

**Michael Peter**  
CEO, Siemens Mobility

## Members of the Presiding Board



**Henri Poupart-Lafarge**  
CEO, Alstom



**Nicolas Lange\***  
Member of the Executive Board and Responsible for the Rail Vehicle Systems division, Knorr-Bremse AG



**Javier Martínez Ojinaga**  
CEO, CAF Group



**Augusto Mensi**  
CEO, Lucchini RS



**Pascal Schweitzer**  
CEO, Faiveley Transport



**Millar Crawford**  
Executive Vice President, Ground Transportation Systems, Thales Group



**Roger Dirksmeier**  
Managing Director, FOGTEC (representing the UNIFE SME Committee)



**Franz Kainersdorfer**  
Member of the Management Board, Voestalpine AG

\*Subject to approval of the UNIFE General Assembly in June 2024



# UNIFE Committees and Working Groups

The **Presiding Board** is UNIFE's highest committee. It is responsible for the management of the association. The Board takes any measure or action required to achieve the objectives and general policies of the association. This body reviews applications for membership before they are submitted to the General Assembly for ratification. The Presiding Board is composed of 9 members elected by the **General Assembly**, every three years. One seat on the Presiding Board is reserved for the Chairperson of the UNIFE SME Committee.

The **Strategy Committee** steers UNIFE activities and advises the Presiding Board on all strategic and political issues. It is composed of high-level managers representing the association's most prominent members.

The **Technical Platform** brings together all UNIFE Members and equally covers all EU research, technical harmonisation and standardisation matters. The platform regularly reports on relevant developments and the Association's

activities at EU level standardisation bodies. It also shares news regarding the Association's R&I projects, including **Europe's Rail Joint Undertaking**. The Technical Platform communicates changes within the regulatory framework in regards to the **European Union Agency for Railways (ERA)** and the **European Commission** (i.e. DG MOVE, DG RTD, DG GROW, etc.). This body enables all members to have a better understanding of current EU rail technical issues, their background and their implications for the industry in Europe and beyond.

The UNIFE **Freight Committee** gathers companies active in the rail freight business and aims to strengthen the position of the industry within the European institutions' policy priorities. This committee provides its members with information and support on EU R&I funding opportunities, rail freight policy developments and participation in EU lobbying on pertinent rail freight developments, including discussions concerning ongoing and upcoming TSIs/Standards, as well as following the Digital

Automatic Coupling activities at European level including the work of the Task 4 of Europe's Rail System Pillar.

**UNIRAILINFRA** is a consensus-building platform focused on rail industry infrastructure at a pre-competitive stage. It promotes investment and innovation in the railway infrastructure and energy areas. UNIRAILINFRA brings together companies specialising in the manufacturing and supply of fixed railway equipment linked to the infrastructure and energy subsystems with companies that design, construct and maintain those products.

The **Research and Innovation (R&I) Committee** is responsible for monitoring European rail research opportunities and preparing recommendations. It is responsible for the regular exchange of information on European rail research, including updates pertaining to Europe's Rail Joint Undertaking, discussions on Horizon Europe R&I work-programmes and the definition of railway suppliers' R&I positions. The committee also drafts common positions that will be defended at the EU level. Its purview also includes contributing to ongoing initiatives such as ERRAC, Europe's Rail, the Industrial Dialogue and European Commission consultations on R&I.

The **UNIFE System Pillar Committee** is responsible for the definition of the overall strategy and strategic guidance of UNIFE regarding Europe's Rail System Pillar activities. This committee is following Europe's Rail System Pillar activities and aims at defining UNIFE's position on the strategic topics discussed in the System Pillar. This committee is composed notably of UNIFE Europe's Rail Founding Members and members of the UNIFE Strategy Committee. This committee is working in close contact with UNITEL, UNISIG, SRG and the UNIFE Freight Committee.

The **UNIFE System Pillar Technical Group** is responsible for the follow-up of the Task 1 of Europe's Rail Joint Undertaking dealing notably with the definition of the high-level architecture of the European railway system. It defines UNIFE's position on strategic topics linked to the evolution of the European railway system. The Committee brings together representatives

from UNITEL, UNISIG and SRG and reports to the UNIFE System Pillar Committee.

The **Standards and Regulation Group (SRG)** steers UNIFE's technical activities pertaining to the European regulatory framework (i.e. Railway Directives, TSIs, etc.) and standardisation, in Europe and abroad. The SRG is composed of technical directors from the UNIFE's main system integrators and subsystem suppliers.

The **European Railway Wheels Association (ERWA)** aims at promoting usage benefits, lifecycle cost reduction and standardisation of railway wheels and wheelsets. Its mission includes developing standards and promoting innovation in safety and environmental friendliness. The group also encourages the adoption of best practices across the European market. The ERWA Steering Committee is composed of CEOs from European wheels and wheelsets manufacturers. It is supported by the Development Committee, which analyses political issues, market strategy and communications; and the Technical Committee, which deals with standardisation, regulation and research.

The **Digitalisation Committee** focuses on developing digital technologies in the rail sector from a political, technical, and business perspective. The main objectives of the Committee are to bring the rail supply industry's view to the centre of the EU-level digital debate. In addition, the members aim to understand better the potential opportunities and challenges of digitalising rail transport.

The **Cyber-Security Working Group** brings together the association's member companies that possess significant cyber-security expertise. This working group's main objective is to provide UNIFE members with a forum to discuss and identify opportunities for cybersecurity cooperation within the European rail sector, strengthening its position when compared to competitors and other stakeholders.

The **UNIFE Extended CCS Steering Committee (UESC)** coordinates UNIFE's strategic and political ERTMS activities. UESC members regularly liaise with European Commission (DG Move) and European Railways Agency (ERA) representatives

to address any political issues related to ERTMS and organise high-level meetings between European bodies representatives and Signalling companies' CEOs and/or Directors.

The **UNISIG Committee** is composed of UNIFE members that supply ETCS products and systems. The committee was established in 1998 to develop the ETCS technical specifications to guarantee interoperability. The role of UNISIG in the context of the CCS TSI is to develop, maintain and update the ETCS specifications in close cooperation with Railways under the leadership of the European Agency for Rail (ERA), which has been made the "system authority" for ERTMS. As of this year, UNISIG is contributing to the technical activities in the System Pillar of Europe's Rail Joint Undertaking.

The **ERTMS Marketing Group (UEMG)** is tasked with coordinating any marketing activities related to the **European Rail Traffic Management System (ERTMS)**. This includes collecting and disseminating deployment statistics, planning events, generating common publications such as factsheets, flyers, and brochures, as well as managing the ERTMS website.

The **Control Command and Signalling Platform (CCS-P)** is a platform aiming at exchanging on control command and signalling topics. The platform is an information and sharing platform focusing on the progress of Europe's Rail System Pillar activities especially regarding Task 2 of the System Pillar dealing with Control Command and Signalling.

The **UNITEL Committee** focuses on the development and implementation of the future interoperable railway communication system (FRMCS/Next Generation), the inherent successor of GSM-R, as part of the future ERTMS. UNITEL bring together the major railway telecommunications products suppliers and companies that have significant experience in current GSM-R and future railway systems. The committee members aim to ensure that the railways communication system fulfils existing and future signalling, train control and traffic management requirements, as well as supports European railway research initiatives.

The **National Associations Committee** gathers the directors of 12 national rail associations from 11 different EU Member States, collectively representing more than 1,000 large- and medium-sized European rail supply companies. As UNIFE Associate Members, these organisations promote our positions domestically while elevating national concerns to the European level.

The **Public Affairs Liaison Group** brings together representatives of full UNIFE Members responsible for EU and national advocacy. It discusses lobbying strategies concerning important EU political files. It also identifies synergies between the association and its membership for impactful lobbying activities and campaigns.

The **SME Committee** is a platform for Small and Medium-sized Enterprises (SMEs) to share and learn information about EU policies and available funds. This group works to facilitate SMEs members' access to support schemes and to prepare advocacy campaigns on issues of concern to organisations of this size.

The **Trade & International Affairs Committee (TIAC)** oversees the monitoring of EU trade negotiations and instruments with potentially significant implications for the European rail supply industry and coordinating UNIFE's responses. The Committee also focuses on public procurement, be it at international or EU level. TIAC is also a platform for the exchange and dissemination of information on bilateral cooperation activities undertaken by UNIFE in international markets.

The **Sustainable Transport Committee (STC)** brings together the rail supply industry's leading experts on sustainability-related topics. The STC defines the strategy and carries out UNIFE's activities in the field of sustainable mobility, climate crisis, energy efficiency, urban mobility, circular economy, sustainable finance (EU Taxonomy) and any other relevant EU policy initiative. The STC coordinates the activities of two technical expert bodies, named Topical Groups: the *Life-cycle Assessment Topical Group* (LCA TG) and the *Chemical Risks Topical Group* (CR TG).

The **Investment and Project Financing Expert Group** brings together high-level executives responsible for long-term financing and corporate relationships with multilateral development banks, such as the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD). This committee explores funding avenues for infrastructure and industrial projects, including Public Private Partnerships (PPPs). The Expert Group also tracks and communicates on issues related to export financing (e.g., Export Credits).

The **International Railway Industry Standard (IRIS) Steering Committee** was established in 2006 and is composed of high-level representatives from the UNIFE system integrators and equipment manufacturer membership. This steering committee is the UNIFE working group responsible for IRIS Certification® operational management and decisions regarding resources, contracts and financial budgeting.

The **UNIFE Gender Equity Advisory Group** will work to assess the current situation of female employees throughout the industry, to understand barriers of entry for those wishing to have a fulfilling mobility career and to craft association position papers, statements and recommendations in order to ensure the optimal mobilisation of the rail community going forward.

The **UNIFE Communications Committee** steers the UNIFE Communication Strategy. It is composed of the Communications Directors of UNIFE members.

## UNIFE Technical Working Groups

- Aerodynamics
- Brakes
- Cabin
- Chemical Risks
- Crash Safety
- Diesel
- Electromagnetic Compatibility (EMC)
- Energy
- Energy Efficiency
- Entity in charge of maintenance (ECM)
- Fire Safety (SRT)
- Infrastructure
- Life Cycle Assessment (LCA)
- Noise
- Persons with Reduced Mobility (PRM)
- Railway Dynamics
- Rolling Stock
- Safety Assurance
- Signalling
- Telematic Application for Passengers & Freight (TAP & TAF)
- Train Control Management System (TCMS)
- Vehicle Authorisation
- Wagon (WAG)







# 02.

## European Affairs

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# 1. Industrial Policy

## a. Inflation and disruptions in the rail supply industry

Despite the positive growth forecast for the world rail market, concerns regarding widespread inflation and supply chain disruptions continue. UNIFE maintained continuous and regular

bilateral exchanges with member companies, in order to reflect on the long-lasting impacts of these situations. Based on existing position papers, actions will continue in 2024, as both issues are expected to be a major challenge for the new representatives of the EU institutions.

## b. The Net-Zero Industry Act: Fostering clean technologies in Europe

In January 2023, the European Commission announced the **European Green Deal Industrial Plan**, which sets out how the EU will lead the path to climate neutrality by investing in clean technology.

UNIFE closely followed a related initiative named the **Net-Zero Industry Act**, which aims at creating the necessary conditions to facilitate investments in net-zero technology manufacturing projects. However, the proposal from the European Commission was only focused on certain key energy technologies, and not prioritising key decarbonisation industries such as the rail supply industry. Therefore, through a position paper and various advocacy actions, UNIFE strived for the extension of the scope of the Regulation and for the introduction of EU public procurement rules.



European Commission's Factsheet on the Net-Zero Act

## c. Mobility ecosystem transition pathway

In January 2022, the European Commission's DG GROW published a **Staff Working Document** titled **"For a resilient, innovative, sustainable and digital mobility ecosystem – Scenarios for a transition pathway"**. The Mobility Ecosystem is one of the 14 priority sectoral groupings established by the European Commission in the revised 2020 **Industrial Strategy**.

Throughout 2023, **UNIFE co-organised with the European Commission (DG GROW) a sectoral roundtable on rail and participated in several transversal roundtables** (skills, research and innovation). In doing so, UNIFE played a key role in coordinating the views of the European rail suppliers to ensure that the specific needs of our sector are duly taken into consideration when it comes to decarbonisation, digitalisation and resilience.

## d. Competitiveness of the Rail Supply Industry

At the end of 2022, at the request of UNIFE, the European Commission endorsed an **extension of the mandate of the EC Expert Group on the Competitiveness of the Rail Supply Industry until 2025**. Its continuation is instrumental to maintaining our constructive dialogue and collaboration with the different Directorates-General of the European Commission, the Member States and the railway operating community.

In June 2023, **a meeting of the EC Expert Group** was held in order to **discuss the economic situation of the industry as well as major**



UNIFE's Position Paper on the mobility ecosystem transition pathway

**priorities, such as the implementation of the Green Deal or EU rail procurement.** The meeting confirmed that this forum is a much-needed governance tool for discussing our industry's priorities at EU level, in conjunction with the mobility ecosystem and transition pathway.

UNIFE also organised or participated in a number of **industry-related events**:

In the framework of the **European Parliament's Forum for International Trade & International Competition**, UNIFE's Director General Philippe Citroën was a speaker in the event "Revitalising Europe's industrial might: pathways to counter de-industrialisation", hosted by MEPs Inmaculada Rodríguez-Piñero (ES) and Iuliu Winkler (RO).

Additionally, as part of the French rail fair SIFER, UNIFE organised an event on the rising challenges and possible solutions to boost the competitiveness of the European Rail Supply Industry.



European Parliament Forum "Revitalising Europe's industrial might: pathways to counter de-industrialisation", 28 March 2023

## 2. Skills Policy



UNIFE has been active on Skills in 2023, in particular in the context of the **European Rail Skills Alliance (STAFFER)**. The ERASMUS+ financed project aims at supporting an overall sectoral skills strategy, developing concrete actions to address short- and medium-term training needs and also identifying the most sought-after jobs within the European rail sector. The project is now heading into its final stages, ending in 2024.



**Ludovic Vermeulen** (Training and Operations Director, Ferro Campus), **Barbara Grau** (Senior Advisor European and International HR Affairs, SNCF), **Irma Padilla-Marroquin** (L&D Europe / AU Campus Manager, Alstom), **Ana Manuelito** (Public Affairs Manager, UNIFE)

During the **Rail Forum Europe event “Re-Train Rail”** and hosted by **Member of the European Parliament Ondřej Kovařík** (CZ) in June, UNIFE had the opportunity to engage with different stakeholders and discuss key topics for the rail industry, such as attractiveness, education and training needs and presented the STAFFER project.

Later in December, UNIFE was once again present at the **Rail Live!** fair in Madrid, participating in the event **“People, purpose & potential: The STAFFER project delivering a European view to attracting talent onto the railways”**. On top of the various events organised during the year, UNIFE advanced on its channels of communication and online activities around skills, attractiveness and diversity, supported by

Throughout 2023, and also in the context of the **European Year of Skills**, UNIFE organised and participated in a number of events and activities to promote STAFFER. In March, UNIFE organised a **roundtable discussion titled “Skills and Youth – what are the challenges for the European Railway Sector?”** at SIFER.



**Ondřej Kovařík** (Member of the European Parliament, and of Rail Forum Europe), **Elzbieta Lukaniuk** (Member of Cabinet of EU Transport Commissioner Vălean), **Josef Doppelbauer** (Executive Director, ERA), **Jonathan Nguyen** (Head of Public Affairs, UNIFE)

infographics, informative video reels and press articles in the **International Railway Journal** and **Euractiv**.

Finally, UNIFE participated in the **Transition Mobility Pathway** and its **co-creation roundtables on social issues**, a European Commission (DG GROW) led-initiative, aiming at identifying the green and digital transition's main challenges and opportunities within the Mobility sector.



For more information, please visit **STAFFER's** dedicated **website**, **LinkedIn** and **Twitter** channels

# What **skills** does the **European rail** sector need?



## Skills for the Railway Industry



Systems  
engineering



Cloud based  
signalling



Cybersecurity



Different customer  
service skills



Remote condition  
monitoring



Virtual reality  
simulators  
and trainers



Big data  
analysis



Problem-solving



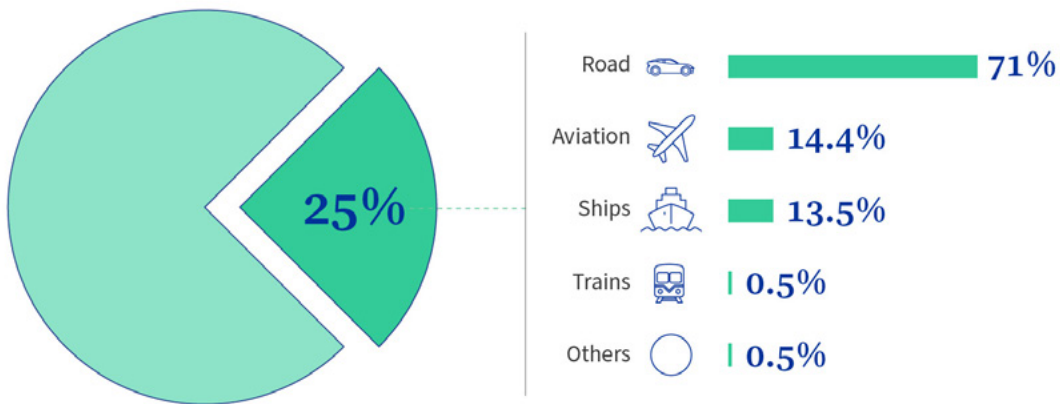
Communication



Association skills

# 3. Green Deal and Transport Decarbonisation

**Transport** is responsible for almost 25% of greenhouse gas (GHG) emission in the EU.



## a. Alternative Fuels Infrastructure Regulation (AFIR)

As part of the **Fit for 55 package**, the **Alternative Fuels Infrastructure Regulation (AFIR)** entered into force in 2023, and thanks to UNIFE's advocacy, with a positive result. The European Rail Supply Industry has been working for several years to develop and place on the market solutions based on alternative fuels, including battery-powered trains and hydrogen applications, to gradually phase out diesel trains. The ongoing deployment of those alternative fuels solutions in the rail sector is already a reality in several European countries, and is set to grow even further in the coming years. Against this background, AFIR marks an opportunity to

establish the basis for a progressive deployment of alternative fuels infrastructures for rail, particularly for those lines which cannot be electrified.

UNIFE considers **the inclusion of rail under the scope of AFIR as a step in the right direction, in particular due to the relevant rail-related provisions:**

- Member States shall assess the development of alternative fuel technologies and propulsion systems for rail sections that cannot be fully electrified for technical or cost-efficiency reasons, such as hydrogen or battery-electric train and, if relevant, any refuelling and recharging infrastructure needs



- Member States will have to provide an overview by 2025, within their National Policy Frameworks, of the state of play, perspectives, and planned initiatives for deployment of infrastructure, including targets, key milestones and financing needed for hydrogen or battery electric trains on network segments that cannot be electrified. The European Commission will also be able to issue recommendations on the National Policy

Frameworks regarding the level of ambition of targets and objectives and the policy measures related to them.

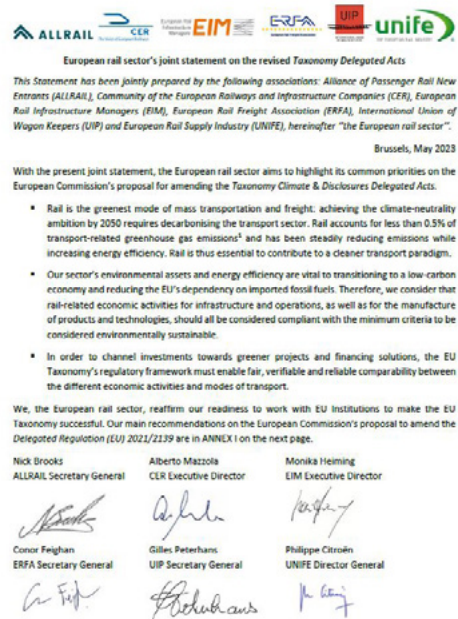
AFIR therefore sets an appropriate regulatory framework to sustain the investments made by railway suppliers, operators and infrastructure managers alike in innovative alternatives to diesel, facilitating European technology leadership and deployment in this field.

## b. European Taxonomy

UNIFE and its members have been very active on the EU Taxonomy file, as this topic is vital to channel investments towards greener projects and financing solutions – including towards the rail sector and supply industry. UNIFE continued to support the Commission's ambition to use the EU Taxonomy Regulation to define a common classification scheme, including criteria for identifying sustainable economic activities, to guide investors and financial institutions through a truly green transition.

The EU Taxonomy's regulatory framework must enable fair, verifiable and reliable comparability between the different economic activities and modes of transport. Due to the complexity of this legal framework, part of the rail supply industry's activities were not covered by the EU Taxonomy, a very problematic situation with potentially harmful financial consequences.

Compared to the previous versions of the text, the European Commission's proposal for amending the *Taxonomy Climate and Disclosures Delegated Acts*, published for public consultation in April 2023, improved the legal framework for the rail industry. Some points were still to be adjusted, and detailed feedback from UNIFE was sent to the Commission. In addition, a **joint statement was co-signed by six European rail sector organisations and sent to the Cabinets of Commissioners in charge of this file, as well as representatives from the Directorate-General Mobility and Transport (DG MOVE), and the Directorate-General for Financial Stability, Financial Services and Capital Markets Union (DG FISMA).**



The European rail sector's joint statement on the revised *Taxonomy Delegated Acts* was co-signed by six organisations and sent to the European Commission in May 2023

As a result, the final version of the *Delegated Acts* is much improved compared to the initial draft. Nevertheless, some problematic aspects remain, leading to further actions needed in 2024. These will include a new position paper that will list the rail supply and sector's issues, while providing solutions to the European institutions to improve the EU Taxonomy.

## c. Ecodesign Sustainable Product Regulation and other initiatives

As part of the first **Package of Circular Economy**, the European Commission has published a **legislative proposal** for **Ecodesign Sustainable Product Regulation (ESPR)**. The main objective is to extend the scope of the **Ecodesign directive (2009)** to a broader range of products and introduce the EU digital product passport to provide the value chain with more information on the products' environmental sustainability.

The European Commission released in January 2023 its **1<sup>st</sup> Working Plan of the Ecodesign Sustainable Products Regulation**, as a result UNIFE submitted a contribution to the public

consultation in May 2023. The main concerns for the rail sector identified by UNIFE are primarily the inclusion of rail-related products in the scope of the regulation and the possible misalignment with existing rail environmental declaration methodologies already in place (Environmental Product Declaration and Product Category Rules). Following exchanges with the Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW), it was clarified that the rail sector will not be included in the first phase, but some essential products, such as steel or glass, are.

## d. PFAS restriction proposal: a key concern for the rail industry

Per- and poly-fluoroalkyl substances (PFAS) are a family of artificial chemicals with 12,000 different substances, used in many products due to various valuable properties: lubricant, water and dirt repellence, durability under extreme conditions (temperature, pressure, radiation, chemicals), electrical and thermal insulation, refrigerants etc.

