

European  
Rail Supply  
Industry

# Annual Report 2020



**unife**   
THE EUROPEAN RAIL INDUSTRY



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UNIFE Chairman

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# Message from UNIFE Chairman



"2021, the European Year of Rail, provides an excellent opportunity to showcase our capacity to innovate, to provide Europe with the sustainable transport systems that it deserves and contribute to the economic recovery of our continent."

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

"As the European rail supply industry, it is up to us to deliver the solutions that will underpin this revolution of our mobility system."

I started my second mandate as Chair of the UNIFE Presiding Board in June this year.

Between my first mandate in 2014 and 2020 our industry has undergone tremendous changes. We have started our transition from a rather traditional heavy industry to a fully digitalized one, innovative and with a key role to play in the decarbonization of our mobility systems.

2020 as you all know has been for the European rail industry as for everyone a very challenging year.

The year started on an optimistic note following the announcement by the new President of the European Commission

Mrs von der Leyen of the Green Deal as her flagship initiative, when we had to deal with the worst pandemic faced by humanity in recent times. Overnight, trains stopped running and our factories had to close. When I started my mandate, we were coming to terms with the sanitary impact of the crisis and its economic consequences on our customers.

But this challenging time also showed the resilience of rail transport: Europe's economies and societies managed to function through the lockdown thanks to rail transport. The dedication of all our employees and of our customers' is to be recognized.



With vaccines available in the near future, Europe has confirmed that the recovery of our economies should focus on the Green and Digital transitions. The EU leaders, in an unprecedented step, have agreed for an extra €750 billions to be available to support national resilience and recovery plans underpinning this ambition.

Regarding Mobility, the European Commission has released in early December its Smart and Sustainable Mobility Strategy, which sets our common path towards a 90% reduction in CO<sub>2</sub> emissions by 2050 – and rail has to play a key role. The trans-European transport network must be completed in time and enable a trebling of very high-speed rail passenger traffic, and a doubling of rail freight traffic by 2050.

As the European rail supply industry, it is up to us to deliver the solutions that will underpin this revolution of our mobility system. In particular, innovation in alternative fuels such as hydrogen now enables us to be the first transport mode with zero direct emissions.

2021, the European Year of Rail, provides an excellent opportunity to showcase our capacity to innovate, to provide Europe with the sustainable transport systems that it deserves and contribute to the economic recovery of our continent. Our landmark initiatives will include the successful continuation of our common innovation program Shift2Rail 2, with hopefully a level of EU co-funding which will enable a high level of ambition, and our communication campaign, 'Hop On For Our Planet', that highlights the potential that our sector offers for young graduates willing to work in a sector that makes a difference for our societies.

As Chairman of UNIFE, I count on you to support our association in the coming year, as it is only by working together that we can achieve progress on our key priorities:

- Advocating at all governance levels for rail transport as a key contributor to Europe's economic recovery and as an enabler to a clean mobility system.

- Achieving a level playing field for transport modes within Europe, thanks for the internalization of external costs.
- Ensuring the accessibility of markets outside of the EU and fair conditions for competition in the EU and abroad.

Sincerely,



**Henri Poupart-Lafarge**

UNIFE Chairman and,  
Chairman and CEO of Alstom

# Message from UNIFE Director General



"As we enter this new decade, UNIFE will work to ensure the projects initiated in the last one continue to receive ample support and are empowered to move Europe towards both a green transition and a swift economic recovery following the pandemic."

**Philippe Citroën**  
UNIFE Director General

"Thank you to our Members for their participation in our activities during a most unusual year and your continued commitment to building a stronger European Rail Supply Industry in service of our shared sustainable future."

2020 was an unprecedented year, defined by a pandemic unlike any other in living memory. The European Rail Supply Industry contended with new public health measures and the disruptions generated by their necessity. Like other frontline workers who kept us safe and provided for during this crisis, rail has continued to run to ensure that essential personnel can safely carry on their tasks, medicine and equipment swiftly arrives where needed and when necessary patients can be transported for care. UNIFE has also continued its work through this sanitary crisis, advocating on behalf of our sector and advancing its vision – in line with the EU Green Deal and in service of the post-COVID-19 recovery - through engagements with EU institutions, Member State repre-

sentatives, rail sector stakeholders and others.

As the **European Commission**, led by President **Ursula von der Leyen**, has elected to use its coronavirus economic recovery strategy in advancement of the green transition, this association has continued to participate in Research & Innovation (R&I) initiatives and promotion of international procurement market fairness, skills training and streamlined rail regulations to ensure the creation and implementation of innovative rail solutions needed for such a transformation.

Throughout 2020, UNIFE maintained consistent and close collaborative relations with the Croatia and Germany Presidencies of



the **European Council**, respectively, as the EU has confronted the pandemic. Contemporaneously, UNIFE has worked with the European Commission as it attempted to marshal its resources to overcome COVID-19 while continue to define its Green Deal objectives. During the initial outbreak of COVID-19, UNIFE CEOs had fruitful meetings with EC Vice-President **Frans Timmermans** and Commissioners **Thierry Breton** and **Adina Vălean**. These conversations were valuable opportunities to discuss much needed rail investment under the framework of the recently agreed to and historic **Multinational Financial Framework** (MFF) and the upcoming **National Recovery Plans**.

These financial instruments will fuel Europe's movement towards carbon neutrality by 2050 and the shift of substantial passenger and freight traffic to rail, as outlined in the Green Deal. However, this will only be possible if the rail industry has a highly trained and appropriately staffed workforce. UNIFE has led on skills development initiatives in 2020, having launched with several industry leaders of UNIFE the ambitious **Hop On For Our Planet** communication campaign and the Erasmus+-funded **STAFFER** Blueprint for Skills with our colleagues at **CER** to ensure that curricula and career paths adequately prepare job seekers and rail professionals seeking new capabilities are prepared to implement the rail solutions of tomorrow.

The introduction of green, next generation rail solutions cannot happen across both Europe and the world. In 2020, UNIFE continued to promote the European Rail Supply Industry's global leadership in international fora such as **Business at the OECD** and the **European Standardisation Organisations** (ESO) - particularly, **CEN** and **CENELEC** - through the **Sector Forum Rail** (SFR). To this end, we also released a new Vision Paper that explains the importance of continued European guidance in international standardisation bodies. With societies around the world realising the mounting pressures of climate change, rail will only be able to become the backbone of a truly multimodal, sustainable mobility paradigm if it is able to operate in



a truly level global playing field shaped by a equitable standardisation environment.

Preceding the Commission's June launch of a major review of the EU's trade policy to build a consensus around a fresh medium-term direction for EU trade policy and our participation of the public consultation, UNIFE has remained committed to the promotion of the **International Procurement Instrument** (IPI) in close cooperation with **AEGIS** and the adoption of the Most Economically Advantageous Tender (MEAT) principle by Member States.

As we enter this new decade, UNIFE will work to ensure the projects initiated in the last one continue to receive ample support and are empowered to move Europe towards both a green transition and a swift economic recovery following the pandemic. First, we have continued our vocal support of

the **EU Agency for Railways** (ERA), led by Director **Josef Doppelbauer**, for the creation of a "One-Stop Shop" through our work on the full transposition of the Technical Pillar of the Fourth Railway Package across all member states and opposition to proposed and unfortunate subsidy cuts to this important institution. Additionally, following the release of the *Sustainable and Smart Mobility Strategy* and an agreement on the historic 2021-2027 Multiannual Financial Framework with its substantial Structural Funds, Connecting Europe Facility (CEF) and "Next Generation EU" recovery supplement, we hope to see a continuous deployment of ERTMS, being carried out diligently by ERTMS Coordinator **Matthias Ruete**.

The European Rail Supply Industry has been excited by President **von der Leyen** insistence that her mandate's hallmark project, the "European Green Deal", will serve as

the bedrock for their European recovery strategy and hope to see rail prioritised in the tactics utilised under the recent Mobility Strategy as a meaningful shift from unsustainable modes of transport to cleaner, more efficient rail is key to our green recovery. During the coming years, UNIFE will advocate for extensive investments in infrastructure and rolling stock for passenger, freight, regional and urban rail, as well as expanded ERTMS deployment.

Furthermore, new mobility paradigms will require new rail solutions. We will continue to promote the extension of the **Shift2Rail Joint Undertaking** (S2R JU), led by Executive Director **Carlo Borghini**, as "Shift2Rail 2", during the 2021-2027 period. Building even more reliable, safer, comfortable and sustainable rail solutions will require innovative new digital applications that make use of cutting-edge technologies such as Artificial Intel-



ligence, the Internet of Things and telecommunications, like 5G. It will also necessitate improving Europe's railways cybersecurity and the regulatory framework that allows our industry to profit from emerging opportunities.

UNIFE is confident that the organisation has taken steps at its June General Assembly to best pursue these objectives. During the meeting **Henri Poupart-Lafarge**, Chairman and CEO of **Alstom**, was elected to succeed **Sabrina Soussan**, CEO of **Siemens Mobility**, as UNIFE's new Chair. Ms. Soussan was an impressive advocate for our industry, dedicating her 2017-2020 mandate to aiding UNIFE's important advocacy campaigns in favour of EU investment for rail, a global level-playing field and **Shift2Rail 2**. Mr. Poupart-Lafarge has stated that he intends to use his chairship, acknowledging the challenges of the moment to promote rail's contribution to both the Green

Deal and the recovery, while stating that the 2021 EU Year of Rail is an unprecedented and welcomed venue to do so. The meeting also saw the signature of the *Declaration of the European Rail Supply Industry*, raising awareness among EU and national decision-makers of our industry's crucial importance to the dual crises we face.

This year, UNIFE, through its work with **IRIS** and the **International Rail Quality Board** (IRQB), has advanced quality in the rail sector through the launch on the "Silver" certification level and the commencement of testing for the even more prestigious "Gold" level.

Thank you to our Members for their participation in our activities during a most unusual year and your continued commitment to building a stronger European Rail Supply Industry in service of our shared sustainable future. UNIFE is pleased five new Members have cho-

sen to join us on this journey in 2021: **ERICSSON**, **ErvoCom AG**, **GESTE Engineering S.A.**, **GMT Gummi-Metall-Technik GmbH** and **ITT Italia Srl**. We look forward to working with you all in the year to come.

Sincerely,

A handwritten signature in blue ink, which appears to read 'Philippe Citroën', is written on a white background.

