

ANNUAL REPORT 2022



European Rail Supply Industry



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Message from Henri Poupart- Lafarge, UNIFE Chairman

At the end of last year I was looking forward to 2022, expecting that, as the world emerged from the Covid pandemic and the induced economic shock, we would be able to focus on tackling the most pressing challenge faced by our society – climate change.

This was not to be, as the return of war to the European continent due to Russia's invasion of Ukraine has radically altered the picture. Beyond the devastation and the suffering brought by the conflict, it has exacerbated the instability in global supply chains for all sectors including ours, extended disruptions to the energy sector and sustained inflation levels that we had not seen for decades. Yet, Europe has done its best to maintain the momentum of the Green Deal, and the pressing need to reduce our dependency on imported fossil fuels is leading us to accelerate the green and digital transitions. This can be done in part thanks to the implementation of the national recovery & resilience plans, funded by joint EU debt, with €55 billion of investment for rail at stake!

The upcoming COP 27 will determine whether the same momentum remains at the global level, but the energy that we could see in our sector at InnoTrans and the results of the latest **World Rail Market Study** give us some ground for optimism.

We are therefore challenged to bridge the gap between the immense short-term pressure faced by our industry and economies with the long-term outlook shaped by decarbonisation and renewed European industrial competitiveness.

This will require continued action from our political institutions, at all levels: European, national, regional and local. As a sector, we must continue to be their reliable and trusted counterpart on mobility policy issues, but also make our case in many other policy areas. The latter include industrial and trade policies, but also the digital domain and the debate around skills and competencies, where our sector is less well known.

At the European level, UNIFE will continue to be the voice of our industry, with a lot to do in 2023 on these various subjects. Indeed, this will be the last full year of this European institutional cycle, before the next European elections in 2024: by the end of next year, we will know if Europe has set the appropriate regulatory framework to deliver a 55% reduction in Europe's greenhouse gas emissions by 2030.

We will of course be able to build on the achievements of 2022, which included:

- Significant progress in Trade policy on the level-playing field between European and third country suppliers, with the adoption of the **International Procurement Instrument** as well as the **Foreign Subsidies Instrument**
- Progress on the “**Fit for 55**” package, with trilogues already on the way regarding the **Alternative Fuels Infrastructure Regulation** and the **Carbon Border Adjustment Mechanism**. The updated **TEN-T regulation** should reach that stage at the beginning of 2023
- The release of the draft Mobility Ecosystem’s **Transition Pathway**, which we hope will be fully complementary to the Expert Group on the competitiveness of the rail supply industry
- Last but not least, the first call for projects of the **Europe’s Rail Joint Undertaking**: by the time you read this report, 6 projects mobilizing €568 million will be up and running to sustain our sector’ innovative capabilities and the European industry’s leadership

In parallel, discussions are ongoing regarding updated **Technical Specifications for Interoperability**, where we call for transition rules that ensure the absence of negative impact on ongoing projects.

In conclusion, I would like to thank the UNIFE team for their dedication, but also all our members for their continued support. 2022 has proven to be an eventful year, more than we expected. I am convinced that the European agenda is set in the right direction for our sector and our societies: it is up to us now to support its finalisation and implementation.



Henri Poupart-Lafarge
UNIFE Chairman and,
Chairman and CEO of Alstom



Message from Philippe Citroën, UNIFE Director General

When I last addressed the European Rail Supply Industry via the UNIFE Annual Report, our association looked to rapid vaccination roll-outs and ambitious recovery packages rooted in sustainability as a source for optimism and added purpose for our mode of transportation. Russia's invasion early in 2022 and subsequent war of aggression against Ukraine has added resolve to our mission to contribute to a European multimodality rooted in rail. Throughout the year, UNIFE has communicated to a variety of stakeholders about how continuing Europe's commitment to research and innovation, investing in next generation technologies that will drive a shift to rail, ensuring greater access to foreign markets while limiting unfair influence in ours and providing career pathways for new rail professionals will lead to the completion of **EU Green Deal** objectives, generate post-pandemic economic recovery and make Europe more resilient.

2022 saw Europe exit the more restrictive periods of the COVID-19 pandemic. This past year, with the return of the **UNIFE General Assembly** in Paris and **InnoTrans** in Berlin, allowed UNIFE to meet all of you and our partners for in-depth and in-person exchanges on how our rail can best contribute to the next generation of the European Union after an approximately 3-year hiatus. Given continued turbulence caused by pandemic and the aggression against Ukraine, the European industry has been forced to

endure supply chain disruptions and contend with rapidly increasing inflation. However, our association is optimistic that our sector will see continued growth as presented in our **9th edition of the World Rail Market Study**, that predicts a **3% per annum growth until 2025-2027**. Additionally our industry sees with great enthusiasm all the opportunities to boost rail investments coming from EU instruments such as the **National Recovery Plans, Connecting Europe Facility, and the Structural Funds**.

During 2022, EU institutions reached a final agreement and entry into force of important EU autonomous tools: the long-awaited **International Procurement Instrument** and the **Foreign Subsidies Regulation**. These are major achievements and a sign that Europe is serious about beefing up its strategy to achieve a level-playing field on third country markets and in Europe. UNIFE has always been, and will continue to be, active and vocal to promote fair competition.

To further enhance European rail's development and deployment, UNIFE spent the 2022 European Year of Youth working with stakeholders from across the EU. Our association, having been a vocal champion of **Europe's Rail Joint Undertaking** was glad to see its launch during the **French Presidency of the Council** of the EU in Paris in January. This institutionalised partnership managed by **Executive Director**

Carlo Borghini has instituted a novel System and Innovation Pillars structure to best organise innovation initiatives focused on next generation rail solutions and emerging technology needed to advance our railways to a true **Single European Railway Area** and inspire a modal shift to rail. The launch of the System Pillar is expected to support the development of an efficient technical regulation and standardisation framework in line with the envisaged long-term roadmap. We are certain that the award of the first Flagship Projects will also help increase the flexibility, attractiveness, market share and competitiveness of the EU Rail Supply Industry.

One of the promising technologies which UNIFE has been pursuing this year has been the Digital Automatic Coupler (DAC) via a dedicated platform passionate about transforming future freight.

UNIFE has advanced technical regulation progress throughout 2022 through our work on the **implementation of the Fourth Railway Package** with the **European Union Agency for Railways (ERA)**, headed by **Executive Director Josef Doppelbauer**.

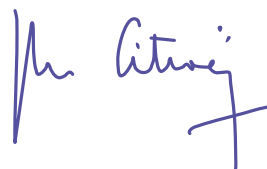
We have been highly involved with the on-going revision of this year's **Technical Specifications for Interoperability (TSI) Package** and we hope that it will establish a new regulation framework to ensure a stable evolution of TSI and standards as it has been mentioned by **UNIFE Chair Henri Poupart-Lafarge** in different fora. We need to ensure predictability, and minimise the frequency of project changes.

Our association also knows that Europe's rail suppliers' success is directly linked to its workforce – 21st century transport solutions require professionals knowledgeable in their systems to design, manufacture and deploy them. For that reason, UNIFE is heavily involved in the **STAFFER Blueprint for Skills** consortium. This unique Erasmus+ programme brings together suppliers, operators and academics to assess and improve upon existing rail education and vocational training programmes to help welcome new practitioners into our ranks. We also welcome the launch by the European Commission of the Europe Skills initiative for 2023. This consortium has been a welcomed

space for UNIFE to extend its efforts around women in rail as we have followed the letter of our UNIFE **2022 Gender Equity Policy** by centring issues of inclusion in both employment and education during discussions. I would like to take this opportunity to welcome the European Commission's initiative to declare **2023 as the European Year of Skills**, and we look forward to collaborating with the relevant stakeholders throughout the year and beyond.

Finally, UNIFE would be remiss not to thank its members – their constant support and participation has been rewarded in significant empowerment of rail and its position in the modern mobility paradigm. Your engagement in our advocacy initiatives has raised awareness of both the European Rail Supply Industry's pivotal role in confronting our current crises and building the sustainable multimodality rooted in our unique transportation mode. To help us achieve these goals, our membership officially expanded by 11 new companies, who will be key in reaching our stated goal of sustainable multimodality rooted in rail: **Express Service (BG)**, **Dual Inventive Holding (NL)**, **Scheidt & Bachmann Signalling Systems (DE)**, **Expandium SAS (FR)**, **Cylus Cybersecurity (IL)**, **Softil (IL)**, **DAKO-CZ (CZ)**, **RailNovation (CH)**, **RazorSecure (UK)**, **Gillet Group (FR)**, and 1 Associate Member **Rastia (BG)**.

Thank you for your commitment to the rail supply industry and belief that it holds a meaningful potential role in the future of Europe. We look forward to continuing to build the future of sustainable, accessible and reliable transportation that provides us all with greater resiliency together.



Philippe Citroën
UNIFE Director General

welcome on board

welcome on board





01.

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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 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 2320** IRIS Certification® certificates issued worldwide

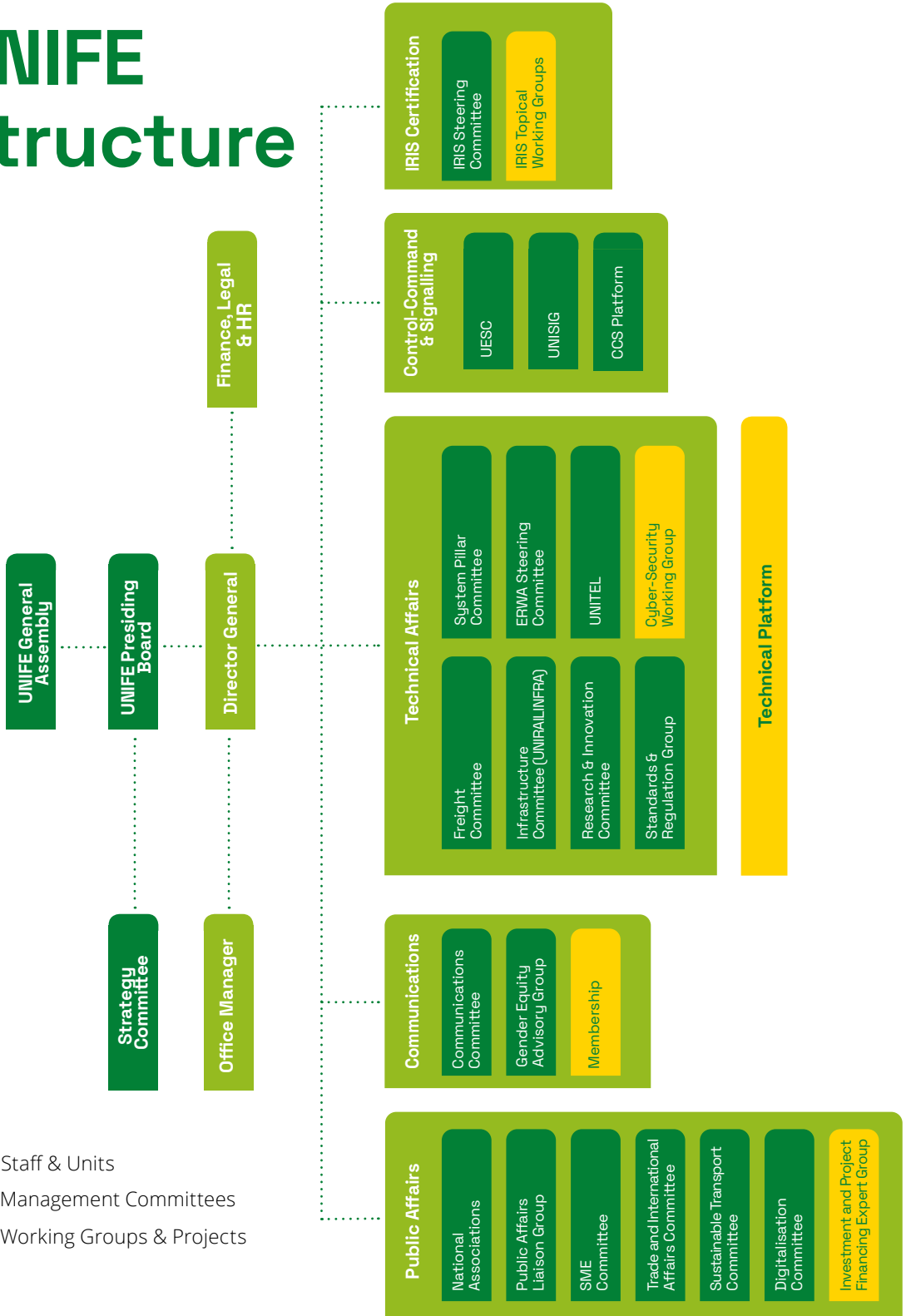
European Rail Supply Industry



European Union

UNIFE Structure

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



2020-2023

UNIFE Presiding Board



UNIFE Chairman

Henri Poupart-Lafarge

Chairman and CEO, Alstom

Members of the Presiding Board



Javier Martínez Ojinaga

CEO, CAF Group



Lilian Leroux

CEO, Faiveley Transport



Roger Dirksmeier

Managing Director,
FOGTEC (representing
the UNIFE SME
Committee)



Jürgen Wilder

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



Augusto Mensi

CEO, Lucchini RS



Michael Peter

CEO, Siemens Mobility



Millar Crawford

Executive Vice
President, Ground
Transportation
Systems, Thales Group



Franz Kainersdorfer

Member of the
Management Board,
Voestalpine AG



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 Platform** is open to all UNIFE's members and focuses on the development of digital technologies in the rail sector from a political, technical and business perspective. The main objectives of the Platform are to bring the rail supply industry's view to the centre of the EU-level digital debate and reach a better understanding of the potential opportunities and challenges of digitalising rail transport. The Platform coordinates these efforts with the Cybersecurity Working Group. The platform's activities are frequently presented and promoted at public conferences and workshops, as well as articles in specialised magazines.

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 main experts on sustainability-related topics. More specifically, the STC defines the strategy and carries out UNIFE's activities on the field of sustainable mobility, climate change, energy efficiency, urban transportation and EU taxonomy (sustainable finance). The STC is notably in charge of the Green Deal-related policies. The STC coordinates the activities of two active Topical Groups (TGs): the Life-cycle Assessment (LCA) TG and the Chemical Risks (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

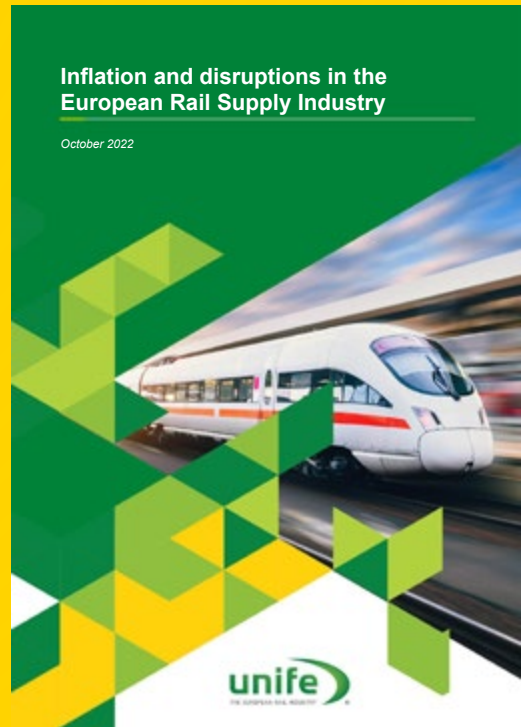
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1. Industrial Policy

a. Impact of inflation and disruptions in the rail supply industry

Despite positive growth forecast for the world rail market, concerns have been mounting throughout 2022 due to the widespread inflation and supply chain disruptions – from delays to tremendous price increases for energy, raw materials and logistics. UNIFE maintained continuous and regular bilateral exchanges with numerous member companies to allow for concomitant reflection on the long-lasting impacts of this situation.

Through a **statement finalised in October, UNIFE alerted EU institutions on the need to mitigate inflation and disruptions within the supply chain**. This topic is extremely important not only for European rail suppliers but for the sector as a whole, since we need to collectively achieve the objective of decarbonising the transport sector in the framework of the Climate Law, “Fit for 55” and the Sustainable and Smart Mobility Strategy. UNIFE suggested specific actions, in particular from the side of the European Commission (DG GROW), in order to guide Member States and contracting authorities in the specific context of public procurement. The statement also listed measures taken at national level while emphasizing the need to extend these measures beyond construction contracts.



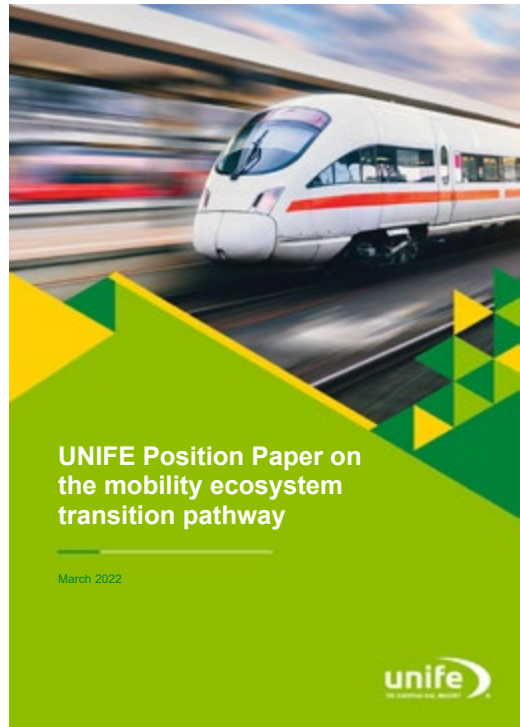
UNIFE publication on the impact of inflation and disruptions in the rail supply industry

b. Mobility ecosystem and transition pathway

In May 2021, European Commission Executive Vice-President for A Europe Fit for the Digital Age Margrethe Vestager, Executive Vice-President for An Economy that Works for People Valdis Dombrovskis, and EU Commissioner for Industry and Internal Market Thierry Breton jointly presented an update of the 2020 **Industrial Strategy**. The communication confirmed the rail supply's inclusion in the "**Mobility, Transport and Automotive ecosystem**" – one of the 14 priority sectoral groupings established by Commissioner Breton – and the development of so-called "transition pathways".

At the end of January 2022, the European Commission's DG GROW published a **Staff Working Document** entitled "*For a resilient, innovative, sustainable and digital mobility ecosystem – Scenarios for a transition pathway*". The Commission opened a **public consultation** on this document until the end of March and 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. In particular, UNIFE insisted on the need to take into account the specific needs of the European Rail Supply Industry when it comes to decarbonisation, digitalisation and resilience of the rail sector, while emphasizing certain commonalities with other parts of the ecosystem (e.g. skills).

Furthermore, **an event on the mobility ecosystem was organised** on 8 February, **during the EU Industry Days**, with representatives of the three industrial sectors. A **co-creation roundtable event was also organised on 28 November** to discuss in particular the specific challenges related to the acceleration of the twin (i.e. smart, sustainable) transition.



UNIFE publication on the impact of inflation and disruptions in the rail supply industry



c. Competitiveness of the Rail Supply Industry

In January 2022, a meeting of the EC Expert Group on the Competitiveness of the Rail Supply Industry was held in order to take stock of the implementation of the final report from October 2019 (88 recommendations across 10 strategic policy areas). This discussion was based on a thorough stocktaking exercise of the implementation of these recommendations carried out by UNIFE, in parallel with a scoping paper from the European Commission. There was also an agreement on the way forward, to focus in particular on certain areas (e.g. internal market, and EU public procurement).

In December, a second meeting of the Expert Group was held to delve into a number of priority topics, including inflation and disruptions in the supply chain, digitalisation files or regulations and standards.

At the end of 2022, the European Commission accepted – at UNIFE’s request – an extension of the EC Expert Group mandate until 2025. This important step represented the recognition of this forum as an already existing and much-needed governance tool for discussing the future of our industry at the EU level, in complementarity with the mobility ecosystem and transition pathway. The EC Expert Group has already yielded concrete results and helped foster collaboration on critical work (e.g. MEAT). The continuation of the Expert Group will be instrumental to maintaining our constructive dialogue and collaboration with the different Directorate Generals of the European Commission, the Member States and the railway operating community.

2. Skills Policy



The European Rail Skills Alliance (STAFFER), which started in November

2020, brings together more than 30 partners across Europe to support an overall sectoral skills strategy and develop concrete actions to address short- and medium-term training needs. The project will last for 4 years, ending in 2024.

2022 was an intense year in terms of activities, as we are now finishing the second STAFFER-implementation year, creating the timely moment to communicate and disseminate about the project’s achievements so far. Among other initiatives, UNIFE presented the STAFFER project during the Connecting Europe Days in

Lyon in June, as well as during the Rail Skills Forum in July.

In September UNIFE organised the **STAFFER Roundtable “Skills for the Rail Sector: Adapting Training Curricula and Attracting Talent”** during InnoTrans. The discussions revolved around the main challenges that the rail sector is facing and how the sector is inventing itself to attract new talent and re- and up-skill their workforce.

The **STAFFER mid-term conference** took place in Brussels in October and attracted several participants, both from the project’s partners but also speakers from the European institutions and other stakeholders. UNIFE’s

Member CAF Rolling Stock Technical Program Manager Marta Elorriaga took the opportunity to bring the rail supply industry perspective to the debate on how to make the railway sector attractive for young people.

In November, UNIFE had the opportunity to take part of the **panel “Skills & Diversity – making a career in rail more attractive to all” during the Rail Live event** that took place in Málaga, Spain. The panel aimed at answering some key questions regarding recruitment challenges and what are the steps can rail suppliers take to make a career in rail a more desirable profession. It was also a good occasion to further present the objectives and deliverables of the STAFFER project.

On top of the various events organised throughout 2022, efforts have also been made on other channels of communication, amongst which the **UNIFE podcast on Skills & Diversity**, and the **Staffer video animation**.

We would like to take this opportunity to welcome the European Commission’s initiative to declare **2023** as the **European Year of Skills**, and we look forward to collaborating with the relevant stakeholders throughout the year and beyond.



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



Kristian Schmidt (Director Land Transport, DG MOVE, European Commission), **Angela Di Febraro** (STAFFER Coordinator / Professor of Transportation Engineering at University of Genoa (UniGe)), **Josef Doppelbauer** (Executive Director, European Union Agency for Railways (ERA)), **Marta Elorriaga** (Rolling Stock Technical Program Manager, CAF), **Sabine Schneider** (Head of Talent Management, Siemens Mobility)

3. Green Deal and Transport Decarbonisation



State of the Union Address by European Commission President **Ursula von der Leyen** (European Parliament, September 2022)

a. Fit-for-55 – AFIR

Increasing the efforts to confront climate change remains one of the top priorities of the European Commission, especially considering the current geopolitical context of energy crisis. Commission's President Ursula von der Leyen acknowledged, in her 2022 State of the Union speech, that hydrogen can be a game changer for Europe right now, meantime this is already a reality in some countries such as Germany, where some local trains now run on green hydrogen.

Among the various initiatives of the **Fit-for-55** package of legislative proposals in July 2021, aiming to lower greenhouse gas emissions by at least 55% by 2030, the EC proposal for a new **Regulation on Alternative Fuels Infrastructure (AFIR)**¹ marked an unprecedented opportunity for UNIFE to help establish a European legal framework to support the deployment of alternative fuels infrastructures for rail for those lines that are not mandated to be electrified under the TEN-T or those that do not belong to the network. Indeed, this file became one of the most sensitive priorities for UNIFE and as such an intense outreach campaign was carried out.

1) https://ec.europa.eu/info/sites/default/files/revision_of_the_directive_on_deployment_of_the_alternative_fuels_infrastructure_with_annex_0.pdf

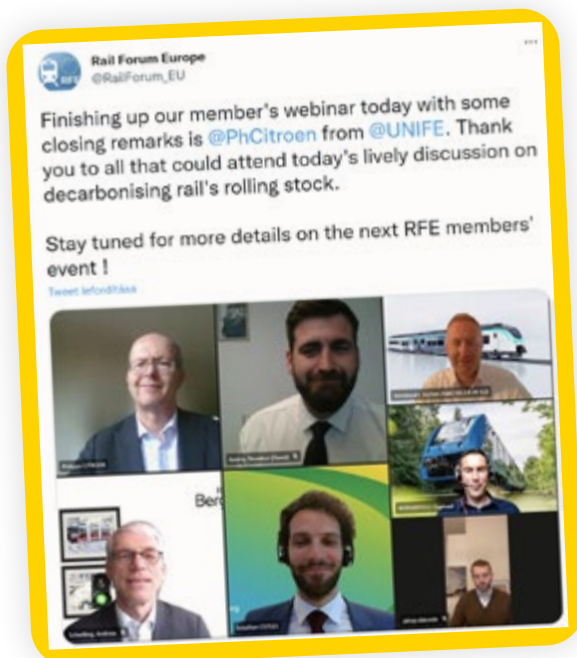


Tweet by MEP **Anna Deparnay-Grunenberg**, shadow rapporteur for Greens for AFIR

If the **general approach** reached by the Council in June 2022 did not increase the level of ambitious for rail-related provisions, **the European Parliament (EP) made considerable progress to fully include rail**. **AFIR Rapporteur Ismail Ertug** (S&D), and other MEPs like **Shadow Rapporteur Anna Deparnay Grunenberg** (Greens), have succeeded in significantly improving the text so as to enable the European rail sector to proceed on a path towards full decarbonization and lead the mobility green transition in the coming years. The EP's **position**, voted during the October Plenary, fully asserts the key role alternative fuels will play in shifting away from the remaining fossil fuel-powered trains that are still in service and ensuring an appropriate amount of alternative fuels infrastructure will be deployed. Trialogues between Parliament, Commission and Council started in October 2022 and will continue under the Swedish Presidency of the European Union in the first semester 2023.