Besides widespread consumer uses, PFAS are used in many industrial sectors, including the rail supply industry and its entire value chain, such as in refrigerant (F-gases), electronic components, batteries, fuel cells, plastics, textiles, lubricants, adhesives, paints, hydraulic fluids, firefighting foam, etc. However, **PFAS have a high persistence associated with potential environmental and human health concerns**, thus their prevalence in high-impact media coverage, which terms them as *"the forever chemicals"*.



### PFAS restriction proposal: a key concern for the rail industry

**PFAS, a large class of thousands of synthetic chemicals**

Per- and poly-fluoroalkyl substances (PFAS)<sup>1</sup> are a family of artificial chemicals with 12 000 different substances. PTFE (Polytetrafluoroethylene) is one of the best-known and widely applied PFAS. The commonly known brand name of PTFE-based composition is Teflon<sup>®</sup>. Similarly, Viton<sup>®</sup> is the brand name of FKM (fluoro-rubber).

PFAS are used in many products and have various valuable properties: lubricant, water and dirt repellence, durability under extreme conditions (temperature, pressure, radiation, chemicals), electrical and thermal insulation, refrigerants etc. However, **PFAS have a high persistence associated with potential environmental and human health concerns**, thus their prevalence in high-impact media coverage, which terms them as *"the forever chemicals"*.

#### ECHA and the PFAS restriction proposal

For this reason, the **European Chemicals Agency (ECHA)**, backed by the national authorities of Germany, Denmark, the Netherlands, Norway and Sweden, published a **PFAS restriction proposal**<sup>2</sup> on 7 February 2023.

The proposed restriction on PFAS is set to be one of the largest ever on chemical substances in the European Union. As a result, manufacturing and placing products on the EU market containing **PFAS will no longer be permitted by 2026 or 2027**. After this, **possible derogations might exist for a use-specific and a time-limited transition period (maximum until 2039) without extension or renewal**. This means work on alternatives by industry is necessary. In addition, particular uses have time-unlimited derogations.<sup>3</sup> Some PFASs are already restricted in the EU (PFOS, PFOA, C9-C14 PFCAs). This proposal does not affect these existing restrictions and ongoing decision-making for PFHxS and PFHxA restrictions.



UNIFE Factsheet explaining the PFAS restriction proposal



Main application as defined in Annex XV report proposal	Sub-uses as described in Annex XV report proposal	Examples of use	Request for confirmation of the proposed derogation as in the Annex XV report proposal (plus a review clause)	Request for derogations for missing uses and/or no possibility of modifying the existing application (plus a review clause)
Applications of fluorinated gases (F-gas)	Air conditioning and heat pumps	New HVAC	Missing use	Exemption*
		Existing HVAC	5.i (13.5 years after Eif)	Exemption*
		Existing HVAC with mechanical and hydraulic compressors	5.p (6.5 years after Eif)	Exemption*
	Fire suppressants	Automatic fire system	5.m (13.5 years after Eif)	Exemption*
	Refrigeration	Catering Battery Monitoring Systems	Missing use	Exemption*
		Climatic chamber	5.g (13.5 years after Eif)	Exemption*
Electronics & semiconductors	Coating, solvents, cleaning		Missing use	13.5 years after Eif
	Electronic components		Missing use	13.5 years after Eif
	Semiconductors		5.ee (13.5 years after Eif)	-
	Wires & cables	Motor Sheath - Heat shrinkable	Missing use	13.5 years after Eif
Energy sector	Batteries	Batteries	Missing use	13.5 years after Eif
	Proton exchange membrane (PEM) fuel cells	Fuel cells	6.e (6.5 years after Eif)	13.5 years after Eif as a minimum
Lubricants	Greases	Greases	5.s (13.5 years after Eif)	-
	Low viscosity lubricants	Oil	5.s (13.5 years after Eif)	-
Transport	Coating and finishings	Balljoint	6.o (13.5 years after Eif)	-
	Electrical engineering and information technology		6.o (13.5 years after Eif)	-
	Sliding and guiding elements	Sliding part - segment - guide - bearing	5.a (6.5 years after Eif) 6.o (13.5 years after Eif)	13.5 years after Eif
	Safety equipment (incl. fire prevention & protection)		6.o (13.5 years after Eif)	-
	Sealing applications	Transformer-bogie-motor-brake	6.o (13.5 years after Eif)	-
		Valves of tank wagons	Missing use	13.5 years after Eif as a minimum
TULAC (Textile, upholstery, leather, apparel and carpets)	Technical textiles	Valves, venting, membrane	5.e (6.5 years after Eif)	-

Table summarising the derogations on the PFAS restriction proposal the European rail sector requested  
Exemption\*: as already covered by the revision of the F-gases regulation

The European Chemicals Agency (ECHA), backed by the national authorities of Germany, Denmark, the Netherlands, Norway and Sweden, **published a PFAS restriction proposal on 7 February 2023**. The proposed restriction on PFAS is set to be one of the largest ever on chemical substances in the European Union. If approved, manufacturing and placing products containing PFAS on the EU market **will no longer be permitted by 2027**. After this, **possible derogations might exist for a use-specific and a time-limited transition period (maximum until 2039) without extension or renewal**. This means work on alternatives by industry is essential. For this reason, UNIFE organised an internal webinar for its members, accompanied by a factsheet explaining the PFAS restriction proposal for the rail sector **available online**.

The 6-month ECHA public consultation received more than 5,600 submissions from over 4,400 organisations, including the 68-page contribution from UNIFE and its partner organisations. **Endorsed by nine rail organisations led by UNIFE**, it proposes a mapping of the PFAS used by the railway sector, a list of alternatives (when possible), and a table listing derogations for essential PFAS applications.

UNIFE will continue monitoring the European Chemicals Agency's next move, as its final proposal will be sent to the European Commission. Therefore, raising awareness of the potential negative impact of a total PFAS use ban on the rail sector is crucial.



In the same spirit, UNIFE organised a session on the PFAS restriction proposal with the members of the **Platform for Electromobility**, which brings

together more than 40 members from across all transport modes, including UNIFE. This shows that the other actors of the electromobility value chain share UNIFE's concerns on the chemical risks dossier.

## 4. Digitalisation

Throughout 2023, UNIFE closely monitored all the relevant initiatives linked to the European **Data Strategy** launched in 2020. The goal of the Commission is to create a single market for data and cybersecurity across the EU as well as

to establish "common European data spaces" across different sectors – including rail. UNIFE has been mainly focused on the **EU Data Act**, and on other key digitalisation priorities such as the **Cyber-Resilience Act**.

### a. EU Data Act

The European Commission's **proposal for a regulation on harmonised rules on fair access to and use of data**, also known as the *EU Data*

*Act*, was published in February 2022. It aims to improve **user access to data generated by all connected devices** in *business-to-business (B2B)* and *business-to-government (B2G)* contexts.

Rail networks produce a staggering amount of digital information, which includes several billion data points yearly. The rail supply industry has fully acknowledged the importance of collecting, managing and effectively processing data, as a better management of data has a range of benefits (such as e.g. improving the maintenance of railway infrastructure and rolling stock, reducing the life-cycle cost of rail products and enabling better and dynamic traffic management). Therefore, removing barriers to data-sharing between rail operators (mainline and urban), infrastructure managers, and suppliers is crucial.

UNIFE conveyed its position in the **European public consultation** and in its position paper released in July 2022. UNIFE supported the European Commission's objective to increase access to and further use of data in both the B2B and B2G contexts, as this will contribute to maximising the benefits of data for the mobility ecosystem, but had many concerns with the transversal nature of the proposal.



This is an essential file on which there was intensive advocacy, from various sectors and particularly from UNIFE and its members, until the very end of the negotiations. The Council and the European Parliament approved the definitive version of the regulation in November 2023, with overall positive results for the European Rail Supply Industry.

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### c. Cyber Resilience Act

In September 2022, the European Commission proposed a regulation on cybersecurity requirements for products with digital elements, including software – the **Cyber Resilience Act (CRA)** – with three main objectives: Inclusion of cybersecurity by design through self-assessment or third-party certification affecting CE marking, a maintenance phase in which manufacturers must provide free patches for any exploited vulnerabilities, and reporting obligations for such exploited vulnerabilities. All these obligations are at the manufacturers' expense.

UNIFE pointed out early on in the process that the proposal would be difficult to apply to the railway sector, as it is an industrial sector. Indeed, the impact of this file would have been detrimental to the Railway Supply Industry and would have had a huge financial impact on the sector. The main

concerns related to the unbalanced obligations depending on the organisation of the rail sector as well as technical problems, e.g. in the supply of spare parts interacting with legacy systems and the high cost of the proposed maintenance phase, where the provision of free patches in industrial sectors is very costly.

UNIFE and its members have been engaging with the co-legislators throughout 2023 to ensure that the proposal can be better applied in the railway sector. This took the form of position papers, explanatory documents, high-level letters, joint statements with other associations, and proposed amendments to the interim text of the file, while the co-legislators made progress in reaching agreement on the final text. The final form is better suited to rail transport and a great success for a more coherent application within the rail supply industry.

# 5. Investment Policy

“EU funds are an exceptional tool to support rail related investments. In the context of NextGeneration EU and the EU MFF programmes, UNIFE continues advocating for significant allocation of EU funds for rail and closely monitoring its implementation and deployment. Strong efforts are needed to improve the absorption capacity and allow an effective implementation of projects across EU Member States”

## a. NextGeneration EU

Over the last 12 months, Member States have made use of **EU Recovery and Resilience Facility (RRF) funds** to boost rail related investments in infrastructure, rolling stock, urban mobility and signalling. In this sense, the Member States' National Recovery Plans incorporate **ca. €55 billion for rail related investments**. According to the European Commission, based on its RRF 2023 Annual Report, a total of €153.4 billion (all sectors) has been already disbursed to Member States. A swift implementation of all the reforms and investments detailed in the **National Recovery Plans** will be essential to fulfil the implementation deadline of 2026 set up in the RRF Regulation. Furthermore, several Member States are currently submitting revised Plans to the Commission to accommodate the REPower EU chapters, but also to solicit their respective loan components to incorporate new investments or reforms or amend existing ones.



In this regard, pending final approval from both Commission and Council, we observe that Member States have requested additional €147.5 billion in loans, which include financial support to new or existing rail investments. UNIFE continues to closely monitor all these updates. Additionally, UNIFE circulated amongst its members a *compiled overview of rail projects in the National Recovery Plans* in order for them to monitor and track the rail investments foreseen in each of the Plans.

## b. European Structural and Investment Funds

The **European Structural and Investment Funds (ESIF)** continue to be a key tool within the **EU Cohesion Policy** that supports significant rail investments which are co-financed by Member States. During the course of 2023, all Member States had their Partnership Agreements signed with the European Commission. Over this period, UNIFE has been closely monitoring and analysing the publication of all the Operational Programmes which detail the rail related investments to be allocated and implemented over the coming years. To help UNIFE members navigate these funds, UNIFE shared a *detailed overview of EU Cohesion Policy funding for rail and SMEs 2021-2027*. The analysis shows that ca. €30 billion are to be allocated to rail infrastructure and rolling stock, and signalling including at the urban level for urban rail mobility.



ESIF related funds have to be committed by 2029. In this sense, UNIFE has been always vocal on the challenges posed by the lack of absorption capacity across several Member States and the need to speed up implementation with reinforced collaboration between public administrations and the rail sector.

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## c. Connecting Europe Facility

The **Connecting Europe Facility (CEF)** is one of the most successful EU programmes designed to support rail related infrastructure investments on the **EU Trans-European Transport Network (TEN-T)**. **Out of the €25.8 billion earmarked for transport, rail is set to be assigned at least 70% of the total.** This has been confirmed when considering the 2021 and 2022 call for proposals, which saw over €10 billion allocated to rail project construction and modernisation of infrastructure, but also including ERTMS and military mobility. In order

to speed up implementation, the Commission has frontloaded funding in the first three years of the programme. With the recent launch of the 2023 call with €7 billion available for support (all transport sectors), the majority of the budget will be exhausted by 2024. One of the main novelties of CEF is that now, the Commission incorporates **Ukraine and Moldova** as eligible countries for funding, with the aim of integrating the European rail network with these countries. UNIFE will continue to advocate for significant reinforcement of the CEF budget in the upcoming MFF.

## d. Revision of the TEN-T Regulation

Since 2021, negotiations have been ongoing to conclude the revision of the TEN-T Regulation, which should become operational as of 2024. The TEN-T aims to make the EU's transport network safer, more sustainable, faster, and more convenient for its users. To address the missing links and modernise the entire network, **quality standards and infrastructure requirements must be increased**. As the most sustainable mode of transport, rail plays a fundamental role in the TEN-T Network. Completing missing infrastructure cross-border links and modernising existing ones, will stimulate rail market growth in the years to come. UNIFE is strongly supporting the ambitious proposals, which have been made by the European Commission and reinforced by the European Parliament. In this sense, UNIFE advocates for **strong TEN-T governance and investment coordination within the European Transport Corridors and full deployment of ERTMS on the entire network by 2040**.



The Trans-European Transport Network (TEN-T)

## e. Revision of the EU's MFF 2021-2027

In June 2023, the European Commission presented its mid-term revision of its **Multiannual Financial Framework (MFF)**.

Among the key elements of the review, the Commission presented a Proposal to establish a **Ukraine Facility with a budget of €50 billion**, which is designed to support Ukraine reconstruction and modernisation in its aspirations to prepare for EU accession. Observing the vital role that rail is playing during these critical times, and the importance of strengthening EU-Ukraine rail connections, rail investments should feature prominently in this new Facility. UNIFE is advocating for rail related investments (be it for freight and passenger transport) in infrastructure, rolling stock (including freight and passenger locomotives), and signalling (including in ERTMS) to be considered as priority support within the Investment Plan that Ukraine will



prepare with the European Commission, and which will be supported through the upcoming Facility. In addition, UNIFE participated at the **EU-Ukraine Business Dialogue** organised by the Directorate-General for Neighbourhood and Enlargement Negotiations (DG NEAR) in Brussels. During the meeting, UNIFE expressed to the European Commission and the Ukrainian representatives our support to the sustainable reconstruction of Ukraine and our sector's priorities in terms of rail related investments and the procurement associated to it.



On 20<sup>th</sup> September, **Rail Forum Europe**, with the support of UNIFE, organised a breakfast briefing at the European Parliament in Brussels **to take stock of the on-going revision of the EU MFF**, and plan for the future so as to ensure proper EU funding for rail. The event was hosted by the Chairman of Rail Forum Europe, MEP Andrey Novakov (BG) and counted with high-

level key note speeches from MEP Dominique Riquet (FR) and Herald Ruijters, Deputy Director General at DG MOVE. During the discussion, speakers reflected on the importance of the on-going negotiations on the revision of the TEN-T Regulation, debated on the numerous funding opportunities for rail within the current budgetary cycle and the challenges associated to them.



**Dominique Riquet** (MEP), **Matthias Ruete** (EU ERTMS Coordinator), **Herald Ruijters** (DG MOVE, European Commission), **Philippe Citroën** (Director General, UNIFE)

## f. Basel III reforms

As part of a broader coalition, UNIFE has been advocating on a prudent revision of the **Capital Requirements Regulation (CRR3)**, which was proposed by the European Commission in October 2021 in the context of the banking package regarding Basel III. Pending the official publication on the Official Journal of the EU and following the provisional agreement reached by

co-legislators in June 2023, the two main issues identified by the Rail Supply Industry have been addressed in the right direction. Notably, the calibration of the **Credit Conversion Factor for trade finance products**, and the transitory measures on **High Quality Object Finance Risk Weight Asset** will allow the financing of rail projects at reasonable costs – a key element to accomplish the EU Green Deal objectives.

## g. EU State Aid rules

As announced in the **European Commission's Action Plan to boost cross border and long-distance passenger rail** published in 2021, the Commission is aiming at "*clarifying by 2023 the State aid rules on public funding of interoperable rolling stock for cross-border services in the revised **Railway Guidelines***". At the time of writing this report, the so-called revision was not yet finalised; nevertheless, on April 2023, the European Commission adopted the **State aid Temporary Crisis and Transition Framework**

to further support transition towards net-zero economy in line with the **Green Deal Industrial Plan**. In particular, the new Framework increases the amounts of aid that can be paid without first informing the European executive and now includes a section relating to investment aid "*for the acquisition of clean vehicles or zero-emission vehicles and for the adaptation [retrofitting] vehicles*". Aid for micro-enterprises and SMEs to meet the additional costs of energy prices also includes, subject to conditions, the list of exceptions to notifications.

## h. Engagement with financial institutions to mobilize financing for rail

During 2023, UNIFE successfully organised several sessions with representatives of European financial institutions to leverage private sector financing for rail, and to better understand concrete products and services that these institutions can offer to the benefit of the rail sector. The sessions included:

- **European Investment Bank (EIB):** session organised on JASPERS (Joint Assistance to Support Projects in European Regions), which provides support to cities and regions deliver high-quality projects
- **Crédit Agricole (CACIB):** session organised on the revision of Basel III paying particular attention on the issues affecting the financing of rail vehicles
- **KfW IPEX-Bank:** session organised on tailor made products and services for land base transportation including rail

# 6. Public Procurement in Europe

Given the importance of **public procurement spending in the EU**, which totals approximately 14% of GDP (€2 trillion per year) by over 250.000 public authorities, (with the vast majority of rail and urban transport operators being public authorities), public procurement is by far the predominant and most common process for funding rail projects in Europe.

Moreover, taking into account the various funding and investment opportunities for rail in the EU, (e.g. the **National Recovery Plans (NRPs)** and other sources of EU funding) UNIFE remains committed to ensure that funding dedicated to rail should be spent in the best possible way and tied to the **European Union's public procurement framework principles**. This should ensure fair competition between suppliers and establish an approach in rail procurement that focuses on best value, rather than on price criteria only.

UNIFE has continued to stress the importance of strengthening the rules on abnormally low tenders and the more profuse acceptance of the **Most Economically Advantageous Tender (MEAT)** principle. These are of particular importance given increasing budget constraints



**Ana Manuelito** (Public Affairs Manager, UNIFE) delivering a speech on EU public procurement at the Middle East Rail Conference 2023 in Abu Dhabi

linked to the ongoing economic and energy crisis on the one hand, and the greater activity from non-European, state-owned enterprises (SOEs) that are shielded from normal market competition on the other hand. UNIFE took the opportunity to speak in May about strategic European public procurement at the **Middle East Rail Conference** in Abu Dhabi, and at the **Train and Rail Conference** in Stockholm, highlighting the need to foster successful rail investments attached to specific legal provisions (MEAT principle).

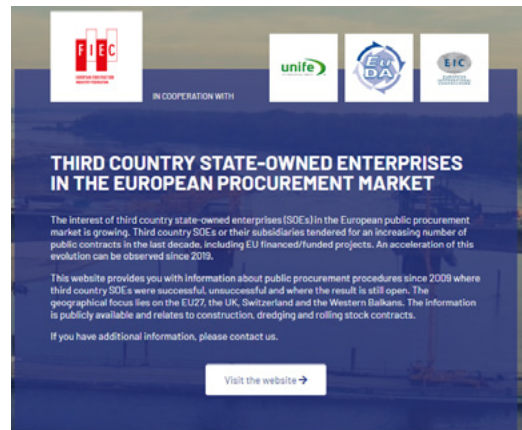


Discussions have continued within the UNIFE membership throughout 2023 to define the next joint steps and actions to further promote the MEAT principle towards the EU institutions, Member States/Contracting Authorities and the railway community, including to build on the **UNIFE/CER/EIM Recommendation to apply the Most Economically Advantageous Tender (MEAT) & Good practices in the domain of railway procurement.**



**UNIFE/CER/EIM Recommendation** to apply the Most Economically Advantageous Tender (MEAT) & Good practices in the domain of railway procurement

Additionally, during 2023, UNIFE updated its contribution to the **interactive map on the activity of third country state-owned enterprises in the European procurement market**. This map, created with the European Construction Industry Federation (FIEC), European International Contractors (EIC), and the European Dredging Association (EuDA), displays all projects in which third country SOEs have tendered since 2009 in the construction, dredging and rail supply sectors. The update confirms that the interest of third country SOEs in the European public procurement market has kept growing significantly in recent years.



UNIFE Factsheet explaining the PFAS restriction proposal



Lastly, in 2023, UNIFE co-chaired two meetings of the **AEGIS Europe** alliance's **Working Group on Public Procurement**, which gathers several industry associations driven by common interests and challenges on the field. Along with UNIFE, AEGIS Europe continues its efforts to promote the European public procurement framework towards the European institutions and individual Member States.



# 03.

## International Affairs

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# 1. Organisation for Economic Co-operation and Development (OECD)

2023 was a milestone year for the European Rail Supply Industry with the publication of the awaited **OECD (Organisation for Economic Co-operation and Development) trade policy paper** titled **Measuring distortions in international markets – The rolling-stock value chain** in February.

This report helps shed light on the magnitude and the manner in which governments subsidise the rolling stock manufacturers that they deem as strategic, with a view to informing efforts to revisit global trade rules. It also highlights that **government support to rolling stock manufacturers is raising concerns about possible market distortions and unfair competition**. Over the period 2016-2020, governments provided about \$5 billion to the sector, much of it in the form of government grants and income tax concessions.

While not quantified, discriminatory practices in government procurement and competition enforcement, forced technology transfers, as well as non-market export credits may have also distorted global competition in the rail supply industry. In the report, it is notably stated that ***"CRRC obtained as much as 72% of all absolute support" (through grants, tax concessions, below market borrowings, etc.), and that CRRC obtained "tax support of more than \$400 million in 2020 alone"***.

OECD publishing

## MEASURING DISTORTIONS IN INTERNATIONAL MARKETS

### THE ROLLING-STOCK VALUE CHAIN

OECD TRADE  
POLICY PAPER  
February 2023 n°267







**Jehan Sauvage** (Policy Analyst, OECD), **Sabine Schneider** (Head of Talent Management, Siemens Mobility), **Lucian Cernat** (Head of the Regulatory Cooperation and Public Procurement Unit, European Commission Directorate-General for Trade), **Augusto Mensi** (Member of the UNIFE Presiding Board, and CEO Lucchini RS), **Lorena Ionita**, (Deputy Head of Unit Mobility, DG GROW, European Commission), **Nick Kingsley** (Executive Editor Railway Gazette)

Throughout the year, UNIFE has been communicating about this important policy paper towards the EU institutions and key-stakeholders in a number of occasions, both in Europe and beyond. The report has been showcased during the 2023 UNIFE General Assembly by the Trade and Agriculture

Directorate of OECD. UNIFE is confident that the policy paper will provide a credible and substantiated case for distortions in international competition, be useful in advocacy activities and will support the potential use of EU's trade autonomous tools.