**Philippe Citroën**  
UNIFE Director General



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## UNIFE in 2020

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# UNIFE Mission

## “Promoting Rail Market Growth for Sustainable Mobility”

01

**Promoting**  
European policies  
and programmes  
favourable to rail

02

**Working** towards  
an interoperable  
and efficient  
European railway  
system

03

**Ensuring**  
European Rail  
Supply Industry  
leadership  
through advanced  
research,  
innovation and  
quality

04

**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 Shift2Rail Joint Undertaking and contributing to the follow-up of its activities
- ▶ Shaping the future of rail research & innovation in Europe

## IV. IRIS Certification®

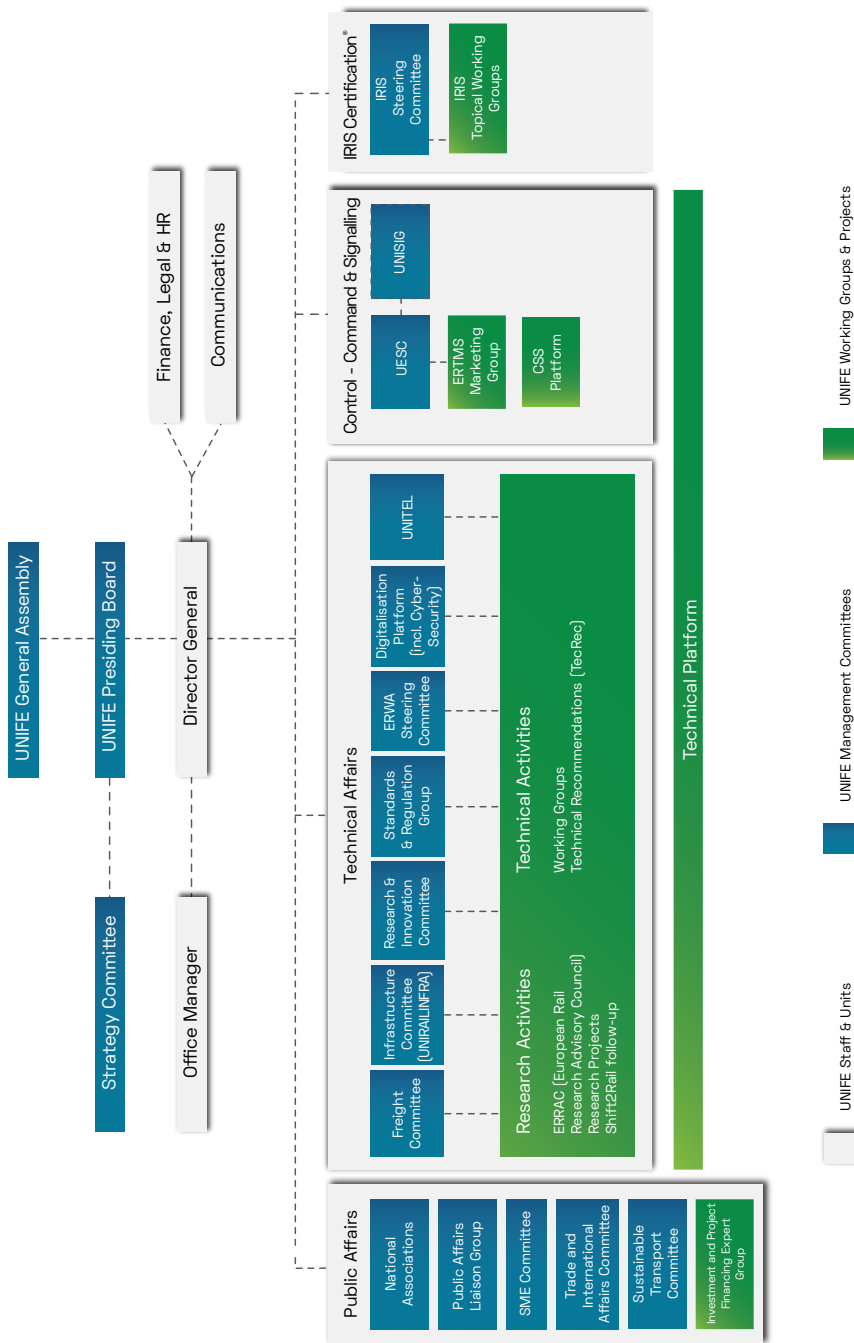
- ▶ The globally recognised rail quality management system
- ▶ Enables efficient business processes and leads to substantial quality improvements and cost reduction throughout the supply-chain
- ▶ More than 2100 IRIS Certification® certificates issued worldwide

European Rail  
Supply Industry



European Union

# UNIFE Structure







# UNIFE Presiding Board



**Henri Poupart-Lafarge**

UNIFE Chairman

Chairman and CEO,  
**Alstom**



**Danny Di Perna\***

Member of the Presiding Board

President,  
**Bombardier Transportation**



**Augusto Mensi**

Member of the Presiding Board

CEO,  
**Lucchini RS**



**Andrés Arizkorreta**

Member of the Presiding Board

Chairman,  
**CAF Group**



**Michael Peter\*\***

Member of the Presiding Board

CEO,  
**Siemens Mobility**



**Lilian Leroux**

Member of the Presiding Board

CEO,  
**Faiveley Transport**



**Jacob Zeeman\*\*\***

Member of the Presiding Board

CEO,  
**Strukton Rail**



**Roger Dirksmeier**

Member of the Presiding Board

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



**Millar Crawford**

Member of the Presiding Board

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



**Jürgen Wilder**

Member of the Presiding Board

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

\* Danny Di Perna / Until January 29th 2021 due to take over of Bombardier Transportation by Alstom

\*\* Michael Peter / Subject to approval of the UNIFE General Assembly, June 2021

\*\*\* Jacob Zeeman / Left Strukton Rail end of October 2021

# 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 10 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&D/I projects, including Shift2Rail. 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 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.





**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 sector. The committee also discusses and encourages rail infrastructure development. UNIRAILINFRA brings together companies specialising in the manufacturing and supply of fixed railway equipment linked to the infrastructure subsystem 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 Shift2Rail, discussions on and the preparation of future European rail R&D programmes like Horizon Europe and Shift2Rail-2 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, Shift2Rail, the Industrial Dialogue and European Commission consultations on R&I. Additionally, it prepares inputs for ERRAC.

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. 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 co-operation within the European rail sector, strengthening its position when compared to competitors and other stakeholders.

The **ETCS 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 **ERTMS Marketing Group (UEMG)** is tasked with coordinating any marketing activities related to 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)** was recently reactivated to provide UNIFE with signalling expertise. Platform members are primarily collaborate with EULYNX Consortium members on reviewing EULYNX Specifications which aim to standardise interfaces and elements of signalling systems.

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 brings 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, including industrial policy.

The **Trade & International Affairs Committee (TIAC)** is in charge of monitoring EU negotiations with potentially significant implications for the European rail supply industry and coordinating UNIFE's responses. TIAC is also a platform for the exchange and dissemination of information on bilateral cooperation activities undertaken by UNIFE in international markets such as the United States, Russia, throughout the Gulf and beyond.

UNIFE's **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 tracks and communicates on issues related to export financing.

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. Its steering committee is the UNIFE working group responsible for IRIS Certification and decisions regarding resources, contracts and financial budgeting.

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
- ▶ Cyber Security
- ▶ Diesel
- ▶ Electromagnetic Compatibility (EMC)
- ▶ Energy
- ▶ Energy Efficiency
- ▶ 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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Elsterwerda  
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# 1) COVID-19: alerting EU Institutions on challenges faced by UNIFE Members

## a. Assessing and monitoring the pandemic's impact on our industry

To best assess the consequences COVID-19's first wave on its Members, UNIFE began its pandemic response by conducting a dedicated survey between March and April. Additionally, UNIFE Director-General Philippe Citroën entered bilateral exchanges with the CEOs of numerous member companies while the association organised special meetings on the coronavirus for many of its internal Committees and Working Groups. For example, the UNIFE SME Committee held 3 COVID-19 meetings to assess the potential impacts of the pandemic on Small and Medium-sized Enterprises.

As a result, it is clear that our industry's suppliers have been severely affected by the disruption of cross-border and domestic supply chains, as well as the temporary closures of plants. While the suspension, or easing, of lockdown and quarantine measures after the first wave have helped restore factory production capacities, companies have expressed serious concern about the impact of COVID-19 on tomorrow's business. The financial losses incurred by the urban and mainline rail operators amount to billions of euros and continue to deepen as ridership remains far below pre-crisis levels. This slowdown have inspired fears that planned investment might be postponed or, even worse, cancelled.

## b. Alerting the European Institutions

### The EU Council Presidency and the Member States

The Presidency of the Council of the European Union rotates among the Member States every six months. The Presidency's function is of importance as the responsible Member State determines the EU's political agenda and sets the work programme for the semester during which they hold office. It is also essential in facilitating dialogues through European Council meetings and other EU institutions. For this reason, UNIFE strives to establish close contacts with each EU Presidency well in advance of the start of its mandate. Achieving this goal allows the rail supply industry to effectively convey our stances and influence the Council's political agenda.

**In 2020, Croatia and Germany held the Presidency of the EU Council during the first and second halves of the year, respectively. Both of them had to cope with this massive and unexpected pandemic.** As it always does, UNIFE published two special Presidency Briefings, providing EU institutions with a series of concrete policy recommendations that will support our industry in the challenging times of COVID-19. These topics range from Industry and Trade to Transport, Public Procurement, Research & Innovation (R&I) and Investment policy.





UNIFE also organised a series of bilateral virtual meetings with National Governments (including Luxembourg Vice Prime-Minister François Bausch on 29 July) and with the Permanent Representations of Member States in Brussels to inform them about the situation, the concerns and challenges of the rail supply industry. These notably include exchanges with the Portuguese and Slovenian Authorities as these two countries will hold the EU Council Presidency in 2021.



### The European Commission

By 17 April, UNIFE addressed a first official letter to EU Industry Commissioner Thierry Breton to call his attention to COVID-19's detrimental impact on our industry's production capacities. In response to this crisis, Commissioner Breton held a bilateral conference call with several UNIFE CEOs on 28 May. UNIFE kept him well aware of all developments in our industry with two subsequent official letters, sent to him on 8 June and 10 September.

Similarly, UNIFE sent two official letters to the EU Commissioners for Transport and Cohesion Policy, Adina Vălean and Elisa Ferreira, to alert them of the need to swiftly boost EU investment in the rail sector as a means of avoiding a significant market contraction that would severely impede the rail supply industry. Following this correspondence, UNIFE organised on 7 July a conference call between EU Transport Commissioner Adina Vălean and rail supply industry CEOs. Another official letter was sent to Commission Vălean on 10 September to call for massive rail investment under the framework of the upcoming National Recovery Plans, co-funded by the EU.



### The European Parliament

UNIFE forwarded the aforementioned official letters to Members of the European Parliament (MEPs), particularly those sitting in the parliamentary committees for Industry (ITRE), Transport (TRAN), Trade (INTA), Cohesion Policy (REGI) and budgetary matters (BUDG). UNIFE also organised several bilateral conference calls with MEPs to share the difficulties encountered by rail suppliers and call on their support.

## 2) Industrial Policy

“sustainable and smart mobility industries” that have the “responsibility and the potential to drive the twin [green and digital] transitions, support Europe’s industrial competitiveness and improve connectivity”.

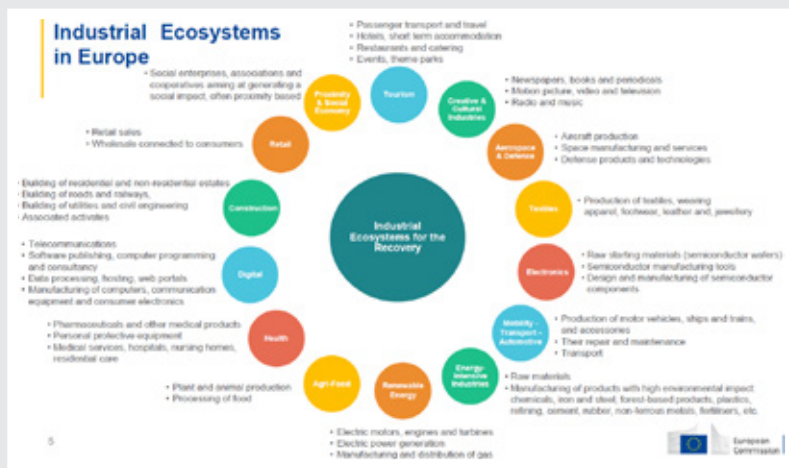
### a. Competitiveness of the rail industrial ecosystem

In March, EU Commissioner Thierry Breton presented the *New EU Industrial Strategy for Europe*. In this important document, the Commission explicitly mentions rail manufacturers as one of the **“sustainable and smart mobility industries” that have the “responsibility and the potential to drive the twin [green and digital] transitions, support Europe’s industrial competitiveness and improve connectivity”**.