To fully support the rail supply industry priorities on AFIR, in March 2022, UNIFE organized a **dedicated Rail Forum Europe (RFE) digital event** titled *"Decarbonising rolling stock: The potential of alternative propulsion systems in the rail sector"*. The event featured prominent speakers like **MEP Andrey Novakov** (EPP),

MEP Jakob Dalunde (Greens), **Giuseppe Izzo**, **Transport Attaché at the Italian Permanent Representation**, as well as representatives from **Roland Berger**, and from the rail supply industry (Alstom, Siemens). The event was a great opportunity for speakers to explain the main benefits of the available alternative fuels technologies such as hydrogen and battery powered trains. UNIFE members recalled once again that electrification and green propulsion systems assume tremendous significance for our industry's efforts to decarbonize lines that still run on diesel.



Rail Forum Europe digital event organized by UNIFE on Alternative fuels in the rail sector

During InnoTrans, UNIFE also organized **an event on alternative fuels** titled *"Going the extra mile: a growing market demand for zero-emissions trains in Europe"*. Speakers from Deutsche Bahn and Alstom presented the key benefits these alternative solutions can offer also in the rail sector, especially for those segments of the network that will not be electrified. They also showcased the impressive growing market demand for zero-emissions trains in Europe, both from the industrial and operators perspective, explaining why their companies are at the forefront of this increasingly emerging market.


b. European Taxonomy

The topic of sustainable finance remained a key topic for UNIFE in 2022. We continued to support Commission's ambition to use the EU Taxonomy Regulation to define a common classification scheme including criteria for identifying sustainable economic activities, with the aim of guiding investors and financial institutions through a truly green transition.

In 2022, the **Climate Delegated Act**², as well as the so-called "**Disclosure Delegated Act**"³, entered formally into force and this officially triggered the reporting phase for companies being covered by these delegated acts.

After having thoroughly analysed both delegated acts, UNIFE has published a **position paper** to propose a number of improvement areas to ensure a successful Taxonomy implementation in the rail sector which is expected to play a leading role in the transition towards a more sustainable mobility ecosystem.

Following the publication of the position paper, UNIFE has presented the key areas of concerns to representatives from the Commission involved in the Taxonomy discussion, such as Cabinets of Executive Vice-Presidents **Frans Timmermans** (EU Green Deal) and **Valdis Dombrovskis** (Trade), Commissioners **Mairead McGuinness** (Financial services) and **Adina Vălean** (Transport), as well as representatives from DG MOVE and DG FISMA.

 In the same spirit, members of the **Platform for electromobility**, which brings together more than 40 members from across all transport modes, including UNIFE, relayed a number of **observations** commonly shared by its members focused on the best "usability" of the published Taxonomy delegated acts. This clearly shows that UNIFE's concerns are generally shared also by the other actors of the electromobility value chain.

2)establishing the conditions under which an economic activity substantially contributes to the climate change mitigation or climate change adaptation and causes no significant harm to any of the other environmental objectives.

3)specifying the content, methodology and presentation of information to be disclosed by companies concerning the proportion of environmentally sustainable economic activities related to their turnover, capital ('CapEx') and operational expenditure ('OpEx'), entered into force as well.



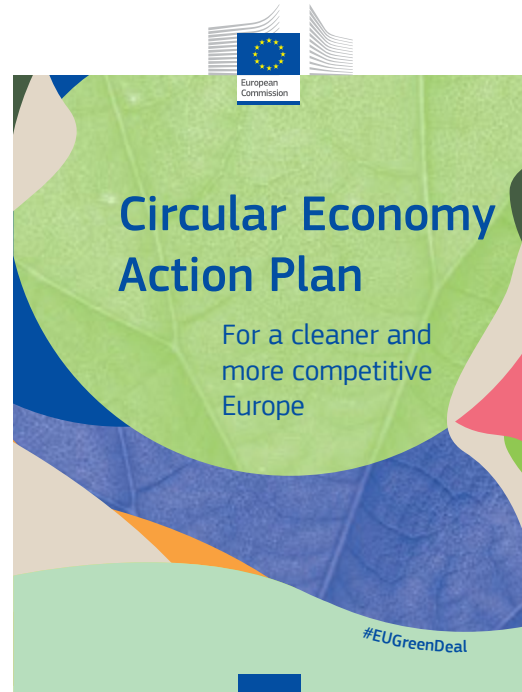
UNIFE publication on Taxonomy implementation

c. Ecodesign Sustainable Product Regulation and other initiatives

As part of the 1st Package of Circular Economy the 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 main concerns for the rail sector identified by the members of the UNIFE Sustainable Transport Committee (STC) are primarily, the inclusion of rail-related products in the scope of the regulation and the possible misalignment with existing rail environmental declaration methodologies being already in place (Environmental Product Declaration and Product Category Rules). Following exchanges with DG GROW, it was clarified that the actual setting of ecodesign requirements for rail-related products will depend on their inclusion in the upcoming working plan aiming to identify the products for which these requirements are needed. Meanwhile UNIFE and its members continue to closely monitor the preparation of this working plan.

Other important upcoming legislative initiatives being followed by UNIFE's Sustainable Transport Committee are the **Air Quality Directive** review (October 2022) as well as the **Initiative on substantiating green claims** (November 2022).



European Commission's Circular Economy Action Plan



d. Action Plan on long distance rail passenger services

In December 2021, the European Commission presented an ambitious set of proposals under the **Efficient and Green Mobility Package** to modernize the European transport network and help the transport sector cut its emissions by 90% by 2050.

UNIFE welcomed in particular the publication of an **Action Plan on long-distance and cross-border rail** including measures to ease the development of new passenger trains services, including among others, financing for rolling stock, ticketing, and strategies for night trains. This plan demonstrated the Commission's strong intention to position rail transport at the heart of their efforts to green the Union's mobility system.

Consequently UNIFE greeted the adoption of this far-reaching Action Plan and to mark the publication of such an important document, we published a **brochure** to further build on the most relevant issues identified by the European Commission in the Plan and present some concrete proposals to make the Action plan even more effective in the coming years.

In February 2022, UNIFE was invited to speak at the thematic event on the renewal of night trains in Europe organized by the French Presidency of the Council of the EU in Paris. UNIFE Director General Philippe Citroën presented the conclusions of the publication on long distance rail passenger services by recalling the key challenges that have to be tackled before the renaissance of night trains can begin:

- Need for ad-hoc financial support for suitable infrastructure and rolling stock
- Interoperability and regulatory stability to support the full ERTMS roll-out
- New digitalisation solutions to be developed and deployed in order to ease multimodal door-to-door journeys and make travel more passenger friendly
- Promotion of a real level-playing field between transport modes
- Develop a European rail skills strategy to face the twin transition



UNIFE Publication on Cross-border and long distance rail services



4. Digitalisation



Commission Executive Vice-President **Margrethe Vestager** and Commissioner for Internal Market, **Thierry Breton** launching the EU Data Strategy in 2020

Digitalisation is one of the main priorities of the Von der Leyen Commission, and it is crucial in the ongoing transformation of the mobility ecosystem. Throughout 2022, UNIFE closely monitored all the relevant initiatives linked to the European **Data Strategy** launched in 2020 with the objective 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. Among the regulatory initiatives announced by the European Commission in the EU Data Strategy, UNIFE has been mainly focused on the establishment of a “Common European Data Space” for mobility, the so-called Data Act regulation proposal incentivising horizontal data sharing across sectors, and the Cybersecurity Resilience Act.

As described in the UNIFE Vision Papers, **Digital trends in the rail sector** and **Rail fit for the digital age**, data is at the core of the on-going digital transformation of the rail sector and digitalization remains one of the key levers of the European rail supply industry to continue driving innovation in our sector and ensure our competitiveness at the global level.

The newly established UNIFE Digitalisation Committee, taking over from the previous Digitalisation Platform, continued to successfully bring the European rail supply industry’s views and objectives to the centre of the ongoing digital debate, decisively contributing to these discussions and effectively engaging in a fruitful dialogue with decision-makers and other key stakeholders.

a. European Common Mobility Data Space

In December 2021, UNIFE attended a workshop co-organized by DG MOVE and DG CNECT to present the concept of a **common European mobility data space (EMDS)**. The Commission explained that the EMDS will aim to facilitate access, pooling and sharing of data from existing and future transport and mobility databases, while providing better control to companies and individuals who generate the data. This will help achieve the ambitious goals set in the Sustainable and Smart Mobility Strategy by strengthening the performance of the European transport sector and improving the use of data in all modes of transport.

As per the European Commission 2023 **work programme**, recently presented by President Von der Leyen, a non-legislative initiative on common European mobility data space is expected in 2023. UNIFE will monitor this initiative to ensure the significant work being conducted at Europe's Rail Joint Undertaking for the definition of the architecture of the future federated rail dataspace will be properly considered in the broader architecture of the European Mobility Data Space.

b. Data Act

The Commission proposal on Data Act was published in February 2022 as part of the EU Data Strategy (2020), with the objective to set-up harmonised rules on fair access to and use of data, in both B2B and B2G (Business to Government) contexts.

The proposal of the Commission seems however to be unfit for B2B industries such as rail supply, where data-sharing is predominantly stipulated in bilateral contracts/agreements. Hence, UNIFE members do not believe that cross-sectoral horizontal rules will achieve the European Commission's objective to enhance and foster data sharing. By contrast, a one-size-fits-all approach could bring about negative impacts which outweigh the potential benefits of the EU Data Act, especially in the field of critical infrastructure, including rail infrastructure.

For this reason, UNIFE has published a position paper in July 2022 to better explain what are the

main areas of concerns for the Rail Supply Industry. While UNIFE is not against the creation of a data sharing market, it is necessary to better clarify the access, usage and control over data, by taking into account actual market conditions and requirements in such a way to benefit all the market participants.

To this end, UNIFE has been clearly calling for new definitions of data holder versus data user, and raw data versus derivate data, so as to better reflect the business reality in the rail sector. The general obligations for the data holder to make the data available to a third party free of charge might eventually jeopardizes the ongoing investments of digital products/services suppliers. Competitiveness of EU suppliers must be preserved at global level.

The main priorities and solutions proposed by UNIFE members have been shared and presented over the past months to the key EU stakeholders involved in the negotiations. This work will continue in 2023, as both the Council and the European Parliament will finalise their respective positions and enter the critical trilogue phase.

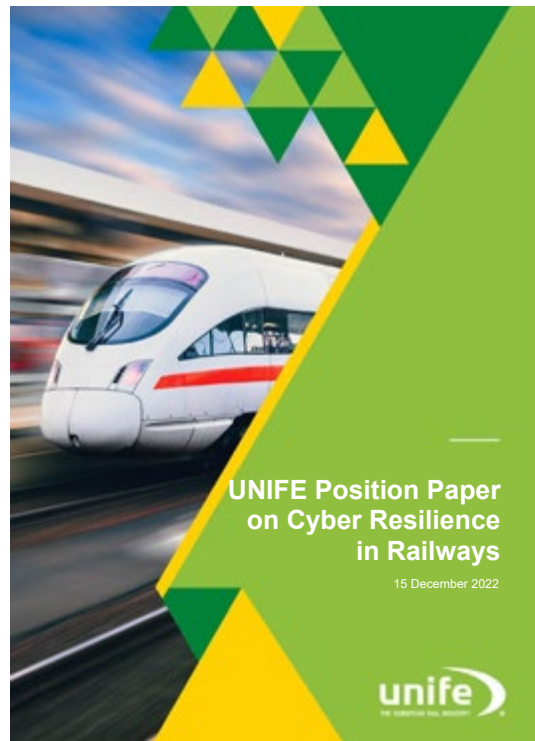


UNIFE publication on Data Act Regulation proposal

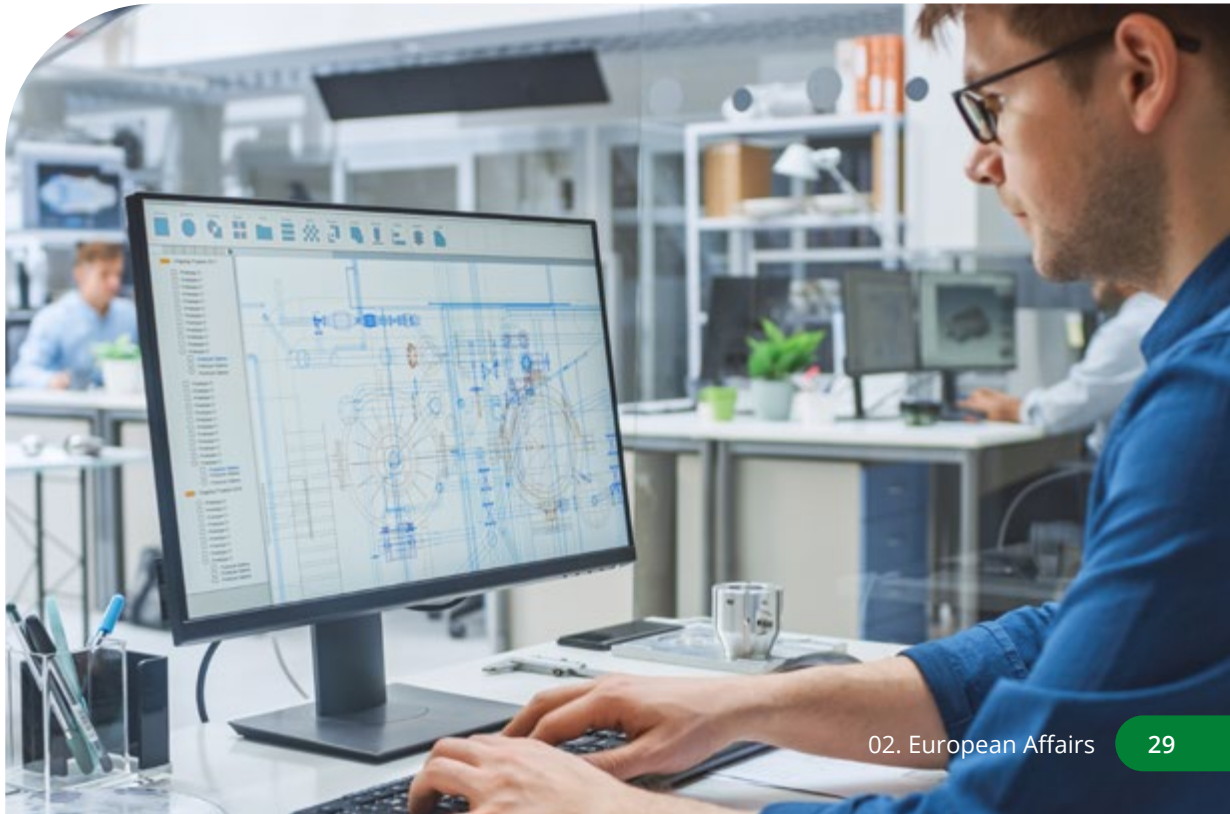
c. Cyber Resilience Act

In September 2022, the European Commission made a proposal for a regulation on cybersecurity requirements for products with digital elements – the Cyber Resilience Act – aiming to bolster cybersecurity rules to ensure more secure hardware and software products.

UNIFE has flagged early in the process that this proposal would see difficult and burdensome applicability in the rail sector. The main concerns are related to technical difficulties on implementation (e.g. applicable at product level, not considering the rail sector is a system of sub-systems), maintenance of exploited vulnerabilities (interfering with rail safety regulation, homologation process, vehicle authorisation process), and supply chain disruption and lower competitiveness in the internal market. Throughout 2023, UNIFE will continue to actively convey its messages regarding the Cyber Resilience Act.



UNIFE Position Paper on Cyber Resilience in Railways



5. Investment Policy

“UNIFE is continuously advocating for the efficient absorption and implementation of this exceptional amount of EU funding that can be used to support rail investments across EU Member States and beyond to make rail the backbone of sustainable mobility”

a. EU funding for rail under Next Generation EU and the EU Multiannual Financial Framework

Rail investments within the EU-27

2022 was marked by the transition from programming to implementation of key EU funding programmes which will be used to boost rail related investments over the coming years. UNIFE has been proactively engaging with a wide range of EU and Member States stakeholders to make sure that these programmes effectively feature rail so it receives sufficient financial allocations which will allow society as a whole to advance on the decarbonisation agenda.

The unprecedented **Next Generation EU funds**, with the **EU Recovery and Resilience Facility (RRF)** worth approximately €800 billion (in current prices) at its centre, and which includes €55 billion for rail-related investments, has reached cruise speed during 2022. 26 Member States have their National Recovery Plans fully approved and the achievement of milestones and targets regarding the programmed reforms and investments is allowing Member States to unlock such funds. A relevant example is the ambitious Italian project to deploy ERTMS across its territory, for which the country had allocated €3 billion which are already being contracted. It is important to highlight that Member States still have at their disposal approximately €225 billion regarding the loan component of the RRF. **These funds can be requested until August 2023** and



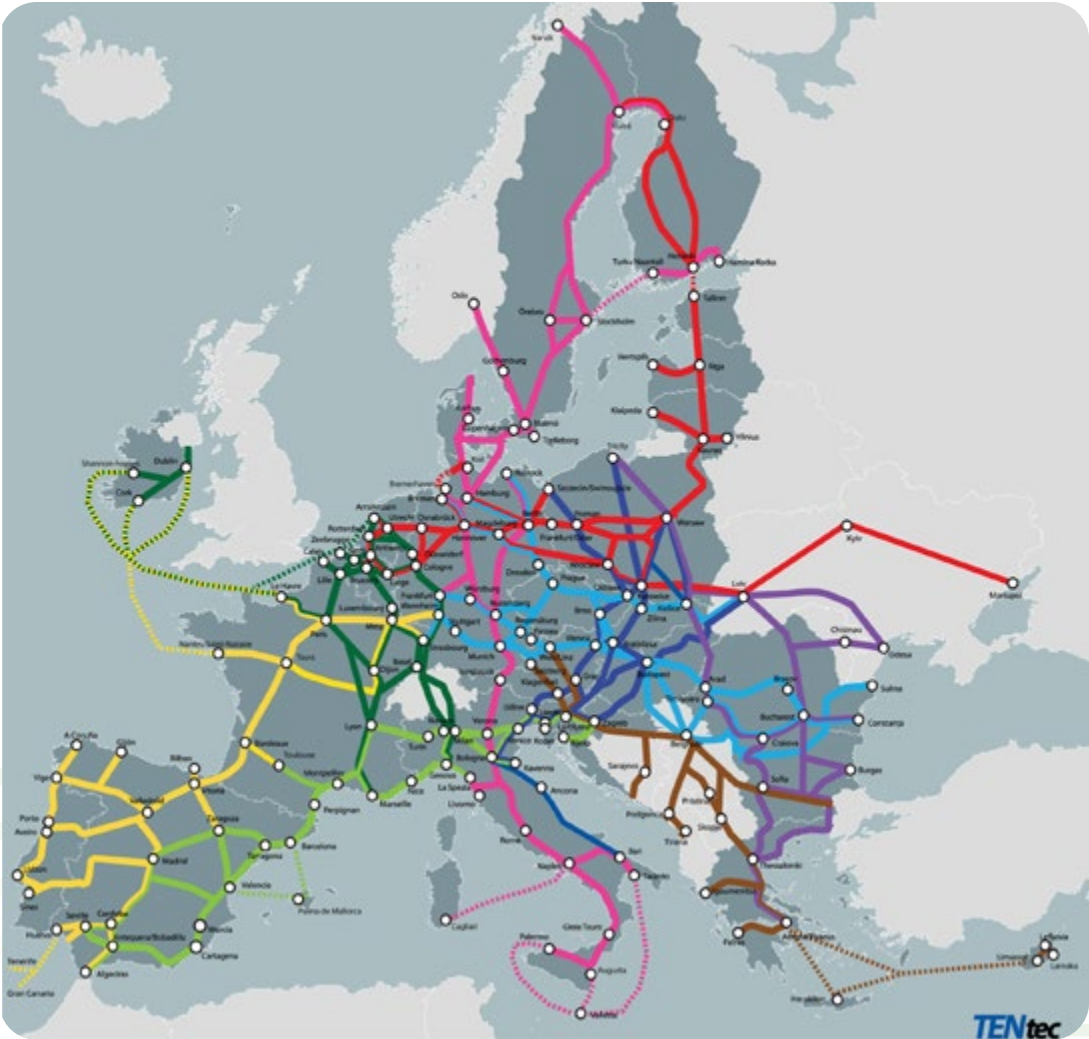
the Commission has already indicated a set of eligible investments – including further railways electrification and zero emission rolling stock – that can be supported in the context of the newly announced **REPower EU Strategy**, aimed at cutting of dependencies of fossil fuels.

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 receive at least 70% of such amount. This is confirmed looking at the results of the 2021 call for proposals which saw over €4 billion out of the €5.8 billion available allocated

to rail projects, including €350 million for ERTMS. Future CEF calls for proposals will continue the same trend of benefiting rail projects over the coming years. Eligible activities that can be supported and which rail suppliers can benefit from either directly or indirectly are those relating to completion of missing links (including cross-border ones), modernisation of infrastructure, ERTMS deployment both onboard and trackside, alternative fuels infrastructure on the rail network and infrastructure adaption for military mobility.

2022 was also marked by the **revision of the TEN-T Regulation**. UNIFE is actively involved to support an ambition revision which should

establish the enabling conditions to complete the TEN-T rail network by 2050, with intermediate deadlines in 2030 and 2040 – thus stimulating rail market growth in the years to come. To ensure the rail supply industry messages are well heard, UNIFE has developed a position paper which was widely disseminated to EU and national decision-makers over the last months. At this time, inter-institutional negotiations between Commission, Parliament and Council are yet to start. Among the key topics at stake, it will be vital to come up with a strong commitment for the effective and speedy deployment of ERTMS across the entire EU TEN-T Network.



European TEN-T Network

UNIFE participated in the **Connecting Europe Days**, previously known as the TEN-T Days, which the European Commission organised in Lyon in June under the French Presidency of the Council of the EU. The event brought together politicians, industry representatives and the European Commission to discuss transport and mobility. Among others, participants had the opportunity to see state-of-the-art innovations and an exhibition of EU-funded projects. The UNIFE stand was one of the most popular spots of the exhibition due to the presence of the SIEMENS ETCS simulator which was tested, amongst others by European Commissioner for Transport Adina Valean and European ERTMS Coordinator Matthias Ruete.

The **European Structural and Investment Funds (ESIF)** continues to be a key tool within the **EU Cohesion Policy** that supports various rail related investments at the level of the Member States. At the release date of our annual report, the vast majority of Member States have seen their Partnership Agreements adopted by the Commission, paving the way for the approval of the Operational Programmes which will contain the proposed budgets and projects to be supported using these funds. UNIFE is actively monitoring the approval of these programmes providing its Members with early market intelligence to support business pipelines generation. As a reference, during the period 2014-2020, about €20 billion have been allocated to rail projects under ESIF. Consequently, given that Member States have a global amount of nearly €300 billion ESIF at their disposal for the 2021-2027, we should



UNIFE publication on the Revision of the TEN-T Regulation

expect at least the same level of commitment as in the previous programming period. In this sense, UNIFE held a high level meeting in April with the **Cabinet of EU Commissioner Elisa Ferreira, in charge of this portfolio together with EU Commission's Directorate General for Regional Policy (DG REGIO)**, to emphasise the significant necessities of our industry so that appropriate funding can be allocated to rail.



Elisa Ferreira, European Commissioner for Cohesion and Reforms

Rail investments beyond EU's borders

The European Commission is also engaged in providing financial support to neighbouring countries of the Western Balkans to advance on reforms and investments. The EU Economic and Investment Plan for the **Western Balkans** sets out a substantial investment package aimed at mobilising up to €9 billion of funding for the region including the support for sustainable connectivity.