The OECD is also a forum for maintaining, developing and monitoring the financial disciplines for export credits, which are contained within the Arrangement on **Officially Supported Export Credits** ("the Arrangement"). Over the years, UNIFE has been advocating to undertake a comprehensive reform of the Arrangement, in order to level the playing field in terms of export

finance vis-a-vis countries which are not part of the Arrangement. In July 2023, Participants agreed a revamped and modernised text. In a nutshell, **the Arrangement will allow longer repayment terms (up to 22 years)** that are consistent with the useful life of the exported goods and services. Even longer repayment terms and financial structuring flexibility will be available for a broader range of climate-friendly transactions, including rail related ones, that are not covered under the **Climate Change Sector**

**Understanding (CCSU).** UNIFE also had the pleasure to host the OECD Secretariat team in charge of export credits to exchange and better understand the implications for rail in this new modernisation of the policy. Furthermore, as a Member of **Business at OECD (BIAC)**, UNIFE has also collaborated in the preparation of a **new position paper titled: Building on the momentum for a more fit-for-purpose OECD Arrangement**. The paper highlights proposals by BIAC on the OECD Arrangement post-modernisation discussions on payment and credit terms, including a key priority for the Rail Supply Industry relating to the renewal of the Common Line of Procedure for down-payments.



## European Export Credit Strategy/ Facility

The European Commission is now exploring options for an **EU Export Credit Strategy**. In **2023, the Feasibility Study on an EU Strategy on Export Credits**, which was commissioned by DG TRADE was published. UNIFE and its Members have had the opportunity to interact and engage during the preparation of this study communicating their challenges and priorities in terms of export credits. These challenges could be addressed by an **EU Export Credit Strategy** that would on one hand alleviate the export finance bottlenecks experienced in the EU, and on the other level the playing field for EU businesses by broadening their access to opportunities afforded by other forms of official finance in supporting the EU's external agenda.



## 2. International Procurement Instrument

The **International Procurement Instrument (IPI)** has been part of the **EU's autonomous trade tools** since August 2022, after several years of intense discussions and negotiations. 2023 marks the first year of its entry into force. Throughout the year, UNIFE has been monitoring closely its implementation phase, by supporting its members on navigating the Regulation and identifying possible avenues to manage.

The IPI Regulation is of paramount importance for the European Rail Supply Industry as a way to improve reciprocity in non-EU markets in the area of public procurement, by removing unfair barriers and promoting fair competition worldwide. In fact, today's reality is underscored by strong political messages around unfair competition issues as declared by **President Ursula von der Leyen during the 2023 Annual State of the Union Address**:

**“Competition is only true as long as it is fair. Too often, our companies are excluded from foreign markets, or are victims of predatory practices. They are often undercut by competitors benefiting from huge state subsidies”**



**Lucian Cernat**, Head of the Regulatory Cooperation and Public Procurement Unit, European Commission Directorate-General for Trade

During 2023, UNIFE has been engaging with the European institutions on a number of occasions, in order to exchange views regarding the IPI Regulation. Amongst them, the European Commission participated in the 2023 UNIFE General Assembly Roundtable “Competitiveness and Global Leadership of the EU Rail Supply Industry”, as well as on other technical-oriented discussions which proved to be extremely important during the implementation stage. **Lucian Cernat, Head of the Regulatory Cooperation and Public Procurement Unit at the European Commission Directorate-General for Trade**, highlighted in his remarks that *“in the current context of growing protectionist tendencies in public procurement markets worldwide, the International Procurement Instrument is more important than ever to ensure a level-playing field for EU companies”*.



# 3. Foreign Subsidies Regulation

Another trade instrument which was approved was the , which was an intense and fast-tracked legislative process. The law entered into force on 12 January 2023 and started being applied on 12 July of the same year. It began on 12 October, when the reporting obligations to notify financial contributions in the context of public procurement procedures and takeovers were enabled.

The Regulation would grant the European Commission the power to investigate financial contributions granted by non-EU governments to companies active on the European market. If such financial contributions constitute distortive subsidies, the European Commission could impose redressive measures.



**Jonathan Nguyen** (Head of Public Affairs, UNIFE) with **Denis Redonnet** (Deputy Director-General, Chief Trade Enforcement Officer, European Commission)

On top of the Regulation, the European Commission opened a in March, asking to provide details regarding the rules applicable to proceedings conducted by the European Commission. UNIFE actively contributed to the public consultation, and had subsequent exchanges with the European institutions and relevant stakeholders, outlining the need to have further legal clarity on the scope of the instrument. Further to this, UNIFE outlined the need to have simplified reporting requirements for companies in the context of screening financial contributions.

UNIFE also participated in a number of public events to raise awareness of the main issues related to the European Rail Supply Industry, including a organised in February by Oxera and Herbert Smith Freehills, as well as the Conference organised in June by Informa.

UNIFE and its members will keep monitoring its implementation and full application, which now needs to pass the practice test, in order to benefit of the European Rail Supply Industry.



**Ana Manuelito** (Public Affairs Manager, UNIFE) with **Jani Ringborg** (Legal Service – State Aid Team, European Commission)

# 4. Carbon Border Adjustment Mechanism

UNIFE and its trade alliance **AEGIS Europe** have been active in the legislative process of the **Carbon Border Adjustment Mechanism (CBAM)**. The law was adopted by the co-legislators in May of this year, with application beginning later in October. The **CBAM is now under its transitional period until December**

**2025**, during which economic operators are requested to submit reports to the European Commission in regards to emissions embedded in their imports, subject to the mechanism without paying any financial adjustment. The full CBAM deployment will take place early 2026.

**In its first phase, the CBAM will focus on goods most at the risk of carbon leakage:**



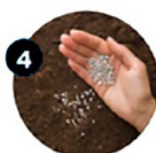
**CEMENT**



**IRON-&STEEL**



**ALUMINIUM**



**FERTILISER**



**HYDROGEN**



**ELECTRICITY**

European Commission's proposal on Carbon Border Adjustment Mechanism

UNIFE will keep on working on the CBAM, with the European Commission set to present by end of 2025 an impact assessment, in particular with a view to extend the scope of the CBAM, after the transition period. UNIFE has been emphasising its support of the stated objective to establish a level-playing field on carbon content and to avoid carbon leakage, but also has highlighted the significant risks for the competitiveness of

downstream industries, such as the rail supply industry. The **CBAM should be applied to the emissions of the complete product value chain, before such product is imported into the EU. Finished products, such as rail rolling stock and equipment, should have the possibility of being included in the CBAM as soon as possible in order not to create distortions.**

# 5. EU's Foreign Direct Investment Screening Regulation

The **EU's Foreign Direct Investment (FDI) Screening Regulation** was adopted in 2019 as a means to foster Member States to further evaluate foreign investments/non-EU related to security and public order, particularly when it comes to critical infrastructure. This Regulation is of particular importance for the European Rail Supply Industry since over the past years, the foreign direct investment has significantly increased, and the rail sector has been identified by several countries as a strategic sector.

In October 2023, the **European Commission released its Third Annual Report on the screening of foreign direct investments into the Union**, which outlined that one of the main sectors of interest to foreign investors is **Transport**. More concretely, investments in equity stakes grew substantially in the Transport sector (+24%) in 2022, experiencing a positive trend in the post-COVID period with an increase of 40,9% compared to 2020.

During the summer, the European Commission launched a public consultation in view of evaluating and reviewing the EU's Foreign Direct Investment Screening Regulation. UNIFE has contributed with a number of recommendations. For instance, UNIFE stressed the need to implement and promote convergence of FDI mechanisms across all Member States, including screening obligations for "critical infrastructure" and "critical technologies" concerning the transportation sector. The European Commission also published a **revised Regulation proposal in December**, and UNIFE will keep on actively participating in the debate and advocating these positions together with its members towards EU decision-makers.



UNIFE's feedback to the EU's FDI Screening Regulation

# 6. Free Trade Agreements

The European Rail Supply Industry is a strategic and leading economic industry for Europe, and its world leadership strongly depends on the ability of companies to access new markets. **Free Trade Agreements (FTA)** matter as they encompass a number of innovative provisions, and offer opportunities to reduce tariffs while addressing barriers and discriminatory requirements. As such, they can be beneficial for the entire supply chain (e.g. local content requirements).

Yet, according to the **2022 UNIFE World Rail Market Study**, **worldwide rail market accessibility has declined over the last decade from around 70% in 2008 to 61% in 2022**. Market access issues and non-tariff trade barriers remain significant, and this situation stands in sharp contrast with the EU, where the public procurement market is one of the most open and transparent in the world.

During 2023, UNIFE continued to work with the European Commission, especially DG TRADE, in order to keep the debate high on the agenda regarding key markets in which European rail suppliers still face a number of trade barriers, especially in **Japan** and **South Korea**.



Relaunch of the EU-Thailand Free Trade Agreement Negotiations, March 2023

UNIFE also continues to work with the European Commission by providing inputs in the context of current negotiations of free trade agreements, focusing in particular on the government procurement chapters, with the objective of boosting the presence of European rail suppliers in third-country markets. In 2023, special attention was given to trade negotiations with **Thailand** and **India**. Moreover, UNIFE monitors the legislative process and entry into force of other free trade agreements, such as the ones with **Chile, Mexico, New Zealand** and **MERCOSUR (Argentina, Brazil, Uruguay and Paraguay)** and provides intel on their development to its members.



# 7. Bilateral cooperation with third countries

Bilateral cooperation with third countries remains one of UNIFE's priorities. Throughout 2023, UNIFE had the opportunity to exchange and meet with several partners across the globe.

In March, UNIFE participated in a panel discussion "Regional trains as an integration and mobility solution", organised during the NT Expo Congress – the main rail event in Latin America - along with its counterparts the **Brazilian Association of the Railroad Suppliers (ABIFER)** and the **Latin American Railway Association (ALAF)**. UNIFE had the opportunity to share the European experience in delivering regional trains solutions, and outlining the main market prospects for the railway sector in Latin America. Further cooperation with Latin-American counterparts remains high on our agenda.

In October, UNIFE had the pleasure of again meeting its North American partners **Railway Supply Institute (RSI)**, **Canadian Association of Railway Suppliers (CARS)**, and the **Mexican Association of Railroads (AMF)** during the Railway Interchange Conference that took place in October in the US. The four organisations discussed topics of common interest related to trade, in particular public procurement and global competition during the session "**International Collaboration to Support a Thriving Rail Supply Chain**". Given the challenges to overcome, many of them going beyond international borders, it is of paramount importance to maintain such good collaboration and join forces with UNIFE's partners worldwide.



Ana Manuelito (Public Affairs Manager, UNIFE), Sylvia Newell (President, CARS), Iker de Luísa Plazas (Director General, AMF), and Patricia Long (President, RSI)



# 8. European Global Gateway



European Commission President **Ursula von der Leyen** at the Global Gateway Forum 2023

**Global Gateway** is the EU's contribution to narrowing the global investment gap worldwide, with a **mobilisation of €300 bn investments** up to 2027. It is in line with the commitment of the G7 leaders from June 2021 to launch a values-driven, high-standard and transparent infrastructure partnership to meet global infrastructure development needs. Since its establishment, UNIFE has been insisting on the need to articulate rail projects in EU third partner countries, in order to promote the EU

Green Deal outside of the EU. Over the last 12 months, several milestones have taken place in this regard:

- **Global Gateway Business Advisory Group:** Together with 59 other organisations, UNIFE has been selected by the European Commission to become a member of the Global Gateway Business Advisory Group. The new group gathers CEOs or senior executives of European companies and business associations. It will assist the European Commission in promoting

cooperation with the European private sector, as part of the implementation of the Global Gateway strategy and the scaling up of Global Gateway flagships.

- **The Global Gateway Forum 2023**, attended by UNIFE, was organised in Brussels on 25-26 October. The Forum brought together over 40 high-level government representatives, financial institutions and business representatives to discuss the world's investment needs, debate solutions and seal new deals. During the Forum, UNIFE Director General Philippe Citroën had the opportunity to discuss with Jutta Urpilainen, the EU Commissioner in charge of International Partnership and, DG INTPA's Director General Koen Doens to convey UNIFE's support for Global Gateway and its rail and urban mobility flagship projects.
- **Global Gateway Flagship projects and activities:** In 2023, the European Commission approved further Global Gateway projects

across different continents. Thanks to UNIFE's advocacy, rail projects are now featuring more prominently in the different regions, compared to the initial proposal presented in 2022. Another example of Global Gateway funded activities completed, is the **Study on sustainable transport connections with Central Asia** carried out by the **European Bank for Reconstruction and Development (EBRD)**. The study identifies 33 hard infrastructure investment needs across the region, including for rail infrastructure and rolling stock, as well as seven coordinated actions on soft connectivity measures. These are all specific, concrete and realistic actions which can contribute to the competitiveness and operational efficiency of the trans-Caspian transport connections between the five relevant Central Asian countries and Europe.







# 04.

## Standards and Regulation

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# 1. Overview

As the **official representative body** for the European rail supply industry, UNIFE coordinates the contributions and position of its members towards the development of regulations, decisions, guidelines and other documents drafted by the **European Union Agency for Railways (ERA)** and the **European Commission (EC)**.

The **UNIFE Standards and Regulation Group (SRG)** and its supporting UNIFE technical working groups are platforms for members to influence technical regulations that relate to the interoperability and safety of the European railway system. UNIFE has actively participated in numerous working parties and groups organised by the European institutions to support the drafting of the aforementioned outputs. The SRG plays a pivotal role in coordinating UNIFE's technical stances on the implementation

of the EU's 2016 **Fourth Railway Package (4RP)** and 2023 **Technical Specifications for Interoperability (TSIs) Revision Package**.

SRG also interacts with other rail associations, such as **CER**, **EIM**, **UIP** and **NB-Rail**, as well as other stakeholders in Europe's rail sector through participation in the **Group of Representative Bodies (GRB)** and the **European Standardisation Organisations (ESO)** - particularly, **CEN** and **CENELEC** - through the **Sector Forum Rail (SFR)**.

As an observer on both the **ERA Management Board** and **ERA Executive Board**, UNIFE Director General Philippe Citroën regularly attends these meetings to express the rail supply industry's position on important topics, such as ERA's annual work programme and ongoing activities supporting the 4RP's implementation.

## 2. 2023's key developments in rail standards and regulations

### a. The 2023 Technical Specifications for Interoperability Revision Package

This year saw the conclusion of the 2023 TSI Revision Package with the positive vote by Member States achieved during the 98<sup>th</sup> meeting of the European Commission's **Railway**

**Interoperability and Safety Committee (RISC)** held 29-30 March 2023. The RISC vote concluded over three years of extensive collective work of the various actors in drafting this TSI revision package and consultation with the European Union Agency for Railways and the European Commission. The 2023 TSI revision package was subsequently published on 8 September, and entered into force on 28 September 2023.

The package introduces significant changes that will impact all future rail subsystems, as well as subsystems currently subject to ongoing projects.

The 2023 TSI Revision Package addressed the “*Digital rail and Green freight*” TSI revision mandate given by the EC to ERA in January 2020, which is intended to align the TSIs’ contents with the EC’s high-level policy goals. UNIFE attended all **ERA TSI Working Party** and **Topical Working Group (TWG)** meetings held in 2023 during the finalisation of the TSI recommendation to RISC, as well as the meetings following the RISC vote to update the TSI Application Guides based on the changes contained in the voted texts.

Over the past few years, UNIFE has adapted its internal consultation processes with its committees and technical working groups to

follow and contribute to the new revision and structure within ERA. Within our association, the Working Party on the revision of TSIs is followed by the SRG, which coordinates the rail supply industry’s response, nominates experts within the TWGs and cooperates with the other UNIFE committees when appropriate. The activities of each TWG, where the detailed TSI revision proposals are developed, have been consulted by a combination of the existing UNIFE technical working groups depending on the change request subject. UNIFE’s goal is to ensure that the necessary evolution of the technical regulation and standards framework is carried out in a way that will improve the competitiveness of the European Rail Supply Industry, support the harmonisation and transparency of technical rules in Europe, while also facilitating the development and authorisation of rail products.

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## b. Implementation of the Fourth Railway Package’s Technical Pillar



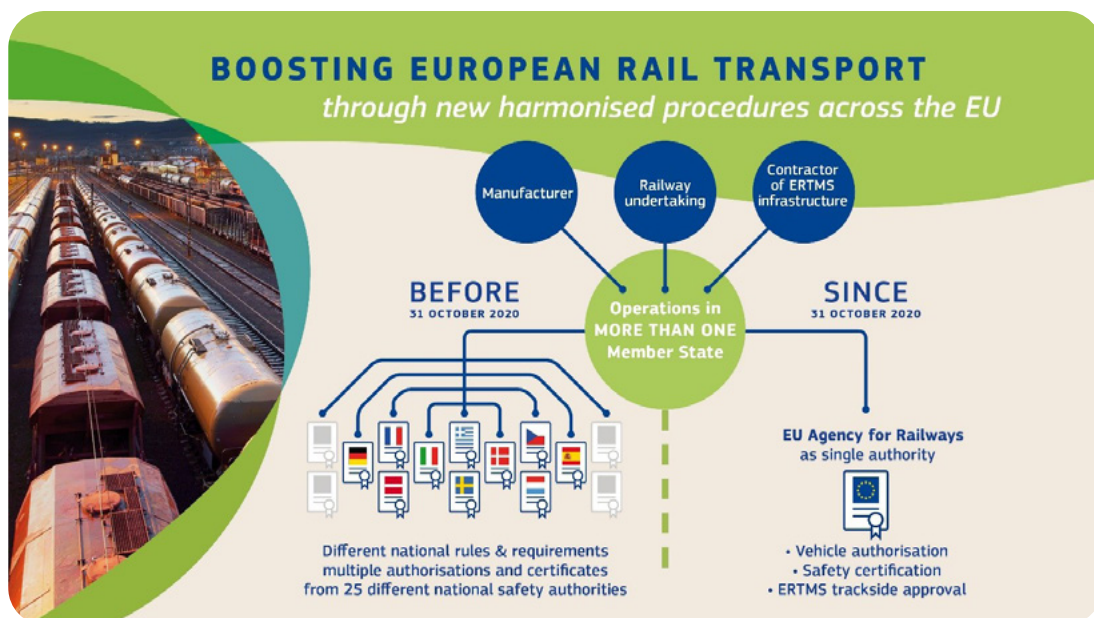
The 4RP’s Technical Pillar, comprised of the recast Interoperability and Safety Directives and the ERA Regulation, entered into

force in June 2016. Following the transposition of the measures by EU Member States, the Technical Pillar and its new vehicle authorisation regime entered into operation on 16 June 2019, and has been in force since 31 October 2020 in all Member States. Our association strongly supported the Technical Pillar’s adoption, which we see as of paramount importance for the rail industry’s competitiveness, as it aims to remove the remaining technical barriers to the creation of a **Single European Rail Area (SERA)**. A harmonised European authorisation process ran by the ERA should see a convergence and greater certainty of requirements, leading to a more consistent, quicker and cheaper vehicle authorisation process with less duplication of checks and testing.

**Since 16 June 2019, ERA has acted as a European authorising entity and delivered over 5700 vehicle authorisation decisions - representing over 64,000 authorised rail vehicles.**

With now over four years of experience in operation, the time has come to review the new processes based on the feedback and return of experience of UNIFE members. Together with all stakeholders from the railway sector and the **National Safety Authorities (NSAs)**, activities have been launched to review the newly implemented system and define recommendations from all involved stakeholders on how to optimise the new processes and achieve the targeted cost and time saving goals. This review is led by **4RP Steering Group**, of which UNIFE is member and has provided the detailed feedback from the European rail supply industry, including during the resulting **ERA Vehicle Authorisation Advisory Groups** held over the first half of 2023. These activities are followed closely by the **UNIFE Vehicle Authorisation Mirror Group**, as the key UNIFE group to exchange on the 4RP authorisation process.





Vehicle authorisation harmonisation under Fourth Railway Package - Source ERA

### c. European Commission Expert Group on the Technical Pillar of the Fourth Railway Package

UNIFE is a permanent member of the EC's **Expert Group on the Technical Pillar of the Fourth Railway Package**, alongside Member State and other official sectoral representative bodies. This group is intended to consult the sector on legislation to be voted on, give recommendations on draft texts and to help prepare discussions and votes to be held in the **Railway Interoperability and Safety Committee (RISC)**. This Expert Group is intended to complement - but not replace - the RISC, which only allows Member State representatives to vote on the final Implementing Acts.

Five meetings of the EC Expert Group on the Fourth Railway Package were held in 2023, with the first two focused on the European Commission's consultation on the 2023 TSI Revision Package texts, including the TSI on **Control Command and Signalling (CCS)** prior to the scheduled vote by the 98<sup>th</sup> RISC in March 2023. The final two meetings were focused on the Commission's revision of the TSI regarding telematic applications. UNIFE took the opportunity to raise our positions on the priority change proposals within the concerned TSIs to support the competitiveness of the European railway sector and its supply industry.

### d. UNIFE High-Level Dialogue with DG MOVE, ERA and Europe's Rail Joint Undertaking on the Implementation of the Technical Pillar of the Fourth Railway Package

UNIFE has established a high-level dialogue between the European Commission (**DG MOVE's** Directorate C), ERA and **Europe's Rail Joint Undertaking** management teams and UNIFE members at the CTO level on the implementation of the Technical Pillar of the Fourth Railway Package. This high-level forum

continued in 2023, where discussions covered the final developments of the 2023 TSI Revision Package, the latest feedback on the 4RP vehicle authorisation process, as well as starting to look forward to the future regulatory developments beyond 2023, such as regarding cybersecurity and FRMCS introduction.

For the future evolution of the technical framework after the 2023 TSI Revision Package completion, UNIFE introduced our **Vision Paper on the Evolution of Regulation, Standardisation and Innovation for a Competitive European Rail Supply Industry**. Published in October 2022, it explained our vision for how to ensure its balanced, streamlined and stable evolution going forward. Following multiple revisions of the TSIs in recent years, UNIFE is calling for better regulatory stability to enable contracts and projects to be delivered smoothly via sufficient transitional provisions and to establish a predictable and transparent evolution of the technical framework in the years to come for the sector. In 2023, this **UNIFE Vision Paper** has acted as a baseline for our technical lobby activities and overall objectives in the coming years for the Technical Specifications for Interoperability, and their link to the standardisation and research and innovation domains. The goal is to ensure the future technical framework evolutions to support the



UNIFE Vision Paper on the Evolution of Regulation, Standardisation and Innovation for a Competitive European Rail Supply Industry

European rail supply industry to thrive both at home and internationally, while increasing the competitiveness and market share of rail transport in support of the European Green Deal objectives.

## e. Cooperation with the Group of Representative Bodies (GRB)

As the official representative body for the European rail supply industry, UNIFE is a member of the **Group of Representative Bodies (GRB)**. The GRB is a group of European railway associations tasked with supporting the sector's consultations with the **European Union Agency for Railways (ERA)**, as it undertakes its work programme and its activities on rail safety and interoperability.

The GRB has continued to be highly active throughout 2023, with particular focus paid to the revision of the TSIs and return of experience of the process to build upon for future activities.