In recognition of its key contribution to both economic recovery and the EU Green Deal, the Commission included the rail industry in the “Transport and Mobility ecosystem”, 1 of the 14 priority “industrial ecosystems” announced by Commissioner Breton.

Although the concrete modus operandi of these industrial ecosystems is still unknown, the European Commission has already accepted - at UNIFE’s request - an extension of the *EC Expert Group on the Competitiveness of the European Rail Supply Industry’s* mandate beyond 2020. This step marks a recognition of this forum as an already existing and much-needed governance tool for discussing the future of our industry ecosystem at the EU level.

Indeed, by doing so, the different DGs of the European Commission and the Member States have managed to establish more than just a close dialogue with our industry.



The EC Expert Group has, in fact, already helped foster collaboration and consensus on critical work. One very concrete outcome was the adoption in October 2019 of a final Report that listed 89 recommendations across 10 strategic policy areas. The continuation of this body will be instrumental to maintaining our constructive dialogue and working together on the continued implementation of all these policy recommendations.

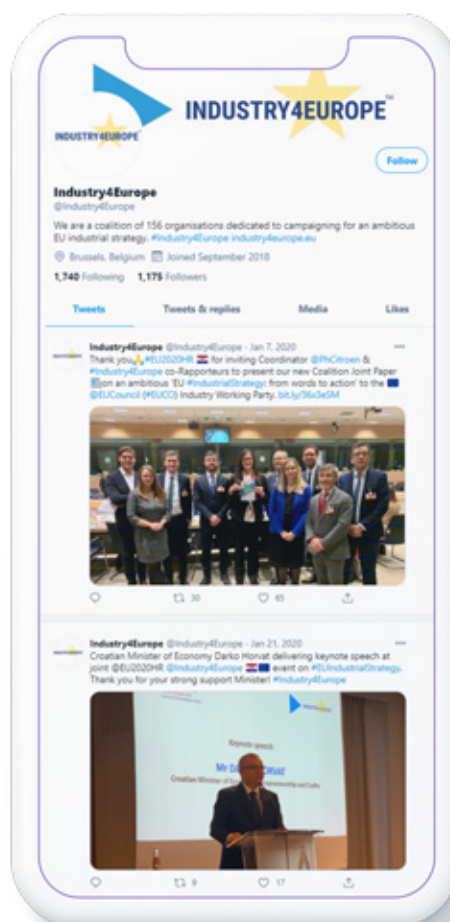


## b. The Industry4Europe coalition

UNIFE initiated Industry4Europe, a large and unprecedented coalition of 156 European industrial federations from all manufacturing sectors, almost 4 years ago. This alliance has continuously called on the EU to implement an ambitious industrial strategy for safeguarding European manufacturers' world leadership and the industrial jobs they create in Europe.

On 7 January, the Coalition was invited to present its new Joint Paper entitled *A long-term strategy for Europe's industrial future: from words to action* to all of the Member States during a meeting of the Council's Industry Working Party.

Two weeks later, the Coalition co-organised an event in Brussels with the Croatian EU Presidency on "The long-term strategy for Europe's industrial future". Croatian Economy Minister Darko Horvat was in attendance. Following this, the Coalition led an active, targeted social media campaign on Twitter to express key messages as the Commission prepared its new EU Industrial Strategy. The strategy was eventually presented on 10 March. In its capacity as General Coordinator of the Coalition, UNIFE has continued to organise several virtual meetings throughout the year to allow the coalition's member federations the opportunity to exchange with representatives of the European Commission, the European Economic and Social Committee and BusinessEurope.



### 3) Skills policy



**For more information**  
on STAFFER, please visit  
[www.railstaffer.eu](http://www.railstaffer.eu) or  
Twitter (@Rail\_Staffer) and  
LinkedIn (@Rail Staffer)

The Commission's 2019 Study on the Competitiveness of the Rail Supply Industry listed the "promotion of the development of skills and safeguard of access to skilled labour" as a crucial action for maintaining a formative European rail sector. Therefore in 2019, at the request of UNIFE and following discussions held within the EC *Expert Group on the Competitiveness of the EU Rail Supply Industry*, the Commission shortlisted the rail industry as 1 of 6 sectors eligible for the creation of an Erasmus+ *Blueprint for Sectoral Cooperation on Skills*. The Blueprint is a EU-funded framework for strategic cooperation between key business, trade union, education and training

institution stakeholders and public authorities. The aim is to support an overall sectoral skills strategy and develop concrete actions to address short- and medium-term skills needs. After several months of preparation, UNIFE and 31 other partners submitted their proposal for a European project in February 2020. The Commission announced during the summer that the project – Skill Training Alliance For the Future European Rail system (STAFFER) – had been approved to be the future Blueprint for our sector. The project officially started on 1 November and will last for 4 years.





## 4) Digitalisation

UNIFE's Digitalisation Platform brings together around 30 association members from across the entire value chain of the European rail supply industry to discuss digital priorities and initiatives. This open, dynamic forum is essential to shaping the rail industry's vision for its future.

UNIFE aims to bring the European rail supply industry's views and objectives to the centre of the digital debate, decisively contributing to these discussions and effectively engaging in fruitful dialogue with decision-makers and other key stakeholders. To those ends, in June 2020, the UNIFE Digitalisation Platform released its second vision paper. The document, titled *Rail fit for digital age*, picks up where its predecessor left off by outlining the views, priorities and ambitions of the European rail supply industry pertaining to the digital technologies that are shaping the sector's future. Big Data, Cybersecurity and Artificial Intelligence remain essential focus areas for UNIFE, to which Gigabit Connectivity, Digital Twins and Blockchain were also added.

This second vision paper also represents the most effective advocacy instrument in view of all the digital initiatives announced by the European Commission for 2021. In March of 2020, Commission Vice-President Vestager and Commissioner Breton presented their digital masterplan "*Shaping Europe's digital future*". Cor-

nerstones of the initiative are a new comprehensive Data Strategy and a new framework for Artificial Intelligence in the EU.

Notably, the Data Strategy aims to create an EU single market for data and an EU single market for cybersecurity, as well as establish a "common European data spaces" across different sectors and industries – including mobility. Unlocking all barriers to datasets sharing and promoting a robust cybersecurity strategy remain crucial priorities for UNIFE, which looks forward to engage with the EU institutions and fellow stakeholders on those topics.

UNIFE believes it is vital for the whole sector to maintain its commitment to making digitalisation not merely an objective in and of itself, but rather a means to achieving more ambitious and overriding goals. The activities of the Digitalisation platform are directed towards this end and aim to bring the European rail supply industry's views and objectives into the centre of the digital debate.



**Margrethe Vestager**  
European Commission  
Executive Vice-President  
(2019-2024)

## 5) Green Deal, transport decarbonisation and EU climate policies



**Frans Timmermans**  
European Commission  
Executive Vice-President  
(2019-2024)

The transport sector accounts for approximately a quarter of the EU's greenhouse gas (GHG) emissions, making it the second-biggest sectoral emitter after energy. However, not only does rail rely very little on imported fossil fuels, it clearly stands out for its high energy efficiency, low emissions of CO<sub>2</sub> and growing use of renewable energy sources such as solar and wind. UNIFE has continued to be very vocal about rail's essential role in meeting EU targets for decarbonising the transport sector.

The decarbonisation of the transport sector is becoming ever more important as civil society puts pressure on decision-makers to fight climate change. A sustainable, climate-neutral policy is at the heart of the Commission's 2019-2024 initiatives. Commission President Ursula von der Leyen heralded the European Green Deal and its key objective of making Europe the first climate-neutral continent by mid-century as the hallmark of her mandate. Executive Vice-President Frans Timmermans oversees the ambitious strategy.

Mr. Timmermans presented the first European Climate Law in March 2020, enshrining into law the climate-neutrality objectives of the Green Deal. A further amendment to the Climate Law was proposed in October to strengthen the 2030 mid-term EU climate targets: a 55% reduction of GHG, compared to 1990-levels. By June 2021, the European Commission will outline which existing EU legislation must be amended or updated

to comply with such more ambitious 2030 climate targets.

UNIFE believes that the Green Deal can be a game changer and provide the framework needed for the EU to achieve net zero emissions by moving towards a low-carbon economy, while also reaching high efficiency standards. The decarbonisation of the transport sector should mean, above all, more rail-based public transportation solutions and further electrification of the system, as envisioned in the 2011 Transport White Paper.

The most important transport initiative stemming from the Green Deal is the new strategy for "sustainable and smart mobility", to be presented by Transport Commissioner Vălean by the end of the 2020. The strategy is expected to define the EU policy framework for transport for the years to come, just as the 2011 Transport White Paper did before. UNIFE has taken a proactive approach, looking forward to the launch of the strategy. Together with fellow rail associations CER and EIM, UNIFE prepared a "Joint Statement" aimed at influencing the strategy by advocating for rail being at the centre of the future mobility paradigm and defending the relevance of the "modal shift" principle. UNIFE also participated this year in the public consultation launched by the European Commission on this topic.

In support of these efforts, we organised a 27 October public webinar titled "Sustainable and Smart Mobility: which role for rail in the future



European strategy?”. The discussion included the participation of the EU Transport Commissioner’s Deputy Head of Cabinet.

Finally, through the work of the Sustainable Transport Committee (STC), UNIFE has undertaken several other sustainability-related activities in 2020. Major fields of work have involved sustainable finance, especially the EU taxonomy initiative – with a specific focus on the Delegated Acts enforcing the current Taxonomy Regulation – and the revision of the Alternative Fuels Infrastructure Directive (AFID).



► UNIFE Director General Philippe Citroën during the ‘Sustainable and Smart Mobility’ webinar (27 October, 2020)



**Joint Statement CER/  
EIM/UNIFE on the future  
EC Strategy on Smart  
and Sustainable Mobility**

## a. UNIFE joins the European Clean Hydrogen Alliance



The European Commission confirmed in October, UNIFE’s European Clean Hydrogen Alliance membership. This body aims to ambitiously deploy hydrogen technologies by 2030, bringing together renewable and low-carbon hydrogen production, increasing demand in industry, mobility and other sectors, as well as expanding hydrogen transmission and distribution. With the alliance, the EU wants to build its global leadership in this domain, as a means of supporting the EU’s commitment to reach carbon neutrality by 2050.

As mobility will be addressed by the group, UNIFE will aid its mission by defining key messages, with the support of its Members, to influence the EU agenda for hydrogen applications across railways. This can be completed by, for instance, implementing new rail hydrogen projects in Europe and building stronger support from the European Union for research and innovation.

Read further about the alliance, at this [website](#) and this [one](#).

For further information, please contact **Nicolas Furio**, Head of Technical Affairs at UNIFE, by email at [nicolas.furio@unife.org](mailto:nicolas.furio@unife.org)

## 6) EU Investment Policy

### a. Recovery Package: an unprecedented EU effort to tackle COVID-19 and rejuvenate the EU economy

- swiftly boost the much-needed deployment of the European Rail Traffic Management System (ERTMS) on the European rail network

- put in place an EU-backed mechanism or scrapping scheme to encourage the replacement of older rail vehicles with new, modern and more efficient ones

In July 2020, after a historical European Council meeting and in pursuit of an “extraordinary Recovery effort”, the 27 Heads of State and Government agreed on a plan to jointly borrow €750 billion. The EU’s new Recovery fund, called “Next Generation EU”, will be composed of €390 billion in grants and €360 billion in loans. While the initial Commission’s proposal foresaw a larger proportion for grants (i.e. €500 billion designated as grants vs €250 billion in loans), several Member States vehemently battled for the grants proportion to be decreased.