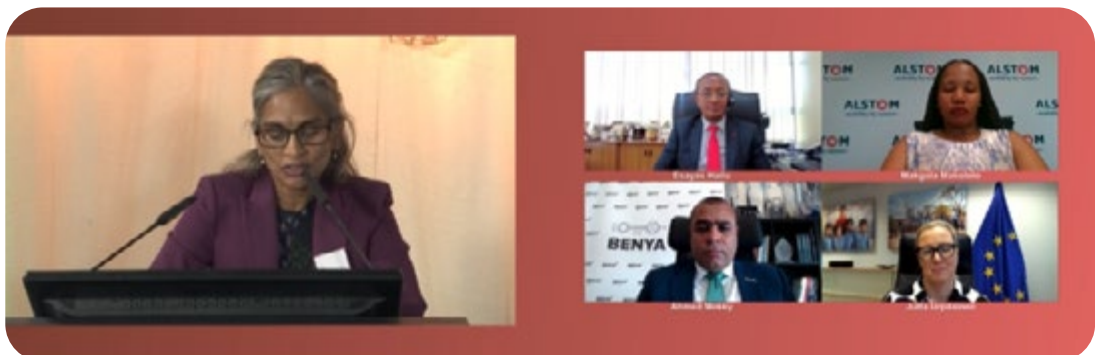
In May UNIFE brought together, in an exclusive webinar organised for its members, some of the main stakeholders of this Plan to discuss the state of play of rail investments and reforms in the region. The event featured a panel composed of high-level representatives from the European Commission: Maja Bakran (Deputy Director General, DG MOVE), Michael Voegele (Deputy Head of Unit of Western Balkans Regional Programmes, Economic Investment Plan, DG NEAR), regional stakeholders: Matej Zakonjšek (Director, Transport Community Secretariat of the Western Balkans), and UNIFE Members. The discussion examined upcoming flagship rail projects in the Western Balkans, explained suitable investment support mechanisms currently available and took stock of the ongoing extension of the Trans-European Transport Network (TEN-T) into the region. These are key elements for the swift, full integration of the Western Balkans into the EU rail market and efforts to untap the potential that sustainable rail investments and reforms can offer to both regions.

On the sidelines of the **EU-Africa Summit**, held in Brussels on 17 and 18 February, the European Commission unveiled 11 Strategic Transport Corridors in Africa where it aims to concentrate



significant investments in the coming years. These will be supported by the flagship **EU Global Gateway strategy**, which aims to mobilise €300 billion in investments globally until 2027 through the Team-Europe approach. For Africa alone, Commission President Ursula Von der Leyen announced that €150 billion in investments will be dedicated to the continent and that sustainable and quality infrastructure, including along the Transport Corridors, is one of the main priorities.

Additionally, an **EU-Africa Business Forum** was held during the same period. Several large, high profile events were organised to discuss topics central to the creation of an enabling framework (i.e., financing, sustainable energy, infrastructure and connectivity), and building stronger and sustainable value chains. It is important to highlight that UNIFE was represented at a High Level Panel on Connectivity and Infrastructure, along with **Jutta Urpilainen, the EU Commissioner for International Partnerships**, and **Amani Abou-Zeid, African Union Commissioner for Infrastructure and Energy**. This event was a welcomed opportunity to present the European Rail Supply Industry's ability and willingness to deliver quality infrastructure and rail solutions in Africa.



EU-Africa Business Forum

b. EU State Aid rules

“A relaxation of EU State Aid Rules to advance the modal shift”

As announced in the European Commission's Action Plan to boost cross border and long-distance passenger rail published in December 2021, the Commission's 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”. The Railway Guidelines set out the conditions under which aid to railway companies may be considered compatible with the internal market and State aid rules. According to the Commission “the long-standing lack of interoperability, alongside the strong need for further digitalisation, is holding back the development of seamless, cross-border rail services. State aid can help address these market failures and improve the competitiveness of rail, thus facilitating modal shift, cutting transport emissions and reducing road congestion”. UNIFE agrees with this assessment and welcomes the Commission's efforts to accelerate the modal shift to rail. In fact, rail transport is a cornerstone for the fulfilment of EU's climate objectives and to decarbonise the transport sector. These messages were gathered in the respective position paper published on March 2022.

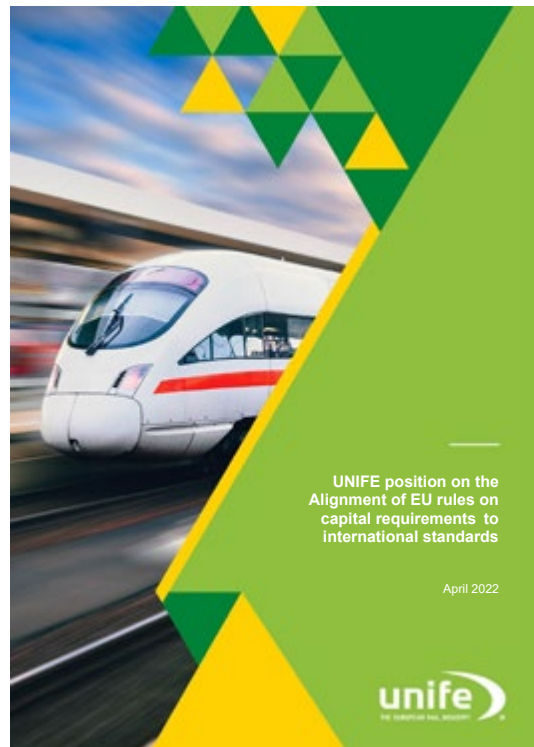


UNIFE publication on the Revision of the State aid Railway Guidelines

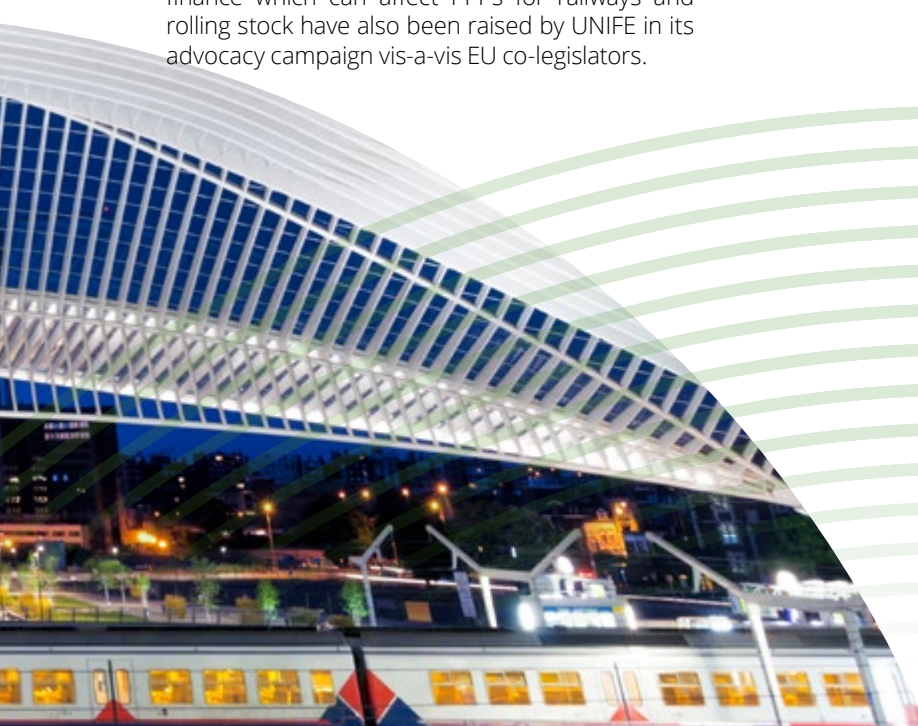
c. Capital Requirements under Basel III

“UNIFE alerts on the potential harm of Basel III transposition for the real economy and the rail sector”

The Capital Requirements Regulation (CRR3) update, which was proposed by the European Commission in October 2021 in the context of the banking package regarding Basel III, can have severe implications for the provision of cost-effective trade finance to the real economy. During 2022, UNIFE, as part of a broader coalition that includes the International Chamber of Commerce (ICC), the banking sector and strategic European industries, has been actively advocating for maintaining the Credit Conversion Factor (CCF) for Technical Guarantees at 20% and seeking clarity on the application of the effective maturity recognition for trade finance products and the provisions relating to risks weights on project and object finance. These messages were gathered in a position paper published by UNIFE in April. Other aspects regarding the credit risk weights for specialized lending regarding project and object finance which can affect PPPs for railways and rolling stock have also been raised by UNIFE in its advocacy campaign vis-a-vis EU co-legislators.



UNIFE publication on the Alignment of the EU rules on capital requirements to international standards



d. Engagement with banks to mobilize financing for rail

As the EU Climate Bank, **the European Investment Bank (EIB)** successfully reviewed its Transport Lending Policy (TLP) in 2022. UNIFE has participated in the discussions leading up to the revision to communicate the need for continuous support of this institution into our sector. In concrete terms, urban mobility, rail infrastructure, clean rolling stock, rail freight and rail digitalisation and automation are now listed as top priorities for the EIB. Furthermore, our industry positively observes that the provisions on procurement and the risk of distortions caused by anti-competitive practices (including, State aid, direct subsidisation, etc.), previously only incorporated under the shipping provisions are now applying to all sectors.

To continue this constructive dialogue, UNIFE held an exchange with EIB Vice-President Kris Peeters on 21 November to communicate important priorities on topics such as the

prospects of the new EIB TLP and support for rail alternative fuels technologies – taking into account Commission’s President Von der Leyen announcement on the State of the Union about the creation of an “European Hydrogen Bank” to mobilise up to €3 billion for Hydrogen projects in Europe, impact of Taxonomy on rail investments, EIB support for railways in Africa and the presentation of the 2022 UNIFE World Rail Market Study.

UNIFE has also constructively engaged over the past months with **European Bank for Reconstruction and Development (EBRD)**. The European Commission assigned the EBRD to conduct a study on the sustainable transport corridors connecting Europe with Central Asia, as one of the actions taken in support of the Global Gateway initiative. UNIFE has had several working meetings with the EBRD to communicate the priorities for our industry. The finalization of the report is due in May 2023.



Philippe Citroën and Kris Peeters Vice-President of the European Investment Bank

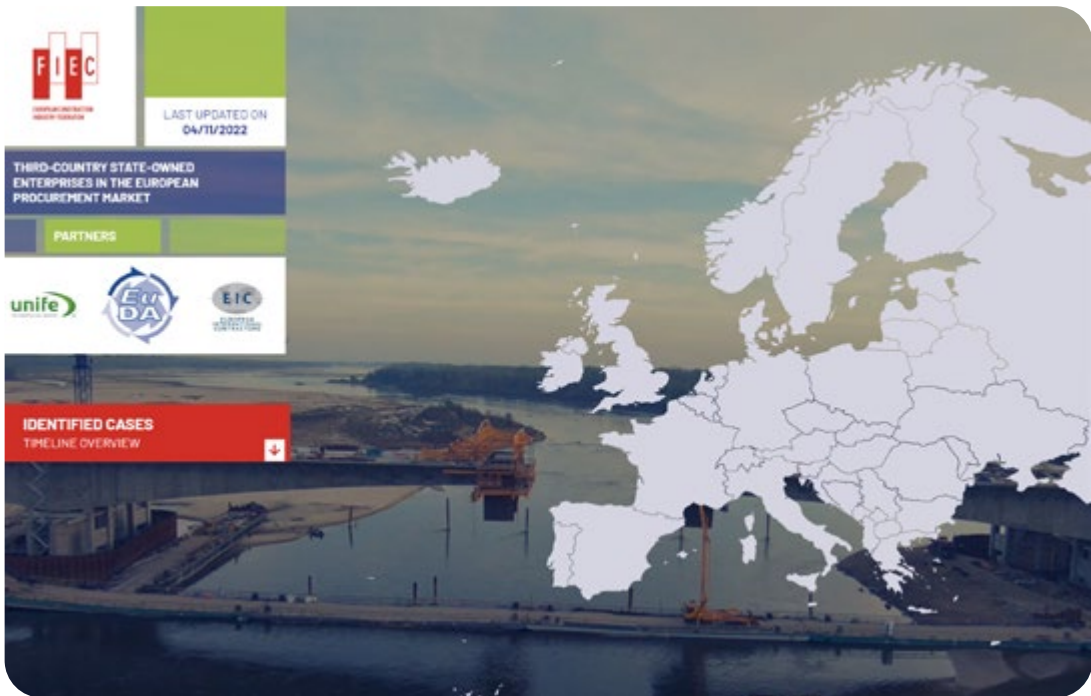
6. Public Procurement in Europe

With the National Recovery Plans (NRPs) and other sources of EU funding for rail, there is an unprecedented opportunity – and challenge – to ensure that funding dedicated to rail will be spent in the best possible way, one that ensures the timely and fair implementation of projects.

Although the **2014 modernisation of the European Union's public procurement framework** marked a positive step forward on a number of topics, there remain shortcomings to ensuring fair competition between suppliers and establishing an approach in rail procurement that focuses on best value, rather than price alone. UNIFE has long sought to close these gaps, and progress has been made in this respect.

In May 2021, the European Commission proposed an **instrument to tackle distortions created by foreign subsidies**. The negotiations progressed rapidly, and a final agreement in trilogues was found on 30 June 2022 under the auspices of the French Presidency of the Council of the EU. The final vote in the plenary session of the European Parliament was held in November, and the Regulation entered into force in December. UNIFE and its trade alliance AEGIS Europe have been extremely active from an advocacy perspective to ensure that the instrument, which will set up new disciplines in the framework of public procurement procedures and concentrations, is also applicable to rail supply.





UNIFE and partners map on SOE tenders in the EU

This instrument is all the more important as, in 2022, 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.

In parallel to a future EU instrument, 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 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. Discussions have therefore continued within UNIFE membership, throughout 2022, to define the next steps and actions.

In the context of the Russian aggression against Ukraine, UNIFE monitored during 2022 the **various packages of sanctions imposed by the EU against Russia**. One of the actions taken was the implementation of a full prohibition of the participation of Russian nationals and entities in procurement contracts in the EU. This means that EU contracting authorities' entities are obliged not to consider Russian bids and/or covering EU (or third countries') companies with Russian ownership.

Lastly, in 2022, UNIFE has continued to drive the **ATEGIS Europe** alliance's activities on public procurement. Throughout the year, the alliance pushed for reforms of the European public procurement framework during its exchanges with the European Commission, the European Parliament and individual Member States.

7. Urban mobility

“Rail-bound urban transport is the most environmentally-friendly, safest, and most reliable rapid transport mode, providing the best solution to urban mobility challenges”

As part of its winter mobility package of 2021, the European Commission presented its **New Urban Mobility Framework** last December with the main objectives of contributing to EU Green House Gas reduction targets as set in the Climate Law (including -55% by 2030) and improving transport and mobility to, in and around cities. One of the key features is a more ambitious approach to sustainable urban mobility planning linking with new requirements put forward in the revised TEN-T Regulation for the largest 424 EU

cities. This will require making urban transport resilient, environmentally-friendly and energy-efficient and identifying zero-emission solutions for urban logistics as well as adequate and efficient funding and financing.

In this sense, UNIFE together with UITP in the framework of **Rail Forum Europe**, organized an event on 6 December at the European Parliament on financing for urban mobility.



Welcoming remarks from **Andrey Novakov** (Member of the European Parliament and Rail Forum Europe President) during the UNIFE-UITP Rail Forum Europe event: Unlocking urban rail investments - the key to climate-proof public transport



03.

International Affairs

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1. The International Procurement Instrument

After intense negotiations over the past ten years, 2022 was finally the year when the **International Procurement Instrument (IPI)** was finalised and adopted. The text was approved by the European Parliament in June, followed by its official adoption by the European Council and its signature and publication during the same month. The IPI regulation entered into force on 29 August.

This is a tremendous victory and a fundamental milestone for UNIFE, as well as for AEGIS Europe, which have been extremely active on the file. According to the **Member of the European Parliament Daniel Caspary** (EP Rapporteur of the IPI Regulation), *"together we have ensured that IPI becomes an effective and efficient instrument that improves the reciprocity within our markets. IPI is a significant door opener for our European companies in third countries as it removes unfair barriers and promotes fair competition"*.

The instrument is particularly important looking at the market restrictions of third countries that continue to limit growth and business opportunities for European suppliers. **As the 2022 World Rail Market Study reported, worldwide rail market accessibility has fallen to only 61% - compared to 62% in 2020 and**

to 63% in 2018. This means that a substantial percentage of the global rail market is not open to international rail suppliers, limiting the full utilisation of innovative products that can decarbonise transport and provide millions with sustainable, reliable mobility. This situation stands in drastic contrast with the European market that is open and freely accessible to non-European rail suppliers.

Later in the year, UNIFE and its members entered in a fundamental step of the entire process: the implementation phase of the IPI Regulation. In the second half of 2022, UNIFE started a series of meetings with the European Commission, Member States and other relevant stakeholders, in order to exchange views on the matter.





2. The regulation on foreign subsidies distorting the internal market

The year 2022 was also marked by the fast legislative progress and conclusion of negotiations on the regulation on foreign subsidies distorting the internal market instrument on foreign subsidies. This was initially proposed by the European Commission in May 2021. At the beginning of May 2022, both Member States and the European Parliament have agreed on a common position on the file. Thanks to the tremendous efforts made by the **French Presidency of the Council of the EU**, the text got its green light at the end of June 2022.

The Regulation was approved by the European Parliament at its plenary session in November 2022, adopted by the European Parliament and Council in the same month and published in the Official Journal of the EU on 23 December 2022 entering into force on 12 January 2023.

With this important initiative, the Commission acknowledged for the first time that there is a growing number of instances within the EU in which foreign subsidies have distorted market operations, or bidding in public procurement, to the detriment of EU companies.

The Regulation would grant the Commission the power to investigate financial contributions granted by non-EU governments to companies active in the EU. If it finds that such financial contributions constitute distortive subsidies, it could impose redressive measures. By doing so, it responded to the call of many industrial sectors, in particular the European Rail Supply Industry.



UNIFE and its trade alliance AEGIS Europe have been extremely active in the negotiations throughout 2022, especially to make sure that there is no legal barrier to apply the instrument on goods in the specific context of public procurement.

3. Carbon Border Adjustment Mechanism

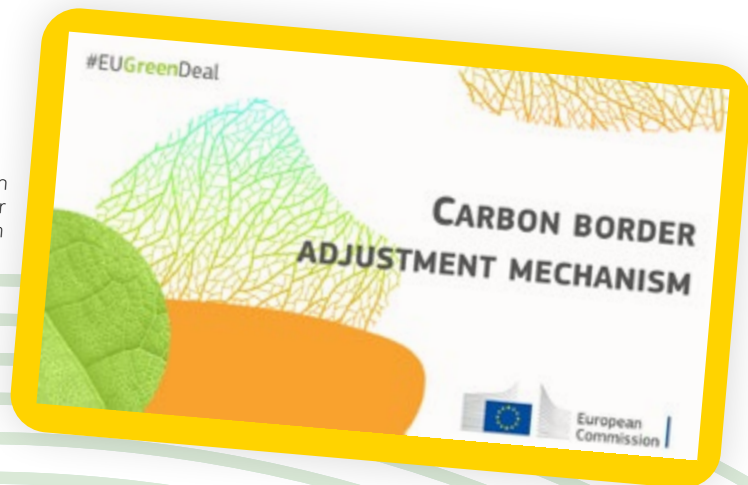
The **Carbon Border Adjustment Mechanism (CBAM)** is part of the “Fit for 55” package released by the European Commission in July 2021. It aims to address carbon leakage and to contribute to the Green Deal objectives. Throughout 2022, UNIFE organised a number of meetings with Members of the European Parliament, and Member States to express our its priorities, and submitted amendments to the different reports of the European Parliament’s Committees.

While **UNIFE emphasised its support of the stated objective to establish a level-playing field on carbon content and to avoid carbon leakage, it also highlighted the significant risks for the competitiveness of downstream industries such as rail supply.** UNIFE stressed that 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 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.

The trilogues phase between the European Commission, Council and European Parliament reached its end in December 2022. The full adoption of the law is expected by April 2023 and shall apply from October 2023 with a transitional period until 2026. As a result of the negotiations, it should be noted that the scope of the instrument was extended to new products – including, hydrogen, certain precursors and some downstream products also introduced explicit references for the inclusion indirect emissions (CO₂ emissions linked to the consumption of fossil electricity), as UNIFE had been advocating.

European Commission
proposal on Carbon Border
Adjustment Mechanism



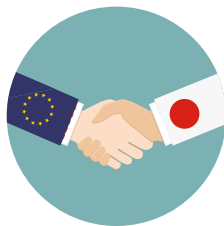
4. Monitoring of existing trade agreements

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 matters because they encompass a number of innovative provisions and offer opportunities to reduce tariffs and address barriers and discriminatory requirements. As such, they can be beneficial for the entire supply chain (e.g. local content requirements) that are normally treated under specific chapters focusing on public procurement.

However, European rail suppliers still face a number of trade barriers in third countries markets, especially difficulties related to public procurement procedures. Therefore, UNIFE has been taking a number of actions during 2022, in particular by organising two important meetings with **Denis Redonnet, Chief Trade Enforcement Officer (CTEO) and Deputy Director General of the European Commission's DG TRADE**, in order to keep the debate at the highest level.



Meeting between UNIFE and **Denis Redonnet**, CTEO and Deputy Director General of DG TRADE, European Commission



EU-Japan Economic Partnership Agreement

UNIFE was particularly vocal on the EU-Japan Economic Partnership Agreement (EPA) during 2022, as it is a very

important market for the European Rail Supply Industry, and even with the agreement in place the European rail suppliers still face many difficulties accessing the market. Against this background, UNIFE welcomed the EU-Japan Summit joint statement which referred to the

need to “cooperate further on the effective implementation of the government procurement provisions in the EPA”. Among other initiatives, UNIFE responded to a survey launched by the European Commission in April to gather inputs from stakeholders on the main problems encountered on the Japanese market, through which UNIFE had the opportunity to once again list the various rail supply problems and challenges. In addition, UNIFE, together with the Japan Tax and Public Procurement Helpdesk and DG TRADE, organised the webinar “**EU-Japan Partnership Agreement: What’s in it for EU railway suppliers?**” in June.



EU-South Korea Free Trade Agreement

Despite the existence of a Free Trade Agreement between South Korea and Europe since 2011, there are currently many obstacles related to public procurement, technical aspects and government support that impede access to the South Korean rail market for European

suppliers. This shortcoming is also due to the fact that this deal was less ambitious than the more recent generation of trade agreements. UNIFE continues to actively collaborate with DG TRADE to ensure a level-playing field and degree of reciprocity in procurement relations.

UNIFE also continues to monitor negotiations and entry into force of other free trade agreements, such as with Chile, Mexico and Australia, and to inform our members accordingly.

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

Arrangement on officially supported export credits and the Rail infrastructure Sector Understanding (RSU), and EU Export Credit Facility

In this respect, UNIFE has been closely interacting with Commission DG TRADE's officials to communicate how important this Facility can be for our sector and how and which coordination role it could play among the existing European Export Credit Agencies (ECAs).



Export credits remain a very important tool for rail suppliers when doing business abroad. While discussions on a potential modernisation of the OECD Arrangement on Officially Supported Export Credits are ongoing, the focus of attention seems to be turning now on the establishment of an EU Export Credit Facility.

6. Bilateral cooperation with third countries

Bilateral cooperation with third countries remains one of UNIFE's priorities. Throughout 2022, UNIFE had the opportunity to meet with several partners across the globe.

Cooperation with Gulf Countries (GCC-SG)

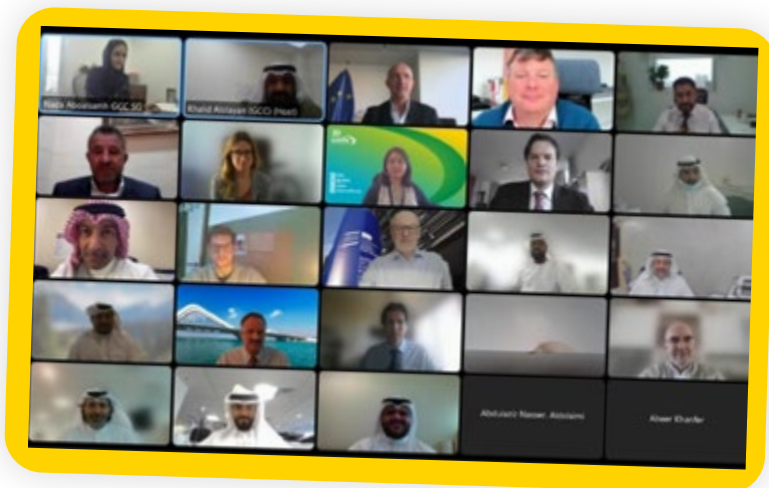


The cooperation between UNIFE and the Gulf Cooperation Council Secretariat General (GCC-SG), which oversees economic developments in the region, has been established in 2014

and since then both organizations have been consolidating their relationship.