The strong GRB cooperation has resulted in a number of joint positions relating to regulation and standardisation being expressed in consultation forums or jointly submitted to the EC, ERA and Member State representatives over the past year.

Since January 2019, **Christian Rausch**, member of UNIFE's **Standards and Regulation Group (SRG)**, has also served as the GRB's Chair for a two-year mandate including this year acting under his third mandate for 2023/24.



For further information on GRB, please visit [www.grbrail.eu](http://www.grbrail.eu)

## f. UNIFE's involvement in Standardisation

Standardisation is extremely important for our industry, leading many UNIFE members to be involved in both European and global standardisation proceedings through their respective national bodies. UNIFE provides a platform for its members to coordinate their standardisation advocacy and build consensus on our industry's priorities in this area. UNIFE's **Standards and Regulation Group (SRG)** is responsible for monitoring developments in both regulation and standardisation within the technical framework applicable to rail products. The careful coordination of activities in both areas is required to ensure that the work carried out by European institutions and European Standardisation Organisations is complementary and improves the rail sector's functioning and competitiveness.



To support the efforts of its members at the national level, UNIFE has established close links with relevant **European Standardisation**

**Organisations (ESOs)**, namely **CEN** and **CENELEC**. Our association works closely with the Commission, who sets the policy framework for European level standardisation, and the **CEN-CENELEC Management Centre**, which coordinates the activities of both organisations.

UNIFE is a member of the **Topical Working Group on Standardisation (TWG STA)** at ERA, which is the key platform for updating the regulated link between the TSIs and the European Standards, responsible for updating the reference to over 100 standards during the 2023 TSI Revision Package. UNIFE participates in **Sector Forum Rail (SFR)** which facilitates discussions between the CEN-CENELEC Management Centre and representative bodies on the sector's standardisation priorities, in addition to the **Rail Standardisation Coordination Platform for Europe (RASCOP)** established by the European Commission. By using these forums, UNIFE aims to influence the EC, ERA and ESOs to deliver an efficient technical framework with a lean interface between regulation and standardisation. Once again, UNIFE's 2022 Vision Paper on the Evolution of Regulation, Standardisation and Innovation for a Competitive European Rail Supply Industry acted as a baseline for our objectives in standardisation in the forums mentioned.



Thierry Breton (EU Commissioner for Internal Market) during the EU High-Level Forum on European Standardisation

At the global level, UNIFE holds A-Liaison status for the **International Standardisation Organisation's (ISO) Rail Technical Committee 269 (ISO TC 269)**. This enables us to take part in the committee's regular meetings.

Finally, in 2023 **UNIFE became a member of the European Commission's High-Level Forum on European Standardisation**, set up by DG GROW (European Commission's Directorate for Internal Market, Industry, Entrepreneurship

and SMEs) and chaired by Thierry Breton, the EU Commissioner for Internal Market of the European Union, as part of the EU Strategy on Standardisation. The purpose of the forum, which is at its second consultation, is to identify standardisation priorities in support of EU policies and legislation, and discuss horizontal issues such as international leadership, education and skills and pre-normative challenges, in a multi-sectoral setting.

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## g. Urban Rail Platform

In 2023, UNIFE has relaunched our cooperation with urban transport operators on standardisation through the **Urban Rail Platform**, a forum driven by UNIFE and the **International Association of Public Transport (UITP)**. The platform aims to support standardisation in urban rail and provide its members with a forum for discussing additional matters related to regulation and Research and Innovation (R&I). In 2023, the **URP Standardisation Subgroup** was also reactivated to identify potential new standardisation activities by analysing the existing urban rail standardisation works at CEN-CENELEC and consider where gaps and opportunities exist.



For more information on Standards and Regulation, please contact UNIFE Technical Affairs Manager Nicholas Shrimpton at [nicholas.shrimpton@unife.org](mailto:nicholas.shrimpton@unife.org)

# 3. UNIFE Technical Working Groups

The **UNIFE Technical Working Groups** support the association's work on standardisation, regulation and research. The overall coordination is done by the association's committees responsible. There are two types of Technical Working Groups at UNIFE:

- **UNIFE Mirror Groups (MG)** are groups which are primarily active during the drafting and they mirror ERA's working parties or topical working groups, where UNIFE delegates

participate as official representatives of the European rail supply industry

- **UNIFE Topical Groups (TG)** follow specific topics, mainly related to standardisation and research activities

The UNIFE SRG supervises the UNIFE Technical Working Groups and periodically reviews their activities to ensure that they operate in line with our overall standards and regulation objectives.

## a) UNIFE Mirror Groups (MG)

### Electromagnetic Compatibility Working Group (EMC MG)



In 2023 UNIFE experts have worked in close cooperation with EIM and CER experts within the **Train Detection Compatibility Working Group (TDC WG)**, coordinated by ERA. During the first half of the year, the group has continued work started in 2022 of updating ERA/ERTMS/033281 specification (interface document) needed to complete the new version of the CCS TSI. The main topics addressed are summarised hereinafter:

- AC and DC input impedance
- On-board flange lubrication
- Metal and inductive components-free space between wheels
- The maximum amount of sand per rail per sanding device
- Magnetic End Pieces

Once the CCS TSI was approved, new topics were proposed by ERA for the TDC WG activity in 2023/2024:

- Break Down of limit values to single coaches/ locomotives

- Simplified EMC checks for freight wagons with DAC
- Support Member States concerning the transfer of EMC related rules into Specific Cases
- Application Guide
- Other elements of the interface document: EN50728 follow up, OPE TSI – informing signaller about sanding and Sand Quality

The group actively worked during the second part of the year in the topic related to the "Break Down of limit values to single coaches/ locomotives", making a first proposal of the limit value for the locomotive justified with the existing value provided by main manufacturers. This proposal was preliminary discussed in the ERA TDC WG and further analysis and work will be performed during 2024.



For more information, please contact UNIFE Technical Affairs Manager Jose Bertolín at [jose.bertolin@unife.org](mailto:jose.bertolin@unife.org)



## Noise Mirror Group (MG)



In 2023 the UNIFE Noise Mirror Group was represented by its chairman Joan Sapena during the Noise Days organized by UIC in February 2023. A potential collaboration with the new UIC vehicle group was analysed and discussed between both associations, but no decision was taken so far. The group follows the new ISO 3095 enquiry

related to the Parking Noise measurement method and the future topics for next TSI revision.



For more information, please contact UNIFE Technical Affairs Manager Jose Bertolin at [jose.bertolin@unife.org](mailto:jose.bertolin@unife.org)

## Safety Assurance Mirror Group (SafAssu MG)



The **Safety Assurance Mirror Group (SafAssu MG)** supports ERA's work on the *Railway Safety Directive*. It also assists the SRG and other working groups with expertise on risk assessment and the application of the **Common Safety Method (CSM) Regulation (EU) 402/2013**.

In 2023, this mirror group continued to elaborate the industry position within multiple ERA working groups focusing on railway safety. The group monitored the development of the **Common Safety Methods** for the assessment of safety levels and safety performance of operators at both the National and European Union level (CSM ASLP) to ERA. Additionally, this group coordinates UNIFE's positions pertaining to the numerous ERA activities on human and organisational factors and safety culture.

In September 2023, UNIFE also attended the 3<sup>rd</sup> edition of the European Rail Safety Days, hosted by the European Union Agency for Railways (ERA) in Tallinn, Estonia. The conference focused on nurturing a learning railway system and delivered a diverse range of presentations by experts and leaders from railways and other high-risk industries (aviation, maritime, nuclear), addressing areas such as continuous safety improvement, safety culture, and learning from investigations, monitoring and data.



For more information, please contact UNIFE Technical Affairs Manager Nicholas Shrimpton at [nicholas.shrimpton@unife.org](mailto:nicholas.shrimpton@unife.org)



Opening of the 3<sup>rd</sup> edition of the European Rail Safety Days, September 2023, hosted by ERA

## Persons with Reduced Mobility Mirror Group (PRM MG)



The PRM TSI defines common priorities and criteria to further improve accessibility for persons with reduced mobility and provides clear requirements for manual and electric wheelchairs, which allows their users to safely access passenger trains.

In 2023, the **Persons with Reduced Mobility Mirror Group (PRM MG)** were active in finalising the integration of the previously elaborated ERA

PRM TSI recommendation from 2020 into the 2023 TSI Revision Package. This also including the finetuning of several aspects of the ERA recommendation and application guide.



For more information, please contact UNIFE Technical Affairs Manager Nicholas Shrimpton at [nicholas.shrimpton@unife.org](mailto:nicholas.shrimpton@unife.org)

## Telematic Application for Passengers and Freight Working Group (TAP/TAF TSI MG)



Work in 2023 was focused on completing the 2022 revision cycle process, as the so-called TSI Megapack passed approval, but without the TAF/TAP TSI. The merger of the TAF and TAP TSIs into one TSI (RU-IM communication) and a separate TAP retail TSI was not adopted as proposed. UNIFE's task in the TSI 2022 revision cycle was to prepare a revision of the TAF/TAP TSI glossaries, which was successfully completed. Final approval at the RISC level was expected in November 2022, but was successively postponed to February 2023, and then later to September 2023. The TAF/TAP TSIs were not approved by that date either. Therefore, it was decided to resume the discussion process of some other changes and now the process of additions and modifications is underway in connection with the proposal for the **EC Implementing Act**, which is being discussed within the EC – ERA Expert Group. Its activities are also supported by sectoral associations, including UNIFE.

Within the **Joint Sector Group (JSG)**, UNIFE also participated in the work related to the eFTI Regulation, which is significantly linked to the TAF TSI. Change management and monitoring of TSI TAF/TAP implementation was continuously followed in 2023, with the process of reviewing and finalising implementation plans of individual actors, which are more specified in the proposed EC Implementing Act. UNIFE's members from the TAF/TAP TSI Mirror Group participated through the JSG in the preparatory phase of the drafts of

the new Regulation on railway network capacity management. This regulation is in the process of approval, and is affecting both TSIs and capacity planning as an essential part of the Timetable Redesign process (TTR).

The TAF/TAP TSI implementation process continued successfully in 2023. UNIFE members are engaged in work on implementation projects within the CEF2 calls published in September 2023.

Within the working groups established by JSG, UNIFE initiated the creation of a working group dedicated to the compliance of DAC development in relation to TAF TSI and other operational regulations and finally OPE TSI. UNIFE also actively promotes proposals in the TAF and TAP TSIs as part of its involvement in the **Steering Group of Europe's Rail System Pillar**. The new JSG CG 10 group, which is working on the preparation of new common interface specifications, continued its activities in 2023. UNIFE's members are considered as important actors in the TAF and TAP TSI community, and continue to contribute throughout the rail transport industry to competitiveness in terms of interoperability and in the System Pillar of Europe's Rail Joint Undertaking.



For more information, please contact UNIFE Technical Affairs Manager Stefanos Gogos at [stefanos.gogos@unife.org](mailto:stefanos.gogos@unife.org)

## b) UNIFE Topical Groups (TG)

### Special Vehicles Ad Hoc Group



UNIFE established an ad hoc expert group focused on “special vehicles” (e.g., on-track machines, infrastructure inspection vehicles, road-rail vehicles) in 2020, following the request of several of its members. This group engaged itself with the existing TSI requirements for these vehicles, resulting in a change request being submitted by UNIFE for the 2023 TSI revision package that aimed to improve the consistency of the **TSI LOC&PAS** regarding special vehicles with the recast Interoperability Directive and European standards that facilitate

their authorisation within the Union. In 2023, the group remained active in the follow-up of the change request with ERA and late TSI amendments with the EC for the final texts of the 2023 TSI revision package.



For more information, please contact  
UNIFE Technical Affairs Manager  
Nicholas Shrimpton at **nicholas.shrimpton@unife.org**

## c) MG/TG Combined Consultations for ERA TWGs

Several other UNIFE Technical Working Groups have continued their activities through combined consultations with the ERA **Topical Working Group** (TWG) activities ahead of the 2023 TSI revision:

- The **ERA Topical Working Group on the Interfaces between Rolling Stock and Fixed Installation (TWG RST/FI)** has consulted the **UNIFE Rolling Stock, Infrastructure and Energy Mirror Groups** (RST MG, INF MG and ENE MGs). This TWG's activities have addressed multiple change requests on the improvement of interface requirements between the LOC&PAS, ENE and INF TSIs, improved TSI requirements with regards to multiple pantograph uses and traffic loads, and elevated provisions when applying the TSIs in case of upgrade or renewal.

- The **ERA Topical Working Group on Composite Brake Blocks (TWG CBB)** has consulted the **UNIFE Noise and Wagon Mirror Groups (NOI MG and WAG MG)** and the **Brakes Topical Group (Brakes TG)**. The activities of this TWG aimed to define a procedure for the demonstration and assessment of the acoustic performance of composite brake blocks at the interoperability constituent level. The defined procedure will close the open point in Appendix F of TSI Noise and amend the Appendix G of WAG TSI in the 2023 TSIs.



For more information, please contact  
UNIFE Technical Affairs Manager  
Nicholas Shrimpton at **nicholas.shrimpton@unife.org**

## 4. UNITEL: Rail Telecommunication Activities



Philippe Citroën giving UNIFE's Keynote Speech at the 2<sup>nd</sup> UIC Global FRMCS Conference

The **UNITEL Committee** brings together UNIFE members with significant telecommunications experience to build a consensus within the sector concerning the development and implementation of the **Future Railway Mobile Communication System (FRMCS)**, the inherent successor of GSM-R as part of the future **European Rail Traffic Management System (ERTMS)**. As the **recognised voice of the European railway telecoms supply industry** since its establishment in 2018, the UNITEL Committee continues to work closely together with their cross sectoral partners and the European institutions to ensure that the development and transition to FRMCS is as smooth and successful as possible.

In 2023, the UNITEL experts have been active in all ERA working groups responsible for the development of future **Control Command and Signalling Technical Specification for Interoperability (CCS TSI)** pertaining to railway telecommunications. In addition to the maintenance activities of the GSM-R specifications, the **UNITEL Technical Group (UTG)** contributes to the preparation of the FRMCS specifications and the introduction of FRMCS provisions to the TSIs in 2023 and beyond. Committee members remain active in the multiple international standardisation organisations responsible for the development of the railway telecommunications system and discussions defining the radio spectrum allocations at European level.

UNITEL experts have been engaged in the ongoing FRMCS R&I activities within the Horizon 2020 **5GRAIL** project, which concluded in 2023, and within the Innovation and System Pillars of **Europe's Rail Joint Undertaking (EU-Rail)**. UNITEL has contributed to the request and definition of a full-scale testing programme focused on first market applications, trials and pilot rollouts of FRMCS within real-life railway operational environments, which is expected to launch in 2024. Such testing activities are seen as an essential step to successfully introducing the new communication system to the railway network.

UNITEL has continued to raise awareness of the rail telecom industry's views regarding the remaining challenges for industrialising FRMCS

solutions before commercial rollout becomes a reality and as such has continued close dialogue with sectoral partners and the European institutions. This included the participation of UNIFE and UNITEL to the 2<sup>nd</sup> UIC Global FRMCS Conference on 7-8 June 2023 in Paris, where the telecom supply industry positions contained in the **UNITEL Committee's GSM-R Long-term Support Statement** and **UNIFE Position Paper on the Successful Transition to FRMCS** were reiterated.



For more information on rail telecommunication activities, please contact UNIFE Technical Affairs Manager Nicholas Shrimpton at **nicholas.shrimpton@unife.org**

## 5. Cybersecurity activities – Cyber Working Group

Cybersecurity represents a major priority on the EU agenda, and is a key area of interest for the European Rail Supply Industry. It is worth underlining that the European Commission has set Cybersecurity as one of its top priorities and a cornerstone for a digital and connected Europe. Therefore, several legislative initiatives aim to improve cybersecurity and cyber resilience to cyberattacks across Europe.

The main priority for the European rail supply industry is to ensure that horizontal and vertical legal instruments are sufficiently coordinated to promote the harmonisation of cybersecurity

regulations, but also to avoid potential overlaps. Harmonisation can be achieved through standardisation, and therefore both regulation and standardisation are seen as the most urgent task in the field of cybersecurity in the rail sector.

In 2023, the **UNIFE Cybersecurity Working Group** has been very active in two different areas of work: regulation, with a particular focus on the **Cyber Resilience Act (CRA)** and all related initiatives, including standardisation, as well as internal activities that contribute to achieving the overall objectives of the Cybersecurity WG.



The first area of work related to cybersecurity regulation focuses on the Cyber Resilience Act. The UNIFE Cybersecurity WG has been very active in drafting position papers, explanatory documents, joint statements and other documents in order to make the horizontal CRA proposal more suitable for the railway sector in its future application. The UNIFE Cybersecurity Working Group has been engaging with co-legislators and stakeholders to adequately convey the main concerns of the European rail supply industry. As the CRA will have its own standard, UNIFE and its members have been very active in the CRA standardisation request. In addition, the UNIFE Cybersecurity Working Group has responded to various public consultations closely linked to the CRA, such as

the ENISA mandate or the consultation on the Implementing Regulation for the ICT Certification Scheme – both under the Cybersecurity Act.

In the second area of work and following the main objectives of the UNIFE Cybersecurity WG, various activities have been carried out, such as the UNIFE Cybersecurity WG technical delegation in Madrid. This included visiting different entities such as Metro de Madrid (metro operator), RENFE (Spanish mainline railway operator) and INCIBE (Spanish National Centre for Cybersecurity) to exchange visions, communicate the priorities and concerns of the European rail utilities industry, while also sharing best practices.



UNIFE Cyber Technical Delegation in Madrid (INCIBE)

In addition, the UNIFE Cybersecurity WG has established a Task Force on a topic that is key for UNIFE members, the **Cybersecurity Management of the Rail Supply Chain**.

It should also be emphasised that one of the most important topics for the UNIFE Cybersecurity WG is the standardisation activity. In this regard, in 2023 the UNIFE Cybersecurity WG has been following the standardisation “CENELEC/Technical Specification 50701 Railway applications – Cybersecurity” and its migration at international level PT (IEC) 63452 - Railway applications - Cybersecurity, which covers signalling, rolling stock and fixed installations. This migration at international level is a great success for the railway sector.

In addition, UNIFE’s Cybersecurity Working Group has continued to engage very actively with relevant stakeholders, including the **European Union Agency for Cybersecurity (ENISA)**, the **European Union Agency for Railways (ERA)** and the **European Commission** through its **DG CONNECT** (in charge of Communications Networks, Content and Technology) and **DG MOVE** (in charge of Mobility and Transport). UNIFE has actively conveyed its messages on cybersecurity priorities and concerns in various forums, such as the UNIFE General Assembly, and ERA and ENISA’s joint conference “Cybersecurity in the Rail Sector” hosted in Athens in November 2023, among others.



For more information on cybersecurity activities, please contact Technical Affairs Manager Marta García at **marta.garcia@unife.org**



# 05.

## R&I Activities

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# 1. Europe's Rail Joint Undertaking



**Europe's Rail Joint Undertaking** is the sector's second large-scale European research joint undertaking, which aims to focus innovation efforts and accelerate the creation

of market-driven solutions, by integrating new and advanced technologies into novel rail tools. The Joint Undertaking supports the development of a strong and globally competitive European rail industry by contributing to the achievement of the **Single European Railway Area (SERA)**.

Europe's Rail is critical to devising next-generation rail solutions that leverage emerging technologies needed to create a digital and green transition in transport.

EU-Rail's objective is to deliver a high-capacity, integrated European railway network, by eliminating barriers to interoperability and providing solutions for full integration by covering traffic management, vehicles, infrastructure, and services.

Research and Innovation (R&I) initiatives conducted by Europe's Rail seek to achieve the project's overall objectives by working on new technologies that will be tested and applied across the entire rail system. To achieve such system-wide developments, the Joint Undertaking's work is structured into two distinct pillars: the **Innovation Pillar** and the **System Pillar**.



## A. Innovation Pillar

The Innovation Pillar steers the Joint Undertaking's R&I activities and is organised into 7 Flagship Areas:



In 2023, seven Flagship Projects (embedded in the Flagship Areas) involving UNIFE members have been actively working on the delivery of the first of Europe's Rail innovations.

For more information on the Flagship Projects, please visit [rail-research.europa.eu/eu-rail-projects](https://rail-research.europa.eu/eu-rail-projects)

Following a Call for proposals for the Flagship Area 7 and exploratory research published in September 2022, eight projects worth €13,1 million against €11,7 million funding, were selected to be funded under this Call for Proposals for Research & Innovation activities within the amended framework of the Europe's Rail Annual Work Programme 2022-2024. Thanks

to the support of UNIFE, several UNIFE members joined some selected consortia.

In October 2023, a Call for Proposals for rail research and innovation activities was published. Projects worth €21,2 million are expected to be funded under Europe's Rail 2023 Call for Europe's Rail, dedicated to network management planning and control, mobility management in a multimodal environment, digital enablers, and as well as for exploratory research and other activities, within the framework of **Europe's Rail Amended Annual Work Programme 2023-2024**. The UNIFE Technical Platform was consulted, and UNIFE supported its members in the process of consortium setting-up.

## B. System Pillar

The System Pillar seeks to deliver a unified operational concept and a functional, safe and secure system architecture. It is also focused on the European railway network compliance with *Directive 2016/797*, which applies to integrate European rail traffic management, command, control and signalling systems. In line with the Directive, the Pillar also considers **Automated Train Operation (ATO)**, in order to ensure that research targets are both commonly agreed upon, there must be shared customer requirements and operational needs. The programme has also positioned itself to be open to evolution needed as use cases shift.

This Pillar is managed by the System Pillar Core Group and is organised into four “Tasks”:

- **EU Rail System**
- **Control Command and Signalling (CCS)**
- **Traffic Management System (TMS)**
- **Digital Automatic Coupler (DAC) / Full Digital Freight Train Operations (FDFTO)**

In 2023 two new specific projects have been included in the System Pillar, **one on EGNOS for Rail and a second one on Harmonised Diagnostics**.

UNIFE is an **active member of the System Pillar Consortium**, which provides the necessary resources and sector input to ensure the System Pillar achieves its objectives set, to contribute to a major transformation of the European rail system and allow the sector to converge on its evolution of an overarching operational concept and system architecture. As a member of the Consortium, UNIFE has involved several of its members in the System Pillar's activities, in order to provide their expertise on technical areas such as Railway system, CCS, TMS, DAC.

The **System Pillar Core Group** continued its activity in 2023 by leading and monitoring the day-to-day work of the System Pillar Tasks, providing content and guidance, managing the

specific inputs and channelling the necessary outputs to the regulations and standards. UNIFE has nominated four experts responsible for representing the European rail supply industry in the core group.

The various “System Pillar Task Groups” have continued their activities in 2023, and aimed at facilitating a targeted, flexible, and rapid delivery of outputs. The System Pillar Consortium has nominated both railways and supplier experts for the System Pillar Tasks and domain teams.