Within this massive Recovery effort, the biggest segment of the funds will be allocated through the “Recovery and Resilience Facility” (RFF), with a total of €672,5 billion – of which grants represent €312,5 billion and loans €360 billion. 70% of the grants provided by the RRF will be committed in 2021 and 2022 while the remaining 30% will be fully committed by the end of 2023. The RFF will be allocated to each Member State on the basis of “national recovery and resilience plans” that are now being prepared by national Governments to outline the reform and investment agenda of the Member State concerned for 2021 through 2026.

This past year, UNIFE has been leading an active advocacy campaign to urge all Member States to include significant rail investment within their National Recovery Plans. On 10 September, UNIFE Chair Henri Poupart-Lafarge and Director General Philippe Citroën sent a joint letter to EU Transport and Industry Commissioners Adina Vălean and Thierry Breton to call on the European Commission to “use the opportunity of the bilateral discussions on future national Recovery and Resilience Plans to encourage all Member States to make the Green Deal a reality by dedicating significant EU-backed investment for boosting rail projects all over Europe”. In the letter, UNIFE notably advocates for fast-track investments to:

- swiftly boost the much-needed deployment of the European Rail Traffic Management System (ERTMS) on the European rail network

- put in place an EU-backed mechanism or scrapping scheme to encourage the replacement of older rail vehicles with new, modern and more efficient ones





Following UNIFE's letter, the European Commission published its strategic guidance for the implementation of the Recovery and Resilience Facility on 17 September. The guidance classified "Sustainable mobility" among the 7 priority investment pillars and encourages Member States to use the Recovery and Resilience Facility to "invest in public transport and in infrastructure that supports the shift towards more sustainable and smart mobility".

UNIFE also met with the new European Commission Task Force on Recovery and Resilience to promote its suggestions for possible rail-related fast-track investments.

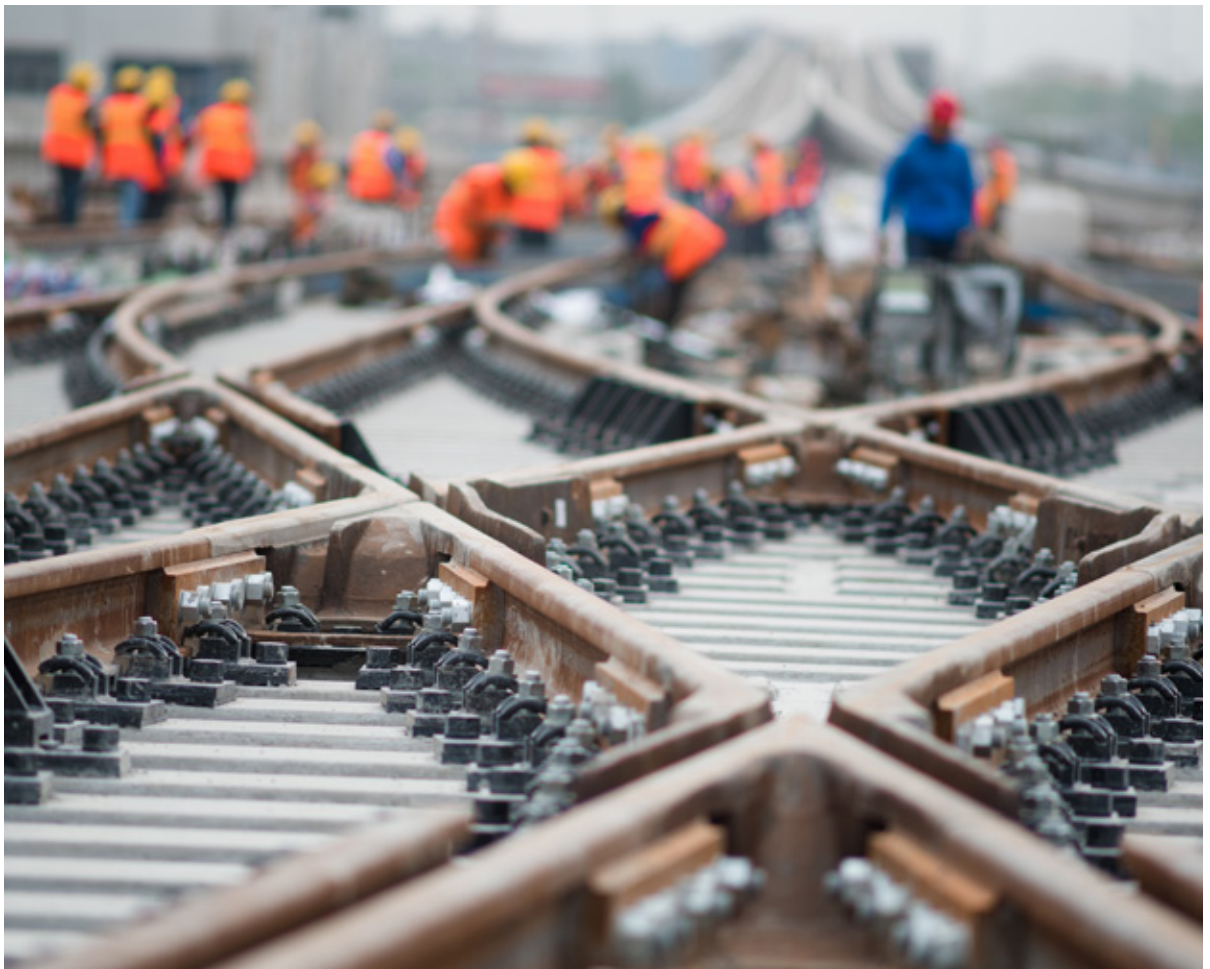
Foreign Affairs Council - July 2020

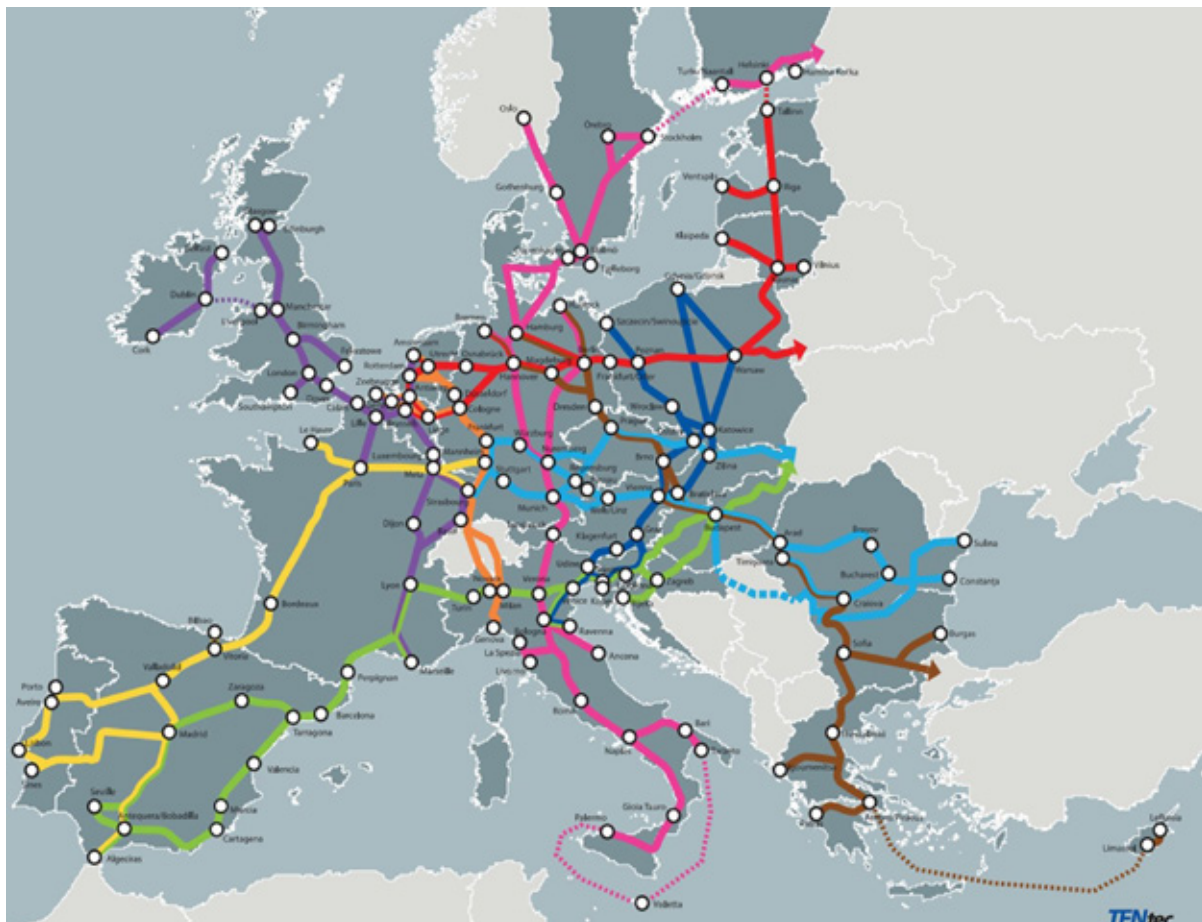
## b. 2021-2027 EU budget (MFF): securing ambitious budgets for Connecting Europe Facility and Cohesion Policy

During July's historic European Council meeting, the 27 Heads of State and Government reached an agreement on the EU long-term budget for 2021-2027, the Multiannual Financial Framework (MFF). Instead of accepting the €1100 trillion total proposed by the Commission, EU leaders eventually unanimously agreed on a new €1074,3 trillion seven-year budget for the Union.

On 10 November, the German Presidency of the Council finally reached a political agreement with the European Parliament's MFF negotiators. This agreement was reached following intensive negotiations with the Parliament that began at the end of August. The agreed upon political package notably includes a targeted €15 billion reinforcement of EU Programmes through additional means (€12.5 billion) and reallocations (€2.5 billion). Finally, on 10 December, the 27 Heads

of State and Government overcame veto threats by Poland and Hungary and reached the agreement on the historic €1.8 trillion EU budget which includes both the 2021-2027 MFF of €1.1 trillion and the temporary Recovery Package of €750 billion. A week later, on 16 December, the European Parliament granted its final endorsement to the EU's seven year budget. This is extremely important as it allows the EU to begin funding programmes and instruments starting in January 2021.





### The Connecting Europe Facility (CEF)

CEF supports the development of interconnected trans-European networks in the fields of transport, energy and digital services (including through investment in rail infrastructure and ERTMS deployment). Rail has traditionally been the most benefited sector under this funding instrument. For the 2021-2027 period, European Heads of State and Government agreed on a Transport envelope for CEF amounting to €21,384 billion, including the confirmed €10 billion transfer from the Cohesion Fund.

In the coming years, The CEF will support:

- o efficient, interconnected, interoperable and multimodal networks
- o safe and secure mobility by co-funding smart, interoperable, sustainable, multimodal, inclusive and accessible project solutions
- o dual use of the transport infrastructure in view of improving both civilian and military mobility





### The Cohesion Policy

The EU Cohesion Policy will operate with a budget of over €330 billion, to be distributed across the 27 Member States. Two EU Structural Funds will be of vital importance for the rail sector, namely: the European Regional Development Fund (ERDF) and the Cohesion Fund. **Eligible investments under these schemes will include: Rail TEN-T infrastructure (including stations supported development, reconstruction & upgrade, ERTMS deployment); freight transport on rail; development, reconstruction, upgrade of tram**

**and metro lines; environmentally-friendly rolling stock for public transport; upgraded digitised urban transport systems.**

UNIFE is carrying out regular meetings with the Member States' Permanent Representation in Brussels in order to make the EU27 aware of our industry's priorities. UNIFE also sent an official letter to EU Commissioner for Cohesion Policy Elisa Ferreira on 22 April to ask the Commission to dedicate significant allocations from the EU Structural Funds towards rail projects all over Europe.