In March, UNIFE participated in **the Fifth Gulf Cooperation Council – European Commission**

Joint Workshop for Railways. UNIFE was also pleased to once again participate in the annual **Middle East Rail Conference**, held this year in Abu Dhabi on 17-18 May, where we participated in two panel discussions: “Exploring a digital journey towards the railway of the future” and “Funding futuristic networks: the road to financing for the railroad of the future”. The conference proved to be an important and fruitful opportunity to make deeper connections with a wide range of government stakeholders from the region, learn more about ongoing and upcoming rail projects, exchange best practices and present our industry's priorities.



Fifth Gulf Cooperation Council – European Commission Joint Workshop for Railways

Cooperation with ASEAN countries

UNIFE participated in the **EU-ASEAN ERTMS Workshop** in May to discuss ERTMS developments and deployment across both regions. ERTMS is the backbone of digital rail and a main driver of global railway modernisation.



EU-ASEAN ERTMS Workshop

Cooperation with North America

During InnoTrans, which took place in Berlin in September 2022, UNIFE had the opportunity to meet with North American partners and further strengthen its cooperation with them.

Among other initiatives, a Memorandum of Understanding was signed by **Sylvia Newell President Canadian Association of Railway Suppliers (CARS)**, **Patricia Davitt Long President US Railway Supply Institute (RSI)**, and **Philippe Citroën, Director General UNIFE**. This agreement is intended to enhance our ability to support the health and future growth of our industry while identifying opportunities for our organizations to work together in the advancement of those objectives.

During 2022, UNIFE has also maintained close and solid relations with our counterparts from the American Public Transportation Association (APTA). In February, UNIFE Director General Philippe Citroën and APTA President Paul Skoutelas chaired an online meeting to discuss a number of policy priorities for both sides of the Atlantic, including the EU National Recovery Plans and President Biden's Bipartisan Infrastructure Law. During InnoTrans, UNIFE and APTA also organised a bilateral exchange and a joint discussion on UNIFE and APTA cooperation, focusing on growth drivers for both rail markets and on the main areas of cooperation between the two organisations.



CARS, RSI and UNIFE Sign Memorandum of Understanding to advance the Railway Supply Industry



UNIFE and APTA Cooperation event at InnoTrans: **Jeff Nelson** (Chair, APTA), **Ana Manuelito** (Public Affairs Manager, UNIFE), **Paul Skoutelas** (President, APTA), **Philippe Citroën** (Director General, UNIFE)

Cooperation with Brazil (ABIFER) and Australia (ARA)

UNIFE also had the great pleasure to meet its counterparts from the **Brazilian Association of the Railroad Suppliers (ABIFER)** and the **Australasian Railway Association (ARA)** during InnoTrans. The organisations had the opportunity to exchange on common topics of interest, such as investments, skills shortages and trade challenges. According to the UNIFE's World Rail Market Study, **Brazil is forecasted to**

remain the largest market for rolling stock in Latin America. With a market value of €500 million per year in 2019-2021, Brazilian demand is predicted to rise strongly at 6.3% per year until 2025-2027. Moreover, on the Australian side, the study shows that **the Australian rolling stock segment should continue to grow after a strong increase in the current market.** Growing at a rate of 0,9% per year until 2025-2027, the market is expected to reach an annual total volume of €1 billion.



UNIFE and ABIFER delegation, led by President **Vicente Abate**, during InnoTrans



UNIFE delegation and Australasian Railway Association CEO **Caroline Wilkie**





04.

World Rail Market Study

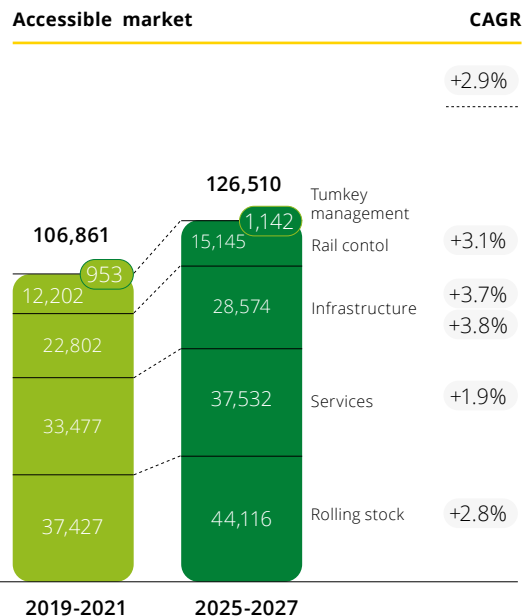
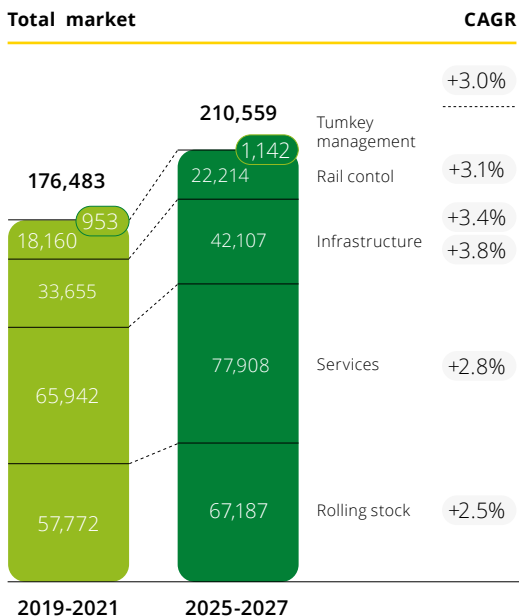
The **ninth edition of the World Rail Market Study (WRMS)**, conducted by Roland Berger for UNIFE, was unveiled by UNIFE Chair Henri Poupart-Lafarge and Director General Philippe Citroën on 20 September 2022 during **InnoTrans**. Published biennially since 2006, the Study provides an **overview of the market in its current form and a forecast of its future development in different regions and market segments**. It also assesses changes in rail market accessibility.

The study projects a **stable growth rate¹ of 3.0% CAGR²** to achieve a market volume of €211 billion per year for the 2025-2027 period. Global commitments to achieve net zero linked to flagship environmental and stimulus programmes such as the EU Green Deal and Recovery and Resilience Facility, and the US Infrastructure Investment and Jobs Act, are supporting further significant investments in rail projects. Thus, demonstrating once more that rail has the best potential to become the backbone of sustainable mobility worldwide and achieve ambitious decarbonisation targets.



Andreas Schwillig (Senior Advisor, Roland Berger) **Philippe Citroën** (Director General, UNIFE) **Henri Poupart-Lafarge** (Chair, UNIFE / CEO and Chairman Alstom) launching the Study at InnoTrans

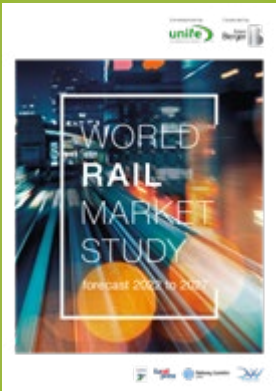
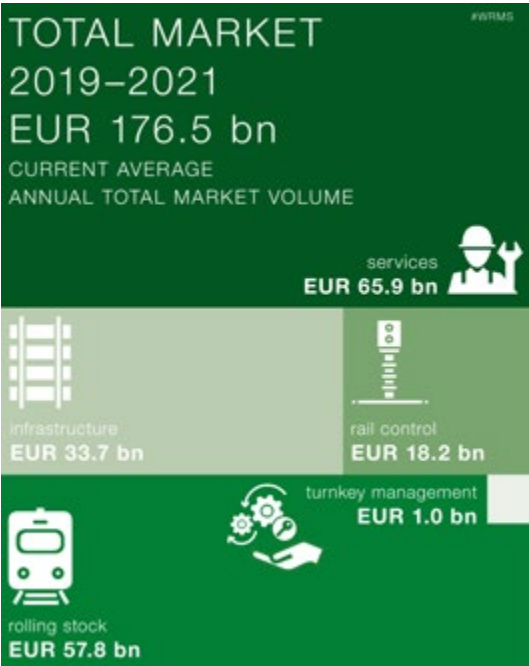
1)Real growth rate excluding inflation based on 2021 prices
2)Compound Annual Growth Rate



The total worldwide rail supply market added up to an average of €177 billion per year in the 2019-2021 period. **Rolling stock was the second largest segment, amounting for €57.8 billion per year in total, followed by the services segment market. Both segments combined made up 70% of the total market, underlining their importance for the rail supply industry.**

While almost all regional markets, except for Commonwealth of Independent States (CIS), are expected to grow in the future, **the highest growth rates are forecasted in the relatively small markets of Africa/Middle East and Eastern Europe, with 7.1% and 6.1% increases, respectively.** However, more mature markets like Western Europe, Asia Pacific and North American Free Trade Agreement (NAFTA) will also grow significantly and therefore account for the largest share of absolute growth.

Overall, worldwide rail market accessibility has declined during the last decade due to higher content requirements and revamped market access barriers resulting in the exclusion of European suppliers from key markets. Indeed, average total market accessibility decreased from around 70% in 2008 to 61% today. **The missed business opportunity between total and accessible market increased during the last decade from €47.9 billion per year to €69.6 billion per year.**



To order a copy of the **UNIFE World Rail Market Study**, please visit the **WRMS** section of the **UNIFE** website





05.

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

2022 **Revision of the Technical Specifications for Interoperability** (TSIs).

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. 2022's key developments in rail standards and regulations

a) Revision of the 2022 Technical Specifications for Interoperability

On 24 January 2020, the EC sent a request to the ERA for the preparation of the 2022 Digital rail and Green freight TSI Revision package. This package is intended to align the TSIs' contents with the EC's high-level policy goals. In 2022, the **ERA Working Parties** and **Topical Working Groups** (TWGs) have been focused

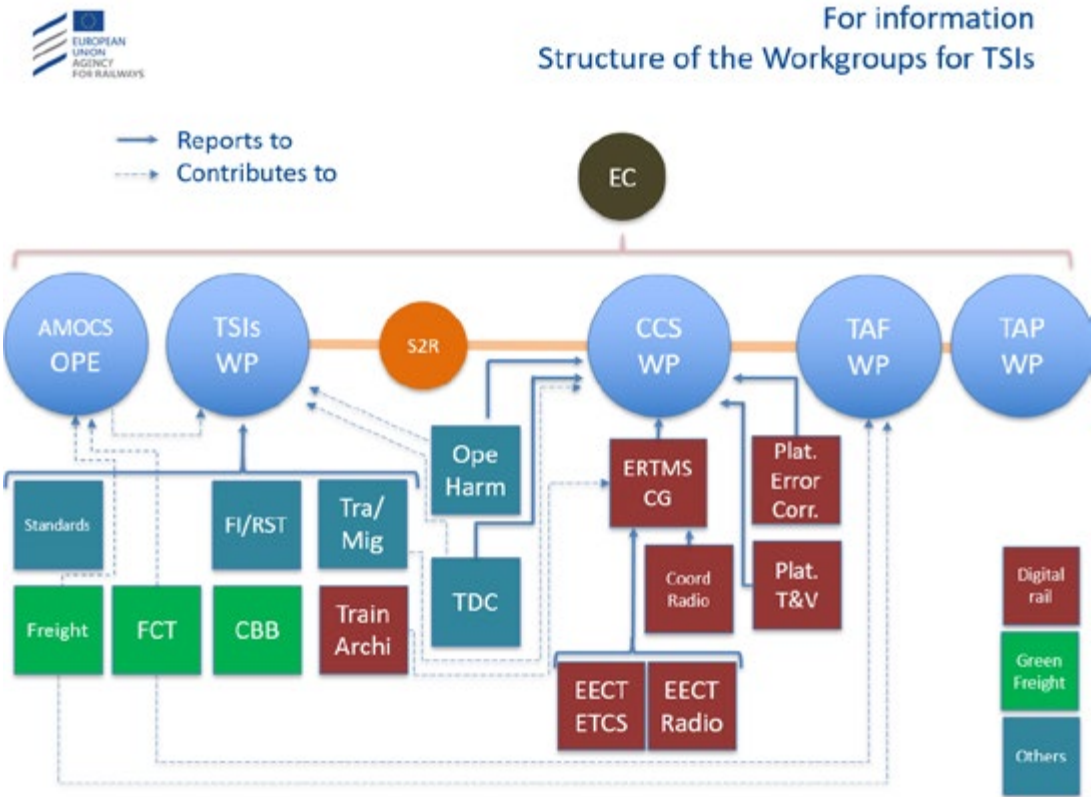
on the preparation and delivery of the ERA TSI Recommendation for 2022 TSI Revision Package to the European Commission and scheduled for vote and publication early 2023.

UNIFE has adapted its internal consultation processes with its committees and technical working groups to best follow and contribute to the new revisions. We are a member of the ERA Working Party on the revision of TSIs which

acts as the steering group for all such activities and has experts nominated to each of the activated TWGs. 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 facilitating the development and authorisation of rail products.

The ERA TSI Working Party held eight meetings on the TSI revision in 2022 to monitor the activities of the TWGs, review and endorse the resulting change request proposals, in addition to those formulated by the Working Party itself. The TSI Working Party was successful in delivering the ERA TSI Recommendation by 30 June 2022 and held several meetings in the second half of the year to finetune several change requests and review the subsequent updates to the TSI Application Guides in 2023 based on the changes contained in the 2022 TSI Revision Package.



ERA Technical Working Groups structure

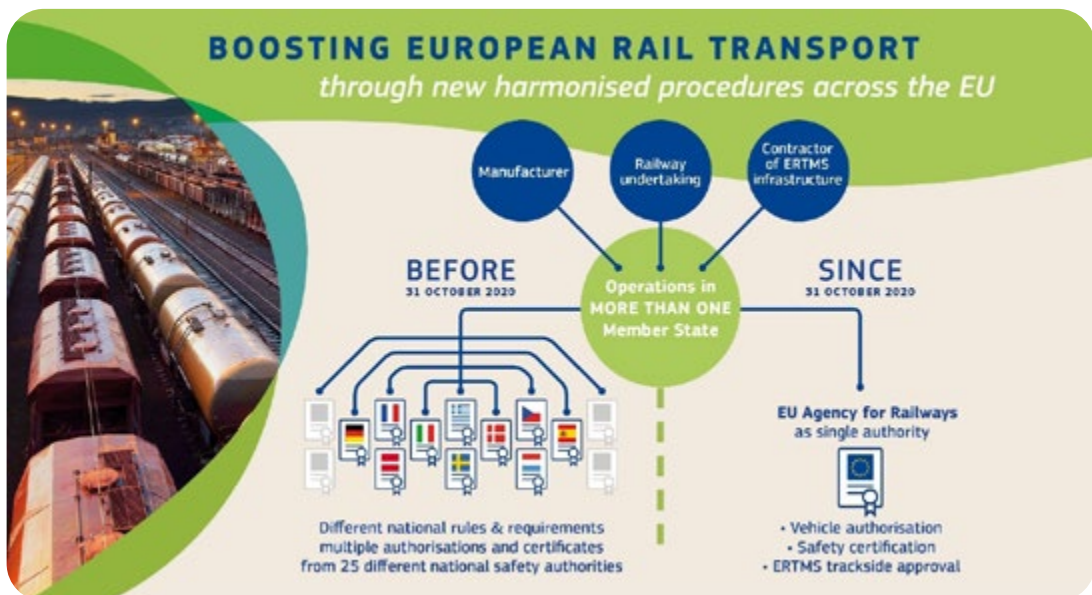
b) Implementation of the Fourth Railway Package's Technical Pillar

The 4RP's Technical Pillar is comprised of the reworked Interoperability and Safety Directives and the ERA Regulation, which entered into force on 15 June 2016. Member States were provided with a three-year transposition period, a possible one-year extension upon request and later a further actionable extension until 31 October 2020 due to inconveniences caused by the COVID-19 disruption. As a result, the Technical Pillar and its new vehicle authorisation regime entering into operation starting 16 June 2019 and 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 removes the remaining technical barriers to the creation of a **Single European Rail Area (SERA)**. A harmonised European authorisation process ran by the newly fortified ERA should result in 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 4100

vehicle authorisation decisions - representing over 46.000 authorised rail vehicles.

UNIFE's focus this past year has been the continued collection of feedback and experience of our members on the new processes in an attempt to ensure lessons learnt are shared, issues resolved and agreements reached where further enhancements can be made to optimise the new system. With now over three years of experience at ERA, 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. Previous feedback has also resulted in the launch the **ERA Vehicle Authorisation Advisory Group** which kicked-off in October 2022, followed closely by the UNIFE Vehicle Authorisation Mirror Group. In 2022, UNIFE also coordinated the industry's response to the European Commission's public consultation on the evaluation of the European Union Agency for Railways and their role under the Fourth Railway Package.



Vehicle authorisation harmonisation under Fourth Railway Package

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 legalisation to be voted on, give recommendations on draft texts and 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.

Four meetings of the EC Expert Group on the Fourth Railway Package were held in 2022 focused on the European Commission's consultation on the 2022 TSI Revision Package texts following the submission of the European Union Agency for Railway's TSI Recommendation to the EC and prior to the scheduled vote by the RISC in early 2023. UNIFE took the opportunity to raise our positions on the priority change proposals within the package, namely those associated with the TSI Transitions, key CCS TSI proposals and overall TSI impact assessment. Throughout the consultations, UNIFE has called on the European Commission, ERA and Member States to ensure the 2022 TSI Revision Package supports the competitiveness of the European railway sector and its supply industry.

d) UNIFE High-Level Dialogue with DG MOVE and ERA on the Implementation of the Technical Pillar of the Fourth Railway Package

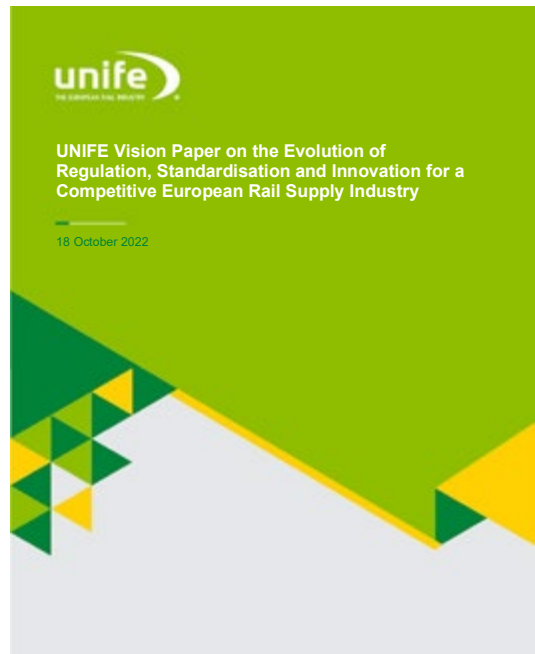
UNIFE has established a high-level dialogue between **DG MOVE's** Directorate C, ERA management teams and UNIFE members at the CTO level on the implementation of the Technical Pillar of the Fourth Railway Package. These meetings have sought to jointly and closely monitor the final implementation activities of the Fourth Railway Package as it entered operation at ERA in June 2019 and to identify common actions to ensure the smooth transition to the new regime. Discussions have covered areas such as the new vehicle authorisation processes and requirements, the development of the related ERA IT tool, the TSI amendments and the clean-up of notified national technical rules.

the key developments of the 2022 TSI Revision Package and the priority items for UNIFE in the final stages of its drafting. Finally, the participants began to exchange of the future evolution of the technical framework after the 2022 TSI Revision Package completion, where UNIFE introduced our Vision Paper on the Evolution of Regulation, Standardisation and Innovation for a Competitive European Rail Supply Industry and explain our vision for how to ensure its balanced, streamlined and stable evolution going forward.

This high-level forum continued in 2022 where participants exchanged on the return of experience of the new vehicle authorisation regime after three years of operation to identify common areas for continued improvement and agree on practical measures to facilitate the authorisation applications and process. Discussions in these meetings also covered

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

In October 2022, UNIFE published its **Vision Paper on the Evolution of Regulation, Standardisation and Innovation for a Competitive European Rail Supply Industry**. This paper was drafted throughout 2022 led by the UNIFE Standards and Regulation Group and consulting all UNIFE members. The UNIFE Vision Paper provides a state of play in the areas of regulation, standardisation and research & innovation as seen from the European rail supply industry and outlines UNIFE's high-level objectives and vision to achieving an efficient technical framework going forward. The UNIFE Vision Paper comes at a key moment for the European railway stakeholders in shaping the European railway target system and defining how to achieve the Single European Railway Area, following the TSI Revision Package 2022 and establishment of the Europe's Rail Joint Undertaking. This UNIFE Vision Paper will therefore provide 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 & innovation domains. The goal is to ensure the future technical framework evolutions support



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

the 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.

f) Cooperation with the Group of Representative Bodies (GRB)

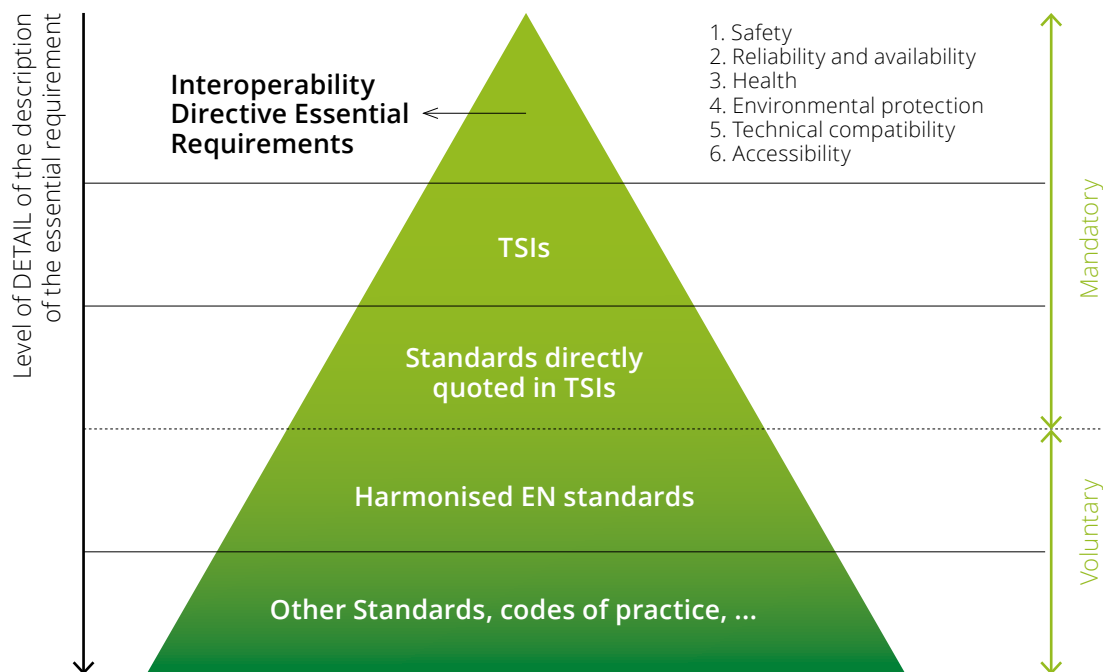
As the official association of Europe's rail suppliers, UNIFE is a member of the **Group of Representative Bodies (GRB)**. The GRB is a group of European railway associations tasked with supporting the sector's consultations with the **European Union Agency for Railways (ERA)** as it composes its work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

The GRB has continued to be highly active throughout 2022, with particular focus paid to the Fourth Railway Package Vehicle Authorisation process and guidance, the revision of the TSIs for 2022 and the budget and functioning of ERA. A number of joint positions relating to regulation and standardisation have been adopted by the

GRB and submitted to the EC, ERA and Member State representatives. The GRB also continues to closely follow all ERA activities and the delivery of its work programme.

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 second mandate for 2021/22. Strong leadership and cooperation among all stakeholders have been vital during the final stages of the Fourth Railway Package Technical Pillar's implementation and the finalisation of the 2022 TSI Revision Package.

✓ For further information on GRB, please visit www.grbrail.eu



Standardisation technical framework

g) UNIFE 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, the complete technical framework of which is represented in the figure below. 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 also participates in Sector Forum Rail (SFR), formerly known as the **Joint Programming Committee Rail (JPC-R)**. The SFR facilitates discussions between the CEN-CENELEC Management Centre and representative bodies on the sector's standardisation priorities.

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.

UNIFE is also a member of the **Rail Standardisation Coordination Platform for Europe** (RASCOP). Initiated by the European Commission in 2016, the platform brings together parties involved in the planning and development of railway-related legislation, standards and technical documents in Europe. It also works to coordinate all activities related to the development of European standards and other related technical documents that are relevant to the railway sector. The platform is chaired by the Commission's Directorate-General for Mobility and Transport (**DG MOVE**) and is supported by ERA.

In 2022, UNIFE further promoted the rail sector vision on international standardisation that which was elaborated at the initiative of UNIFE

in 2021 and expresses the common views of brings together the views of different rail sector organisations on international standardisation.