The UNIFE System Pillar Committee - in cooperation with other UNIFE committee and working groups such as UNISIG, UNITEL, the System Pillar Technical Group, and the Freight Committee - is coordinating the association's approach, while contributing to the discussions with other rail associations to deliver the System Pillar's outputs.

In terms of UNIFE's contributions to the delivery of the System Pillar's outputs, we have contributed to the delivery of:

- **The System Pillar “EU Rail and Harmonisation” document:** One of the main goals of the System Pillar is to support the integration of outcomes from the Flagship projects and Task and Domain teams into the harmonisation channels (TSI, EN standards, other normative documents), interfacing with the existing TSI and Standardisation process. The process of collecting, assessing and delivering topics for harmonisation is described in the document EU Rail and Harmonisation.
- **The FRMCS Report** considering the essential role in railway digitalisation of FRMCS and the time pressure for FRMCS readiness, due to GSM-R announced obsolescence, and the development of the FRMCS specifications. This also includes the roles and requirements of the future radio system, which should be considered and aligned by the entire sector, including the European Commission, the European Union Agency for Railways (ERA), and the System Pillar.

- **A subset of the Baseline 4 Release 2 specifications jointly published by EULYNX and the System Pillar:** The System Pillar Trackside Assets Control and Supervision (TACS) domain is responsible for standardising Trackside Assets, primarily based on the work done by the EULYNX initiative.

Additionally, **UNIFE is also a member of the System Pillar Steering Group**, the governing body of the System Pillar.



More information on Europe's Rail Joint Undertaking can be found at [rail-research.europa.eu](https://rail-research.europa.eu). For more information on UNIFE's activities related to Europe's Rail, please contact UNIFE Head of Technical Affairs Nicolas Furio at [nicolas.furio@unife.org](mailto:nicolas.furio@unife.org)

## 2. European funded R&I projects

### A. 5GRAIL

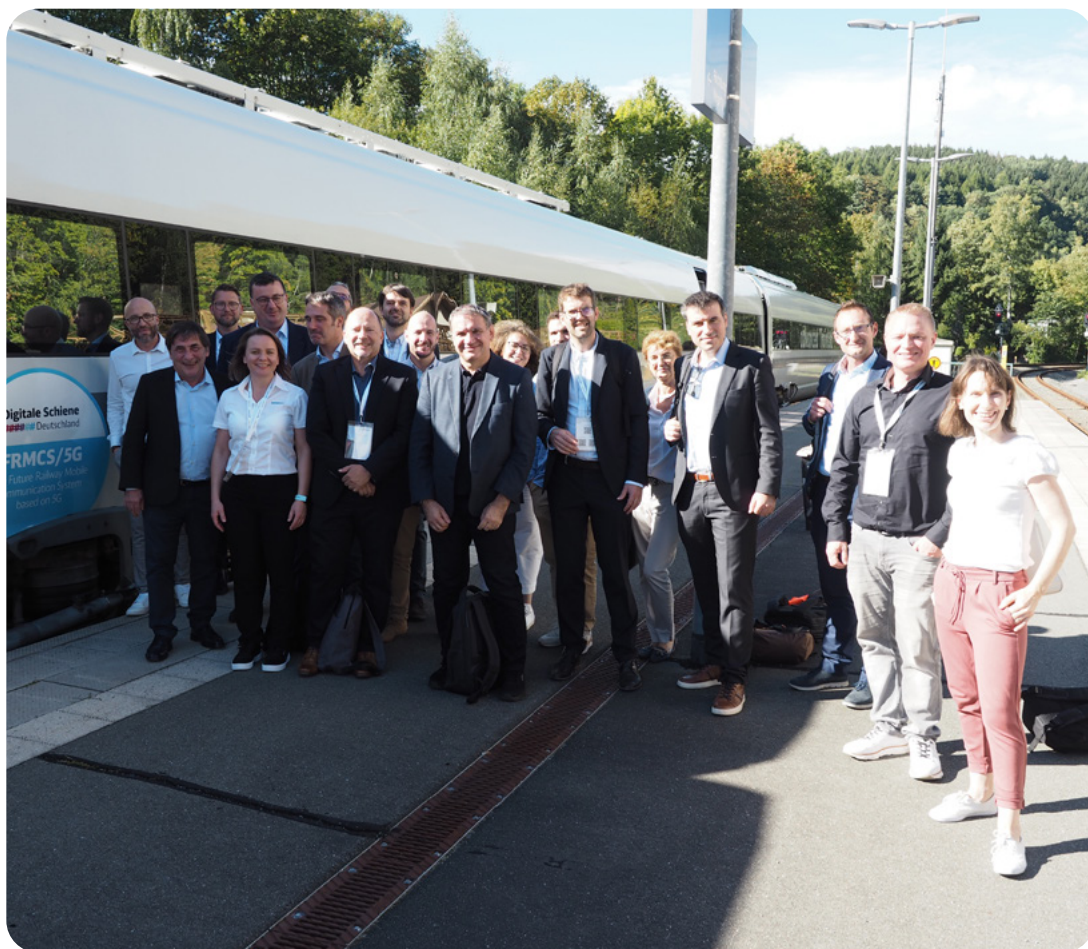


**5GRAIL** is a Horizon 2020 EU-funded project (co-financed by DG CONNECT, the Directorate-General for Communications Networks, Content and Technology), which was launched in November 2020 and has now reached its final stage (project ended in December 2023). The main objective of the project was to validate the first set of specifications for the **Future Railway Mobile Communication System (FRMCS)**. It has achieved that by developing and testing prototypes of the FRMCS ecosystem, for both trackside infrastructure and on-board. Regarding on-board, 5GRAIL aimed at reducing specific equipment costs and installation engineering time by combining all train-to-ground communications by enabling a modular on-board setup based on standardised interfaces and including mainstream 5G components, called TOBA (Telecom On-Board Architecture), in alignment with the sector's technical vision.

Prototypes have been developed based on an agreed set of use cases (FRMCS v1), have been

tested in simulated and real environments, and rolled out in various European sites (France, Hungary and Germany). This was done to ensure compliance and validation for specifications, standards and performance, and consequently guarantee the time to market the FRMCS products planned for 2025, as per the European timeline.

FRMCS will be the 5G worldwide standard for railway operational communications, conforming to European regulation as well as responding to the needs and obligations of rail organisations outside of Europe. It will replace GSM-R, which represents around ~130,000 km of coverage of tracks in Europe, after announced obsolescence by around 2030 due to its current 2G-based technology. GSM-R is one of the components of the **European Railway Traffic Management System (ERTMS)**, which is the European unified system for Control-Command and signalling, included in the European regulation.



5GRAIL partners in front of DB's Lab ICE "advanced TrainLab" for the 5GRAIL demo run in Annaberg, Germany

5GRAIL completed an important milestone by having a successful field demonstration on 20 September 2023. The project partners performed a demo run on the 5GRAIL testbed in Annaberg, Germany, demonstrating several railway operational and performance applications. This included Voice calls including Group Calls, Railway Emergency Calls (in FRMCS, GSM-R, coexistence FRMCS and GSM-R and transition from FRMCS to GSM-R modes), uplink Video Streaming and multiple applications over the same TOBA – Video and Voice Call simultaneously. This was performed via the 5GRAIL FRMCS network (3GPP 5G Stand Alone, Mission Critical).

UNIFE is leading the project's Dissemination, Communication and Exploitation Work Package. This project is also linked to **UNIFE's UNITEL Committee**, which is involved in the development of FRMCS.



For more information on 5GRAIL, please visit [5grail.eu](https://5grail.eu) or contact UNIFE Technical Affairs Manager Stefanos Gogos at [stefanos.gogos@unife.org](mailto:stefanos.gogos@unife.org)



## B. OPTIMA



**OPTIMA (cCommunication Platform for Traffic ManAgeMent demonstrator)** is a project within

Shift2Rail Joint Undertaking 2<sup>nd</sup> Innovation Programme (IP2). The consortium includes research organisations, industrial rail stakeholders, and infrastructure managers actively performing Traffic Management and Traffic Control in dedicated Control Centres.

OPTIMA addressed the design and development of a Communication Platform to manage the link with different services, also known as “multimodal

operational systems”, which supports Traffic Management System (TMS) applications.

The main objectives of OPTIMA are:

- Make use of the Integration Layer to incorporate real-time data from rail business service, external sources, services running in the Application Framework, and operator workstations
- Develop, validate and verify the Communication Platform
- Provision of a fully available and documented communication platform for installing and testing complementary project prototypes



OPTIMA Final conference in Brussels

The final conference for the project was held on 16 February 2023 in Brussels, gathering project consortium members, stakeholders from the rail industry, and various research centres. During the event, the coordinator and the leaders of the different activities presented the main achievements and results of the project. OPTIMA and X2RAIL-4 demonstrated the integration of TMS prototypes into the OPTIMA Communication platform through the integration of both project platforms.

The OPTIMA project finished at the end of April 2023, after completing the validation of OPTIMA

Integration Layer for traffic management demonstrator and testing the Integration Layer with integrated modules (TMS prototypes) from complementary Shift2Rail project X2RAIL-4. The integration of the TMS prototypes was performed through a federation of both projects' integration layers, and the implementation of a C-Wrapper.



For more information on OPTIMA, please visit [www.optima-project.eu](http://www.optima-project.eu) or contact UNIFE Technical Affairs Manager Jose Bertolín at [jose.bertolin@unife.org](mailto:jose.bertolin@unife.org)



## C. TRANSIT



**TRANSIT** (TRAIN pass-by Noise Source characterisation and separation Tools for cost-effective vehicle certification) has been a research and innovation project being conducted within the wider Shift2Rail Joint Undertaking "Cross-Cutting Activities". It started in December 2019 and finished in February 2023.

TRANSIT has provided the railway community with a proven set of innovative methodologies for reducing rail's environmental impact, and improving the level of interior acoustic comfort of railway vehicles. One of the challenges that TRANSIT has addressed is related to vehicle certification and homologation, which requires extensive measurement campaigns on dedicated test tracks, leading to high costs and time losses. TRANSIT has addressed this challenge by providing a methodology to conduct these processes virtually, by providing a reduction of the total costs.

The project has developed accurate and robust source characterisation, separation methods/techniques, and exterior noise simulation tools, which have proven the facilitation of virtual testing and can lead to more cost-effective vehicle certification and homologation methods.

Several noise measurement campaigns have been performed during the life of the project in collaboration with the FINE2 project. The analysis of those outcomes has been made, and the different methods developed in train pass by Noise Source characterisation and separation have been applied.

In addition, TRANSIT hosted its final event, jointly organised with SILVARSTAR, an additional Europe's Rail project investigating the fields of noise and vibrations.



For more information on Transit / noise and vibrations, please visit [transit-prj.eu](https://transit-prj.eu) or contact UNIFE Technical Affairs Manager Marta García at [marta.garcia@unife.org](mailto:marta.garcia@unife.org)

## D. RIDE2RAIL



**RIDE2RAIL** is a project directly linked to Shift2Rail Joint Undertaking's 4<sup>th</sup> Innovation Programme (IP4). The project started

in December 2019 and finished its activities in April 2023. The overall objective of RIDE2RAIL was to develop an innovative framework that would support intelligent multimodal mobility by facilitating efficient connections between flexible and scheduled transport services. The framework has been developed in such a way as to integrate existing collective and on-demand transport services, thereby improving and reinforcing the mobility offer, particularly in rural and low-demand areas. The RIDE2RAIL partners worked on the development of solutions and tools that facilitate the efficient combination of ride-sharing and scheduled transport services - for example, bus and rail. By making it easier to

compare and choose between multiple transport options and services, RIDE2RAIL aimed to make ride-sharing a (more) attractive way to move passengers towards public transportation while fighting both congestion and pollution.

RIDE2RAIL integrated multiple public, private and social data sets and sources with existing transport platforms to promote effective ride-sharing practices by citizens. This makes rail a complementary transport mode that extends public transport and railway networks. The RIDE2RAIL framework for intelligent mobility integrated and harmonised real-time and diverse information about rail, public transport, ride-sharing and crowdsourcing in a social ecosystem, which allowed users to compare and choose between multiple options or services classified by a set of criteria. These criteria included environmental impact, travel time, comfort, and cost according to their preferences, with the ultimate goal to make the travel experience both

more positive for individual users and, globally, more sustainable.

RIDE2RAIL designed, developed and tested in real demonstrators a set of software components for the IP4 ecosystem. This includes advanced *Travel Companion* features and a crowd-based *Transport Service Provider*, which fosters the combination of flexible and regular multimodal

mobility, through easy personalisation in diverse existing environments, facilitating further market uptake. It also delivered a set of validated proof of concepts and business cases envisaging future mobility scenarios, where advanced transport solutions were seamlessly integrated into existing collective transport services (rail and others) in four diverse European cities: **Padua, Athens, Brno and Helsinki.**



RIDE2RAIL Final conference in Brussels

A key challenge of the project was to ensure that the demonstrations were accurately and objectively measured and linked to the wider activities of RIDE2RAIL. The diverse nature of demonstration sites allowed testing in several contexts, meaning that the consistent measuring of performance in these different settings needed to be rigorous. The evaluation activity worked with demonstration sites to establish seven targets and Key Performance Indicators (KPIs), measurable across all locations. A KPI monitoring methodology was designed to capture anonymised, aggregated trip data from within the RIDE2RAIL ecosystem. A short online survey supplemented the anonymous data and captured aspects such as trip purpose, perceptions of choice criteria and traveller demographics. In addition to the KPIs, the quality of the RIDE2RAIL user experience was measured by standardised usability metrics, such as the Software Usability Scale.

All the outputs have been tied to an impact analysis with stakeholders from local authorities, public transit and academia in the four demonstration sites. This impact analysis demonstrates the significant benefits of RIDE2RAIL lie in its potential for increasing public transport ridership and increasing rail connectivity.

The project's final conference took place on 27 April in Brussels, where the RIDE2RAIL partners showcased the project results and explained how best to combine public transport with ride-sharing to reduce private car ownership and make more efficient use of vehicles' capacity.



For more information on RIDE2RAIL, please visit [ride2rail.eu](http://ride2rail.eu) or contact UNIFE Technical Affairs Manager Stefanos Gogos at [stefanos.gogos@unife.org](mailto:stefanos.gogos@unife.org)

## E. RECET4Rail



**RECET4Rail** (Reliable Energy and Cost-Efficient Traction system for Railway) has been a project under Shift2Rail Joint Undertaking's 1<sup>st</sup> Innovation

Programme (IP1), which started in December 2020 and finished in September 2023.

The RECET4Rail research project has investigated and demonstrated new emerging and disruptive technologies to support rail traction systems, in order to improve the overall rail system performance from all points of view while reducing the overall lifecycle exploitation cost.

RECET4Rail's outcomes have contributed to knowledge and competence that support improvement to high Technology Readiness Levels (TRL) of Shift2Rail traction demonstrations developed in the Shift2Rail **PINTA-3** project. This collaboration has paved the way for future key developments in digitalisation applied to traction, environmental sustainability (especially devising carbon-free traction systems) and reinforcement of standardisation to lower complexity and costs.

The project has been investigated in four different workstreams with various tests and prototypes as described below:

- 3D additive manufacturing and new manufacturing technologies with the testing of a small scale prototype of a 3D printed wavy pin
- Wireless Dynamic Charging for urban vehicles based on silicon carbide (SiC) semiconductors and high power lithium-ion batteries sizing including a prototype testing
- Investigations on the reliability of traction components and lifetime mechanisms have shown that SiC semiconductors are highly reliable under various extreme conditions
- Big Data, Artificial Intelligence (AI) for smart and predictive maintenance of traction systems, including the development of traction systems smart maintenance algorithms, and models for predictive and preventive maintenance

In September 2023, RECET4Rail hosted its final event in Brussels, where different stakeholders attended and could hear about all the outcomes that RECET4Rail has achieved and contributed for next-generation traction systems.



For more information on RECET4Rail, please visit [recet4rail.eu](https://recet4rail.eu) or contact UNIFE Technical Affairs Manager Marta García at [marta.garcia@unife.org](mailto:marta.garcia@unife.org)

## F. GEARBODIES



The **GEARBODIES** project started in December 2020 and was completed in June 2023. The project aimed to develop new methods and technology for the inspection of new materials

in carbody applications, as well as to employ innovative approaches for developing novel concepts with enhanced lifetimes for key running gear components.

GEARBODIES worked towards the development of cost-efficient and reliable trains by contributing with specific innovations towards the **Shift2Rail Technology Demonstrators (TD)** of Innovation

Programme 1 (IP1), through two dedicated work streams:

- **Work Stream 1 (WS1):** Inspection methods for carbodies using new materials (TD1.3) to develop effective and affordable solutions for inspecting carbodies which are using new lightweight materials.
- **Work Stream 2 (WS2):** Innovative approaches for developing running gear components (TD1.4), which aim to employ innovative approaches, tools and methods for developing novel concept designs of running gear components. This includes with added benefits of extended lifetimes, and low LCC, whilst maintaining or reducing current levels of reliability, noise emissions, and track damage.



GEARBODIES Final conference in Brussels

The two Work Streams of GEARBODIES actively contributed towards improving the efficiency, safety and competitiveness of the European railway sector by supporting the implementation and exploitation of innovative materials and practices. This will have downstream and profound impacts on the cost-efficiency and reliability of the sector, as well as on its energy consumption and infrastructure maintenance. Inspection time is significantly reduced, while the use of new materials and systems enables an increase in the lifetime of components and lower maintenance costs.

The common element of WS1 and WS2 is the contribution towards the improvement of rolling

stock maintenance processes through a) the use of highly automated non-destructive testing (NDT) techniques for the inspection of composite carbody shells (WS1), and b) the development of running gear components with enhanced performance (WS2).

The project was officially closed following its final conference. Which took place in Brussels on 21 June 2023.



For more information on GEARBODIES, please visit [www.gearbodies.eu](http://www.gearbodies.eu) or contact UNIFE Technical Affairs Manager Stefanos Gogos at [stefanos.gogos@unife.org](mailto:stefanos.gogos@unife.org)



## G. SAFE4RAIL-3



**Safe4Rail-3** (Advanced safety architecture and components for next-generation TCMS in Railways) is a research project within the Shift2Rail Joint Undertaking 1<sup>st</sup> Innovation Programme (IP1). The consortium, coordinated by UNIFE, works on the development of "Technical solutions for the next generation of Train Control and Management System - TCMS".

The activities are based on the development of three technological pillars (**Drive-by-Data - DbD**, **Functional Distribution Framework - FDF**, and **Wireless TCMS**) aimed at advancing the maturity of the technologies and devices needed for the next generation of TCMS to achieve TRL 6/7. The project also aims at performing a Safety and Security assessment to be considered for upcoming standardisation activities. All these technological developments will be further validated in two real demonstrations in close cooperation with other Shift2Rail projects.

The high-TRL devices developed in Safe4RAIL-3 for the Wireless Train Backbone have been integrated and tested in the laboratory using

simulators to simulate situations with two consistent approaches, triggering TCMS communications. Regarding high-TRL Wireless Consist Network devices, tests have been carried out in a real train by CONNECTA-3 partners, and Safe4RAIL-3 partners who provided support during the preparation, deployment and analysis of results.

The Safety and Cybersecurity assessments together with the methodology to develop Safety Functions were completed before the end of the project in collaborative work with CONNECTA-3. Six fundamental safety and cybersecurity-related concepts were assessed, covering all technical sectors of the Safe4Rail-3 Next Generation TCMS.

Safe4Rail-3 proposed guidelines for the development of Safety Functions, which can serve as a reference for sub-system suppliers.

The Safe4Rail-3 and CONNECTA-3 combined final conference took place on 7 November 2023 in San Sebastian.



For more information on Safe4RAIL-3, please visit [www.safe4rail-3.eu](http://www.safe4rail-3.eu) or contact UNIFE Technical Affairs Manager Jose Bertolín at [jose.bertolin@unife.org](mailto:jose.bertolin@unife.org)

## H. DAYDREAMS



**DAYDREAMS** (Development of prescriptive Analytics based on Artificial Intelligence for iAMS) is a project within Shift2Rail JU Innovation Programme 3 (IP3), which started its activities in December 2020 and was completed in May 2023.

DAYDREAMS' overall objective was to advance - in line with S2R JU's vision - on the integration and use of data and artificial/human trustworthy intelligence, together with context-driven **Human Machine Interface (HMI)** for prescriptive **Intelligent Asset Management Systems (IAMS)** in railway by:

- Advancing the maintenance approach by moving from preventive and predictive asset management towards prescriptive asset management
- Largely improving the decision-making process by developing multi-objective decision optimisation approaches, which take into account all possible, and often conflicting, implications of Intelligent Asset Management Systems decisions in the railway environment (e.g. on Traffic Management System, Energy, Freight, etc.)
- Reinforcing the role of the person-in-the-loop, by designing and developing advanced context-driven **Human Machine Interfaces**, which allow context- and risk-aware multiple options decision-making processes that



are supported by the information on data sensitivity and robustness. The HMI will allow the person-in-the-loop to:

- Properly access and visualise predictions/metrics and models
- Assess why and how the model predicts something ("opening the black box")
- Steer models by setting parameters
- Evaluate alternatives using parameter steering, and extending this process through speculative execution

While previous projects involving DAYDREAMS partners, such as **IN2RAIL** and **IN2DREAMS**, have successfully addressed condition-based and predictive maintenance approaches that improved traditional reactive and preventive maintenance methodologies, DAYDREAMS exploited state-of-the-art technologies to tackle complexity and exploit the business value of prescriptive approaches already used in other industrial fields. DAYDREAMS also increased trust by utilising blockchain and smart technologies inherited from IN2DREAMS to track and monitor the IAMS adoption and use in multi-actor environments.



DAYDREAMS Final conference in Brussels

DAYDREAMS has reached its objectives through the design, development, and integration of three technological pillars:

- **AI and Machine Learning** for asset management prescriptions based on asset status in nowcasting and forecasting. These technologies were targeted to model the entire maintenance process, through the use of both endogenous and exogenous (e.g. environmental) data, including asset-related physical models of the phenomena and human behaviour/decisions/actions, which holistically describe or affect the asset management process
- **Multi-objective Optimisation** (including AI- and stochastic-based methods). These technologies were targeted to prescribe optimal decisions to railway stakeholders by ranking a list of possible options, together with related risks. Further to this, it considered both stakeholders' and maintenance process

metrics, considerations, preferences, KPIs and constraints.

- **Context-driven HMI.** These technologies allow the improvement of the effectiveness of information transfer (e.g. prescribed action with associated KPIs and uncertainties) to decision-makers and allow the collection of stakeholders' behaviour, as to obtain an effective risk-aware human-in-the-loop integrated system.

The results along with the IAMS prototype were demonstrated and the way forward for exploitation was discussed during the project's final conference, which took place on 24 May 2023 in Brussels.