“Eligible investments under these schemes will include: Rail TEN-T infrastructure (including stations supported development, reconstruction & upgrade, ERTMS deployment); freight transport on rail; development, reconstruction, upgrade of tram and metro lines; environmentally-friendly rolling stock for public transport; upgraded digitised urban transport systems.”



## c. Working with Development Banks and mobilising private investment for rail

UNIFE has continued to cooperate closely with the European Investment Bank (EIB) and welcomed the Board of Directors' November 2020 approval of the "EIB Group Climate Bank Roadmap 2021-2025". This is a very important document as it will serve as the roadmap that "will guide future EIB financing to support €1 trillion of climate action and environmental sustainability investments by 2030". **The EIB identified "Smart and substantiable transport" as 1 of 11 key focus areas for future green investment and pledged that it "will continue to support the lowest emissions forms of transport including rail and metro".**

Furthermore, UNIFE continued to cooperate with the European institutions and the EIB to ensure that EU initiatives aimed at mobilising private investment for strategic projects

would also benefit the rail sector. Concurrently, UNIFE has continued to insist that, given the limited rail sector results of the European Fund for Strategic Investments (EFSI), the so-called 'blending' of grants with the EFSI and with the proposed InvestEU programme - with an EU budgetary guarantee of €9.4 billion - for the coming 2021-2027 period can be interesting but should only be used as an additional approach - with public grants remaining the core of the support.

Finally, UNIFE has become an official partner organisation of the European Parliament's new Intergroup on "Sustainable, Long-term Investments & Competitive European Industry" and participated in its virtual launch event on 26 October.

The EIB identified "Smart and substantiable transport" as 1 of 11 key focus areas for future green investment and pledged that it "will continue to support the lowest emissions forms of transport including rail and metro".



## d. A special focus on EU investment in Western Balkans

CC: Transport Community



On 6 October, the European Commission adopted the *Economic and Investment Plan for the Western Balkans*, pledging €9 billion of pre-accession grant funding to help with the “long-term economic recovery of the region” and to “support a green and digital transition, foster regional integration and convergence” with the EU. Following this, the Transport Community Secretariat – an international transport organisation that convenes the entire EU27 and six Western Balkan states – presented on 26 October its Rail Action Plan for the region. The 2020-2023 Rail Action Plan aims at developing a regional rail strategy in the Western Balkans and

is divided into six action: Rail market opening; Passenger rights; Border/ Common crossing operations; Interoperability; Governance and Modernisation of rail infrastructure. The modernisation of rail infrastructure is key from an investment perspective as it relates to the upgrading, reconstruction and construction of railway sections in the region.

This year, UNIFE organised two conference calls with the Transport Community Secretariat to set up a fruitful cooperation for the benefit of European rail suppliers.



## 7) Urban mobility



CC: European Commission

The global population has tripled over the last 100 years to over 7 billion people today - and it will continue to grow in the coming years. Urbanisation, coupled with population growth, represents one of the most staggering global mega-trends that will define the next decades. Such drastic urbanisation will not be without medium- and long-term consequences. Cities host the majority of economic activities and output, yet they also consume more resources and energy. As mobility plays a decisive role in ensuring growth, economic dynamism and social cohesion in cities and their suburban areas, the objective becomes ensuring a fundamental rite of urban living: getting around rapidly and safely.

Today's cities face challenges such as increased traffic, diminished air quality, population growth, lack of available space, lowered liveability,

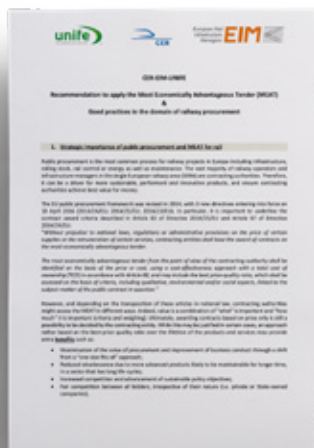
tenuous social inclusion, continued health concerns and the incessant need to create economic development. Against this backdrop, citizens require the creation of new mobility paradigms capable of delivering high-quality, accessible-for-all urban and suburban services.

Following its first vision paper on urban mobility, Urban Rail for the future of cities and metropolitan areas (2019), UNIFE has continued its active involvement in ongoing debates on urban mobility and strengthened its partnerships with associations such as POLIS, EUROCITIES and UITP. In particular, UNIFE attended the Urban Mobility Days, held virtually by the European Commission in September. The following month, UNIFE attended a three-days seminar on MaaS (Mobility-as-a-Service) in metropolitan areas organised by the International Transport Forum (ITF).

Poster of the Urban Mobility Days

# 8) Public procurement in Europe

While UNIFE welcomed these initiatives as further steps in the right direction, legislation changes are strongly needed to ensure a level playing field within the EU procurement market.



CER\_EIM\_UNIFE\_Recommendation for applying MEAT.pdf

The modernisation of the EU public procurement framework in 2014 marked a positive step forward on a number of topics. For instance, it made the Most Economically Advantageous Tender (MEAT) principle the basis for the awarding of contracts. However, awarding contracts purely on price-based criteria is still a possibility, and there continue to be other legal shortcomings (e.g. on abnormally low-tenders or circumventions of EU public procurement rules). These gaps, UNIFE has long sought to close, have been acknowledged for the first time by the European Commission in the *White Paper on leveling the playing field as regards foreign subsidies*, published in June 2020. In parallel to a future EU instrument to tackle distortions created by foreign subsidies, UNIFE stressed the importance of strengthening the rules on abnormally low tenders, in particular from non-European State-owned enterprises shielded from normal market competition.

With the widespread outbreak of the pandemic and the resulting economic crisis, discussions have intensified to boost the role of public procurement for a more sustainable and resilient European economy. On 21 October, a European Conference on Public Procurement took place under the German Presidency of the Council of the EU. EU Commissioner for Industry & Internal Market Thierry Breton reminded attendees of the importance of equipping the EU with better tools to ensure that all players play by the same rules.

The Commission's Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW) also convened an online workshop on 22 October 2020, as part of the

European Week of Cities and Regions, focused on the topic of sustainable infrastructure. It explored how sustainability objectives can be concretely embedded in every step of public infrastructure projects, with special attention paid to the public procurement phase and the possibilities of using sustainable criteria in public tenders. **While UNIFE welcomed these initiatives as further steps in the right direction, legislation changes are strongly needed to ensure a level playing field within the EU procurement market.**

Finally, UNIFE welcomed the Council Conclusions adopted by Member States on 25 November pertaining to *Streamlining public procurement* within the EU for more efficient public spending. The Council stressed the importance of public procurement in fostering sustainable and innovative European economic growth and underlined the need for a level playing field to ensure fair competition.

In terms of sectoral initiatives, UNIFE, CER and EIM finalised a *Recommendation to apply the Most Economically Advantageous Tender (MEAT) and good practices in the domain of railway procurement* in 2019. This strategic document focused in particular on three potential award criteria: technical or technological value; life-cycle costs and environmental and social impact. It also set out several recommendations for rail contracting authorities. A seminar with European railway undertakings, infrastructure managers and suppliers was planned for May 2020 to promote this sustainable approach to rail procurement. Unfortunately, the event was cancelled due to public health measures erected during the first lockdown to constrain the spread of COVID-19 but UNIFE



plans to convene these stakeholders to discuss the matter as soon as possible in 2021.

Lastly, UNIFE has continued to drive the AEGIS Europe alliance's activities on public procurement. Through-

out the year, the alliance pushed for reforms of the European public procurement framework during its exchanges with the European Commission, Member States and the European Parliament.



## 9) Rail Forum Europe



In January 2020, the new Managing Board of Rail Forum Europe was sworn in, including the new President, MEP Andrey Novakov, and two new Vice-Presidents: MEP Anna Deparnay-Grunenberg and MEP Istvan Ujhelyi. They were joined by two other members of the Managing Board: MEP Dominique Riquet and MEP Cesar Luena.

UNIFE has continued to successfully manage the secretariat of Rail Forum Europe (RFE). The organisation was established in 2011 to facilitate dialogue between MEPs, the EC, Member States and key stakeholders on policy issues relevant to Europe's rail sector. The Forum's role is very well-perceived by stakeholders and decision-makers. RFE events are widely recognised as providing a valuable platform for fruitful exchanges on all things rail.

**In January 2020, the new Managing Board of Rail Forum Europe was sworn in, including the new President, MEP Andrey Novakov, and two new Vice-Presidents: MEP Anna Deparnay-Grunenberg and MEP Istvan Ujhelyi. They were joined by two other members of the Managing Board: MEP Dominique Riquet and MEP Cesar Luena.**

A cocktail reception was held at the European Parliament in Brussels on 20 January 2020 to present the new Managing Board – who will be in charge until the next EP elections in 2024 – to the European rail community.

The sanitary crisis' development in March prevented the usual series of physical conferences, workshops and seminars from being organised throughout the year. However, webinars were held in July and December, focusing on key topics which directly impact the rail sector: the MFF budget negotiations and the upcoming "European Year of Rail" in 2021.

At the RFE Managing Board, held on 2 December 2020, CER's Ilja Volpi was elected to serve as RFE's new Executive Secretary, while Nicolas Erb will chair the RFE advisory board for of the coming three years, starting on 1 February 2021. The rail supply industry retained the Presidency of the RFE Advisory Committee.



RFE new Managing Board (2020-2024): President A. Novakov; Vice-President A. Deparnay-Grunenberg; Vice-President I. Ujhelyi,



RFE President A. Novakov with Transport Commissioner A. Vălean.



UNIFE Director General **Philippe Citroën** congratulates RailForum new Chair **Andrey Novakov** & Vice-Chair **Anna Deparnay-Grunenberg** and highlights the major priorities for the sector : EUGreenDeal, MFF, HorizonEurope, Shift2Rail2, CEF, Structural Funds For Rail, ERTMS, 4RP



RFE Cocktail Reception 2020

# 03

## International Affairs

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# UNIFE joins business at OECD (BIAC)



The Organisation for Economic Co-operation and Development (OECD) is an important international body that works on establishing evidence-based international standards and generating policy solutions to social, economic and environmental challenges which are increasingly relevant for our industry. As a consequence, UNIFE decided in May to join *Business at OECD* (formerly BIAC) which represents the leading business federations in OECD countries and over 7 million private

businesses across all sectors and of all sizes. Our association is now engaged in a series of *Business at OECD* policy groups that have been mandated to closely collaborate with various other OECD Committees and policy bodies. In addition to committees on Education, Environment & Energy, Digital Economy Policy, Innovation & Technology, Finance and SMEs, UNIFE is also particularly active in several committees related to Trade and a global level playing field.



# Trade policy review 2020

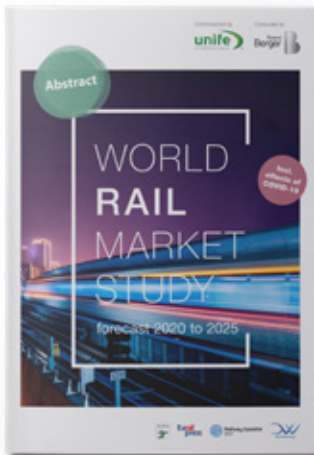
Our input insisted on the need for both strengthening existing trade instruments such as Foreign Direct Investment (FDI) screening, as well as developing and adopting new ones like the International Procurement Instrument (IPI), an Instrument on Foreign Subsidies and a new instrument on reciprocity regarding access to EU funds.