Furthermore, 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 matters related to regulation and Research & Innovation (R&I). In 2022, a workstream was launched to identify standardisation priorities for the urban rail sector. A sub group of the Urban Rail Platform focusses on taking stock of existing initiatives and prioritizing between different needs identified through previous activities such as the urban rail standardisation mandate m486.



3. UNIFE Technical Working Groups

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 temporary groups which are active during the drafting and revision of regulations and TSIs. They mirror ERA's 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 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 2022 UNIFE experts have worked in close cooperation with EIM and CER experts within the Train Detection Compatibility Working Group (TDC WG), coordinated by ERA. The group has been mainly dedicated during this year to the update of the mandatory ERA/ERTMS/033281 specification needed to complete the new version of the CCS TSI. The main topics addressed are summarized 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



Noise Mirror Group (MG)

In 2022 UNIFE experts contributed to the **UIC's survey on management of noise from stationary and parked trains**, launched in February 2022, providing a European rail supply industry's position. The results of the survey were published in Autumn 2022. UNIFE Noise Mirror Group took the opportunity of this survey to present their view on data collection.



Vehicle Authorisation Mirror Group (VA MG)

The UNIFE **Vehicle Authorisation Mirror Group** was established to follow the development of the *Implementing Regulation (EU) 2018/545*, establishing practical arrangements for the railway vehicle authorisation and railway vehicle type authorisation process, pursuant to *Directive (EU) 2016/797*. Since the **Fourth Railway Package's (4RP)** and the new European vehicle authorisation process entry into operation in June 2019, the UNIFE VA MG has been the main group providing feedback of its application at the expert level. Their experiences and lessons learnt, shared in this group, have led to further clarifications and identified areas for improvements have, in turn, been communicated with ERA and the Commission in the **4RP Steering Group** and the ERA Vehicle Authorisation Advisory Group kicked-off in October 2022, with the final goal of streamlining the 4RP processes.

The VA MG has contributed to the revised transitional provision in the upcoming 2022 TSI revision package. This subject is of high priority for UNIFE as it aims finding the balance between the needs for the TSI and rail project stability and the TSI and target system evolution.

The mirror group has also provided additional input regarding TSI 2022 change requests impacting vehicle authorisation and proposals for the update to the *Implementing Regulation (EU) 2018/545* guidelines in 2022.



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*.

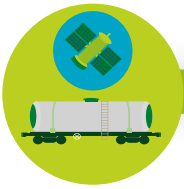
In 2022, this mirror group continued to elaborate the industry position within multiple ERA working groups focusing on railway safety. The group monitored the development of the Common Safety Methods for the assessment of safety levels and safety performance of operators at both the National and European 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.



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 that allows their users to safely access passenger trains.

In 2022, 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 2022 TSI Revision Package. This also including the finetuning of several aspects of the ERA recommendation and application guide.



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

The work in 2022 has focused on freight and passenger subsystems TSIs, finalising the 2022 revision cycle process. A new schema for the TSIs Revision has been introduced and the work on TAF/TAP TSI Revision 2022 started in October 2020. The inputs provided by the UNIFE members focused on the merging of TAF and TAP TSI into one TSI (RU-IM communication) and a separate retail TAP TSI. This process was not accepted as per the proposal, nonetheless significant positive changes to create a modern TAF/TAP TSI have been made. UNIFE's role in the TSIs 2022 Revision cycle was to prepare the revision of the TAF/TAP TSI glossaries which was completed successfully. Final approval was expected at RISC level in November 2022, but it has been postponed to February 2023.

UNIFE has been continuously involved in the revision process, as per the previous revision cycle. The electronic Freight Transport information (eFTI) Regulation and also the TTR process (Timetable Redesign) had a great impact on the overall work. Change management and monitoring of the TAF/TAP TSI implementation continuously followed the revision process and finalising the implementation plans of the various actors. UNIFE contributed to the preparatory phase of the CEF2 programme proposals within the sector.

The group has also been dealing with cybersecurity topics and new TAF/TAP TSI system architecture which is focused more on the Shift2Rail/Europe's Rail's activities on the Common Data Model and system architecture.

UNIFE members are considered as significant actors in the TAF and TAP TSI sector community.

b) UNIFE Topical Groups (TG)



Brakes Topical Group

In 2022, the **Brakes Topical Group** contributed to several UNISIG work items. In particular, it supported several TSI change requests in the context of the TSI 2022 package. These were mainly aimed at updating the TSI standard references. The group plays an important role to advise on brake related questions in the field of CCS. On several occasions, the group's experts joined meetings of the ERA extended core team to support UNISIG specialists on the brakes-related items.

Brakes Topical Group also continued their exchanges on adhesion management by discussing findings of the **PIVOT2** Shift2Rail project.



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 occupied itself with the existing requirements for these vehicles, resulting in a change request being submitted for the new TSI revision package that seeks to improve the consistency of the *TSI LOC&PAS* concerning them by altering definitions and other text in line with the recasted Interoperability *Directive* and European standards that facilitate their authorisation within the Union. In 2022, the group remained active in the follow-up of the change request with ERA and the EC for the 2022 TSI revision.

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 2022 TSI revision:

The **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 use and traffic loads, and

elevated provisions when applying the TSIs in case of upgrade or renewal.

The **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 2022 TSI package.



4. Cybersecurity activities

Cybersecurity is of great importance to the EU and a key area of interest for the European Rail Supply Industry. It is worth underlining that the European Commission has set the topic as one of its top priorities and a cornerstone of its digital and connected Europe initiatives.

During 2022 UNIFE's **Cybersecurity Working Group** has been very active in working on the priorities of the European Rail Supply Industry. Those priorities are reflected in our **2021 Position Paper on Cybersecurity in Railways**.

The paper's main objective was to present a path towards harmonised cybersecurity in railways through a sectoral approach across the European Union. It presents rail's current cyber challenges and opportunities in the short, medium and long term.

The focus of the group during 2022 has been in following the different challenges proposed, as for example, monitoring the **standardisation "CENELEC/Technical Specification 50701 Railway applications - Cybersecurity"** (TS50701), covering signalling, rolling stock and fixed installations. It has been disseminated among different stakeholders and also the TS50701 is currently being migrated at international level (IEC), which is a great success for the rail sector.

The new legal framework (NLF) at EU level places new demands on cybersecurity for the rail sector and thus UNIFE Cybersecurity Working Group is closely monitoring the new legislation, including Cybersecurity Strategy (2021), the Cybersecurity Act (2019), the Network and Information Security Directive (NIS2, approved in 2022) and the Cyber Resilience Act (CRA) Proposal (published in 2022). In this regard, UNIFE has focused on the NIS2 Directive and the CRA, analysing carefully their impacts on the European Rail Supply Industry. One of the most important topics is to ensure the correct level of cybersecurity awareness along the **supply chain**.

Just as important, the paper remarks that in order to reach a fully cybersecure Europe, a **collaborative approach** by all stakeholders is necessary. For this reason, a collaboration has been established with CER and EIM in order to tackle the priorities on cybersecurity in railways. Moreover, the group has actively collaborated with the **European Union Agency for Cybersecurity (ENISA)**, and **European Commission's DG CONNECT** and **DG MOVE**.



For further information about our cybersecurity activities, please contact UNIFE Technical Affairs Manager Marta García at marta.garcia@unife.org

5. UNITEL

The **UNITEL Committee** brings together UNIFE members with significant telecommunications experience to plan the interoperable European rail network of tomorrow. This group focuses on building consensus for 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 transition to FRMCS is as smooth and successful as possible.** UNIFE considers digitalisation an important market driver for the installation of a broadband capable FRMCS. The successful transition to FRMCS will rely the strong coordination and cooperation between all European rail stakeholders.

In 2022, 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 contributes to the preparation of the FRMCS specifications and the planned introduction of FRMCS provisions to the TSIs in 2022 and beyond. Committee members remain active in the international standardisation organisations responsible for the development of the railway telecommunications system and discussions defining the radio spectrum allocations at European level.

Consequently the committee has continued to disseminate and raise awareness of their two position papers published the previous year. The **UNITEL Committee's GSM-R Long-**

term Support Statement, published in July 2021, provides a joint assessment of how this communication service can be supported until the migration to the FRMCS has been successfully finalised - currently projected for some time after 2030. The statement highlights the need for early planning and reciprocal commitment by all involved parties given the existing and future challenges in supporting and phasing out GSM-R until a time when co-existence between the two systems is no longer needed. The **UNIFE Position Paper on the Successful Transition to FRMCS**, published in September 2021, outlines the 8 key technical, organisational or legislative factors for success, as seen by the industry, to be addressed to achieve the smooth introduction and migration to FRMCS. These key factors draw upon lessons learned from the industry's earlier introduction of GSM-R. The paper also outlines the timeline and phased approach envisaged to achieve FRMCS' expected deployment from 2025.

Lastly, UNITEL has begun raising awareness of the remaining challenges for industrialising FRMCS solutions before commercial rollout by 2025 becomes a reality, including necessary full-scale trial activities and the availability of customised 5G chipsets and modems for the introduction of FRMCS. The European rail telecoms supply industry remains convinced of the need of a full-scale programme focused on first market applications, trials and pilot rollouts of FRMCS within real-life railway operational environments.



For more information on Standards and Regulation, please contact UNIFE Technical Affairs Manger Nicholas Shrimpton at nicholas.shrimpton@unife.org





06.

R&I Activities

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1. Europe's Rail Joint Undertaking



The official launch of Europe's Rail Joint Undertaking took place during the European Railway Summit, organised by SNCF in the context of the French Presidency of the European Union, on 21 February 2022 in Paris



Europe's Rail Joint Undertaking is the sector's second large-scale European research joint undertaking that aims to

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

Launched during the 2022 European Railway Summit event in Paris on 21 February, Europe's Rail will be critical to devising next generation rail solutions that leverage emerging technologies needed to create a digital and green transition in transport. During the ceremony, representatives from the European Commission and the rail sector, including Europe's Rail 25 Founding Members, expressed their expectations for Europe's largest rail research and innovation programme worth

€1,2 billion. The launch ceremony was **hosted by Europe's Rail Executive Director Carlo Borghini and attended by several Ministers of Transport of the Member States**. The event was kicked-off by speeches from the **European Commissioner for Innovation, Research, Culture, Education and Youth Mariya Gabriel, European Commissioner for Transport Adina Vălean, and Commission Director-General for Mobility and Transport Henrik Hololei**.

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 March 2022, Europe's Rail Joint Undertaking has published its first Call for proposals for the Flagship Areas 1 to 6 and the Digital enablers. Projects worth €390 million, against €234 million funding, were selected to be funded under this Call for Proposals for Research & Innovation activities within the framework of the Europe's Rail Annual Work Programme 2022-2024.

To support UNIFE members with this Call for proposals, UNIFE organised a Technical Platform meeting with the participation of Europe's Rail

Joint Undertaking Executive Director Carlo Borghini. It was an opportunity to provide our members with more details on the Call for proposals and clarify the new Horizon Europe requirements.

In September 2022, Europe's Rail Joint Undertaking published a second Call for proposals for the Flagship Area 7 and exploratory research. Projects worth €35.8 million, against €14.7 million funding, are expected to be funded under Europe's Rail 2022-2 Call for Proposals for

Exploratory Research and Other Activities. 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. Its architects have designed it with due consideration paid to cybersecurity factors. They also focused on the European railway network compliance with Directive 2016/797, which applies for integrated European rail traffic management, command, control and signalling systems. In line with the Directive, the Pillar also considers automated train operation to ensure that research targets both commonly agreed upon and 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) and Digital Automatic Coupler (DAC)/ Full Digital Freight Train Operations (DFFTO)**.

In 2022, Europe’s Rail Joint Undertaking announced that the Tender dedicated to the System Pillar, and its respective three lots worth up to €45 million, has been awarded to the System Pillar Consortium. The tender will provide 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 - operational concept and system architecture.

UNIFE is a member of the System Pillar Consortium and has involved several UNIFE members in the System Pillar activities. 15 UNIFE members have already been identified and will be UNIFE’s subcontractors in order to provide experts covering different technical areas (e.g. Railway system, CCS, TMS, DAC).

The System Pillar Core Group started its activity in September 2022, and is set to lead and monitor the day-to-day work of the System Pillar

tasks, to provide content and guidance, manage the specific inputs and channel the necessary outputs to the regulations and standards. UNIFE has nominated 4 experts responsible to represent the European rail supply industry in the core group.

The various “System Pillar Tasks” groups have been set-up in October 2022 and aim at facilitating a targeted, flexible, and rapid delivery of outputs. The System Pillar Consortium has nominated both railways and suppliers experts for the System Pillar Tasks and domain teams.

The UNIFE System Pillar Committee, in cooperation with other internal bodies such as UNISIG, UNITEL, the UNIFE System Pillar Technical Group, and the UNIFE Freight Committee, is coordinating the association’s approach while contributing to the discussions with other rail associations in order to deliver the System Pillar’s outputs.

Last but not least UNIFE is 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 <https://rail-research.europa.eu>.



For more information on UNIFE’s activities related to Europe’s Rail, please contact UNIFE Head of Technical Affairs Unit Nicolas Furio at nicolas.furio@unife.org

2. European funded R&I projects

a. 5GRAIL



5GRAIL is a Horizon 2020 EU-funded project (co-financed by **DG CNECT**), which was launched in November 2020 and has as its main objective to validate the first set of specifications for the **Future Railway Mobile Communication System (FRMCS)**. It will achieve that by developing and testing prototypes of the FRMCS ecosystem, for both trackside infrastructure and on-board. Regarding on-board, 5GRAIL aims to reduce 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 are developed based on agreed set of use cases (FRMCS V1) and will be tested in simulated and real environments, rolled out at various European sites (France, Hungary and Germany). This will be done in order to ensure compliances and validation for specification, standards and performance, and consequently guarantee the time to market for FRMCS products, planned for 2025 as per 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, announced obsolete 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 has now passed its halfway point, with the mid-term conference taking place in Brussels on 12 April 2022, during which the partners showcased that there is a lot of complexity behind the scenes, nonetheless despite this the project is starting to show key results, like the integration of modems working in FRMCS 1900 MHz frequencies, with critical applications such as ETCS and ATO.

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



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

b. NEXTGEAR



NEXTGEAR (NEXT generation methods, concepts and solutions for the design of robust and sustainable

running **GEAR**) is a two-year project within the 1st Innovation Programme (IP1) of Shift2Rail Joint Undertaking, started in December 2019.

The project contributes to the development of new generation running gear aligned with

ambitious goals set by Shift2Rail for future European trains. This equipment aims to generate substantial reductions of life cycle costs, improve reliability and energy efficiency, reduce noise emissions and other externalities, and achieve full rolling stock interoperability.

To make a step change towards the development of a new generation of running gear, NEXTGEAR is working on:

- Updating the Universal Cost Model (UCM) from the Shift2Rail Roll2Rail project to make it possible to determine the economic impact of the innovation suggested for an operator using the vehicle
- Suggesting new ideas for the Running Gear Technology Demonstrator (TD1.4) that are

based both on the use of new applications of materials and new manufacturing methods

- Designing the wheelset of the future by proposing a concept for a hybrid carbon fibre / metallic wheelset design that enables substantial reduction of unsprung masses without compromising safety

In February 2022, NEXTGEAR finished its activity with the celebration of a successful final conference where the main results and achievements were presented to main rail sector stakeholders.

 For more information on NEXTGEAR, please visit <http://nextgear-project.eu> or contact UNIFE Technical Affairs Manager Jose Bertolín at jose.bertolin@unife.org

c. OPTIMA



OPTIMA (Communication Platform for Traffic Management Demonstrator)

is a project within Shift2Rail Joint Undertaking 2nd Innovation Programme. The consortium includes research organisations, industrial rail stakeholders and infrastructure managers actively performing Traffic Management and Traffic Control in dedicated Control Centres. Many of these partners have previously participated in Shift2Rail projects.

OPTIMA will address the design and development of a Communication Platform to manage the link with different services - "multimodal operational systems" - supporting Traffic Management System (TMS) applications. The Communication Platform will link TMS applications with Traffic Management, Traffic Control, Maintenance/Energy Management and signalling field infrastructure systems.

The main objectives of OPTIMA are:

- Make use of Integration Layer to integrate real-time data from the 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 projects prototypes

During 2022, the OPTIMA consortium completed the development and the unitary tests of the different modules that constituted the Communication Platform (Integration Layer, Rail Business Services, Application Platform, Operator Workstations and CDM). The project partners also started to work on the Platform validation through the test cases definition and integration with TMS prototypes provided by its complementary Shift2Rail project X2Rail-4.

After completing the validation of the Communication Platform and the integration with the TMS prototypes provided by X2RAIL-4, the project will finish in February 2023 with a final conference where the main results and achievements will be presented.

 For more information on OPTIMA, please visit www.optima-project.eu or contact UNIFE Technical Affairs Manager Jose Bertolín at jose.bertolin@unife.org

d. TRANSIT



TRANSIT (TRAIn pass-by Noise Source characterization

and separation Tools for cost-effective vehicle certification) is a research and innovation project being conducted within the wider Shift2Rail Joint Undertaking's "Cross-Cutting Activities".

TRANSIT will provide the railway community with a proven set of innovative tools and methodologies for reducing rail's environmental impact and improving the level of interior acoustic comfort of railway vehicles. Currently, vehicle certification and homologation requires extensive measurement campaigns on dedicated test tracks, leading to high cost and time consumption. In the future, conducting these processes virtually should reduce these expenditures. Furthermore, increasing energy efficiency of railway transport is a key goal of Shift2Rail and efforts are ongoing to reduce vehicle weight. This is being achieved, for example, by applying composite material technology in the design of the carbody.

The project is developing accurate and robust source characterisation, separation methods and techniques, and exterior noise simulation tools to facilitate virtual testing and more cost-effective vehicle certification and homologation methods. Regarding interior acoustic comfort, innovative material designs needed to increase sound transmission loss and absorption are being developed. Their creation and deployment will lead to improved interior sound quality while not exceeding weight constraints.

Throughout 2022, different measurement campaigns were carried out, data has been gathered and analysed and results validated by the Shift2Rail project FINE2. They are requisite to reaching the project's expected outcomes.



For more information on TRANSIT, please visit <https://transit-prj.eu> or contact UNIFE Technical Affairs Manager Marta García at marta.garcia@unife.org

e. RIDE2RAIL



RIDE2RAIL is a project directly linked to the Shift2Rail Joint Undertaking's 4th Innovation Programme (IP4). The project started in December 2019

and works to develop solutions and tools that will 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 seeks to make ride-sharing a (more) attractive way to move passengers towards public transportation while fighting both congestion and pollution.

RIDE2RAIL aims to integrate multiple public, private and social data sets and sources with existing transport platforms to promote effective ride sharing practices by citizens. This will make rail a complementary transport mode that extends public transport and railway networks. The RIDE2RAIL framework for intelligent mobility

will integrate and harmonise real-time and diverse information about rail, public transport, ride-sharing and crowdsourcing in a social ecosystem, which will permit users to compare and choose between multiple options or services classified by a set of criteria – including environmental impact, travel time, comfort, cost – according to their preferences. The hope is that this will make the travel experience both more positive for individual users and, globally, more sustainable.

RIDE2RAIL is designing, developing and testing in real demonstrators a set of software components for the IP4 ecosystem, including advanced Travel Companion features and a crowd-based Transport Service Provider, which will foster the combination of flexible and regular multimodal mobility through an easy personalisation in diverse existing environments, facilitating market uptake. It will also deliver a set of validated proof of concepts and business cases envisaging future mobility scenarios where advanced transport solutions will be seamlessly

integrated into existing collective transport services (rail and others) in four European cities: **Padua, Athens, Brno and Helsinki.**



For more information on RIDE2RAIL, please visit <https://ride2rail.eu> or contact UNIFE Technical Affairs Manager Stefanos Gogos at stefanos.gogos@unife.org

f. RECET4Rail



RECET4Rail (**R**eliable **E**nergy and **C**ost-**E**fficient **T**raction system for **R**ailway) is a project under the Shift2Rail Joint Undertaking 1st Innovation Programme (IP1).

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

Its ambition is to provide essential knowledge and competence that can lead to the improvement to high Technology Readiness Levels (TRL) of Shift2Rail traction demonstrations developed in the Shift2Rail **PINTA-3** project. This collaboration paves 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.

Four workstreams are envisaged within the project:

- 3D additive manufacturing and new manufacturing technologies
- Wireless Dynamic Charging for urban vehicles based on silicon carbide (SiC) semiconductors and high power lithium ion batteries sizing
- Investigations on reliability of traction components and lifetime mechanisms
- Big Data, Artificial Intelligence (AI) for smart and predictive maintenance of traction systems

During 2022 RECET4Rail has already reached important research conclusions in 3D printing technologies for traction components. Also, in relation with Wireless Dynamic Charging for urban vehicles, a set of solutions based on lithium batteries for a free catenary operation of a tramway in a city profile has already been defined based on reliable semiconductors and AI methods for traction systems.



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

g. GEARBODIES



The **GEARBODIES** project, which started in December 2020, seeks 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 is working 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 that 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

with extended lifetime, and low LCC, whilst maintaining or reducing current levels of reliability, noise emissions, and track damage

Through these efforts, GEARBODIES will actively contribute to improving the efficiency, safety and competitiveness of the European railway sector by supporting the implementation and exploitation of innovative materials and practices. It will have profound impacts on the cost efficiency and reliability of the sector, as well as on its energy consumption and infrastructure

maintenance. Inspection time will be significantly reduced, while the use of new materials and systems will extend component lifetimes and lower maintenance costs.



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

h. SAFE4RAIL-3



Safe4Rail-3
(Advanced safety

architecture and components for next generation TCMS in Railways) is a 32-month research project within the Shift2Rail Joint Undertaking 1st 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 demonstrators in close cooperation with other Shift2Rail projects.

During 2022, the DbD project partners completed the development of the two ECN (Ethernet Consist Network) and ETBN (Ethernet Train Backbone) solutions including the TSN (Time Sensitive Network) to achieve TRL 6/7. A preliminary set of inauguration tests were performed to ensure the interoperability of both solutions.

By end of 2022 the WLTB (Wireless Train Backbone) and WCN (Wireless Consist Network) devices were ready for the integration into the testing platform to proceed with its validation in real and relevant environment. Preliminary unitary tests were performed to validate devices functionality.

The Safety and Cybersecurity assessments started in 2022 and the validation of the TRL 6/7 devices in real and relevant environments will be the main activities in 2023.



For more information on Safe4RAIL-3, please visit www.safe4rail-3.eu or contact UNIFE Technical Affairs Manager Jose Bertolín at jose.bertolin@unife.org

i. DAYDREAMS



DAYDREAMS (Development of prescriptive Analyt**ics** base**D** on a**R**tificial int**elligence** for i**AMS**) is a project within Shift2Rail's 3rd Innovation Programme (IP3). It started its activities in December 2020.

DAYDREAMS's overall objective is 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 that take into account all possible, and often conflicting, implications of IAMS 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 HMIs to allow context- and risk-aware multiple-options decision-making processes 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 extend 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 will exploit state-of-the-art technologies to tackle complexity and exploit the business value of prescriptive approaches already used in other industrial fields. DAYDREAMS will also increase trust by utilising blockchain and smart technologies inherited from IN2DREAMS to track and monitor the IAMS adoption and use in multi actors’ environments.



For more information on DAYDREAMS, please visit <https://www.daydreams-project.eu> or contact UNIFE Technical Affairs Manager Stefanos Gogos at stefanos.gogos@unife.org

j. STREAM



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

is a Shift2Rail Joint Undertaking Innovation Programme 3 project dedicated to delivering a resilient, consistent, cost-efficient and high capacity European rail infrastructure.

The project’s activities are focused on delivering two methods - or Work Streams - to improve competitiveness in railway maintenance and construction operations:

- The **first work stream** involves the development of a control platform designed to convert traditional heavy-duty hydraulic machines (e.g., excavators) in robotic systems
- The project’s **second work stream** is focused on creating a modular, wearable, active exoskeleton to reduce the risk of injury due to physical overload

Furthermore, STREAM has set up an **End-User Board** composed of 12 companies. These board members represent end users of the technology, including Infrastructure Managers

and Construction companies. They provide feedback on all technical aspects of the outputs to help bring the technology close to the market needs. In 2022, two meetings have been held and resulted in fruitful exchanges of information.

In 2022, the main project objectives have been:

- **Implementation technical requirements**, categorised by user, safety, regulatory, and ethical requirements for each of the two technical solutions. Those include the analysis of the replies of the questionnaires for companies and workers
- **Technical demonstrations** of both technologies in Italy and Spain at the beginning of the year
- **Cost-Benefit Analysis and ethical assessment**
- **Preparatory works for the final demonstration** in Spain in May 2023



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

k. IN2ZONE



IN2ZONE (The next generation of railway transition zones) is a

Shift2Rail Joint Undertaking Innovation Programme 3 (IP3) project that seeks to enable infrastructure to boost the economic viability, sustainability and resilience of the European rail network.