For more information on DAYDREAMS, please visit [www.daydreams-project.eu](http://www.daydreams-project.eu) or contact UNIFE Technical Affairs Manager Stefanos Gogos [stefanos.gogos@unife.org](mailto:stefanos.gogos@unife.org)

## I. STREAM



**STREAM** (Smart Tools for Railway work safEty and performAnce iMprovement)

has been a Shift2Rail JU Innovation Programme 3 (IP3) project that has been dedicated to delivering a resilient, consistent, cost-efficient and high-capacity European rail infrastructure. The project started in December 2020 and finished in August 2023.

The project's activities have been focused on delivering two methods – or Work Streams – to improve competitiveness in railway maintenance and construction operations:

- The **first workstream** has delivered a control platform designed to convert traditional heavy-duty hydraulic machines (e.g., excavators) into robotic systems
- The project's **second workstream** has delivered a modular, wearable, active exoskeleton to reduce the risk of injury due to physical overload

The project's outcome was achieved by delivering the two applications to improve railway maintenance operations - a control platform with LiDAR that has been installed in a heavy excavator machine, and also an exoskeleton to support rail workers in heavy activities with a high TRL.

In June 2023, the project hosted its final event in the Port of Tarragona, where a range of stakeholders attended, including high-level representatives of the Port of Tarragona. The project showed impressive results, presenting a demonstration on tracks with the excavator and the exoskeleton.



For more information on STREAM, please visit [streams2r.eu](https://streams2r.eu) or contact UNIFE Technical Affairs Manager Marta García at [marta.garcia@unife.org](mailto:marta.garcia@unife.org)

## J. IN2ZONE



**IN2ZONE** (The next generation of railway transition zones) was a project under Shift2Rail

JU Innovation Programme 3 (IP3) that started in December 2020 and finished in May 2023. The main objective of the project has been to enable infrastructure to boost the economic viability, sustainability and resilience of the European rail network.

IN2ZONE partners have designed and tested a prototype next-generation transition zone solution that provides a step-change in track support conditions, resulting in a drastic reduction in maintenance interventions. This has been achieved by proving the different tests that proved support in:

- Reducing in-service affecting delays due to fewer track geometry defects and associated failures (for example, due to track settlement or a localised loss of rail support)

- Increasing network capacity in terms of more frequent trains and higher speeds, due to improved vertical geometry and reduced degradation rate
- Reducing lifecycle costs through the reduction of maintenance, extending the operational life of both the track and its associated assets
- Lowering noise and vibration at the transition locations, by providing a sustained smooth transfer between areas of differing support stiffness
- Providing a solution for optimum and sustained track support conditions that is compatible with the next-generation track solutions already developed

Consequently, the project enables the transition zone solution to self-correct minor vertical track geometry irregularities or faults. Further, the solution architecture is modular to ensure the benefits are realised in minimal time.

The final event of the project took place on 31 May in Budapest, where the final results of the analysis and the test were presented to the attendees. In addition, the participants had the opportunity to see the pilot installed on-site, on the Southern Bridge in Budapest.



For more information on IN2ZONE, please visit [www.in2zone.eu](http://www.in2zone.eu) or contact UNIFE Technical Affairs Manager Marta García at [marta.garcia@unife.org](mailto:marta.garcia@unife.org)

## K. IP4MAAS



**IP4MAAS** is a project under Shift2Rail JU's Innovation Programme 4 (IP4) which was launched in December 2020 and finalised its activities in June 2023.

Within IP4, more than ten projects have created a wide array of technologies that tackle various aspects of the traveller experience. Those technologies tackle the interoperability of **Transport Service Providers' (TSPs)** services, travel shopping, booking and ticketing, trip tracking, travel companion technologies, and business analytics. Various tools have been tested in multiple locations around Europe to retrieve user feedback and improve upon those critiques. A large toolset of proven technologies

has been developed in IP4, with a need to go to the next level and be implemented in large-scale products.

To that end, IP4MAAS assisted the IP4 projects in demonstrating the technologies at an unprecedented level, at six different locations in Europe and with the cooperation of more than ten transport operators (Public Transport and Mobility-as-a-Service), authorities and agencies. IP4MaaS developed the scenarios for the demonstrations and a thorough assessment strategy that evaluates both the performance and impact of the technologies on users and the environment in urban and suburban setups. IP4MAAS also created strategic plans for the demonstrations that were updated in two iterations, which led to two demonstration phases.



IP4MAAS Final conference in Barcelona

Furthermore, the project provided recommendations on the promotion and transferability of the technologies to other locations in Europe. IP4MAAS organised and monitored one of the largest demonstrations of technology in the life of the project, and expects its findings to be used as a baseline for future demonstrations and testing, which potentially involves a diverse group of demonstration partners.

On 6 June 2023, IP4MAAS held its final conference at the UITP Global Public Transport Summit in Barcelona, showcasing the results of years of

collaboration between 26 European partners. The event was organised jointly with other two Shift2Rail projects, very much linked to IP4MAAS: **ExtenSive** and **CONNECTIVE**, demonstrating once again that outstanding results are achieved only through intense sector collaboration.



For more information on IP4MAAS, please visit [www.ip4maas.eu](http://www.ip4maas.eu) or contact UNIFE Technical Affairs Manager Stefanos Gogos at [stefanos.gogos@unife.org](mailto:stefanos.gogos@unife.org)

## I. SILVARSTAR



**SILVARSTAR** (SoIL Vibration and AuRalisation Software Tools for Application in Railways) has been a 2-years

collaborative project that fits into the "*Cross-Cutting Activities*" category of Shift2Rail JU, which started in November 2020 and finished in February 2023.

This project has provided the railway community with software tools and methodologies, in order to assess the noise and vibration environmental impact of railway traffic on a system level.

The project has developed two software tools for application in soil vibration and in auralisation within the railway sector, in its two different workstreams:

- The **first workstream** has been focused on the prediction of ground vibration through the development and validation of a hybrid (numerical and experimental) approach, that has developed a tool to predict the ground vibration
- In the **second workstream**, has worked on auralisation and visualisation, and has developed a tool based on a physics-based model to synthesize railway noise in high-quality audio

During 2023, SILVARSTAR hosted its final conference in a joint event with TRANSIT – a parallel project that has shown impressive results in the field of rail noise.



For more information on SILVARSTAR, please visit [silvarstar.eu](http://silvarstar.eu) or contact UNIFE Technical Affairs Manager Marta García at [marta.garcia@unife.org](mailto:marta.garcia@unife.org)

## m. Project RAILGAP



**RAILGAP** (RAILway Ground truth and digital mAP) is a Horizon 2020 project that started in January 2021. The project aims at developing innovative High Accuracy, High Precision Ground Truth and Digital Maps, which are essential elements of a European Global Navigation Satellite System (EGNSS) train positioning system and a Validation and Verification Environment.

A collection of user needs was part of the preparation of the campaign during 2022, with the consortium eventually launching in Spain in 2023, with the corresponding data cloud storage. The measurement campaign also began in Italy at end of 2023. The Ground Truth and the Trackside Digital Map activity was the first task related to their specification, which was also undertaken in full this year.

The project requested an extension due to a measurement campaign delay, which means further completion on the Ground Truth and Trackside Digital Map design, implementation and validation will take place in 2024.



For more information on RAILGAP, please visit [railgap.eu](https://railgap.eu) or contact UNIFE Technical Affairs Manager Jose Bertolín at [jose.bertolin@unife.org](mailto:jose.bertolin@unife.org)

## n. CLUG 2.0



**CLUG 2.0** (CLUG Demonstration of Readiness for Rail) is a Horizon Europe project that started in February 2023, which was coordinated by UNIFE and composed of the same partners as the CLUG project. The consortium includes the main European rail infrastructure managers and suppliers from the **Rail and Space Sectors**, who possess strong expertise and background on the applicability of the **Global Navigation Satellite System** (GNSS) to Rail safety applications.

The project continues the activity of complementing the existing **European Train Control System (ETCS)** odometry systems by using GNSS to enable absolute safe train positioning, while also transforming the way of train localisation by demonstrating a GNSS-based multi-sensor fusion architecture.

Since February 2023, the consortium consolidated the system definition and

requirements specification including user needs, operational context, initial assumptions, system boundary and further requirements. The Operational scenarios include nominal and degraded scenarios in regard to Start of Mission and track selectivity.

The RAMS analysis activity used EUG-LWG as a basis, as well work performed in the CLUG project and OCORA initiative, while also conducted with respect to Common Safety Methods and **CENELEC standards**. The public deliverables "**first CLUG LOC-OB (Localisation On-Board) System Context analysis and RAMS Plan and LOC-OB Preliminary Hazard Analysis**" were delivered at the end of November 2023.

The design and development activities of the LOC-OB functional architecture, as well as the Integration and Testing tasks began this year. Two trains were equipped in Switzerland with the necessary equipment to collect raw data. As of late 2023, they were immersed in the validation phase and will be in operation by 2024.





CLUG2.0 Kick-off conference in Prague

The CLUG 2.0 project launch meeting was held at EUSPA's premises in Prague on 8 March 2023. The event gathers project partners, EUSPA Project Officer and reviewers, as well as Europe's Rail Joint Undertaking representatives. It was the first time project partners met in person, which provided a great opportunity to present and discuss the main aspects of the project within the consortium together with the EUSPA representatives (funding entity).



For more information on CLUG 2.0, please visit [www.clug2.eu](http://www.clug2.eu) or contact UNIFE Technical Affairs Manager Jose Bertolín at [jose.bertolin@unife.org](mailto:jose.bertolin@unife.org)

# 3. UNIFE Freight Committee and Digital Automatic Coupling (DAC)

**UNIFE's Freight Committee** has actively followed up on the development of the **Digital Automatic Coupling (DAC)** in 2023. DAC is a breakthrough technology needed for the future of rail freight in Europe. By allowing automatic coupling and uncoupling, and by digitalising freight wagons and locomotives, DAC is paving the way for safe, efficient, reliable, and competitive rail freight operations. Its success is also relying on substantial financial support from the European Commission and the Member States, in order to deploy this technology in a coordinated way across Europe.

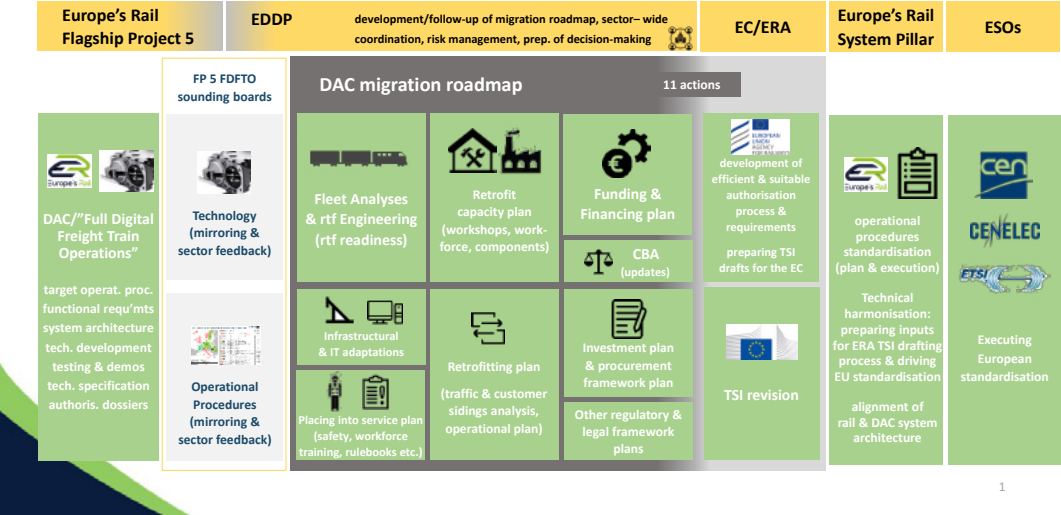
The **European DAC Delivery Programme (EDDP)** aims at effectively and successfully implementing DAC for European Rail Freight, in collaboration with experts representing manufacturers, rail operating companies, wagon keepers and the European Commission. UNIFE is a member of EDDP's Supervisory Board. The **DAC Sector Statement signed by UNIFE and other major European rail associations and companies** was sent to the European Commission in July 2023. This statement shows the commitment of the sector to deploy DAC technology across Europe, for a digitalised and more competitive rail freight industry and network. UNIFE was also present at the TRAKO fair in Gdansk, Poland, to show its support to DAC's technology development, and Europe's Rail Joint Undertaking's (ERJU) R&I freight activities, alongside interim Executive Director Giorgio Travaini.

**DACcord project** is the continuation of the **DACcelerate project**, with updated goals still under the framework of the European DAC Delivery Program (EDDP). The overall goal of the DACcord project is to support Europe's Rail Joint Undertaking in the preparation of the migration and implementation of DAC in Europe, with the following objectives:

- Enable a coordinated and efficient roll-out of DAC in Europe
- Set up a detailed migration and implementation plan for DAC
- Ensure political support for the implementation of DAC throughout Europe, by disseminating and communicating on the technology, and participating in or organising events.

In 2023, the work on DAC also involved UNIFE through Europe's Rail Joint Undertaking's Innovation Pillar and System Pillar workstreams. The System Pillar Task 4's objectives are to deliver the specifications and architecture of a harmonised **Single European Railway Area**, which is fit for full digital freight train operations. The Freight Committee facilitated the monitoring and distribution of information on the progress of the association's wider membership, while also supporting members active in one of the workstreams.

Relation of FP5-TRANS4M-R, EDDP, System Pillar and Sounding Boards



The European DAC Delivery programme. Source: Europe's Rail Joint Undertaking

UNIFE and its Freight Committee are also closely monitoring the legislative process for the **Greening Freight Transport package**, which the Capacity regulation and **Weights and Dimensions Directive** was proposed by the European Commission in July 2023. UNIFE is also following closely the **Combined Transport Directive** proposal.

For more information on DAC, please contact UNIFE Technical Affairs Manager Hugo Tabouret at [hugo.tabouret@unife.org](mailto:hugo.tabouret@unife.org)

# 4. European Rail Research Advisory Council (ERRAC)

ERRAC's Chair **Roland Moser** (Chief Technology Officer, SBB), and ERRAC's Secretary **Marta García** (UNIFE Technical Affairs Manager) have been working on implementing the priorities of 2023, while planning for the year ahead, together with the rest of the ERRAC stakeholders.

During ERRAC's plenary events in 2023, representatives from the European Commission's **DG MOVE and DG RTD, as well as Europe's Rail JU**, reported on the progress of the Horizon Europe work programme. This included broadcasting and reporting on Europe's Rail Joint Undertaking activities, which provided ERRAC members with the latest information on the R&I environment for the rail sector.

During the first quarter, ERRAC actively contributed with various research and innovation topics for the exploratory call of Europe's Rail JU, which was published in the third quarter of 2023.

In addition, ERRAC has been working on the **Rail Research and Innovation Agenda (RRIA)**, the crucial document which will outline future European rail research activities, set to be unveiled in Berlin in September 2024 at InnoTrans. The document defines the new priorities for rail research and innovation in the sector from a technical and operational innovation point of view. This perspective will be required to transform the railway sector and its role in addressing the needs of railway passengers, the economy and society as the most sustainable mode of transport.

Furthermore, ERRAC has been very active in the preparation of the **Transport Research Arena (TRA)**, which is co-organised by the European Commission and will be held in **April 2024 in Dublin**. During TRA 2024, rail will be strongly represented, which will help outline the challenges, opportunities and visions for the years ahead.

In addition, information on potential calls of application regarding the rail sector have been consolidated in a presentation, which was shared with ERRAC stakeholders.

As a result, ERRAC has received several expressions of interest covering Horizon Europe calls, which lead to ERRAC engaging with interested stakeholders in the different calls.



For more information about ERRAC's activities, please visit [www.errac.org](http://www.errac.org) or contact Marta García, UNIFE Technical Affairs Manager, and ERRAC Secretary, at [marta.garcia@unife.org](mailto:marta.garcia@unife.org)







# 06.

## Signalling and ERTMS

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# 1. Overview



Regarding signalling, two topics dominated 2023. In the first quarter, the revision of the CCS TSI concluded, marking the culmination of six years of dedicated work. Notwithstanding, complementary activities concerning the CCS

TSI application guide followed in the further course of the year.

The second main topic concerns the signalling standardisation work organised in the System Pillar of Europe's Rail Joint Undertaking. Having completed the first year, we can affirm that the System Pillar is an effective standardisation platform for the railway sector and that it will remain an important subject for the next years.

## 2. ERTMS communications activity

### UIC FRMCS conference

UNIFE participated in the **Future Railway Mobile Communication System (FRMCS)** conference in June, organised by UIC. The event was the opportunity to discuss the current state of play and next steps for the standardisation and implementation of FRMCS.

FRMCS will substitute GSM-R as radio bearer for ETCS. The system is therefore of vital importance for the ETCS suppliers. UNIFE Director General Philippe Citroën highlighted in his key note speech the importance of FRMCS for the entire

railway sector. Olivier Eudes from UNITEL explained in his presentation the support of the supply industry for the transition from GSM-R to FRMCS, as FRMCS will be a game changer for the railway digitalisation and for the evolution of FRMCS specifications. UNISIG General Manager Klaus Mindel expressed the view and expectations of the UNISIG members during the conference in order to consider actual market demand for a prioritised and structured validation and consolidation of the FRMCS specifications.



**Klaus Mindel**, UNIFE's UNISIG General Manager at the Future Railway Mobile Communication System (FRMCS) conference

## Platform of Rail Infrastructure Managers in Europe (PRIME)

The **Platform of Rail Infrastructure Managers in Europe (PRIME)** invited a group of speakers for a strategic panel discussion at their assembly in December. The agenda focused on the deployment of ERTMS and its associated costs. Michael Peter, Chair of UNIFE and CEO of Siemens Mobility and Klaus Mindel, UNIFE's UNISIG General Manager joined the panel, using

the opportunity to explain that cost drivers have to be addressed by all stakeholders in a holistic and coordinated approach.

The PRIME Platform was established between European Commission's DG MOVE and the Infrastructure Managers at the end of 2013 with the objective to improve the cooperation of rail infrastructure managers across borders, support implementation of European rail policy and develop performance benchmarking for the exchange of best practices.



PRIME Strategic panel discussion **Matthias Ruete** (EU ERTMS Coordinator, European Commission), **Josef Doppelbauer** (Executive Director, European Union Agency for Railways), **Michael Peter** (Chair UNIFE, and CEO Siemens Mobility), **Volker Hentschel** (Head of ERTMS Rollout in Germany / DB), **Klaus Mindel** (UNIFE's UNISIG General Manager), Bernard Gustin (CEO, Lineas), **Kristian Schmidt** (Director Land Transport, DG MOVE, European Commission)

# 3. Progress on the joint European platform for the future signalling and traffic management system: The latest updates on the System Pillar

The System Pillar is of utmost importance for the entire rail sector. In simple terms, the ERTMS standardisation is extended to the entire signalling system, including interlocking and traffic management. Such a holistic approach is important to address the challenges the railway sector is facing. At the same time, the ambitions and scope of the standardisation has to be managed with the consideration of its economic

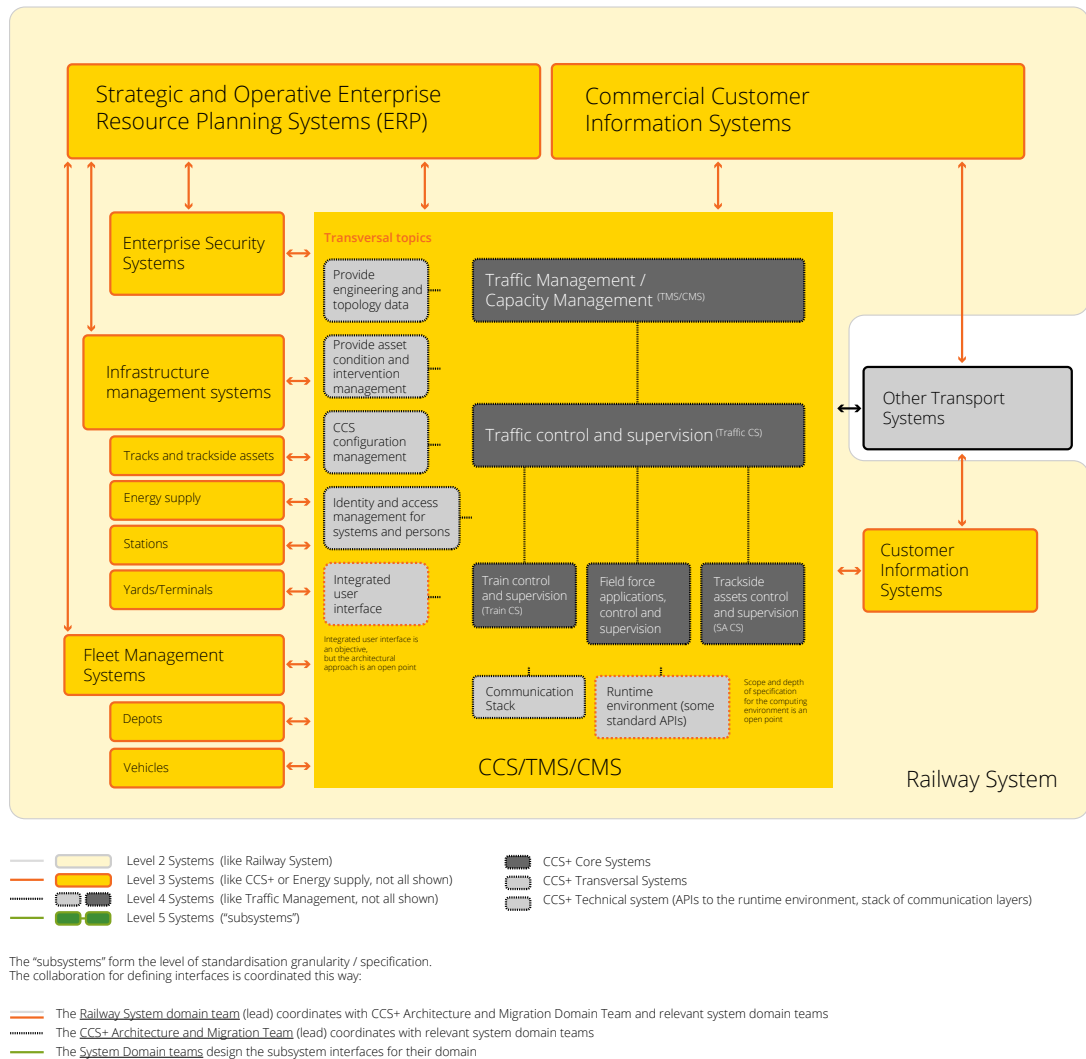
impact. This explains why the System Pillar activities are a top priority for UNISIG.

Notable accomplishments in the first year involve the development of a CCS/TMS/CMS top-level target architecture defined for ETCS Level 2 without trackside signals. The diagram below depicts this architecture in its context.