In June, the European Commission launched a major review of the European Union's trade policy. Launching a public consultation, the European Commission aims to build a consensus around a fresh medium-term direction for EU trade policy, responding to a variety of emerging global challenges and implementing solutions deemed necessary due to lessons learned during the coronavirus crisis. The key objectives will be to support economic recovery, create quality jobs, protect European companies from unfair practices at home and abroad and ensure coherence with broader sustainability and digital economy priorities.

UNIFE provided a detailed contribution to the review, highlighting challenges the European Rail Supply Industry is facing and topics that the EC should prioritise over the coming years. Our input insisted on the need for **both strengthening existing trade instruments such as Foreign Direct Investment (FDI) screening, as well as developing and adopting new ones like the International Procurement Instrument (IPI), an Instrument on Foreign Subsidies and a new instrument on reciprocity regarding access to EU funds.**

# The international procurement instrument (IPI)



World procurement markets are increasingly inaccessible. Worryingly, the current economic crisis linked to COVID-19 is expected to intensify that protectionist trend. As the 2020 World Rail Market Study recorded worldwide market accessibility to have fallen to only 62% - compared to 63% in 2018 - it is more urgent than ever for the European Rail Supply Industry to have a tool capable of opening these procurement markets.

2020 was a more active year for discussions on the IPI, especially under the Croatian Presidency of the Council and with a notably changing mindset across Europe. However, much remains to be done to reach an agreement within both the Council of the European Union and the European Parliament.

UNIFE has again driven AEGIS Europe's Working Group on public procurement. The organisation constitutes an alliance of 22 European upstream and downstream manufacturing federations. Through new position papers, concrete suggestions to improve the revised 2016 draft Regulation have been made. Furthermore, AEGIS Europe sent high-level letters requesting an agreement be swiftly reached, while insisting on the need for an ambitious and actionable instrument that will tackle the risk of circumvention.

More than ever, the support of the entire rail supply industry - especially at the national level - is crucial for reaching an EU-level agreement soon.





# Instrument on foreign subsidies

This summer, the European Commission published a *White Paper on levelling the playing field as regards foreign subsidies*. For the first time, the European Commission acknowledged that there is a growing number of instances on the EU market in which foreign subsidies have distorted market operations or bidding in public procurement, to the detriment of EU companies. The Commission proposed filling existing regulatory gaps in fields such as competition, public procurement, investment and others by putting forward several approaches – called “Modules” – including one for public procurement.

The White Paper was welcome by UNIFE and the like-minded AEGIS Europe coalition:

- Several high-level letters were sent ahead of the publication and media engagement was co-ordinated to increase awareness and visibility of this topic
- Through a detailed position paper, UNIFE participated in the public consultation which was open until September. UNIFE’s contribution highlighted the need for an efficient and deterrent Module on public procurement, with both an approach for central investigation and an approach focusing on specific procurement procedures. Across the different Modules, UNIFE supported strong investigation powers for the European Commission, particularly in situations involving EU funds

- UNIFE shaped AEGIS Europe’s and other business stakeholders’ response, as well as presented this position on behalf of AEGIS Europe in several forums.

The White Paper will lead to several much-anticipated legislative proposals in 2021, and UNIFE will sustain its engagement on this crucial topic





# Trade relations between the EU and China

UNIFE has insisted that the EU should maintain certain safeguards and ensure that Chinese rail suppliers' access to the European market for – already a reality in practice – is not further secured with clear and enforceable guarantees that China's rail market accessibility will improve for their European counterparts.

Over the past few years, UNIFE members have encountered increasing resistance as they attempted to operate in China. According to the 2020 *World Rail Market Study*, China's rail market accessibility has reached a record low of 17%. Not only are some market segments now effectively closed to foreign suppliers, but additional constraints like non-transparent public procurement procedures and expanding localisation requirements are regularly imposed by contracting authorities in the few areas that remain accessible. The introduction of an Autonomous Recommendation List of Equipment in the urban transport market is a worrying trend that could create further market barriers for foreign enterprises seeking to enter their urban transport market.

In November 2013, the EU and China officially opened negotiations in pursuit of a **Comprehensive Agreement on Investment (CAI)**. After agreeing on the prospective deal's scope three years later, both parties confirmed that the future agreement should

improve market access opportunities for investors by establishing a genuine right to invest and guaranteeing that the same treatment afforded national companies is extended to foreign ones. As the negotiations near their terminus, the European Rail Supply Industry has increasing doubts about the possibility to obtain a meaningful and enforceable agreement on level-playing field provisions, particularly in the absence of those on public procurement. **UNIFE has insisted that the EU should maintain certain safeguards and ensure that Chinese rail suppliers' access to the European market for – already a reality in practice – is not further secured with clear and enforceable guarantees that China's rail market accessibility will improve for their European counterparts.** As highlighted by European Commission's President intervention during the EU-China Summit on 14 September, "it's not a question of meeting halfway, but it's a question of rebalancing the asymmetry".



UNIFE has also continued to monitor China's ongoing efforts to join the **WTO Agreement on Government Procurement (GPA)**. Following China's revised and more ambitious offer that included coverage improvements, UNIFE and the AEGIS Europe coalition drafted a position paper stressing the need for certain conditionalities for China to be able to join the WTO GPA. Among these conditions were: **Market access on a reciprocal basis; far-reaching reform of China's government procurement law, in line with GPA principles; the absence of any special or differential treatment and guarantees on enforcement and coherence with the EU's toolbox.** In light of recent *de facto* barriers in China's rail market, however, UNIFE has warned the European Commission of the risk of providing Chinese economic operators with any legally secured market access to Europe.

Simultaneously, Chinese state-owned enterprises have become increasingly powerful players in all product segments and on all continents, often profiting from unfair competition. Against this background, UNIFE has closely monitored the situation through several initiatives and illustrated the shifting landscape in numerous dossiers throughout 2020. In particular, UNIFE continues to monitor developments related to the **EU-China Connectivity Platform**, which aims at enhancing synergies between China's "Belt and Road Initiative" (BRI) and the EU's connectivity initiatives, including the TEN-T policy. By joining Business at OECD, UNIFE is also participating in various work streams as a means of addressing trade distortions and imbalances.

Market access on a reciprocal basis; far-reaching reform of China's government procurement law, in line with GPA principles; the absence of any special or differential treatment and guarantees on enforcement and coherence with the EU's toolbox.





# EU-Japan economic partnership agreement



After years of negotiations, the EU and Japan's Economic Partnership Agreement (EPA) entered into force on 1 February 2019. UNIFE welcomed this agreement as it provides European rail suppliers satisfactory guarantees on public procurement.

However, the EPA only opened the procurement of goods and services covered by the Operational Safety Clause (OSC) in the WTO Agreement on Government Procurement to EU suppliers from 1 February 2020. The OSC was a major non-tariff barrier that allowed opacity and discrimination in procurement from Japanese rail operators.

Throughout 2020, **UNIFE has repeatedly insisted on the importance of monitoring the agreement's implementation to ensure tangible benefits and achievement of equitable market access – especially now that the OSC has been removed.** These meaningful rectifications have yet to materialise. In April, UNIFE answered a business survey as a means of providing feedback to the EU on how the EPA is affecting EU rail suppliers. In the autumn, UNIFE Director General Philippe Citroën participated in an EPA Progress Seminar discussing public procurement. During the event, a guide for EU suppliers was unveiled.

UNIFE has repeatedly insisted on the importance of monitoring the agreement's implementation to ensure tangible benefits and achievement of equitable market access – especially now that the OSC has been removed.





## Brexit

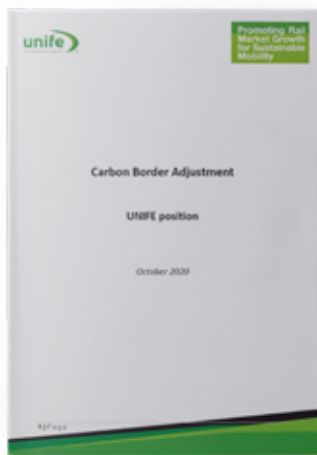
On 31 January 2020, the United Kingdom withdrew from the European Union, commencing a transition period during which EU law has continued to apply to the United Kingdom until 31 December 2020. The negotiations on the future partnership between the EU and the UK started in March 2020 and were difficult on several topics, including level-playing field rules and public procurement.

Throughout the year, UNIFE continued to call on EU institutions and the UK government to swiftly reach an agreement that minimises any disruptions of trade flows while allowing for continued EU-UK cooperation on technical topics, skills and innovation. Without such an outcome, Brexit could present major challenges for both seamless mobility and a more competitive European rail supply industry.

In response, UNIFE developed a position paper on the future EU-UK future relationship and held various meetings, including one with the EU Task Force for Relations with the United Kingdom, to advocate for a smooth and amicable political uncoupling.



# Carbon Border Adjustment Mechanism (CBAM)



Under the Green Deal, the European Commission intends to create a Carbon Border Adjustment Mechanism (CBAM) to tackle carbon leakage and ensure the price of imports more accurately reflects their carbon content.

The Commission published a public consultation in July 2020 to gather stakeholders' views on the different policy options and their possible impacts, with a legislative proposal expected to materialise in 2021.

In its answer to the consultation, **UNIFE stressed that it fully supports the objective of establishing a level-playing field on carbon content and avoiding carbon leakage. However, it is crucial for CBAM not to focus on only a few products and sectors, but to consider entire supply chains to avoid shifting carbon leakage on downstream industries.**

Carbon Border Adjustment

UNIFE stressed that it fully supports the objective of establishing a level-playing field on carbon content and avoiding carbon leakage. However, it is crucial for CBAM not to focus on only a few products and sectors, but to consider entire supply chains to avoid shifting carbon leakage on downstream industries.

# OECD arrangement on officially supported export credits and the Rail infrastructure Sector Understanding (RSU)

With the Sector Understanding on Export Credits for Rail Infrastructure's (RSU) the sunset clause expiring on 31 December 2020, UNIFE has been speaking throughout the year about its crucial importance for our industry and its global competitiveness.

UNIFE has been urging the Participants of the OECD Arrangement to extend the RSU beyond 31 December 2020 and to modify some of its terms to make it an even more efficient tool for the provision of competitive financing solutions. It should be actively promoted towards international trading partners to achieve a level playing field on both market access and export conditions.

To support these efforts, **UNIFE developed a dedicated position paper and submitted it to the OECD during preparatory consultations prior to the official Participants meeting that took place between 17 and 19 November. Additionally,**

**UNIFE was present at and took the floor during the OECD consultation meeting on 21 and 22 October to note the importance of the extension of the RSU and the modification of some of its terms. Our intervention called for the extension of the repayment terms to 18 years and the inclusion of a larger share of local costs up to 50%. Concurrently, UNIFE has raised awareness about the RSU's extension to the European Commission and the Member States.**

The feedback gathered so far is positive. Both European Commission and Business at OECD (BIAC) openly support these efforts and have also strongly advocated for the RSU to be extended and modified. In this sense, as of December 2020 and pending official confirmation from the OECD, positive hints point towards the extension of the RSU until 2023 and the increase of local costs up to 40-50 %.

UNIFE developed a dedicated position paper and submitted it to the OECD during preparatory consultations prior to the official Participants meeting that took place between 17 and 19 November. Additionally, UNIFE was present at and took the floor during the OECD consultation meeting on 21 and 22 October to note the importance of the extension of the RSU and the modification of some of its terms. Our intervention called for the extension of the repayment terms to 18 years and the inclusion of a larger share of local costs up to 50%. Concurrently, UNIFE has raised awareness about the RSU's extension to the European Commission and the Member States.