IN2ZONE's objective is to design and test a prototype next generation transition zone solution that provides a step-change in track support conditions, resulting in a drastic reduction in maintenance interventions. It plans on doing so by:

- 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 will enable the transition zone solution to self-correct minor vertical track geometry irregularities or faults. Further, the solution architecture will be modular to ensure the benefits are realised in minimal time.

During 2022, the prototype has been created and tested.



For more information on IN2ZONE, please visit <https://in2zone.eu> or contact UNIFE Technical Affairs Manager Marta García at marta.garcia@unife.org

l. IP4MAAS



IP4MAAS is a project under Shift2Rail Joint Undertaking Innovation 4th Innovation Programme (IP4). The project was launched in December 2020.

Within IP4, more than 10 projects have created a wide array of technologies which tackle various aspects of the traveller experience. Those technologies tackle the interoperability of **Transport Service Providers'** (TSPs) services, travel shopping, booking & 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. Today, IP4 has a large toolset of proven technologies that need to go to the next level and be implemented in large scale products.

To that end, IP4MAAS is assisting IP4 projects in demonstrating the technologies at an unprecedented level, at 6 different locations in Europe and with the cooperation of more than 10 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 is also creating strategic plans for the demonstrations that will be updated in two iterations, leading to two demonstration phases.

Furthermore, the project will provide recommendations on the promotion and transferability of the technologies to other locations in Europe. IP4MAAS will organise and monitor one of the largest demonstrations of technologies in the history of European

research and innovation project's and expects its findings to be used as a baseline for future demonstrations and testing that involves a diverse group of demo partners.



For more information on IP4MAAS, please visit <https://www.ip4maas.eu> or contact UNIFE Technical Affairs Manager Stefanos Gogos at stefanos.gogos@unife.org

m. SILVARSTAR



SILVARSTAR (SoIL Vibration and AuRalisation Software Tools for Application in Railways) is a project that fits into the "Cross-Cutting Activities" category of Shift2Rail Joint Undertaking Innovation.

This project seeks to provide the railway community with software tools and methodologies best suited to assessing the noise and vibration environmental impact of railway traffic on a system level.

The project's main ambition is to provide software tools for application in soil vibration and in auralisation within the railway sector. In this context, the project has two work streams which address these challenges:

- **The first work stream** is focused on the prediction of ground vibration through the development and validation of a hybrid (numerical and experimental) approach

- **In the second work stream**, auralisation and visualisation software tools will be developed based on a physics-based model to synthesize railway noise in high quality

In 2022, different advancements in the project have been achieved: the definition for prediction models for railway induced vibration, development of the concept for the vibration prediction tool that can be used for environmental vibration impact assessment of new and upgraded railway lines. Furthermore, related with the second work stream a technical demonstration on virtual reality was performed during InnoTrans 2022 at Europe's Rail JU booth.



For more information on SILVARSTAR, please visit <https://www.silvarstar.eu> or contact UNIFE Technical Affairs Manager Marta García at marta.garcia@unife.org

n. 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, essential elements of an European Global Navigation Satellite System (EGNSS) train positioning system and a Validation and Verification Environment.

During 2022, the project has completed the collection of the user needs, has continued with the preparation of the measurement campaign and the work related to the characterization of the technologies in railways.



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

o. CLUG 2.0

In the autumn 2022 UNIFE was informed that the CLUG 2.0 project proposal (**CLUG Demonstration of Readiness for Rail**) was selected by the **European Global Navigation Satellite Systems Agency**. The consortium coordinated by UNIFE is composed of 10 partners from 5 EU Member-states (Belgium, France, Italy, Germany and Spain) and an associated country (Switzerland). The core of the CLUG 2.0 consortium is basically the same as the one of the previous **CLUG project** which involved the main European Rail infrastructure managers and suppliers from the Rail and Space Sector with a strong expertise and background on the applicability of the GNSS to Rail safety applications.

This project, scheduled to start in February 2023, will focus on continuing the activity started in CLUG project of complementing the existing European Train Control System (ETCS) odometry system by using GNSS to enable absolute safe train positioning whilst also transforming the way of train localisation is done today by demonstrating a GNSS-based multi-sensor fusion architecture.



For more information, please contact UNIFE Technical Affairs Manager Jose Bertolín at jose.bertolin@unife.org.



3. UNIFE Freight Committee and Digital Automatic Couplers (DAC)



DAC benefits

A key activity for UNIFE's Freight Committee in 2022 was following the developments around the **Digital Automatic Coupler (DAC)**. This is a key technology for efforts to revitalise European rail freight. Introducing the DAC has been identified as a crucial project that will only be possible through an EU-wide, coordinated effort based on a technical and interoperable solution, backed by the necessary investments. The **European DAC Delivery Programme (EDDP)** aims to deliver open DAC specifications, as well as migration scenarios and business cases in collaboration with experts representing manufacturers, rail operating companies, wagon keepers and the European Commission.

Several UNIFE members are actively contributing to the programme, providing the essential inputs to the technical work. At the association level, UNIFE is a member of EDDP's Supervisory Board and co-leading the work on Migration Scenarios in Work Package 3. In 2022 the work on DAC

continues through the work stream in Europe's Rail Joint Undertaking's Innovation Pillar as well as in the System Pillar. Through its **Freight Committee** UNIFE remains involved in the next steps of achieving the transition to DAC

The Freight Committee facilitated the monitoring and distribution of information on the progress to the association's wider membership, and supported members active in one of the work streams. On the occasion of InnoTrans a **joint sector declaration in support of DAC** was signed with other rail sector organizations.

UNIFE continues to monitor the work on the TSI requirements which will be introduced in 2025. by means of an ERA Technical Document.



For more information, please contact UNIFE Head of Technical Affairs Unit Nicolas Furio nicolas.furio@unife.org



4. European Rail Research Advisory Council (ERRAC)



ERRAC at the Transport Research Arena Conference in Lisbon



In July 2021, **Roland Moser**, Chief Technology Officer at **SBB**, was elected to serve as the new ERRAC chairman following the end of **Thales' Alberto Parrondo's** term. Together with David Kupfer from UNIFE as ERRAC Secretary, ERRAC established a new work plan for itself.

ERRAC's **2030** and **2050 vision documents** will continue to serve as most important reference documents in shaping the Council's priorities. In addition, ERRAC has established the **ERRAC Manifesto** to guide future activities. Focusing on 4 key areas (Sustainability, Inclusivity,

Individuality, and Multi-Modality) the document outlines the advantages of rail transport and the need to fund research and innovation activity in the sector.

Another vital document for the future of ERRAC activities is the **Rail Strategic Research and Innovation Agenda (SRIA)**, published in December 2020. The document was elaborated based on substantial inputs from the UNIFE members and other rail stakeholders. It explains how a new programme of technical and operational innovation can transform the railway sector to support its role in addressing the needs of railway users, the economy and society, as well as protecting the environment.

Not all innovative concepts developed in the SRIA are addressed in Europe's Rail Joint Undertaking. ERRAC therefore closely follows the Joint Undertaking's activity and analyse its multi annual work plan to identify any gaps. ERRAC is addressing these gaps by strengthening the partnerships and organizing frequent exchanges between ERRAC and other **European Technology Platforms** as well as other stakeholders relevant for rail research priority topics.

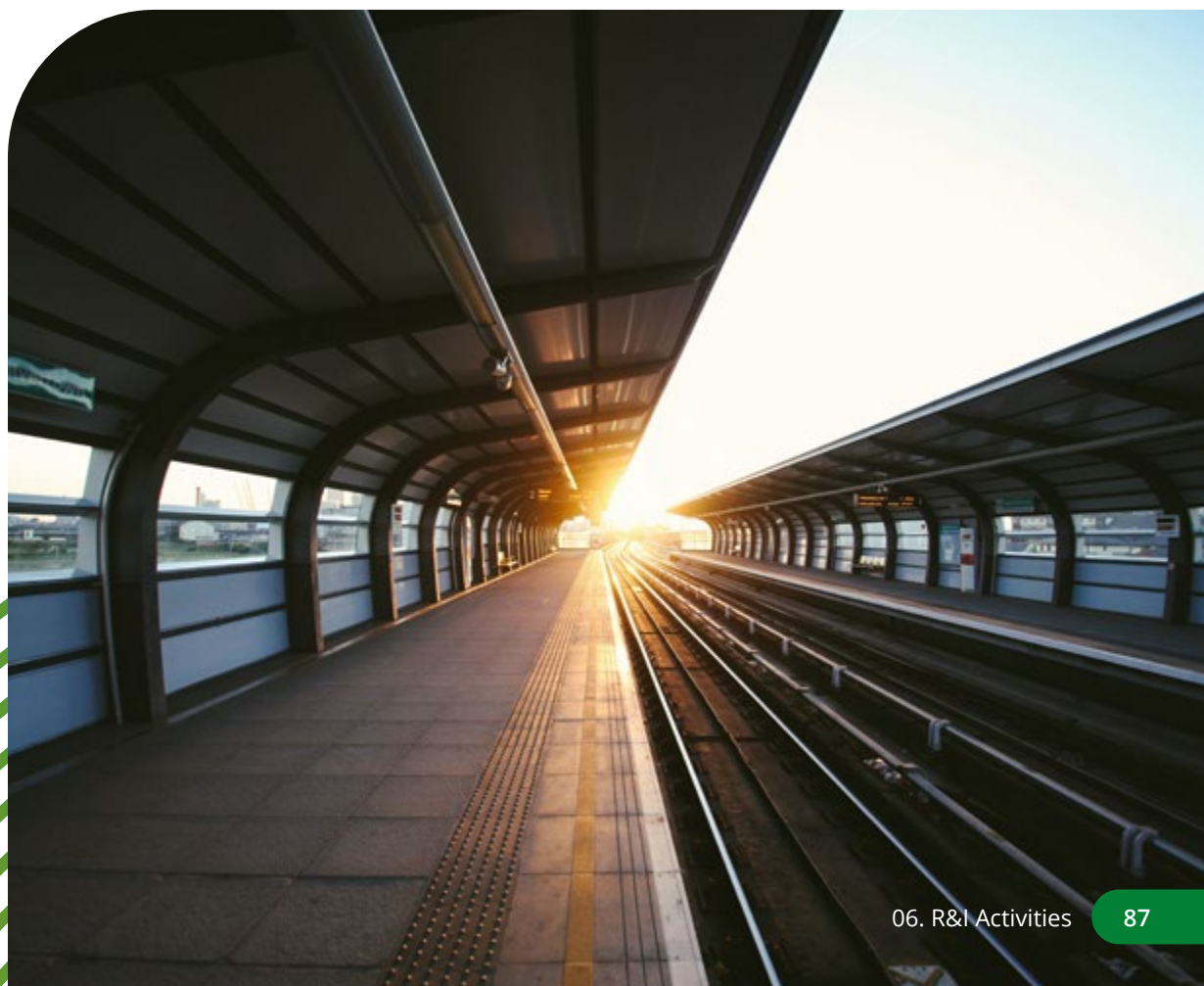
In 2022 ERRAC participated in three key events, the World Congress on Railway Research (WCRR) in Birmingham, InnoTrans in Berlin and Transport Research Arena Conference (TRA) in Lisbon. The TRA was of particular importance and ERRAC succeeded as member of the TRA Management and Program Committees to significantly strengthening the presence of rail speakers in this year's edition of the multi modal conference.

During the ERRAC Plenary events of 2022 that took place in May and in November, representatives from the **European Commission's DG MOVE, DG RTD** reported on the progress of Horizon Europe - EU's key funding programme for research and innovation - including Europe's Rail Joint Undertaking; **Carlo Borghini**, Executive Director of Europe's Rail Joint Undertaking reported on his organisation's activities, thus providing the ERRAC members with the latest updates on the R&I environment for the rail sector.

As of January 2023, Marta Garcia will replace David Kupfer as ERRAC Secretary.



For more information on ERRAC's activities, please visit <https://errac.org> or contact Marta García, Technical Affairs Manager at UNIFE and ERRAC Secretary by email at marta.garcia@unife.org







07.

Signalling and ERTMS

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1. Overview



On the multi-annual calendar, the updates of the TSIs define an important milestone for the European railway community. The last update of the Control Command Signalling Technical Specifications for Interoperability (CCS TSI) was

made in 2016, which underlines the necessity of the current 2022 revision. The related activities were demanding in particular over the last year, not only due to the update of the technical specifications, but also because of the substantial negotiations with ERA and the European Commission.

The second overarching topic was the launch of Europe's Rail Joint Undertaking (EU-Rail) System Pillar. Mid-2021, the European Commission started a consultation process with the rail sector to define the scope, the organisation and the deliverables of a body, the System Pillar, that would bring the sector together to work notably on the development of the rail system architecture. End of 2021, the new EU regulation for the establishment of the Joint Undertaking, the so-called Single Basic Act, was approved by the EU Council, resulting in the kick-off of the Europe's Rail Joint Undertaking (EU-Rail) and its System Pillar. The immediately following System Pillar ramp-up project developed first

results and applied organisational principles of the System Pillar (e.g. the Joint System Pillar Core Group). During 2022, the “System Pillar Consortium” including UNIFE has signed three framework contracts with Europe’s Rail Joint Undertaking. This was an extremely important event in the development of a joint railway sector platform and in particular for signalling standardisation activities including ERTMS. It is worth mentioning that the UNIFE System Pillar Committee is responsible for following the System Pillar and for supervising the UNIFE committees and working groups involved in the System Pillar’s activities.

ERTMS remains high on the political agenda in Europe. The fight against climate change and seamless cross-border mobility for a more connected Europe are topics where ERTMS provides solutions. Matthias Ruete, the European ERTMS Coordinator points this out in his second Work Plan, published in July 2022. His comprehensive report highlights the key achievements and next steps regarding ERTMS. One of the conclusion of the report is that the EU support must be preserved and even increased in order to reach the 2030 targets for ERTMS deployment.

There are indeed substantial European and national programs providing financial support for ERTMS deployment:

- The Connecting Europe Facility (CEF) is one of the main EU instruments to support ERTMS deployment both trackside and onboard on the TEN-T Network. The 2021 CEF call for proposal awarded €350 million for ERTMS projects, out of a total budget of €500 million.

The 2022 call will remain open until January 2023 where there will be an additional €500 million available for smart and interoperable technologies (all modes), out of which a significant share will be dedicated to ERTMS.

- The National Recovery Plans supported under the EU Recovery and Resilience Facility are being currently implemented. Several Member States (e.g. Italy) have allocated financial support to ERTMS trackside, ERTMS rolling stock retrofitting and acquisition of new rolling stock equipped with ERTMS.
- The European Structural and Investment Funds (ESIF) is an EU program that can support many type of investments, including rail related and ERTMS. The Member States are finalizing their Operational Programmes, detailing the indicative projects to be supported as well as their associated amounts.
- State Aid rules for Railway Undertakings: currently the Commission is revising the Guidelines on State aid for railway undertakings. This is a good initiative as the revision is aimed at easing these set of rules so that Member States can provide more financial support to railways including for ERTMS, without creating market distortions in line with competition rules. This is aligned with the EU’s policy priorities and the increased importance of a modal shift from road to less polluting transport modes such as rail in order to meet the Union’s emissions reduction target by 2050.

2. ERTMS: Main political highlights and communication activities

a) European Rail Traffic Management System (ERTMS) 2022 Conference

The **European Union Agency for Railways (ERA)** held its **European Rail Traffic Management System (ERTMS) 2022 Conference** in Valenciennes, France between 26 and 28 April. UNIFE and UNISIG actively contributed to the Conference's organisation and programme.

The conference's first day was dedicated to workshops fostering a constructive dialogue within our community. Participants had the chance to attend three out of ten offered workshops. UNISIG General Manager Klaus Mindel, alongside representatives from UNISIG companies, organised and moderated Workshop 3: "On-board and trackside architecture as foreseen in the TSI CCS 2022". The workshop, focused on the various facets of the TSI for CCS (ERTMS/ETCS Reference Architecture, Trackside Architecture, and On-board Architecture), attracted more than 150 participants.

The second day kicked off with an opening speech from ERA Executive Director **Josef Doppelbauer**, followed by presentations from Members of European Parliament **Dominique Riquet** and **Izaskun Bilbao**, European Coordinator for ERTMS **Matthias Ruete**, and **DG MOVE**. Their interventions highlighted that we are now at a tipping point for rail: making our mode of transportation as successful as possible requires accelerated ERTMS deployment and synchronised on-board and trackside implementation. On one hand, rail is the least carbon intensive transportation mode. However, on the other hand, other modes are also quickly decarbonising, therefore, existing incentives

must be reinforced - both at the European and national levels - and more mandates should be set in place as per the **Trans-European Network - Transport (TEN-T)** guidelines. Day two also included interesting presentations on the very important TSI CCS revision package for 2022 and EU-Rail's vision for rail transport.

On the third day, Sessions 4 and 5 centred on feedback from ERTMS projects. Finnish, Norwegian, German, Spanish and Italian experts took the stage to showcase technical solutions that contributed to successful ERTMS deployments and highlighted major challenges that lie ahead. They also introduced the future ERTMS game changers: ATO over ETCS, FRMCS and On-board Architecture.

Conference attendees may conclude that ERTMS is **THE** single European system to which all "national dialects" should gradually migrate to.



ERTMS Conference



European Commissioner for Transport **Adina Vălean** testing the ETCS simulator

b) Connecting Europe Days

UNIFE participated in the Connecting Europe Days, organised by the European Commission in Lyon, France, at the end of June.

The UNIFE stand boasted a **SIEMENS ETCS simulator**, attracting great interest from decision-makers, such as European Commissioner for Transport Adina Vălean, and other participants, as training and test facilities are more and more required for the increasing use of ETCS systems worldwide. Such facilities allow operational situations and functions/data to be tested mimicking real-life conditions. In such tests, train runs with real system data are used to simulate a wide range of different operational situations. For this purpose, ETCS is embedded in the system environment just like in the real-life system. Within and between these system levels, the functions which are required for complete operational sequences

are performed. All in all, the training and test system is based on the system levels' existing product systems and enables real scenarios to be run in real time by means of 3D visualization with a driver's console. At the same time, the original DMI provides the same information as on an ETCS-controlled vehicle.

Very interesting discussions were also held during the **ERTMS Session**, in which Matthias Ruete, European Coordinator for ERTMS, presented the key deployment issues identified in his work plan and announced the establishment of the ERTMS Forum. Furthermore, DG MOVE provided the latest state of play of the ERTMS deployment both trackside and on-board, as well as highlights inherent to the progress on the TEN-T and CCS TSI revision. In the closing Europe's Rail Joint Undertaking outlined the future CCS evolution and the role to be played by EU-Rail.

c) ERTMS Second Work Plan

In July 2022, **Matthias Ruete**, European Coordinator for ERTMS, published his **second work plan**. The document is the result of exchanges with various stakeholders carried out throughout 2021 in the framework of the European Year of Rail, providing an overview of the current state of ERTMS deployment (with a cut-off date of June 2022), analysing the next steps for both infrastructure and rolling stock, while considering the role of the new Europe's Rail Joint Undertaking and the System Pillar, and also drawing conclusions on the next phases and further actions.

Since his first work plan, published in May 2020, the base conditions for the ERTMS deployment have vastly improved and became more favourable for an accelerated rollout. Fighting climate change in the framework of the Green Deal, accelerating digitalisation and mobilising recovery and resilience funds have been endorsed at the highest political level in the EU. ERTMS is widely seen as providing solutions in this context. In its latest report on ERTMS the European Parliament strongly backed the need for accelerated deployment, better interoperability, sufficient funds, and stronger governance for ERTMS.

The work plan's main message is that we are on the threshold of moving to a Single European Signalling and Safety System, which will form the basis for a true European Traffic Management System. Major renewal, both of infrastructure and rail fleets, is happening now and over the next fifteen years. If we do not seize this opportunity for a joint modernisation, we are probably, given the long lifecycle for innovation in railways, squandering a once in a lifetime chance. We will then remain with a patchwork of approaches, struggling just to ensure interoperability. Our objective must now be to ensure the necessary political backing for what is a major European industrial project for the digitalisation of railways throughout the European Union.

We need accelerated, synchronised deployment of ERTMS for the whole TEN-T network, and the vehicles using it, by 2040, with a strong push on the Core Network already for 2030, a solid move to a radio-based ERTMS, a deadline for phasing out national signalling systems, a major renewal and refurbishment of locomotives and trainsets, better conditions for the mobilisation of public funds (EU, national and regional) and private capital, and better transition management of technological progress ensuring that investments can be made in a predictable environment.



ERTMS Second Work Plan

d) InnoTrans

With InnoTrans finally returning after four years, its visitors had the opportunity amongst others to explore the latest developments on ERTMS worldwide deployment through an interactive workstation at UNIFE's stand and to participate to two dedicated sessions.

The first ERTMS thematic event was held at the UNIFE stand, and featured three UNISIG speakers, providing the audience with examples

underlining the global applicability of ATO, automation technical solutions, as well as showing how these solutions reflect market requirements at European and global level.

The second event was the long awaited **UNIFE Dialogue Forum** with this year's theme "**ERTMS - A building block on the journey towards a digital and autonomous rail**", moderated by Chris Jackson (Senior Editor at Railway Gazette), that sought to inform the audience on the latest developments and strategy of ERTMS world-wide.



InnoTrans UNIFE Dialogue Forum: ERTMS - A building block on the journey towards a digital and autonomous rail

3. The launch of a joint European platform for the future signalling and traffic management system

The European Commission founded mid of 2021 the EU System Pillar Group. All the rail sector organisations including UNIFE, with its UNISIG and UNITEL Committees, have been invited by DG MOVE to join the group and to develop under their leadership the main elements of the future System Pillar. The System Pillar has the role of a generic system integrator for rail in Europe. One conveyer of the objective is the integration of all the different signalling architecture initiatives under one joint platform. Oriented by Common Business Objectives, a target architecture with an harmonised operation and a migration concept for a standardised European Signalling, Traffic Management and Telecommunication system was put on the agenda.

The System Pillar is of utmost importance for the entire rail sector. In simple terms, the ERTMS standardisation is extended to the whole 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 is a lesson learnt from the ERTMS standardisation, which didn't include the harmonisation of operation.

The UNISIG companies joined a System Pillar ramp-up project that ran from the end of 2021 until mid of 2022. This project used the existing framework contract with Shift2Rail involving UNIFE. It delivered a high level target signalling architecture and a list of documents to be considered as input for the System Pillar. Moreover, it successfully demonstrated an organisation approach where suppliers and railways collaborated in domain groups with equal obligations, managed by a pair of domain leads.

Europe's Rail pre-announced at the beginning of 2022 calls for three separate lots with Requests for Service. The invitation to tender, tender submissions and contracting of three framework contracts for the corresponding three lots happened in the course of the second and third quarter of 2022. UNIFE is one of members of the "System Pillar Consortium" which is assigned to deliver the services of the System Pillar for the next years to come. The UNIFE System Pillar Committee carefully monitored the setting-up process of the System Pillar and it is responsible to define UNIFE's position/strategy on the System Pillar in close cooperation with UNIFE's committees and working groups (including UNISIG).

4. Recent activities of the Control Command and Signalling (CCS) Platform

The cooperation between the EULYNX Consortium and the UNIFE CCS Platform (CCS-P) continued in 2022. Signalling experts from the railway supply industry reviewed and commented the interface specifications for interlocking technology provided by the consortium. The comments have been discussed with EULYNX and have been included in the release planning. Consequently three members of the CCS-P joined the meetings of the Change Control Board (CCB) of the EULYNX Consortium. To ensure a balanced representation, a rotating participation system was established. In order to underline the industry's point of view a position paper was elaborated and sent to the consortium. It was jointly stated that a collaborative approach should be found in a more common working environment

In parallel, the railway sector has agreed to use Europe's Rail System Pillar as a common platform to organize future signalling standardization activities, including interlockings. Obviously, this has a fundamental impact on EULYNX and our cooperation with the consortium. UNIFE has decided to concentrate the activities on the EU-Rail System Pillar and develop together with the railways future signalling standards. Interlocking topics are integrated into the organization of the EU-Rail System Pillar. This resulted from the fact, that most of the interlockings topics have to be managed as integral part of the overall signalling system and not in isolation.

Consequently, the collaborative work between the railways and the UNIFE CCS platform is transferred to the new structure of System Pillar Domains. The CCS platform will now become a sharing and information platform on CCS-related issues.



5. ERTMS: Technical achievements

a) Technical specifications for CCS TSI 2022 revision

At the beginning of the reporting period, the focus of the activities was on the update of the technical specifications of the Appendix A (formally called Annex A) of the CCS TSI. As main new features for the TSI, the “ERTMS Game Changers” were identified in 2016. Some Game Changers were progressed within the Shift2Rail JU, others were developed in the context of Specific Contracts contracted by the MoU ERTMS Consortium. All outputs were channelled to ERA and the Extended ETCS Core Team (EECT).