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The Traffic Management / Capacity Management System on the top of the architecture diagram provides permanent control across the network, automatically setting routes for trains and logging train movements, as well as detecting and solving potential conflicts. The Traffic control and supervision subsystem holds the vital, centralised signalling functionality. This could be an ETCS Level 2 implementation, with an ETCS / interlocking overlay, with or without virtual blocks or a more integrated ETCS Level 2 moving block solution type. Below we find the Train Control

and Supervision subsystem, which is on-board the trains (e.g. ETCS and ATO on-board are part of the Train C&S). The Trackside assets Control and Supervision covers the decentralised control of interlocking field elements, like level crossing and point machines. Other field elements are included in the Field force applications control and supervision subsystem. Beside these control and supervision elements, transversal topics are developed in Task 2 and 3, e.g. standard models to represent engineering and topology data.



Out of the deliverables completed during the first year of Lot 2, Task 2 and 3 activities, the following ones are particularly important:

- **CCS/TMS/CMS high level architecture**

The top level logical architecture for the CCS has been consolidated, which is an important achievement as it provides direction for the other domains. Another key deliverable is the granularity concepts and principles document, that defines to which extent modularisation

shall be performed in the system and provides criteria for defining sub-systems in an architecture

- **TMS/CMS**

A first version of a TMS/CMS system concept, system definition and system capabilities, as well as a TMS-CCS interface specification was delivered. Another important deliverable is the apportionment of the Operational Processes to CMS and TMS



- **Train Control and Supervision architecture**

Significant progress was achieved in the on-board Train Control and Supervision domain, especially in the on-board CCS architecture. Here we could find an agreement with railways e.g. how OCORA requests will be managed in the System Pillar

- **Traffic Control and Capacity Management**

The domain has analysed the foreseen game changers (Moving Block, etc.) in terms of their maturity and applicability to fulfil the harmonised operational scenarios and high-level objectives (e.g. performance increase, cost reduction, shorter deployment time). Based on the Single European Railway Area (SERA) requirements, UNISIG members derived the target functionality for the Traffic Control and Capacity Management for an alignment with the railways

- **Trackside Assets Control and Supervision**

Interlocking trackside asset interface specifications were published as System Pillar documents. Originally Eulynx specifications,

they were jointly amended, reviewed and finally approved by Europe's Rail Joint Undertaking. These specifications build an important basis for railways intending to renew their interlockings and preparing themselves for the introduction of the ETCS Level 2 target architecture

The operational harmonisation for signalling and the migration domains proved to be specifically challenging. This is actually not a surprise, as these topics have a strong impact on the core activities of the Member States railways.

For Lot 3, which contains CCS TSI specification maintenance activities, the contract was signed in the middle of 2023. The overall ambition for this contract is to deliver the CCS TSI application guide and to close open points. Additionally, it aims to facilitate the consolidation of FRMCS specifications and the seamless integration of ETCS and FRMCS. Another important activity of Lot 3 is the transfer of Lot 2 deliverables into the European Union Agency for Railways (ERA) CCM process for the TSI CCS.

## 4. ERTMS: Technical achievements

### CCS TSI 2023

Apart from specification error corrections, the technical specifications of the CCS TSI 2023 include a number of important updates:

- **Automatic Train Operation (GoA1&2)**

This new feature establishes an interoperable automatic train operation, assuming a driver is on board. Due to its dispositive speed control, train punctuality and energy consumption will be improved.

- **Defined onboard architecture**

After intensive discussions with the Member States railways and the European Union Agency for Railways (ERA), we could agree on more structured onboard signalling architecture and a standardised interface to the vehicle. This is a fundamentally important step to support cost efficient implementation and maintenance of on-board ERTMS.

- **ETCS Level 2 including former ETCS Level 3**

From a train's driver point of view, and regarding

some technical aspects, ETCS L2 and ETCS L3 do not differ very much. Even though disputed until the end, the RISC accepted the proposal of DG MOVE to merge the former L2 and L3 levels into the new ETCS L2.

- **FRMCS Version 1**

The first version (V1) of the new radio bearer standard for railway applications – FRMCS – is part of the new CCS TSI. After the publication of V2, the V3 will be consolidated, building the basis for the FRMCS rollout.

- **Single Set of Specifications**

Former CCS TSI included more than one ETCS baseline, where each baseline defined one complete set of specifications, with more than one System Version. To reduce the number of specification sets, the new CCS TSI contains only the Baseline 4 with one single set of specifications and the System Versions 2.1, 2.2 and 3.0.

The UNISIG Working Groups continued to finalise the technical specifications within the first half of 2023, which was a substantial volume of work. This was only possible thanks to the strong commitment of our UNISIG members and the contributions of their experts. Under the leadership of the European Union Agency for Railways (ERA) and the ETCS Extended Core Team, together with UNISIG and the ERTMS Users Group, the consolidated specifications were delivered on time. In July 2023, the technical documents for the CCS TSI were delivered by ERA to the European Commission. Lastly, on 8 September 2023, the CCS TSI 2023/1695 was published in the Official Journal of the European Union (OJEU) as a Commission Implementing Regulation (EU) 2023/1695. Also published of note on 10 August 2023, was the technical specification for interoperability, relating to the control-command and signalling subsystems of the rail system in the European Union. This was a repeal of Regulation (EU) 2016/919.

The finalisation of the regulatory part of the CCS TSI 2023 took place during the first three months of 2023, concluded by a RISC meeting on 29 and 30 March 2023. Previously, multiple bilateral meetings with the European

Commission, EC Expert Group, and RISC with UNIFE's participation, were used to improve the regulatory part. In agreement with CER, UNIFE organised for the very first time a CCS TSI workshop with Member State representatives, which was an opportunity for a direct exchange with RISC members.

Lastly, the RISC voted at the end of March 2023 in favour of the CCS TSI. Progress was achieved on critical topics, especially for example the "specification error correction regime", "partial fulfilment" and the Single Set of Specifications" - the regulatory part of the CCS TSI has become overly complex. This shall be an incentive for the simplification of the next CCS TSI version.

On 8 September 2023, the TSI package including the CCS TSI was published in the OJEU and entered into force on 28 September 2023.



For more information about Signalling and ERTMS activities, please visit [www.ertms.net](http://www.ertms.net) or contact Klaus Mindel, UNISIG General Manager at [klaus.mindel@unife.org](mailto:klaus.mindel@unife.org)





07.

# ERWA: The UNIFE Railway Wheels Committee

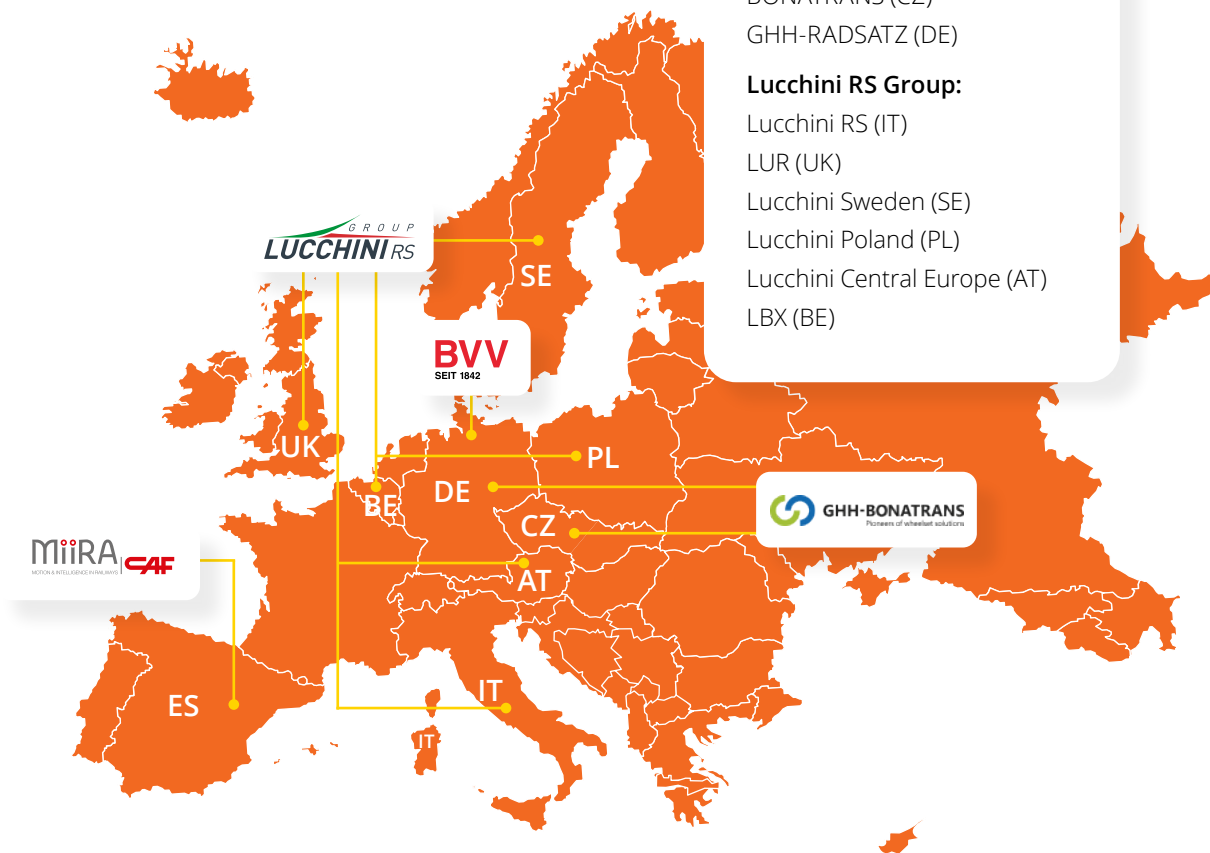


UNIFE's Railway Wheels Committees' (ERWA) main mission is to contribute to the development of standards, further promote safety and environmental friendliness, while developing innovations and fostering both quality and best practices in the European market. ERWA members bring together over 4.300 employees in workplaces across Europe.

The committee consists of the following members:

- **BVV** (DE)
- **CAF MiiRA** (ES)
- **GHH-BONATRANS Group:** BONATRANS (CZ), GHH-RADSATZ (DE)
- **Lucchini RS Group:** Lucchini RS (IT), LUR (UK), Lucchini Sweden (SE), Lucchini Poland (PL), Lucchini Central Europe (AT), LBX (BE)

## ERWA Members



Map of ERWA members



Throughout 2023, ERWA carried out many important activities, these include:

- Contributing inputs to Standardisation and Regulation initiatives
- Maintaining close links with the **European Union Agency for Railways (ERA)** and standardisation bodies such as **CEN/CENELEC**
- Initiating public relations activities and publications
- Conducting market trend evaluations and forming committee statistics, along with patent and trademark monitoring

- Carrying out analyses regarding the Most Economically Advantageous Tender (MEAT) principle compliance
- Promoting the ERWA Axle Coating Guideline
- Aiding in the organisation of the **2023 International Wheelset Congress (IWC)**

These activities were carried out by the **ERWA Technical and Development Committees**, under the coordination of the **ERWA Steering Committee**. Following the 2023 ERWA General Assembly, the new Chairs of the ERWA Committees have been introduced. UNIFE's ERWA Committees carry the following organisation:



Organisation of ERWA's committees

One of the Committee's activities over the past year has been the promotion of the **ERWA Axle Coating Guideline**, which aims to improve the quality of axle coatings. The intention is the assurance of a durable corrosion protection of wheelsets, a fundamental step towards a safer, more efficient and competitive railway operation. A dedicated article was published in the May 2023 issue of the Global Railway Review to describe the latest innovative solutions in wheelsets. You can view the article [here](#).

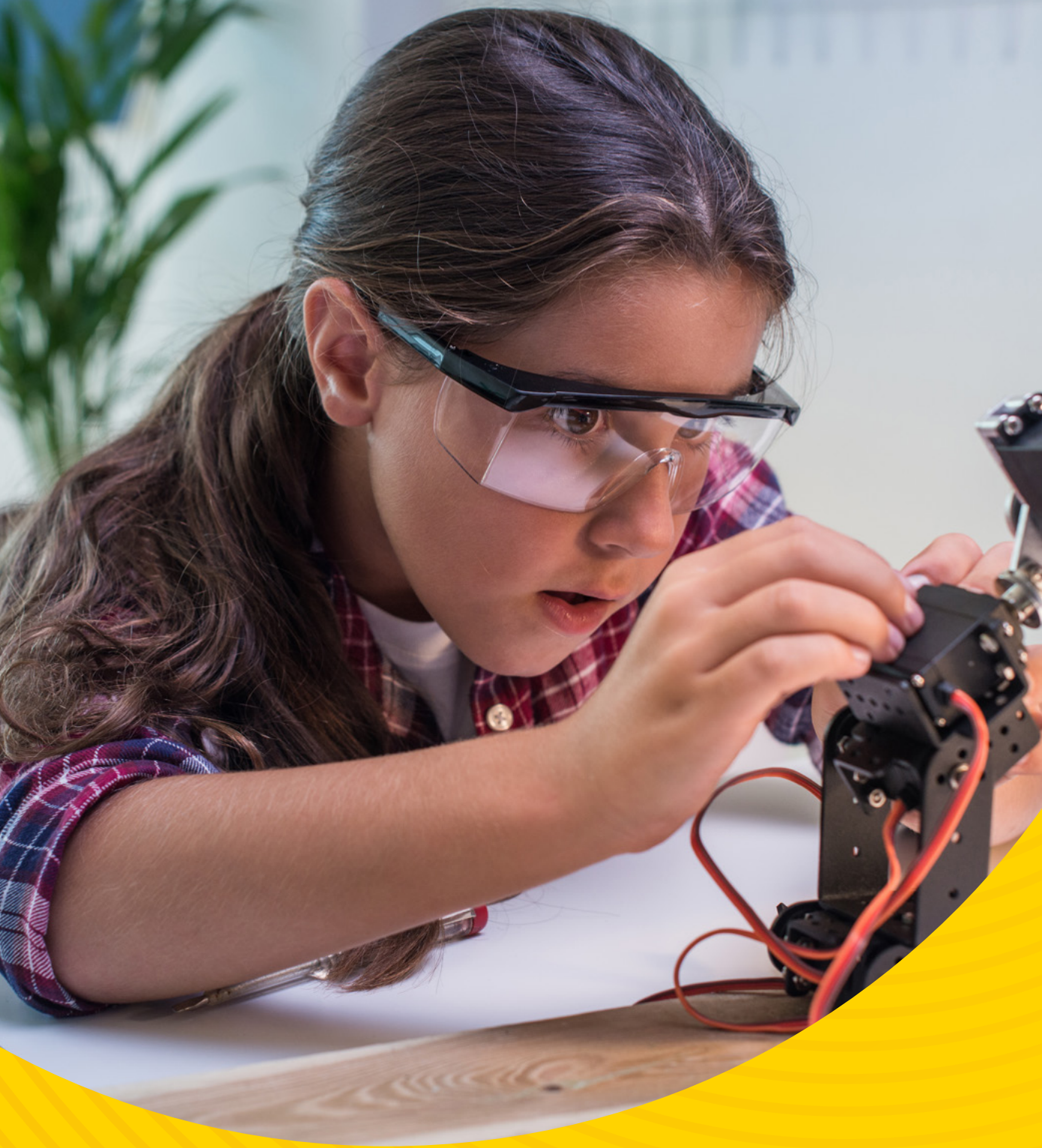
The **20<sup>th</sup> International Wheelset Congress (IWC)** with the theme "Interdependent Ecosystem of Wheelsets" was held in the United States in Chicago, between 8 and 12 May 2023. The first edition of IWC was organised in Italy back in 1963 and, since then, it has travelled across the world with successful editions. ERWA followed and contributed to the preparations of the congress, with its participation in various IWC committees.



Great exchange on European and US rail topics with Administrator **Amit Bose** from the Federal Railroad Administration during the International Wheelset Congress



For further information about ERWA, please contact UNIFE Technical Affairs Manager Stefanos Gogos by email at [stefanos.gogos@unife.org](mailto:stefanos.gogos@unife.org)





08.

**IRIS:  
International  
Railway  
Industry  
Standard**



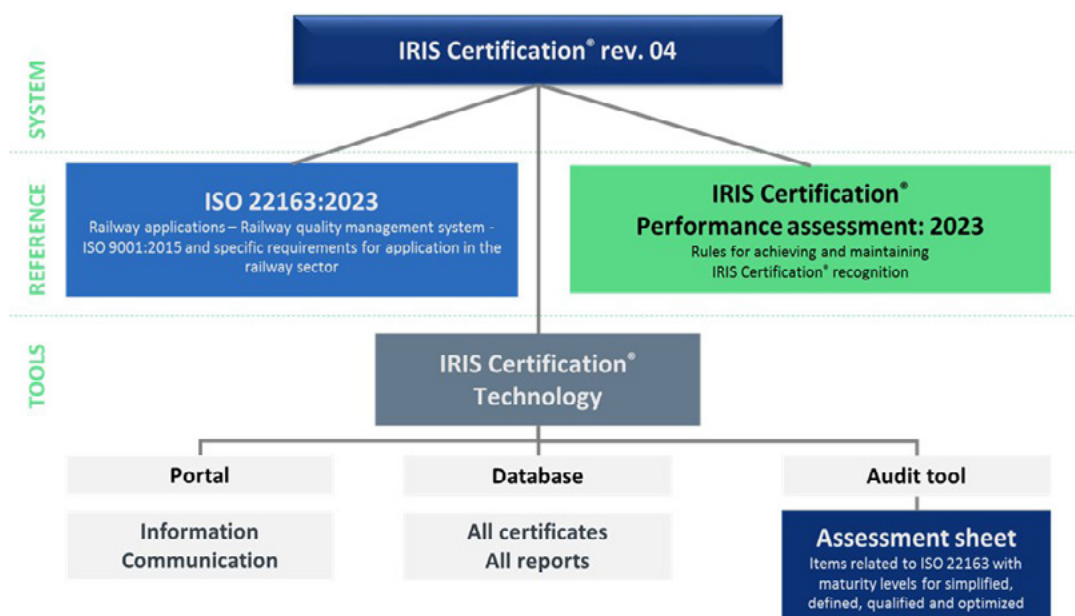


The **International Railway Industry Standard (IRIS)** is a globally recognised system for the evaluation of business management systems, which is unique to the rail sector. Owned by UNIFE and supported by operators, system integrators and equipment manufacturers, IRIS Certification® boosts customer satisfaction and implements a culture

of quality in the rail sector by promoting methods and behaviours that lead sector stakeholders to pursue optimum performance.

## IRIS Certification® milestones and operational situation in 2023

In 2023, UNIFE has reached essential milestones to launch IRIS Certification Rev.04.



IRIS Certification rev.04 system

At the end of July 2023, ISO published the “**ISO 22163:2023 Railway applications — Railway quality management system — ISO 9001:2015 and specific requirements for application in the railway sector**”. In September 2023, the IRIS Unit issued the **IRIS Certification® Performance Assessment:2023** which contains all the relevant rules related to the assessment methodology and the certification process. These two references together with the new **IRIS Technology** (Full Web Application) constitute the **IRIS Certification® rev.04 system**.

The **launch event of the new system IRIS Rev.04** took place on 15<sup>th</sup> September 2023. In order to assess the readiness of the entities in this new challenge UNIFE is working closely with its **17 IRIS approved Certification Bodies** to ensure a smooth transition from IRIS Rev.03 through different informative sessions, and the Office Audit campaign.

In addition, a **transition guideline** has been published at the end of October 2023, to help companies and Certification Bodies to better understand the transition timeline and prepare for the shift. Moreover, two **auditor upgrade trainings** took place in November and December, and gave the necessary confidence and approval to continue training the **294 IRIS approved auditors** in the following months, before the start of the first transition audits in April 2024. In addition, **11 new assessors** have been trained in IRIS Rev.04 in December 2023.

Even though during 2023, the number of certified companies has remained stable we expect to see an increase in the number of certificates in 2024, as many small, medium, and micro-sized enterprises will take advantage of the **new simplified certification approach** easing their entrance to the scheme, while at the same time the already IRIS certified companies will evenly move to IRIS Rev.04. Furthermore, the IRIS Unit is enhancing the collaboration with all its **stakeholders** to successfully operate and promote IRIS Certification® Rev.04.



More details about the previously mentioned items will be given in the subsequent sections. Some more key information concerning **IRIS Certification®** can be found in the adjacent Facts and Figures factsheet as well as on the IRIS Portal: [iris-rail.org](https://iris-rail.org).



IRIS Certification® is a global system enabling the rail sector to benefit from a strong and recognised evaluation method. Its successful implementation creates a win-win situation for all stakeholders.



**3798**  
IRIS REGISTERED COMPANIES



**2270**  
IRIS CERTIFIED COMPANIES

43% SMALL 41% MEDIUM 16% LARGE



**7**  
GOLD QUALITY PERFORMANCE LEVELS



**297**  
SILVER QUALITY PERFORMANCE LEVELS



**1966**  
BRONZE QUALITY PERFORMANCE LEVELS



**17**  
CERTIFICATION BODIES (CBs)



**294**  
ACTIVE AUDITORS



**236**  
LEAD AUDITORS



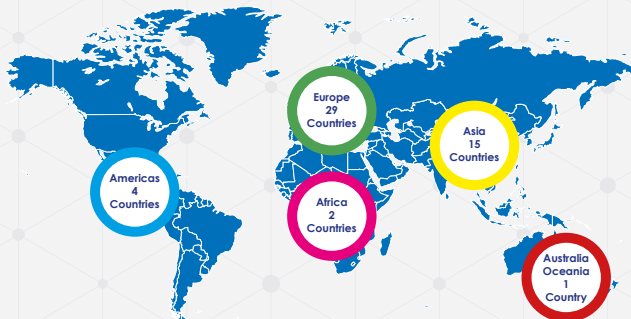
**30**  
LANGUAGES



**58**  
CO-AUDITORS



**26**  
MULTI-CB AUDITORS



**ALSTOM**

**CAF**

**Faiveley** Transport

**GHH-RADSATZ**

**HARTING**

**KNORR-BREMSE**

**Hitachi Rail STS**

**Talgo**

**SCHAEFFLER**

**SIEMENS**

**VOITH**

## Quality performance levels and control

In 2023, 13% of IRIS certified organisations have already reached the Silver Level, a positive and growing evolution that shows improved performance of their processes, as well as the effort to meet customer expectations.

The maturity of the Silver process, continuous learning, knowledge gained and recent experiences in the application of the Gold process, have allowed us to establish new clauses and improvements with the aim of ensuring the trust offered by these levels.