# Bilateral cooperation with third countries



## Cooperation with Gulf Countries (GCC-SG)



Middle East Rail Conference,  
25-26 February, Dubai

The Gulf region remains a priority market for the European rail supply industry as it is expected to grow by 1.7%<sup>1</sup>. Since 2014, UNIFE has worked to build a solid relationship with the Gulf Cooperation Council Secretariat General (GCC-SG), which oversees economic developments in the region. Our organisations codified our cooperative intentions in December 2017 with the signing a Memorandum of Understanding (MoU).

UNIFE Director General Philippe Citroën once again participated in the annual Middle East Rail Conference, which took place on 25 and 26 February in Dubai, before the outbreak of the novel coronavirus. He presented the European Rail Supply Industry's vision on innovation and explained how the European experience can benefit the region. UNIFE also held bilateral meetings with the Federal Transport Authority (FTA) of the United Arab Emirates and with the local European Delegation.



## Cooperation with Russia (NP UIRE)

Throughout 2020, UNIFE has also maintained close contacts with its Russian counterpart, the **Union of Industries of Railway Equipment (NP UIRE)**. While exchanges on the regulatory framework and processes for authorisation have continued, NP UIRE has also confirmed its interest in

discussing signalling and automatic train operation (ATO). The Commonwealth of Independent States (CIS) region continues to be an important and attractive market for the European Rail Supply Industry, with an expected growth of 1.7% in the coming years<sup>2</sup>.

<sup>1</sup> Compound annual growth rate 2021-2023 vs. 2015-2017; UNIFE 2020 *World Rail Market Study*.

<sup>2</sup> Compound annual growth rate 2021-2023 vs. 2015-2017; UNIFE 2020 *World Rail Market Study*.





### Relations with American Public Transportation Association (APTA)

Despite the pandemic, UNIFE has maintained consistently solid relations with our counterparts in North America. Given the challenges both our regions have experienced due to the virus, UNIFE and the American Public Transportation Association (APTA) have decided to hold regular exchanges on COVID-19's impact on our respective markets and potential

policy support measures. The North American rail market - composed of the US, Canada and Mexico - is forecasted to experience growth of 2.5% in the coming years<sup>3</sup>. Important projects such as the California High-Speed Rail, Mexico's Tren Maya and the expansion of the Toronto network are expected to define this period.



### Cooperation with US Railway Supply Institute (RSI) and the Canadian Association of Railway Suppliers (CARS)

UNIFE has also deepened its cooperation on trade and fair competition with the US Railway Supply Institute (RSI) and the Canadian Association of Railway Suppliers (CARS), in a bid to raise the Rail Supply Industry's international visibility and of the challenges it faces due to subsidised, State-owned suppliers.

As the world begins to plot its way out of its current predicament, it is essential that communities explore how rail can contribute to increased stability, resiliency and equity after COVID-19. UNIFE Director General Philippe Citroën joined **Commuter Rail Coalition** (CRC) Executive Director **Kelly-Anne Gallagher** on their new podcast to share lessons learned from both.



<sup>3</sup> Compound annual growth rate 2021-2023 vs. 2015-2017; UNIFE 2020 *World Rail Market Study*.



# 04

## WRMS

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World Rail Market Study 60



# World Rail Market Study



The eighth edition of the World Rail Market Study (WRMS), conducted by Roland Berger for UNIFE, was unveiled by UNIFE Chair Henri Poupard-Lafarge and Director General Philippe Citroën on 1 October at a virtual launch event attended by over 500 participants.

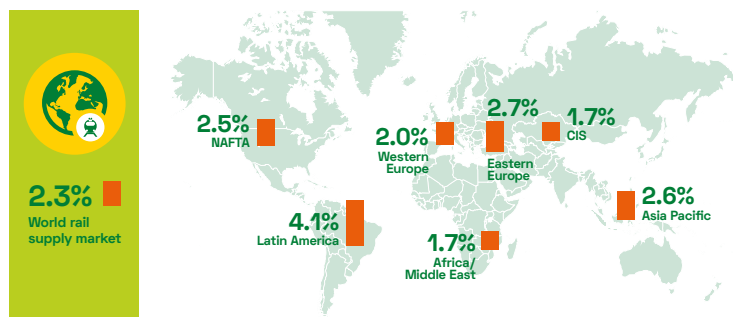
Published biennially since 2006, the Study provides an overview of the market in its current form and a forecast of its future development in different regions and market segments. It also assesses changes in rail market accessibility. Due to the current health and economic crisis, this edition also explored the potential implications of COVID-19.

The main findings of WRMS 2020 were that:

- At the end of 2019, a record market volume of €177 billion was reached, proving the appeal of rail transport in all of its forms, ranging from urban metro to commercial freight. The sector has grown by 3.6% annually since 2017.
- The market is anticipated to develop positively in the medium- and long-term, with an average annual growth rate of 2.3% until 2025 despite an 8% COVID-induced decline in 2020. The total market volume is expected to reach €204 billion by 2025. This assumption is based on an anticipated rapid recovery of the market, which Roland Berger considers probable under a so-called V-case scenario.

## In the V-case all regions remain at high levels - Latin America and Eastern Europe are expected to show strongest growth

Total market growth rates per region [CAGR<sup>1)</sup>, %]



1) Compound annual growth rate 2021-2023 vs. 2015-2017

Source: WRMS 2020, Roland Berger



# TOTAL MARKET 2017–2019 177.2 BN EUR

#WRMS

CURRENT AVERAGE  
ANNUAL TOTAL MARKET VOLUME

services  
65.0 bn EUR



rolling stock  
61.9 bn EUR



turnkey management  
1.0 bn EUR



infrastructure  
32.6 bn EUR



rail control  
16.8 bn EUR

## Different global developments

are likely to continue to fuel rail market growth in the future. Megatrends such as urbanisation, global population growth and increasing environmental awareness illustrated by political programmes such as the European Green Deal should lead to higher passenger numbers, while digitalisation and automation is expected to make the rail sector more attractive. However, public funding will need to be ensured and sustained to achieve that progress.

Finally, the study looks at **worldwide accessibility of the rail market**, which is a key factor affecting the business of the rail supply industry. The share of the world market for railroad technology that remains accessible to European companies has shrunk slightly from 63% to 62%, since the 2018 study. Decreasing accessibility in Asian markets has become a serious impediment to rail sector growth. Further political efforts are needed to level the playing field and fully reap the benefits of a growing market.



To order a copy of the **UNIFE World Rail Market Study**, please visit the [UNIFE website](#).



# 05

## STANDARDS & REGULATION

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# 1) Overview

As the official representative body for the European rail supply industry, UNIFE continues to coordinate 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 groups and workshops organised by European institutions to support the drafting of the aforementioned outputs. The SRG plays a pivotal role in coor-

dinating UNIFE's technical stances on the implementation of the EU's 2016 Fourth Railway Package (4RP).

The UNIFE SRG also interacts with CER, EIM, UIP, NB-Rail and other stakeholders in the European 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 and shares the association's position on important topics such as ERA's annual work programme and ongoing activities supporting 4RP's implementation.

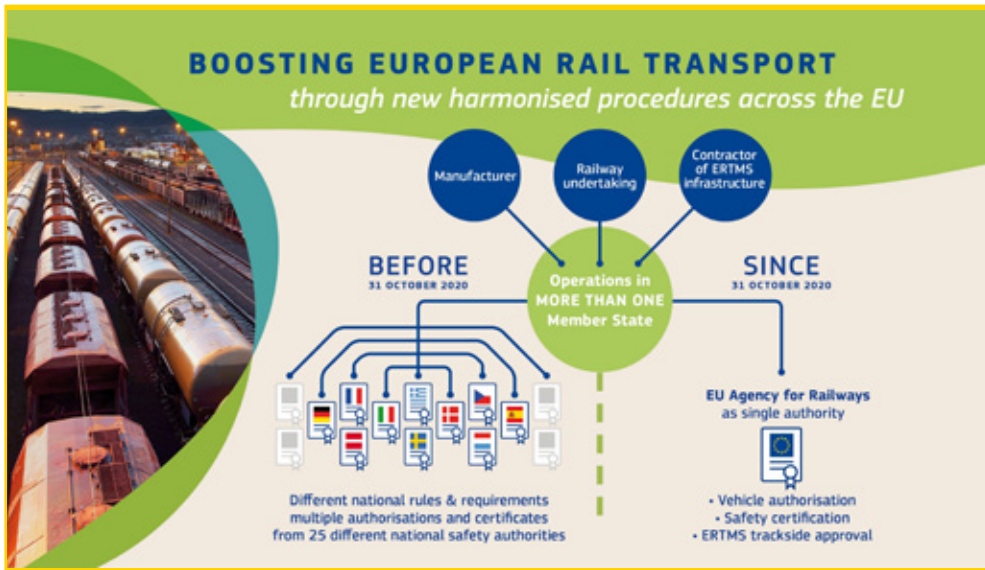
# 2020

## Key Highlights:

### 1. Implementation of the Fourth Railway Package's Technical Pillar

The Technical Pillar, comprised of the recasted Interoperability and Safety Directives and the ERA Regulation, entered into force on 15 June 2016 and provided Member States with a three-year transposition period, with a possible a one-year extension upon request. 2020 was a key year for the implementation of 4RP's Technical Pillar with arrival of the final deadlines for the transposition of the directives and entry into operation of the new regime in all Member States. Due to the COVID-19 pandemic, Member States were able to extend the transposition deadline to 31 October 2020 as part of the EC's COVID-19 "rail relief package".





This year saw the railway sector, together with the ERA and the National Safety Authorities (NSAs), build on the initial experience of the Fourth Railway Package regime following its entry into operation on 16 June 2019 in Bulgaria, Finland, France, Greece, Italy, Netherlands, Romania and Slovenia. It also witnessed the ERA operate as the European authorising entity for the first time. Since 16 June 2019, ERA has delivered over 1000 vehicle authorisation decisions, representing over 12,000 authorised rail vehicles.

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UNIFE's focus this past year has shifted from exchanging knowledge between our members and collecting feedback 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 streamline the new system. Finally, UNIFE continues to raise awareness and greater understanding of changes within the rail supply industry currently being implemented under this new framework. UNIFE strongly supported the adoption of the Technical Pillar, which we see as being 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. It will also result in a more consistent, quicker and cheaper process with less duplication of checks and testing. With the entry into operation of the Technical Pillar in all Member States at the end of 2020, close attention will be paid in the coming year to ensuring the full delivery of the Fourth Railway Package's expected benefits.



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

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UNIFE is a permanent member of the EC's Expert Group on the Technical Pillar of the Fourth Railway Package, alongside Member States representatives and other official 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 attend and vote on the final Implementing Acts.

The Expert Group started 2020 with detailed consultations that resulted in [\(EU\) 2020/387](#) amending the Technical Specifications for Interoperability (TSIs) WAG, LOC&PAS and CCS by codifying an extension of the area of use and transition phases. These exchanges also led to [\(EU\) 2020/424](#), which dealt with submitting information to the Commission regarding non-application of technical specifications for interoperability in accordance with Directive (EU) 2016/797.

Due to the extraordinary circumstances caused by the COVID-19 outbreak, the Expert Group was

consulted shortly after the crisis began in May on the "rail relief package". These discussions consisted of urgent amendments to the interoperability directive and subsequent implementing acts to introduce an additional optional extension for the transposition of the Fourth Railway Package's Technical Pillar. This concession intended to provide Members States who had not yet completed, or would be unable to complete, the legislative work required to usher in their national transpositions by 16 June 2020 the extra time needed to do so. These states were offered a final deadline of 31 October 2020. The package also included measures to provide a smooth transition for vehicle authorisations at the project level across the two remaining transposition dates. It also included provisions to help mitigate the impact of the COVID-19 crisis on the railway sector.