Over the past years, the content of the ERTMS Game Changers was amended. During the EC Expert Group meeting on 19 May 2022, ERA reported the content under the headline “Enhancements”:

- Automated Train Operation Grade 1 and 2 (ATO over ETCS)
- ERTMS readiness for 5G based communication (FRMCS)
- Digital ETCS reducing trackside assets
- On-board modularity
- Additional enhancements to further optimise capacity, safety & security, cost reductions

A number of critical Change Requests and their solutions were discussed with ERTMS Users Group (EUG) and ERA experts in the Core Team. The technical specifications should be finished towards the end of 2022.

b) UNISIG contribution to the regulatory part of the CCS TSI 2022 revision

As always towards the end of the TSI update period, the revision of the regulatory part comes more into the focus. The complexity of the regulations, their criticality and a high number of intermediate versions produced an extensive work load in particular for the UNISIG Certification and Authorization Working Group, the UNISIG representatives in the CCS TSI Working Party meetings with ERA and EC Expert Group meetings, where the revision of the CCS TSI is managed under the leadership of DG MOVE.

Even though a significant number of topics have been agreed as a result of our participation in the review process, a number of critical topics are still under negotiation between sector organisations and DG MOVE / ERA. The most prominent ones are the “specification error corrections”, the deletion of the “partial fulfilment” clause, and a new transition regime, which doesn’t only concern the CCS TSI. The intensity of the negotiations remained high during the third quarter of 2022, demonstrating that the CCS TSI was not ready for a RISC voting in November 2022, therefore DG MOVE decided to shift the vote to February 2023.

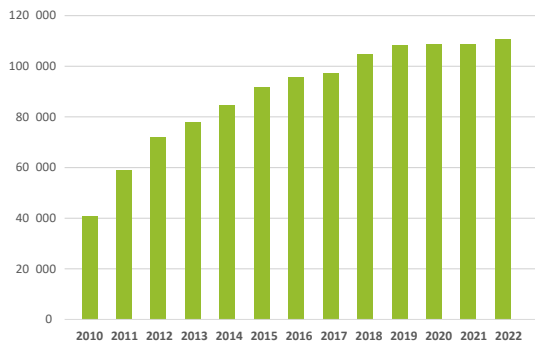
6. ERTMS: Deployment statistics



ERTMS deployment by country

ERTMS trackside contracts

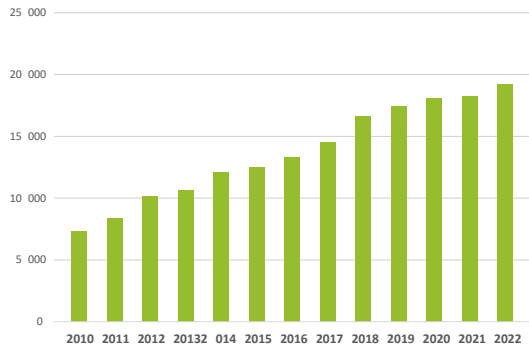
In tracks km, comparison September 2010-2022



● ERTMS equipped tracks worldwide (km) contracted (2010-2022)

ERTMS vehicles contracted

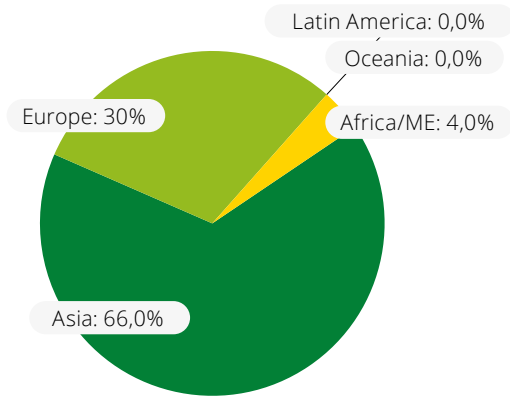
Comparison September 2010 - September 2022



● Number of vehicles equipped with ERTMS worldwide contracted (2010-2022)

ERTMS trackside contracts

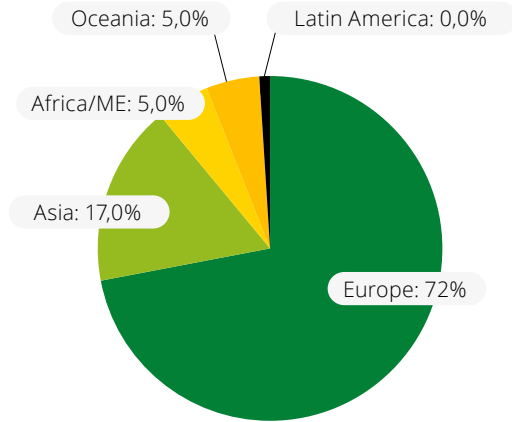
In percentage, by region



Contracted tracks (km) in the world (ECTS L &/or L2)

ERTMS vehicles contracted

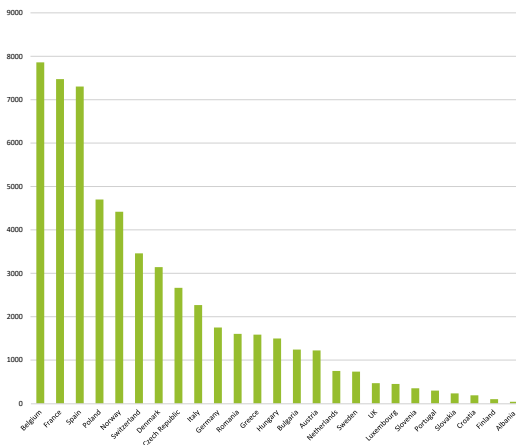
In percentage, by region



Contracted tracks (km) in the world (ECTS L &/or L2)

Global ERTMS contract tracks (km)

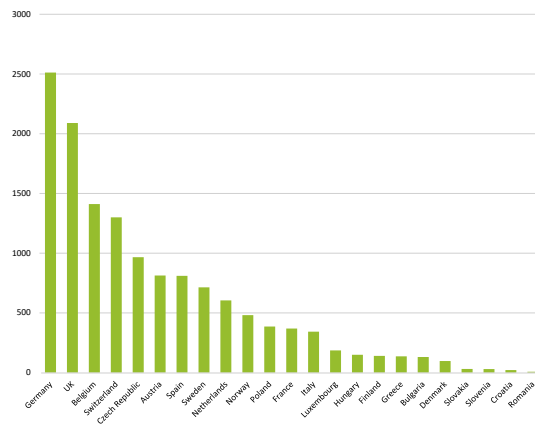
In Europe



Contracted tracks (km) in Europe, including Switzerland (ETC L1 &/or L2)

Global ERTMS vehicles contracted

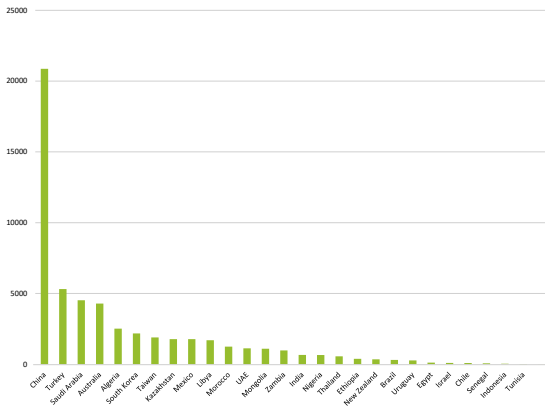
In Europe, per country



Contracted vehicles in Europe, including Switzerland (ETC L1 &/or L2)

Global ERTMS contract tracks (km)

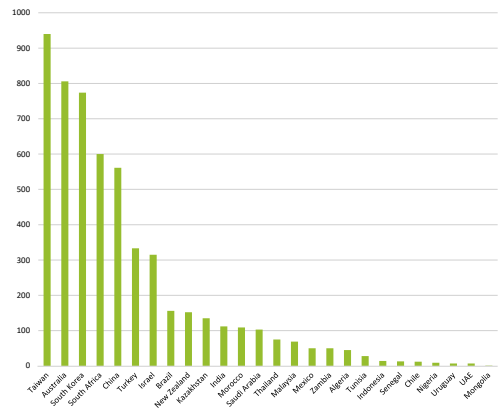
In non-European countries



● Contracted tracks (km) outside Europe (ETCS L1 &/or L2)

Global ERTMS vehicles contracted

In non-European countries



● Contracted vehicles outside Europe (ETCS L1 &/or L2)

The [ERTMS website](http://www.ertms.net) is regularly updated to provide latest updates through an interactive map regarding the system's deployment projects contracted by UNIFE members.



For more information on ERTMS and our progress during 2022, please visit www.ertms.net.

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08.

**ERWA: The
UNIFE Railway
Wheels
Committee**

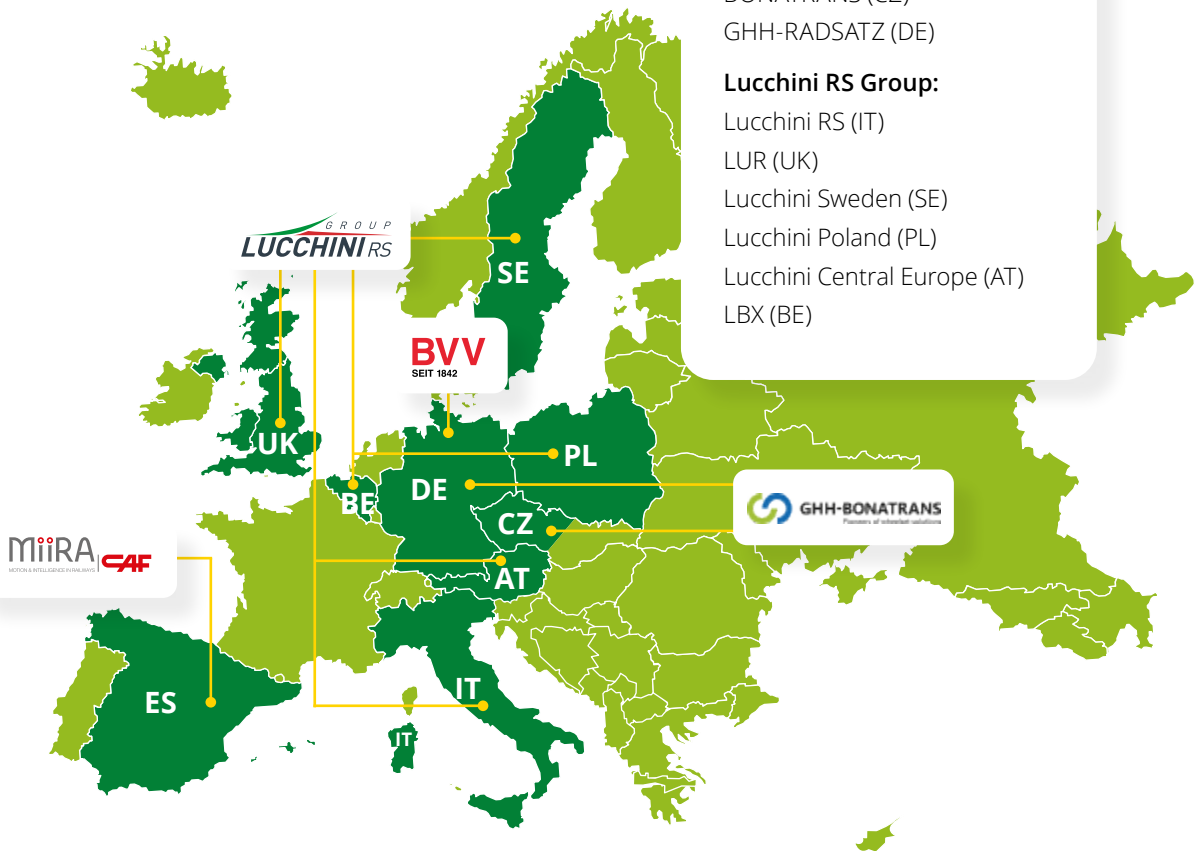


UNIFE's Railway Wheels Committee's (ERWA) main mission is to contribute to the development of standards, promote safety and environmental friendliness innovations and foster both quality and best practices in the European market. ERWA members bring together over 4.300 employees in workplaces across Europe.

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

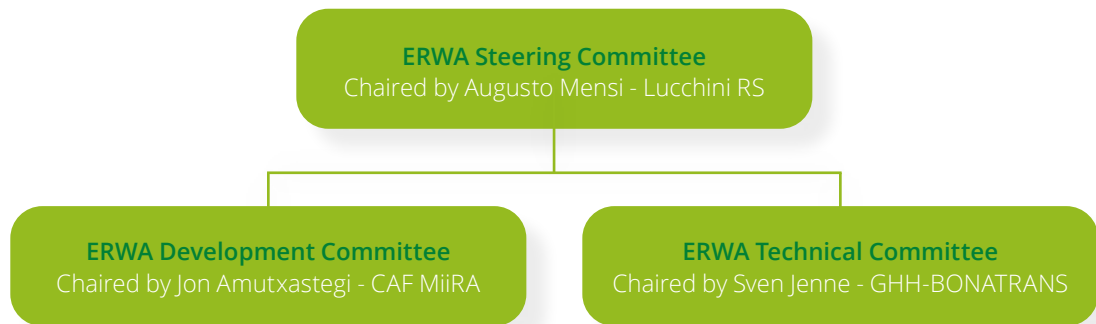


Throughout 2022, ERWA carried out many important activities, these include:

- Contributing inputs to Standardisation and Regulation initiatives
- Maintaining close links with the **European Union Agency for Railways** (ERA) and standardisation bodies like **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 concerning MEAT principles compliance

- Promoting the ERWA Axle Coating guideline
- Aiding in the organisation of the **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 2022 ERWA General Assembly, Elixabet Gallastegi has been appointed as the new Chair of the ERWA Development Committee, while the leadership of the three aforementioned bodies remains the same for another term. UNIFE's Railway Wheels Committee carries the following organisation:



Organisation of ERWA 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 September 2022 issue of the Railway Gazette International.

The **20th International Wheelset Congress (IWC)** with the theme "Interdependent Ecosystem

of Wheelsets" will be held in the United States in Chicago, between 8 and 12 May 2023. ERWA has followed and contributed to the preparations of the congress with its participation in various IWC committees.



For further information about ERWA, please contact UNIFE Technical Affairs Manager Stefanos Gogos by email at stefanos.gogos@unife.org





09.

**IRIS:
International
Railway
Industry
Standard**



The **International Railway Industry Standard (IRIS)** is a globally recognised system for the evaluation of business management systems unique to the rail sector. Promoted by UNIFE and supported by railway operators, system integrators and equipment manufacturers, IRIS complements the internationally recognized ISO 9001 quality standard, introducing rail specific requirements. It 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®: 2022 in a nutshell

The main focus of **IRIS Certification®** was put on the evolutions planned on the conformity assessment, the standard ISO/TS 22163 and the associated tool. You will find hereafter more information on the work done so far.

Meanwhile, the current implemented system confirmed the certification of more than **2300 companies** together with some new ones after a difficult COVID-19 period in the past two years. Nonetheless the COVID-19 pandemic is still impacting the activity slightly in some regions. All the previously implemented measures to enable approved certification bodies and IRIS-certified companies to go through their annual audit were deployed in order to overcome this difficult period.

IMC continued to train auditors in the first semester as the need expressed by the certification bodies was still high. **17 new assessors** passed the examination and joined the IRIS auditor pool.



Key information concerning **IRIS Certification®** can be found in the factsheet and on the IRIS Portal www.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.



3662
IRIS REGISTERED COMPANIES



2320
IRIS CERTIFIED COMPANIES

40% SMALL 41% MEDIUM 19% LARGE



5
GOLD QUALITY PERFORMANCE LEVELS



195
SILVER QUALITY PERFORMANCE LEVELS



2120
BRONZE QUALITY PERFORMANCE LEVELS



17
CERTIFICATION BODIES (CBs)



308
ACTIVE AUDITORS



251
LEAD AUDITORS



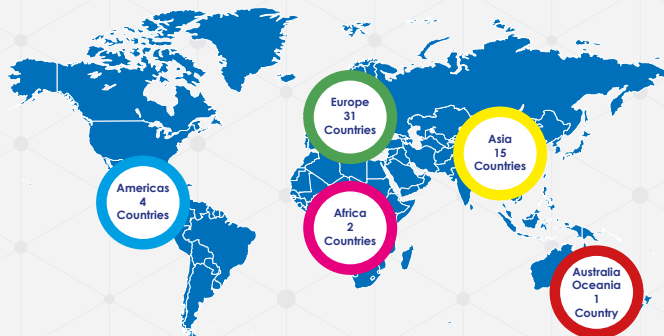
31
LANGUAGES



57
CO-AUDITORS



32
MULTI-CB AUDITORS



Quality performance levels and control

In the past year, for the first time, all the **Quality performance levels** were fully applicable and we noticed a clear development of the **Silver Level** (almost **doubling to 8%** of the total amount of certificates) which indicates:

- Need of process stability
- Strong monitoring of KPIs
- Enhanced performance to the expected level of the customers

The **IRIS Management Centre (IMC)** closely examined the reports through 100% documental veto-checks to guarantee that all the rules and requirements were fully respected by both, the companies and the auditors. That's 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, attracted several companies in this first eligible year. Four companies were confirmed by the Gold committee after a thorough check of all the data. As defined, the candidates were supported by the IMC through "calibration audits" in order to enhance the stakeholder's expected degree of trust.

But, the control activities aren't limited to silver and gold assessment, the bronze level goes through the same process with random inspections of the auditors' performance. Throughout the year, 100 witness audit days were organized to assess one third of our active auditors and to confirm their validity.

The ability of the certification bodies to continue to ensure the efficient management of the IRIS scheme was checked through 25 office audits, either in physical, hybrid or remote meetings.

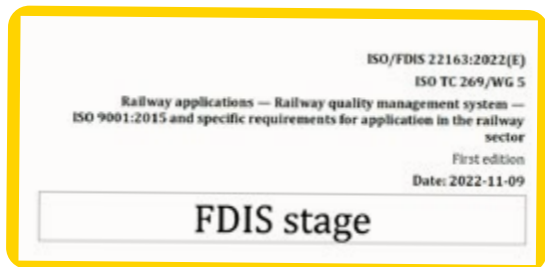
ISO 22163

The Draft International Standard (DIS) proposal finalised in December 2021 was put on ballot in the first semester of 2022 amongst the ISO/TC 269 members. The results were as follow:

- 21 members voted and approved it
- 344 comments were made by the members

As there were not only editorial comments, the discussions on a consensus on the technical comments will need a second ballot on a Final Draft International Standard (FDIS). Five additional meetings between May and October achieved the analysis and answered all the received comments. The FDIS proposal was submitted on 11 November 2022 to the ISO Central Secretariat for editorial adjustments.

This FDIS ballot will be launched early 2023 for two months and after final administrative review and last wording correction, the publication of **ISO 22163** should be officialised at the end of the first quarter of 2023.



ISO/FDIS 22163 cover sheet

Conformity assessment rules update

Consequently of the evolution of the requirements defined in the ISO 22163, the certification process and assessment methodology has to be adapted and revised.

Thus, the IRIS Steering Committee has asked for following improvements:

- Global simplification of the rules
- Easier approach for SMEs
- Adaptation on the railway market evolution
- Return of experience on the performance assessment

A working group was established in February to address all these points and to make proposals for a revision of the Conformity assessment rules to be published in parallel with the ISO 22163 launch.

Starting with a core team level first, and an extended team from June onwards, around twenty representatives of the sector companies as well as auditors, delivered their consensual ideas to the boards for validation.

The main evolutions will address:

- Audit preparation: combined readiness review and data review
- Audit scopes: clarification and extension of the business applicability and product ranges
- Audit organisation: removal of all time reductions (elimination of the calculator)
- Audit reporting: main part abridged to 8 pages
- SME approach: a simplified way to enable companies up to 85 staff headcount, to enter in the certification process with reduced documented information
- Supporting functions: standardised approach for all type of locations, functions, services necessary for a common Management System to ascertain the fulfilment of all processes
- Project management: adapted approach towards business related activities
- Eliminary (KO) items dedicated to readiness review needs
- Performance assessment: customer perception assessment reviewed and “bronze level” strengthen

Updating the tool

One of the strengths of the IRIS scheme is the support of the assessment by an Audit-tool.

This software is mandatorily used by all IRIS auditors and recommended for companies to prepare their audits. Currently, IMC and its IT provider have implemented a consequent project to upgrade the tool to a web based cloud solution. This will improve the efficiency for all the involved parties and it will contribute to the simplification of the scheme by fostering a collaborative auditing process across all stakeholders.

Looking to 2023



At European level, we continued our discussions with the

European Railway Agency (ERA) on finding common ways of working to enhance quality within the continental network with our respective schemes IRIS and ECM.

In 2023, the outputs of our projects will become reality: the publication of the referential documents **ISO 22163** and the **Conformity assessment** will bring IRIS **Certification®** in a new dimension: the opportunity for the rail supply industry to take advantage of 17 years of experience, acknowledged worldwide, for reliable and sustainable products.

The implementation of the transition phase will be a key action as well as the update of knowledge through dedicated trainings. International Rail Quality Board (IRQB)

The **International Rail Quality Board (IRQB)** has focused its 2022 activity to support all developments and evolutions of the scheme at international level. They have acknowledged and validated the proposals of the Conformity Assessment Working Group which will represent the backbone of the future of **IRIS Certification®**.

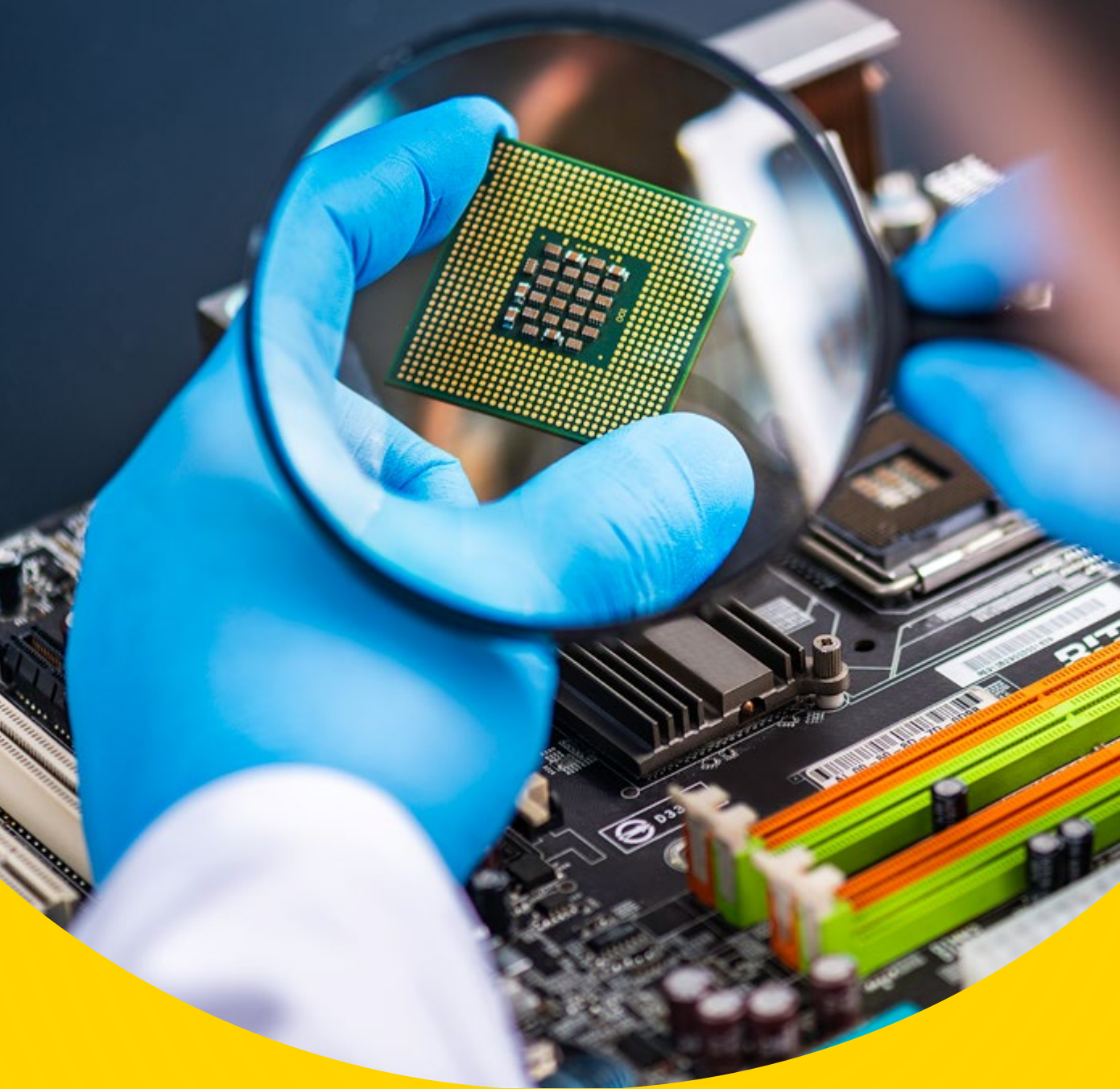
Throughout 2022 we held our monthly webinar programme covering the following topics:

- Geographical focus on France and Spain
- Guideline analysis on FAI and problem solving
- The process approach in audits
- Status of the Gold level

Each session gathered around 150 participants, with more interested stakeholders viewing the webinars available at www.irqb.org.