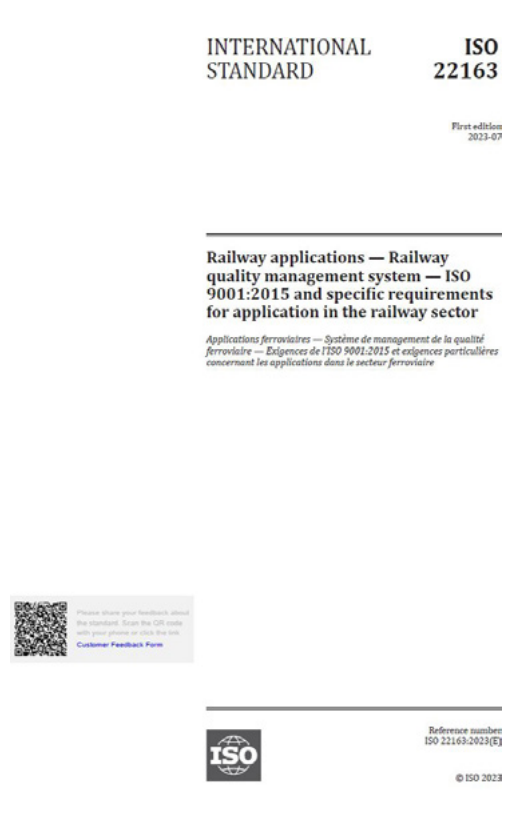
The IRIS Unit has closely verified the reports through 100% documental veto-checks to guarantee all the rules and requirements were fully respected by both, the companies and the auditors. This provides the guarantee for the system's credibility.

Assessment for the Gold quality performance level, as the "Trust level" towards product quality in the railway sector, ratified 7 companies at the Gold Level, after the positive result in the calibration audit, analysis by the IRIS Unit, and its approval in the Gold Committee.

### ISO 22163

After five intense years of find global consensus amongst 50 experts, the working group of the Technical Committee ISO/TC 269, Railway Application, under **UNIFE's Convenorship**, could resume its work regarding the output of the Final Draft International Standard (FDIS) ballot. The FDIS was successfully closed at the end of May, with an unanimous positive vote from the members, with some additional remarks integrated in the document before its publication end of July.

The working group has also issued a **white paper** highlighting the advantages of the standard within the railway sector. This document is available at: [www.iso.org/committee/661629.html?view=documents](http://www.iso.org/committee/661629.html?view=documents).



ISO 22163:2023 Railway applications — Railway quality management system — ISO 9001:2015 and specific requirements for application in the railway sector

The **ISO 22163:2023** Standard, can be purchased from the ISO website, and soon also from the national standard bodies in their respective language, once the translations will be finalised.

## Conformity assessment rules become performance assessment rules

The 1<sup>st</sup> edition of the rules for achieving and maintaining IRIS certification recognition is available as of 29<sup>th</sup> August 2023 on the IRIS portal. As mentioned previously, the IRIS certification performance assessment 2023 is part of the IRIS certification system and has been reviewed and updated to integrate the evolution of the requirements defined in the ISO 22163, the certification process and assessment methodology. The main changes are:

**Certification set-up** (certification activities, business categories, product scopes, supporting functions)

**Audit organisation** (audit execution, audit documentation, audit duration, audit cycle)

**Simplification of the certification process** for Small and Medium-sized enterprises (SME) under the 85 staff headcount, by reducing the documented information and for Project management process (key and mandatory process for certification), which could be now adapted toward business related activities

**Assessment methodology** (enablers including basic items & KO items, customer perception)

**Quality performance level** (new Bronze Level, thresholds)

## IRIS Technology

The new IRIS Technology, that includes the update of the IRIS Audit-Tool, the IRIS Portal and database, which was finalised concurrently to the system supporting documents.

The IRIS Audit-Tool Web Application embraces next generation technology to allow for more efficient and effective audits with simplified reporting. Cross platform usability, a global availability and the fostering of a collaborative approach will provide the users with an enhanced usability of the web platform. This new tool will also include the latest IRIS assessment

sheet updated according to the ISO 22163:2023, and the updated assessment methodology as defined in the Performance assessment:2023.

The IRIS Portal and database have also been updated to adhere to the new rev.04 system that will allow for the update of the company master data, the ability to opt for the new simplified certification approach, as well as the facilitation of the transition phase in 2024, both for IRIS auditors and companies.

## Control activities

In 2023, the control activities to ensure trust and credibility of the scheme were continued focusing on IRIS rev.03 performance and rev.04 preparation. Both models, office audits and witness audits, were used to check auditor and Certification Bodies conformity along the year.

80 days of witness audit were organised to evaluate the active auditors and mainly confirm their validity.

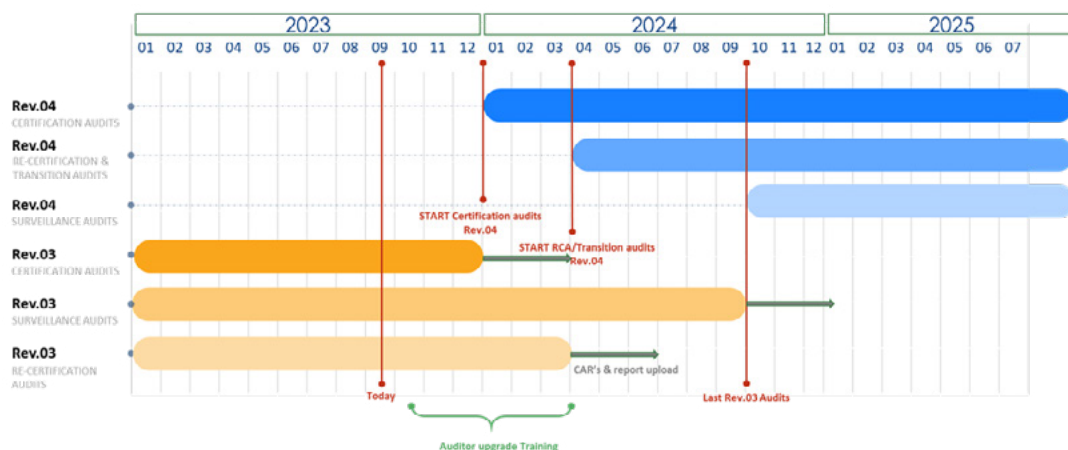
The office audits, again mainly organised through physical meetings, allowed to share results and expectations of all the parties.

In addition to these actions, the IRIS Unit has monitored regularly the performance of the program remotely, based on the IT tools deployed.

## 2024: an important milestone for companies

From 1<sup>st</sup> January 2024 onwards, organisations not yet certified, can afford an IRIS rev.04 certificate.

For the organisations already certified, it will be possible to upgrade to IRIS rev.04 as of 1<sup>st</sup> April 2024 on. Two options to upgrade are possible - implementation during a recertification audit, which is the easiest way, or during a surveillance audit, which is then a transition audit (mix between rev.03 and rev.04 evolutions). All trained stakeholders (IRIS Unit, CBs, auditors) will support this key period and help the organisations to prepare the switch.



IRIS rev.04 implementation timeline

The IRIS Unit will ensure all needed actions to reach a smooth transition and continue communicating on all important topics related to this important evolution.

## Communication

IRIS communication was centred in 2023 on the finalisation and publication of the rev.04 elements. The first phase of the communications plan was to keep the public informed about the ISO ballot and finally the approval to a full ISO, before the release of the IRIS revision 04. The launch event took place on 15<sup>th</sup> September and was attended by 800 participants, during which they had the opportunity to raise questions and find out more from the IRIS Unit and experts from the IRQB working group about the different evolutions of rev.04. The launch event can be viewed on [UNIFE's YouTube channel](#).

The launch event was followed by the well-established **IRQB Quality Monthly webinars** provided specific aspects of the new features. These webinars addressed the many questions that were asked during the launch event. The webinars are available on [IRQB's YouTube channel](#). The webinars will continue after the winter break. Follow us on [Twitter \(X\)](#) and [LinkedIn](#) or subscribe to [our newsletter](#) to stay connected.







# 09.

## Communications

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# 1. European Railway Award



European Railway Award 2023

The **16<sup>th</sup> edition of the European Railway Award** was held in Brussels on 31 January 2023, this was strongly marked by current events in Ukraine and the sector's commitment to diversity. The **Rail Champion Award was presented to Ukrainian Railways (UZ)** for their remarkable resilience and continuation of transport services in times of war and unimaginable hardship. Additionally, **Eglė Šimė** was recognised as this year's **Rail Trailblazer for her focus on empowering women in railways while ably steering her company, LTG Cargo, through tumultuous times.**

The event commenced with a **video message from European Parliament President Roberta Metsola**, highlighting that **"Rail transport, will play an important part in Europe's plan to become climate neutral by 2050"**, followed by the outlook from **Andreas Carlson, Sweden's Minister for Infrastructure and Housing**, **"I would like to stress the importance of well-functioning, efficient transport systems for Europe's competitiveness. Transport**

**is the backbone of our economy, and rail plays a significant part."**

The **European Railway Award's Rail Champion** title is an honorary recognition jointly bestowed by the organisers. Recent tragic events in Ukraine and the remarkable efforts to keep transport lines open, made **Ukrainian Railways (UZ)** an obvious recipient for this year's prize. Since the start of the war, Ukrainian Railways have provided a lifeline to millions of displaced citizens and kept vital aid and supplies flowing through the country. Working under the



Roberta Metsola, President European Parliament



Oleksandr Pertsovskyi, Board Member of **Ukrainian Railways (UZ)** | **Rail Champion Award**

most difficult and dangerous conditions, UZ employees' heroic efforts are ensuring the continuation of transport services according to a regular railway schedule. These efforts demonstrate the enormous resilience and crisis fitness of the railway system and the importance of strong railway companies. Ukrainian Railways' everyday struggle and ongoing achievement was deemed highly deserving of the Rail Champion Award, which also served to underline the EU community's solidarity and support.

**Board Member of Ukrainian Railways Oleksandr Pertsovskyi** was present to collect the Award **on behalf of UZ and its entire workforce**. In his acceptance speech, he said: **"It's an honour for the Ukrainian railway workers who keep doing their job on a daily basis despite constant shelling and infrastructure damage. We have managed to evacuate more than 4 million people by rail, 1 million of them being children. So, my first point here is a massive "thank you" to all railway workers in Europe who ensured their route to safety, and to ordinary Europeans for generously hosting and caring about our children. It's important for us, the railway people, to know that those children that we have saved – and paid with 327 lives for that – are cared about."**

The second major topic of the evening was **better representation of women in rail**. This is a priority issue for the sector, where women and girls represent more than 50% of the passenger



Eglė Šimė, CEO of **LTG Cargo** | **Rail Trailblazer Award**

rail ridership but only compose approximately 20% of the workforce. Conscious that a more mixed workforce leads to a proven increase in problem-solving competence and innovative strength, companies are taking action to redress the gender balance, but there needs to be more awareness to keep the momentum going. That is why the event's **Rail Trailblazer Award** was **dedicated to achievements promoting women in rail**. Selected by a jury of policy makers, sector experts, and journalists, the **2023 Rail Trailblazer was awarded to Eglė Šimė, CEO of LTG Cargo**, for her focus on empowering women in railways while ably steering her company through tumultuous times.

LTG Cargo, a subsidiary of Lithuanian Railways, is one of the largest freight transportation businesses in the Baltic region. While the company has faced a number of challenges in recent months, not least due to geopolitical tensions in Eastern Europe and the war in Ukraine, Ms Šimė has not neglected the working environment and is contributing to stronger female career progression within the company. Ms Šimė is outspoken about the fears many women share about their careers; as CEO she has used her leadership skills to transform the company culture by making a priority of encouraging all employees, especially women, to make the most of opportunities to learn, improve and take responsibility, and to not be afraid of change. She is an ambassador of the LTG Women Club and has mentored several female colleagues. When Eglė Šimė first joined LTG Cargo in 2019, women only constituted 19% of the company's management. Under her

supervision, the number of woman managers at LTG Cargo has in just a few years reached 26%.

When collecting the award, **Eglė Šimė** stated: “**This award to me is about the possibility and the need to change. I feel honoured by this recognition and accept it as an encouragement to continue strengthening our company in changing our business focus from East to West and, hopefully, inspire other women in the sector to build confidence and dare choosing careers they can thrive on.**”

The Rail Trailblazer trophy was accompanied by a €10,000 donation to the charity of the laureate's choice. Eglė Šimė decided to give the prize money to the **Olena Zelenska Foundation**, a charitable organisation set up by the First Lady of Ukraine to help restore people's lives affected by the war.

The 17<sup>th</sup> edition of the **European Railway Award** will be held in Brussels on 29 January 2024.



For further information visit [www.europeanrailwayaward.eu](http://www.europeanrailwayaward.eu)

## 2. UNIFE General Assembly

**UNIFE's 32<sup>nd</sup> General Assembly** was held in Madrid between 14 and 16 June 2023. To best coordinate our industry's contribution to overarching European objectives, UNIFE members convened on the first day in several Dialogue Forums covering a wide array of topics: Innovation, Sustainable Mobility, Cybersecurity, Investment, Quality, and Trade. These meetings allowed for introspective analysis of lessons learnt, emerging challenges and potential opportunities for suppliers as they build the next generation of reliable, multimodal transport with rail as its backbone.

On the second day of the assembly, UNIFE members met in a series of roundtables to assess emerging developments in the worldwide rail sector. Covering topics ranging from the enhancement of mobility with digital solutions, ensuring fairer competition via trade instruments

and an update on the major rail developments in Spain, participants considered the important paths rail must follow in the months and years ahead.

In the keynote speech, **David Lucas Parrón, Secretary of State, Ministry of Transport, Mobility and the Urban Agenda, Spain**, stated “**There is an importance of rail to decarbonise passenger and freight transport. Rail is a key component to ensure cohesion in the EU. The Spanish Presidency of the EU will promote the revision of the TEN-T regulation, as it is a key element for Spain and Europe's cohesion. Further to this, we need to look for alternative ways to decarbonise transport such as hydrogen trains.**”



**David Lucas Parrón**, Secretary of State, Ministry of Transport, Mobility and the Urban Agenda, Spain for Transport, Mobility and Urban Agenda, Spain



**María Luisa Domínguez González**, Chairwoman ADIF, and President EIM

During the **Competitiveness and global leadership of the EU rail supply industry** roundtable, Lucian Cernat representing the European Commission as the Head of Unit Regulatory Cooperation and Public Procurement at DG TRADE highlighted, “In the current context of growing protectionist tendencies in public procurement markets worldwide, the International Procurement Instrument is more important than ever to ensure a level-playing field for EU companies.”

The third roundtable covered the **Major Rail Developments in Spain** with noteworthy inputs from **María Luisa Domínguez González** Chairwoman ADIF, and President EIM, **Manel Villalante**, General Manager Development and Strategy, RENFE, and **Juan Tébar Molinero** Director of Railway Exploitation, Metro de Madrid.

During its Statutory meeting, the UNIFE membership elected to expand its ranks by ratifying the applications of 14 companies: **ABB Switzerland** (SW), **Bodet Time & Sport** (FR), **Comtest Wireless International** (IT), **Megger** (UK), **Pilz** (DE), **Škoda Transportation** (CZ), **Viavi Solutions** (FR), **Vibratec** (FR), **Camlin Rail** (UK), **Cellnex Telecom** (ES), **DIGAS** (LV), **The Cross Product** (FR), **Bode-Die Tür** (DE).

The 2023 General Assembly saw also the ratification of the new **UNIFE Chair**, **Henri Poupert-Lafarge**, Alstom CEO & Chairman

has passed the role to **Michael Peter**, the CEO of Siemens Mobility. Upon taking on the new role **Michael Peter** stated: “It is an honour to represent the railway sector during this pivotal phase of transformation. In order to progress, we need to make an impact in three areas: First, we need to achieve a truly Single European Railway Area. Today, Europe is still rather heterogenous. To deliver interoperability, we need to accelerate the deployment of ERTMS, both trackside and onboard. Second, we now have the opportunity to define how transport in the future will look like. Digitalisation will be the lever to make rail more sustainable, cost-effective, and comfortable. We can achieve so much if we agree on certain standards like APIs or cybersecurity to give operators a consistent overarching picture about assets and provide passengers with improved travel opportunities. UNIFE can help us to drive this and has played a crucial role in creating standards like ETCS in the past. Third, as our industry grows, the pool of experienced and qualified professionals is insufficient to meet the demand. Therefore, making the rail industry an attractive and desirable place to work should be compulsory and not optional. In all these three areas, UNIFE plays a vital role in connecting and



strengthening the complete ecosystem of our rail community. This is a crucial factor to accelerate transformation, and one I am very excited to support in the years ahead.”

Subsequently, UNIFE outlined its ongoing commitments to ensuring a strong future for the rail supply industry. The Board reaffirmed the direction of the **STAFFER Blueprint**, as it moves into the second half of its development. The blueprint alongside last year’s development of the Gender Equity Advisory Group and **UNIFE Gender Equity Policy**, shows the dedication to

attracting a workforce which will be central to delivering greater digitalisation and sustainability solutions in rail. As the continuation of these initiatives is taking place during the European Year of Skills, it shows the European Rail Supply Industry’s proactiveness in ensuring that we are not only creating the products needed for future generations, but the professional environments which empower young people to achieve their full potential.

**The 33<sup>rd</sup> UNIFE General Assembly will take place on 12 and 13 June 2024 in Brussels.**



**Jehan Sauvage** (Policy Analyst in the Trade and Agriculture Directorate, OECD), **Sabine Schneider** (Head of Talent Management, Siemens Mobility), **Lucian Cernat** (Head of Unit Regulatory Cooperation & Public Procurement, DG TRADE, European Commission), **Augusto Mensi** (CEO, Lucchini RS), **Lorena Ionita** (Deputy Head of Unit Mobility, DG GROW, European Commission), **Nick Kingsley** (Executive Editor Railway Gazette)



**Michael Peter** (CEO Siemens Mobility), **Matthias Ruete** (European Coordinator for ERTMS), **Giorgio Travaini** (Executive Director Ad Interim, Europe’s Rail Joint Undertaking), **Josef Doppelbauer** (Executive Director, European Union Agency for Railways), **Kristian Schmidt** (Director Land Transport, DG MOVE, European Commission), **Casimiro Iglesias Pérez** (Director of Planning and Evaluation of the Railway Network, Ministry of Transport, Mobility and the Urban Agenda, Spain)



Ratification of the new UNIFE Chair: Henri Poupart-Lafarge, (Alstom CEO & Chairman) has passed the role to Michael Peter, (CEO of Siemens Mobility)



Presentation of UNIFE's Gender Equity activities by Estere Upmace



UNIFE warmly welcomes the 14 Members who were officially admitted to our ranks during the General Assembly

# 3. UNIFE Gender Equity Activities



In 2023, UNIFE introduced the **A Woman's Place is in Rail** initiative, a comprehensive effort featuring a digital campaign which also showcased role models within the rail industry from UNIFE's membership. This initiative, showcased on the UNIFE website under **Championing Gender Equity in Rail: Voices of Inspiring Women and Supporters**, includes a dedicated section highlighting professionals who work in the rail industry. Additionally, UNIFE began collecting good practices our members adopt to foster gender equity and attract diverse talent to the rail sector. These practices encompass mentorship programmes, engaging with students through girls' days at schools, and similar initiatives, found under **Empowering Women in Rail: A Comprehensive Resource Hub for Careers and Mentorship Programmes** on the website.

To gain insights into the challenges hindering women's entry into the rail industry, UNIFE launched a survey whose results will be disclosed in 2024. Simultaneously, our Gender Equity Advisory Group consistently convenes to explore strategies for enhancing gender equity at the membership level.

Throughout the year, UNIFE has been actively participating in events and activities, such as European Commission's **Women in Transport EU Platform for Change**, and seizing opportunities to showcase the rail industry as an inclusive space for women of varied backgrounds and professions, committed to fostering a welcoming environment. Our outreach efforts extend also to social media, where short video reels spotlighting rail professions are shared, including testimonials from members on our **YouTube** channel. UNIFE's *A Woman's in Rail*

campaign signifies our dedication to cultivating a gender-inclusive workplace and encouraging more women to pursue careers in rail, thereby ensuring a more balanced representation of women in the railway sector.

As the European Rail Supply Industry, UNIFE serves as a reflection of its members and strives to epitomize the best of our sector. Our overarching mission is to position rail as the linchpin not only for Europe's mobility system but also for the societies it empowers. Advocating for a future where women have equal agency and impact, we recognize the importance of leading by example in fostering positive change. In alignment with our values, we acknowledge that true transformation begins from within. UNIFE remains steadfast in championing gender equity and creating an environment where women thrive, contributing significantly to the advancement of the rail industry and broader society.

**UNIFE will continue to strive to be a leader in gender equity and pursue concrete actions that will lead to equal representation in what will prove to be the future of European transport**





## 4. UNIFE Communication Metrics



Google Analytics - [www.unife.org](http://www.unife.org)

**61,978** Visitors

**244,021** Page views



Twitter - @UNIFE

**5,326**  
Followers

**99,117**  
Impressions

**234**  
Tweets

**1,146**  
Likes



LinkedIn - UNIFE - The European Rail Supply Industry Association

**9,839**  
Followers

**187,520**  
Impressions

**255**  
Shares

**5,492**  
Page views



Youtube - UNIFE\_Rail

**13**  
New videos

**2,300**  
Views

**245.6**  
Hours watch time



UNIFE in the Press

**10** Interviews

**245** Articles about or mentioning UNIFE



# 5. Communication leadership and support for:



[www.unife.org](http://www.unife.org)



@unife



UNIFE – The European Rail Supply Industry Association



UNIFE\_Rail



[www.hoponrail.eu](http://www.hoponrail.eu)



@HopOnRail



[www.linkedin.com/showcase/hop-on-for-our-planet/](http://www.linkedin.com/showcase/hop-on-for-our-planet/)



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HopOnRail



[europeanrailwayaward.eu](http://europeanrailwayaward.eu)



@EU\_RailwayAward



[www.railstaffer.eu](http://www.railstaffer.eu)



@RAIL\_STAFFER



Rail Staffer



[www.ertms.net](http://www.ertms.net)



@ERTMS



[www.iris-rail.org](http://www.iris-rail.org)



@IRIS\_Certificat



IRIS Certification



[www.errac.org](http://www.errac.org)



@ERRAC\_Rail



The European Rail Research Advisory Council (ERRAC)



+Dissemination for 12 R&I Projects



[www.irqb.org](http://www.irqb.org)



@TheIRQB



IRQB - The International Rail Quality Board



The IRQB



10.

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UNIFE wishes all  
 the best to those  
 who left the team  
 in 2023



Estere  
 Upmace



Vanessa  
 Pereira







11.















# UNIFE Members in 2023

UNIFE Full Members.....	126
UNIFE Associate Members.....	135

# UNIFE Full Members

	ABB Power Grids Sécheron	<a href="https://new.abb.com/id/about/our-businesses/power-grids">https://new.abb.com/id/about/our-businesses/power-grids</a>
	AKKA High Tech	<a href="https://www.akka-technologies.com">https://www.akka-technologies.com</a>
	Alstom	<a href="https://www.alstom.com">https://www.alstom.com</a>
	ALTPRO	<a href="https://altpro.hr/en">https://altpro.hr/en</a>
	Ardanuy	<a href="http://www.ardanuy.com/es">http://www.ardanuy.com/es</a>
	ASTRA	<a href="http://www.astra-passengers.ro">http://www.astra-passengers.ro</a>
	Axtone	<a href="https://www.axtoneglobal.com">https://www.axtoneglobal.com</a>
	AZD	<a href="https://www.azd.cz/cs">https://www.azd.cz/cs</a>
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