The main communication highlight of the year was the participation at the InnoTrans fair in Berlin where several actions promoted our scheme.

The Board will remain very vigilant on the evolution of the international situation to ensure a steady development of the quality in the rail sector.





10.

Communications

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1. European Railway Award



First organised in 2007, the European Railway Award celebrates and recognises outstanding contributions to the rail sector. **This year, the European Railway Award** reiterated our sector's central contributions to EU's goals of sustainability and interconnectivity by recognising a wide range of actors helping to shape the future of mobility.

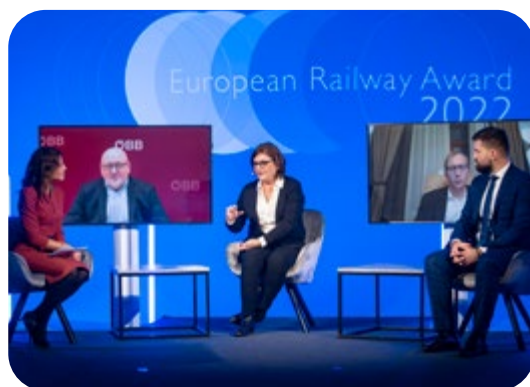
Greeted by **Philippe Citroën, UNIFE Director General**, and Alberto Mazzola, CER Executive Director, hundreds of participants from across Europe joined for the special edition programme, which saw several new additions, such as the **Rail Champion Award** for outstanding political contributions to the advancement of rail transport and the **Rail Trailblazer Award** for technical excellence and innovation. The former was jointly bestowed as an honorary recognition by UNIFE and CER, while the latter was selected by a jury of policy makers and sector experts.

The Rail Champion Award went to **EPP Leader MEP Manfred Weber** for his inspiring dedication to the promotion of rail among Europe's young people. He notably provided pivotal support to the **DiscoverEU scheme**, which has allowed thousands of young Europeans to travel through and engage with their neighbouring EU countries in a sustainable way. Manfred Weber's achievements found particular resonance with the conclusion of the European Year of Rail and the theme of 2022, the **European Year of Youth**. Speaking live at the ceremony, he stated:

"Rail travel is an essential part of our daily lives. Not only that, it can also be a life-changing experience to discover the beauty and diversity of Europe from a train. That is why I am so proud that we greatly increased the access to interrail for young people in Europe.

We are grateful to all the people and organisations that have supported this idea, and we look forward to continue expanding this programme in the future!"

European Commissioner for Transport Adina Vălean was one of this year's **certificate of outstanding achievement** recipients for her role in the Connecting Europe Express, a unique European Year of Rail project - initiated by the Commission and made possible by the voluntary contribution of over 40 rail partners - that took three iconic blue trains on a 20,000 km rail journey across the continent over a 36-day period. Between them the three Connecting Europe Express trains traversed 26 EU Member States and served as a poignant reminder of rail's ability to connect our Union through discussions on rail and its future with sector stakeholders, politicians at all levels, the general public as well as schools.



Roundtable discussion with **Adina Vălean** (European Commissioner for Transport), **Andrej Novakov** (Member of the European Parliament, and Chair Rail Forum Europe), **Henri Poupart-Lafarge** (UNIFE Chair and Alstom Chairman & CEO), and **Andreas Matthä** (CER Chair, and CEO ÖBB)



EPP Leader MEP **Manfred Weber** receiving the 2022 Rail Champion Award



Sverre Kjenne, Chief Operating Officer at Bane NOR receiving the 2022 European Rail Trailblazer Award

At the ceremony's roundtable discussion titled *"Keeping rail a priority after the Year of Rail"* Commissioner Vălean gave her perspective:

"With the European Year of Rail behind us, this year's European Railway Award ceremony was a welcome opportunity to discuss how to keep the momentum it created. I congratulate and thank today's winners for their outstanding work in this regard. For a real rail renaissance, we need to keep the spotlight firmly fixed on trains while tackling the shortcomings simultaneously".

Henri Poupart-Lafarge, UNIFE Chair and Chairman & CEO of Alstom, commented:

"As a major shift to rail is essential to achieving EU and global sustainability goals, the European rail supply industry is committed to supporting greater interoperability and capacity across the railway system".

At the heart of the event was the announcement of the 2022 **European Rail Trailblazer Award**, which the jury elected to present to the **Bane NOR's ERTMS programme**. The Norwegian national rail infrastructure company's plan is to revolutionise its railway network over the next ten years by investing more than €2 billion in the European Rail Traffic Management System (ERTMS), which promises to enable future digitalisation and automation. It is the first project of this scale in Europe, with around 4,200 kilometres of track and

more than 350 stations around Norway slated to be equipped with European Train Control System (ETCS) Level 2 technology.

Sverre Kjenne, Chief Operating Officer at Bane NOR, was present to collect the Award as a key driver of this monumental project. To mark the occasion, he said:

"We are extremely proud to receive this award! It shows that our work with ERTMS is of great importance also outside our own borders. We believe in the initiative to build one modern and common signalling system in one data centre for the entire country. This award gives us renewed motivation to complete this great ambition. Together with our suppliers: Siemens, Alstom and Thales, we will deliver a new, efficient signalling system in the years to come. Starting with our first big milestones this year when we open the first modernised train line - Nordlandsbanen - in October. ERTMS will contribute to a more punctual, safe and environmentally-friendly railway in Norway".

The award was accompanied by a €10,000 donation to the charity of the laureate's choice. Bane NOR decided to give the prize money to **Engineers without Borders Norway**, a Non-Governmental Organisation that contributes engineering competence to projects in developing countries.

2. UNIFE General Assembly



UNIFE gathered its members in Paris for the first in-person General Assembly since the outbreak of COVID-19, **to discuss the future of the rail supply industry** at a time when Europe is ever more in need of the benefits this unique mode of transportation provides communities throughout the EU and globally.

To best coordinate our industry's contribution to overarching European objectives, UNIFE members convened in several **Dialogue Forums**

throughout the first day of the event. In total, there were 6 conversations covering a wide array of topics: *Quality, Investment and Public Procurement, Digitalisation and Innovation, Trade, Interoperability, and Sustainable Mobility.* 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.



Keynote video message from **Thierry Breton**, European Commissioner for Internal Market on the competitiveness and global leadership of the European Rail Supply Industry



Elzbieta Lukaniuk, Member of the Cabinet of European Commissioner for Transport Adina Vălean discussing the Sustainable and Smart Mobility Strategy



UNIFE Chair and Alstom Chairman & CEO **Henri Poupart-Lafarge** welcoming the UNIFE Members at the 2022 General Assembly in Paris

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 industry's competitiveness to the Single European Railway Area and France's mobility network, participants agreed that our mode of transport stands at a critical juncture. Faced with shrinking accessibility abroad and increased interest from third country companies, but empowered by expanding EU financing for new projects, now is the time for a resurgence in rail.

To best complete these goals, the membership elected to expand its ranks by ratifying the applications of 10 companies: **Express Service ODD** (BG), **Dual Inventive Holding** (NL), **Scheidt & Bachmann Signalling Systems** (DE),

Expandium SAS (FR), **Cylus Cybersecurity** (IL), **Softil** (IL), **DAKO CZ** (CZ), **RailNovation** (CH), **RazorSecure** (UK), **Gillet Group** (FR), and 1 Associate Member **Rastia** (BG).

Appreciating the considerations of UNIFE's wide membership and the challenges posed by the current circumstances, **Henri Poupart-Lafarge, UNIFE Chair and Alstom CEO & Chairman**, welcomed the association's newest members and the approval of the latest Advocacy Strategy by stating:

"We are the global leaders of the sustainable mobility market with off-the-shelf solutions ready for deployment to decarbonise our transport systems. Rail is ever more part of the solution".



UNIFE warmly welcomes the 10 Members and 1 Associate Member, who were officially admitted to our ranks during the General Assembly

3. InnoTrans



With 2,834 exhibitors from 56 countries and more than 137,000 trade visitors, InnoTrans continues to be the quintessential event for the European rail supply industry to showcase its major innovations, make important commercial connections, and hear from decision makers and sector leaders about future plans. UNIFE once again had an exhibition stand and a full programme of activities and events at InnoTrans 2022 in Berlin.

The first day started with the official **launch of the World Rail Market Study (WRMS) by Henri Poupart-Lafarge (Chair of UNIFE, and Chairman & CEO of Alstom)**, followed by presentations of the major findings by Andreas Schwillig (Senior Advisor, Roland Berger) and Philipp Grosche (Partner, Roland Berger), as well as on the growing market demand for zero-emissions trains in Europe. The day closed with the signature of the **Memorandum of Understanding** between the **Canadian Association of Railway Suppliers (CARS)**, the **US Railway Supply Institute (RSI)**, and UNIFE.



Launch of the World Rail Market Study by **Henri Poupart-Lafarge**, Chair of UNIFE, and Chairman & CEO of Alstom

On the second day, the presentations at UNIFE's stand focused on various topics including **R&I, Fourth Railway Package's implementation, ERTMS, trade, skills, and IRIS Certification**. The highlight of the day was UNIFE's participation in the **Women in Mobility Luncheon**, gathering

over 700 participants. The goal of the event was to connect female role models to enhance visibility, consequently foster innovation through diversity. UNIFE presented an award and was among the inspiring keynote speakers represented by Antonella Trombetta (Hitachi Rail).



Keynote speech from **Antonella Trombetta** on behalf of UNIFE during the Women in Mobility Luncheon

Day three kicked off with **UNIFE's Dialogue Forum: ERTMS - A building block on the journey towards a digital and autonomous rail**. The event attracted a large crowd and featured Chris Jackson (Editor-in-Chief, Railway Gazette), Keir Fitch (DG MOVE, European Commission), Jo De Bosschere (Head of ERTMS and Telematics Unit, European Union Agency for Railways), Ian Conlon (Head of Unit System Pillar, Europe's Rail Joint Undertaking), Matthias Ruete (European Coordinator for ERTMS) and other stakeholders. The audience listened to presentations from each panellist on their past successes and future strategies for the deployment of ERTMS, followed by a robust panel discussion. The day concluded with a session on the challenges and best practices for railway cybersecurity, and an IRIS discussion on the evolutions to come in the rail certification scheme.

In conclusion, InnoTrans 2022 could be considered as a major success for UNIFE, and we would like to thank all of our speakers and guests who visited our stand and participated in all the various elements of our programme and activities.



Honouring of Railway Award winner during the opening of the Women in Mobility Luncheon



Discussing with STAFFER's partners (Skill Training Alliance For the Future European Rail system)



Building the future of rail together!



Deepen railway knowledge



Growing outreach



Engaging with decision makers

4. UNIFE Gender Equity Activities

Across the European Union, women and girls represent more than 50% of the passenger rail ridership but they only compose approximately 20% of our workforce. The European Rail Supply Industry believes that inclusivity leads to the creation of more well-rounded mobility solutions in line with European Union climate, cohesion and resiliency ambitions, our community is committed to welcoming greater numbers of women to our ranks and positions of leadership. In recent years, our association has examined its values on this topic and entered consortia devoted to the education and recruitment of non-male employees.

As the European Rail Supply Industry, UNIFE is a reflection of its members and strives to represent the best of our sector. Our mission is to promote rail as the backbone for not only Europe's mobility system but the society that it enables. This association endorses a future in which women are given equal agency within, and impact on, the communities that they live and work in. We also recognise that the best place to initiate change is with yourself.

At the UNIFE level, the association announced its **Gender Equity Policy** during its 2022 General Assembly in Paris. The new policy calls attention to gender disparities in rail, advocates for increased equity as essential to our sector's optimal performance and reiterates suppliers' obligation to address these divides. It also highlights working conditions that limit the full participation of women and non-males. Fittingly created during the European Year of Youth, the European Rail Supply Industry remains proactive in ensuring that we are not only creating the products needed for future generations but also the professional environments which empower

all young people to achieve their full potential. Seeking to lead by example, the policy presents internal actions that UNIFE will take to ensure that it remains a champion on the matter.

The first actions of our Gender Equity Policy were the establishment of the **Gender Equity Advisory Group** - a body dedicated to officialising our association's longstanding commitment to representation and empowerment of all rail colleagues - and by no longer participating in or organising "manels".

To stimulate greater awareness of the importance of this topic and inspire action, UNIFE participates in activities ranging from the **Women in Mobility Luncheon** to EU-level initiatives geared to increasing representation in our sector such as the European Commission's **Women in Transport EU Platform for Change** - an initiative launched on 27 November 2017 to strengthen women's employment and equal opportunities for women and men in the transport sector.

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.



UNIFE GENDER EQUITY POLICY

Rail only succeeds with a level playing field for all

As the European Rail Supply Industry, UNIFE is a reflection of its members and strives to represent the best of our sector. Our mission is to promote rail as the backbone for not only Europe's mobility system but the society that it enables. This association endorses a future in which women are given equal agency within, and impact on, the communities that they live and work in. We also recognise that the best place to initiate change is with yourself.

Europe continues to suffer both a significant gender pay gap (14,1%) and employment gap (11,7%), with women overrepresented in low-paying sectors, [according to a 2019 EU review](#). Traditionally male-dominated, women [only represent 22%](#) of the transport sector. These inequities are not caused by a lack of talented, educated and qualified women: in 2020, of the almost 37.5 million persons employed in science and technology in the EU, aged from 15 to 74, nearly 37.5 million were women (51.3%) and 35.5 million men (48.7%). Similarly, individuals that are transgender, intersex or self-classify in another manner must grapple with discrimination in society and the workplace. As the Commission chaired by Mrs Von der Leyen has taken the initiative to ensure gender equality in its leadership, UNIFE hopes to inspire the rail sector to do the same and provide women at all strata of the industry with equitable conditions.

To that end, UNIFE is codifying our legitimate expectations into this gender equity policy that seeks to establish values which will encourage greater visibility and participation of women in our activities and those of the sector as a whole. Our policy will dictate how we engage with external partners and the standards we set for our internal processes.

External Policies

Public engagement

- UNIFE aims to no longer holding panel discussions, roundtables, debates or the likes that do not feature a non-male subject expert.
- When invited to participate in events that plans to only include male panellists, UNIFE will promote the participation of non-male staff members as speaker where a suitable alternative exists to achieve gender parity. If our association cannot ensure optimal contribution from our team, we will direct organisers to consult our database of willing representatives for knowledgeable non-male sector leaders from our membership.
- Our association will strive to increase the visibility of women in rail during our engagement with the media, proposing female voices from our staff where possible or those from our membership in instances where the topic falls outside of our scope.
- UNIFE will compile and disseminate via our website a database of female rail supply experts that can be contacted for public comment, appearance or engagement.

UNIFE announced its Gender Equity Policy during its 2022 General Assembly in Paris, calling attention to gender disparities in our sector



Internal Policies

Governance and collaboration

- UNIFE encourages the members to consider gender equity when electing their representatives. UNIFE is striving to achieve 50/50 representation in its committees and working groups.
- Our association has established an internal facing "Gender Equity Task Force" to assess gender dynamics within our organisation and continue to promote actions that could address any possible deficiencies.
- UNIFE will be convening a new "Gender Advisory Group" composed of our members that will work to assess the current situation of female employees throughout the industry, understand barriers of entry for those wishing to have a fulfilling mobility career and craft association position papers, statements and recommendations to ensure the optimal mobilisation of the rail community going forward.
- UNIFE is committed to participate? launching a mentorship programme to actively connect women in our industry with accomplished professionals in their speciality who can help them grow their skill sets and broaden their network as they progress through their career.
- To ensure that our organisation remains a contributor to greater female representation, we will continue to increase our contacts and proactively include women in our internal mechanisms.
- UNIFE is currently adapting its "Ethics Policy" (name of the document to be defined) as a means of codifying its belief that harassment and discrimination based on gender will not be tolerated by our organisation.

Human Resources

Recruitment and hiring

- When advertising new employment opportunities with our organisation, UNIFE will continue to utilise gender inclusive and neutral language to appeal to a diverse field of potential candidates.
- To ensure that the association maintains a welcoming culture and limit the detrimental impacts of prejudices, our association has long maintained a policy of having all interviewed candidates assessed by at least one man and woman before any offers are extended.

Compensation and working conditions

- UNIFE has long been committed to equal compensation amongst its staff and has succeeded to close the gender pay gap internally. Our association will continue to assess its salary model to rectify any possible causes of inequitable compensation.
- Our association is aware of the demands created by childcare and the disparities that result for working parents – and, overwhelmingly, for women.

Transparency

- Our association will dedicate sections of its website, annual reporting and other corporate materials to sharing in-house statistics describing UNIFE's gender equality status.

5. Metrics



 Google Analytics - www.unife.org

59,469 Visitors | **299,507** Page views



 LinkedIn - UNIFE - The European Rail Supply Industry Association

8,831 Followers | **2,140** Visitors | **97** Updates | **110,647** Impressions | **2,838** Clicks



 Twitter - @UNIFE

215,450 Impressions | **95,140** Profile visits | **235** New Followers | **377** Tweets | **441** Mentions



 Vimeo - UNIFE

1,663 Views | **1,202** Unique viewers | **14,687** Impressions | **23 days, 2 hours, 6 mins** Total watch time



 UNIFE in the Press

9 Interviews | **213** Articles about or mentioning UNIFE

22+ Position papers/reports UNIFE produced or contributed to

6. Communications leadership and support for



www.unife.org



@unife



UNIFE - The European Rail Supply Industry Association



vimeo.com/user57233307



www.hoponrail.eu



@HopOnRail



www.linkedin.com/showcase/hop-on-for-our-planet/



@hoponrail



www.youtube.com/channel/UCVm3a3fKREqUeHQVidpOblig



europeanrailwayaward.eu



@EU_RailwayAward



www.railstaffer.eu



@RAIL_STAFFER



Rail Staffer



www.ertms.net



@ERTMS



errac.org



@ERRAC_Rail



The European Rail Research Advisory Council (ERRAC)



www.iris-rail.org



www.irqb.org



@TheIRQB



IRQB - The International Rail Quality Board



+Dissemination for 15 R&I Projects



11.

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UNIFE wishes all the best to those who left the team in 2022 and thanks them for their contribution to UNIFE activities



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Robert Arenella



David Kupfer



Jana Jung*

* detached from Alstom



Jonathan Cutuli





12.

UNIFE Members in 2022

UNIFE Full Members.....	130
UNIFE Associate Members.....	138

UNIFE Full Members 2022
















 AKKA PASSION FOR TECHNOLOGIES	AKKA High Tech	https://www.akka-technologies.com
	Alstom	https://www.alstom.com
 ALTPRO RESEARCH • DEVELOPMENT • PRODUCTION	ALTPRO	https://altpro.hr/en
	Ardanuy	http://www.ardanuy.com/es
	ASTRA	https://avcactive.com
	AZD	https://www.azd.cz/cs
 BVV SEIT 1842	Bochumer Verein Verkehrstechnik	https://www.bochumer-verein.de/en
	Bonatrans	https://www.ghh-bonatrans.com/en
	CAF	https://www.caf.net
 CEG Electronica Industriale S.p.A.	CEG Elettronica	https://www.cegelettronica.com/en
 CENTRALP Embedded electronic systems	CENTRALP	https://www.centralp.fr
 comesvil spa AUTOMATION SYSTEMS	Comesvil	https://www.comesvil.com
	Constellium	https://www.constellium.com

	ContiTech	https://www.continental-industry.com/en/solutions/suspension-anti-vibration/railway
	CS Group	https://www.csgroup.eu/fr
	CYLUS CYBERSECURITY	https://www.cylus.com
	DAKO-CZ	https://www.dako-cz.cz
	Dellner	https://www.dellner.com/SitePages/Products.aspx
	Dual Inventiv	https://dualinventive.com/en
	EKE Electronics	https://www.eke-electronics.com
	Elcowire Rail	https://elcowire.com
	Elma	https://www.elma.com/en
	ELPA	http://www.elpa.si
	ELTEC	https://www.eltec.de/de
	ENYSE	https://www.enyse.com
	Eolane	https://www.eolane.com/en
	Ericsson	https://www.ericsson.com/en

	ErvoCom	https://www.ervocom.ch/en
	Evopro	http://www.evopro.hu/hu
	EXPANDIUM	https://expandium.com
	EXPRESS SERVICE	https://lz1866.com
	Faiveley Transport	https://www.wabteccorp.com
	FOGTEC	https://fogtec-international.com
	Frauscher	https://www.frauscher.com/en
	FREQUENTIS	https://www.frequentis.com/en
	Funkwerk	https://funkwerk.com/en
	Gerflor	https://www.gerflor.fr
	GESTE	https://geste.group
	GHH-Radsatz	https://www.ghh-bonatrans.com/en
	Gillet Group	https://www.gillet-tools.com
	Greenbrier Europe	https://www.greenbrier-europe.com
	HaCon	https://www.hacon.de/?set_language=en

	Harting	https://www.harting.com/DE/en-gb
HASLER <i>rail</i>	HaslerRail	https://www.haslerrail.com
	HIMA	https://www.hima.com/en/industries-solutions/rail
	Hirschmann	https://www.hirschmann.com/de/
HITACHI Inspire the Next	Hitachi Rail STS	https://www.hitachirail.com
HITACHI ABB	ABB Power Grids Sécheron	https://new.abb.com/id/about/our-businesses/power-grids
	Hoppecke	https://www.hoppecke.com/nl-be
ICF 	ICF	http://www.icf.com.es
indra	Indra	https://www.indracompany.com/en
s&t ISKRATEL	S&T Iskratel	https://www.iskratel.com/en
	ITT	https://www.itt.com/home
	IVM	http://ivmtech.it/en
	Kalthoff	https://www.kalthoff-luftfilter.de
	Kiorow	https://www.kirow.de
	Knorr-Bremse	https://www.knorr-bremse.com/en

 Končar - Electric Vehicles Inc.	KONČAR	http://www.koncar.hr
	Kontron	https://www.kontron.de
	KONUX	https://www.konux.com
	Leonardo	https://www.leonardocompany.com/en/home
	Lippert	https://www.lippertcomponents.eu
	Lucchini RS	https://lucchinirs.com
	Masats	http://www.masats.es/es
	Matisa	http://www.matisa.ch
	MER MEC	http://www.mermecgroup.com
	MER MEC STE	https://www.mermecste.com
	MIOS	https://www.mioselettronica.com
	MIPRO	http://www.mipro.fi
	Neat	https://www.neat.it
	NetModule	https://www.netmodule.com/en
	Nokia	https://www.nokia.com/networks

	OLTIS Group	https://www.oltisgroup.com
	Plasser & Theurer	http://www.plassertheurer.com/de/home/index.html
	ProgressRail	https://www.progressrail.com
	Prolan	https://www.prolan.hu/en
	Promeco	https://promeco.fi/en/home
	Prover	https://prover.com
	Radiall	https://www.radiall.com
	RailNovation	https://railnovation.com
	Razor Secure	https://www.razorsecure.com
	ReLoc	http://relocsa.ro
	RideOnTrack	https://www.rideontrack.com
	Saft	https://www.saftbatteries.com
	Schaeffler	https://www.schaeffler.com/fork
	Scheidt & Bachman	https://www.scheidt-bachmann.de/en
	Selectron	https://www.selectron.ch/en

SIEMENS	Siemens Mobility	http://www.mobility.siemens.com/mobility/en/pub/home.htm
	SOFTIL	https://www.softil.com
	Talgo	https://www.talgo.com
	Te.Si.Fer	http://www.tesifer.it/it/home
	Team LT UAB	https://www.belam.com/lv/sakums
	TELESTE	https://www.teleste.com
	TESMEC Rail	https://www.tesmec.com
THALES	Thales	https://www.thalesgroup.com/en
	Triorail	https://www.triorail.com/home.html
	TTC Marconi	https://www.ttc-marconi.com
	Unex	https://www.unex.net/INT/home
	VDS	https://www.vdsrail.com/en
	Voestalpine	https://www.voestalpine.com/group/en
VOITH	VOITH	https://voith.com/corp-en/about-us/company.html



Vossloh

<https://www.vossloh.com/en>



VÚKV

<https://www.vukv.cz>



Walbo

<https://www.walborailway.cz>



Wenzel

<https://wenzel-elektronik.de>



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