The Expert Group also provided opportunities for regular status updates and consultations on the implementation of the 4RP by Member States and the clean-up of Notified National Technical Rules. UNIFE attended all Expert Group meetings to speak on behalf of the rail supply industry and with EC representatives on these important developments.

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

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UNIFE has established a high-level dialogue between the DG MOVE Directorate C, ERA management teams and UNIFE members at the CTO level on the implementation of the Technical Pillar of the Fourth Railway Package. The objective of these meetings has been to jointly, 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 related ERA IT tool development, the TSI amendments and the clean-up of notified national technical rules.

These meetings continued in 2020 to exchange on first experiences with the new regime and provide feedback. They were also opportunities to share lessons learnt, identify areas for continued improvement, monitor the transposition status by Member States, and agree on practical measures to facilitate the authorisation applications and process.

More recently these meetings have begun to shift towards the development and application of TSIs on the European railway target system and, more specifically, the necessary TSI transitional provisions required to provide the rail supply industry stability for individual railway projects while the regulations,

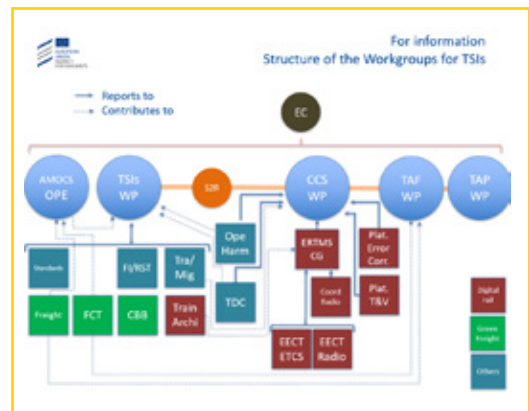
standards and innovations continue to evolve. This subject is considered a priority for the planning and competitiveness of long-term rail projects and delivery of vehicle types. This topic will be addressed by amendments to the TSI transitional provisions in the 2022 TSI package.

## Revision of the Technical Specifications for Interoperability (TSIs) for 2022

Following the publication of the 2019 TSI amendments, work has begun on the next revision of the TSIs with a new full package scheduled for publication in 2022. In January of this past year, the EC sent ERA the formal request to start the assessing this topic, which manifested in a list of objectives and 74 actions focused on 'Digital Rail' and 'Green Freight' intended to align with the European Commission's high-level policies.

At the same time, ERA has introduced a new working structure and process for TSI drafting and working groups. No longer are there working parties for each TSI but rather a single coordinating working party across the TSIs supported by numerous dedicated Topical Working Groups (TWGs) for specific change requests addressing topics across multiple TSIs. The new structure aims at better coordination across TSIs for given changes, better transparency of working and a more efficient use of resources.

UNIFE has consequently adapted its internal consultation processes with its committees and technical working groups to best follow and contribute to the new revisions. This association is a member of the ERA Working Party on the revision of TSIs which acts as the steering group for all the TSI revision activities and has experts nominated to each of the activated TWGs. Within UNIFE, the Working Party on the revision of TSIs is followed by our Standards and Regulation Group (SRG), which coordinates the association'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, are consulted by a combination of the existing UNIFE technical working groups depending on the change request subject.



© European Union Agency  
for Railways (ERA)

The Working Party held four meetings on the TSI revision in 2020 to establish the new system and TWGs. More frequent meetings will be held in 2021 as the outputs and TSI text proposals are delivered by each of the TWGs to finalise the ERA recommendation to the EC by Q4 2021.

For more information on the Fourth Railway Package and TSI revisions, please contact UNIFE Technical Affairs Manager **Nicholas Shrimpton** at [nicholas.shrimpton@unife.org](mailto:nicholas.shrimpton@unife.org)

## 2. 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 ERA as it composes its work programme and its activities on rail safety and interoperability.

The GRB has continued to be highly active throughout 2020, with particular focus paid to the final implementation of the Fourth Railway Package, the rail sector’s response to COVID-19, the revision of the TSIs and the ERA initiatives regarding

railway safety culture and occurrence reporting. 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, Mr. Christian Rausch, Chair of UNIFE’s Standards and Regulation Group (SRG), has also served as the GRB’s chair on a two-year mandate. At the end of 2020, the GRB supported the renewal of his mandate until 2022.

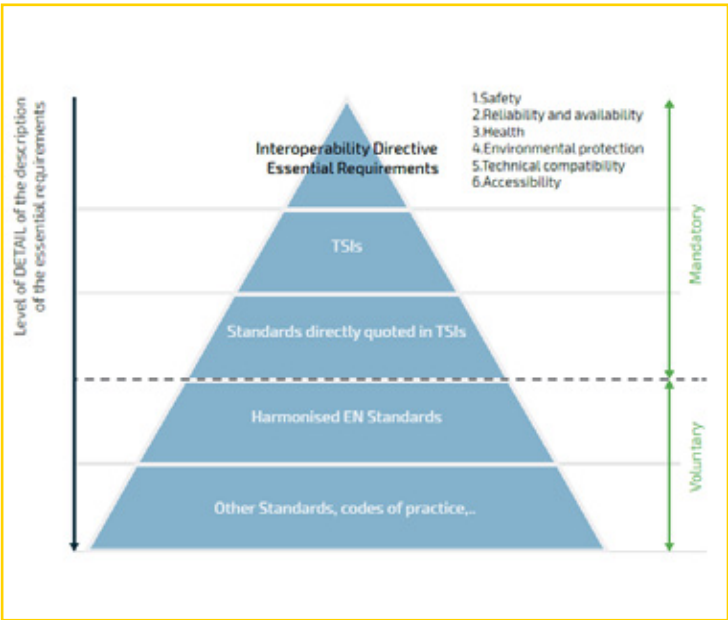
Strong leadership and cooperation among all stakeholders has been vital during the final stages of the Technical Pillar’s implementation and the preparation of the revised TSI package for 2022.

Please contact UNIFE Technical Managers **Nicholas Shrimpton** and **David Kupfer** to learn more. They are reachable at [nicholas.shrimpton@unife.org](mailto:nicholas.shrimpton@unife.org) or [david.kupfer@unife.org](mailto:david.kupfer@unife.org), respectively.

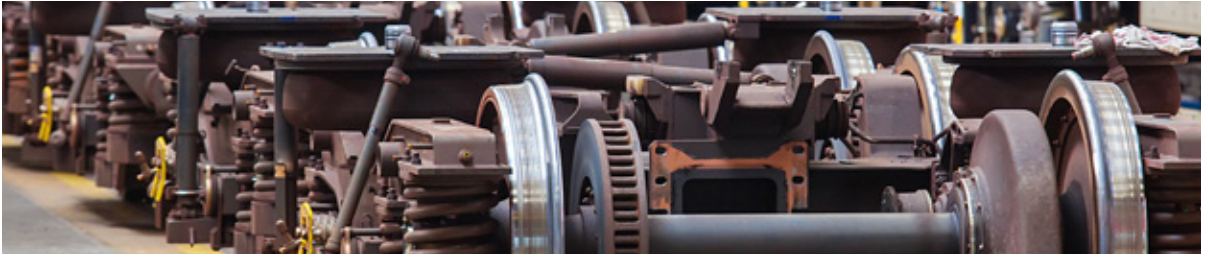
For further information on GRB, please visit [www.grbrail.eu](http://www.grbrail.eu)

## 3. 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 Standardisation Bodies. UNIFE provides a platform for its members to coordinate their standardisation advocacy and to build consensus on our industry’s priorities in this area. UNIFE 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 ESOs 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 ESOs, namely CEN and CENELEC. The association works closely with the EC, 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 ISO Rail Technical Committee 269 (ISO TC 269). This enables the association to take part in the regular meetings of this committee.

UNIFE is also a member of the Rail Standardisation Coordination Platform for Europe (RASCOP). Initiated by the EC 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 EC Directorate-General for Mobility and Transport (DG MOVE) and is supported by the ERA.

In 2020, UNIFE dedicated increased efforts to international standardisation. This year saw the first UNIFE position on international standardisation, which was published in March to provide recommendations that underline the strategic importance of international standardisation for the European industry. The position paper was promoted in bilateral exchanges with the European Commission and plenary meetings of the ISO, CEN and CENELEC Technical Committees. GRB has also started working on a rail sector position paper on international standardisation, based on the UNIFE position.

Furthermore, UNIFE has relaunched our cooperation with urban transport operators on standardisation through the Urban Rail Platform, a forum driven by this association and the International Association of Public Transport (UITP). The Platform aims to support standardisation in urban rail following a mandate issued by the Commission and provides its members with a forum for discussing matters related to regulation and Research & Innovation (R&I).

For more information on the UNIFE's Standardisation activities, please contact UNIFE Technical Affairs Manager **David Kupfer** at [david.kupfer@unife.org](mailto:david.kupfer@unife.org)

# 2) 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 responsible UNIFE committees. There are two types of Technical Working Groups in UNIFE:

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

## UNIFE Mirror Groups (MG)

UNIFE Mirror Groups (MG) **are temporary groups which are active during the drafting and revision of regulations and TSIs**. They mirror the ERA’s working groups where UNIFE delegates participate as official representatives of the European rail supply industry.

## UNIFE Topical Groups (TG)

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

### 1. UNIFE Mirror Groups (MG)

#### 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 entry into operation of the 4RP and the new European vehicle authorisation process in June 2019, the UNIFE VA MG has been the main group providing feedback of its application at the expert level. The experiences



and lessons learnt shared in this group have led to further clarifications and identified areas for improvements which have in turn been exchanged with ERA and the EC to continue streamlining the 4RP processes.

The VA MG is also the nominated UNIFE group following the ERA TWG on Migrations and Transitions which will result in the revised TSI transitional provision in 2022 TSI package. This subject is of high importance

as it aims find the balance between the needs for the TSI and rail project stability and the TSI and target system evolution.

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



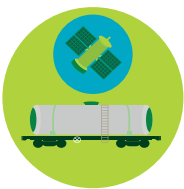
### Safety Assurance Working Group (SafAssu MG)

The Safety Assurance Working Group (SafAssu MG) supports the 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 2020, the group began to exchange experience on the "requirement capturing" process introduced by (EU) 2018/545 within the European vehicle authorisation process. The mirror group has continued to provide the industry position on the development of the Common Safety Methods for the assessment of safety levels and safety perfor-

mance of operators at National and Union level (CSM ASLP) to ERA. This year, the Safety Assurance MG also provided input to the ERA guidelines on the entities in charge of maintenance (ECM) Regulation (EU) 2019/779 - especially with regards to the development of the "safety critical components" concept as introduced by the revised Safety Directive. Additionally, this group coordinates UNIFE's position pertaining to the ERA's activities on human and organisational factors and safety culture.

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



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

Since 2018, UNIFE members have been involved in several EU activities on interoperability. The work focused on freight and passenger subsystems TSIs. The last revision process was concluded in late 2019 and approved at RISC on November 11. The revised version of TAF TSI will be launched early 2021.

Parallel to this process, the new TSIs Revision schema was introduced and the work on TAF/TAP TSI Revision 2022 started in October 2020. Members provided inputs to the 2022 Revision process, especially focusing on merging TAF and TAP TSI into one TSI (RU-IM communication) and separate retail TAP TSI. The Change Request CR449 (i.e. change of primary location codes from 4-digits numeric to 4-digits alphanumeric) which

allows the extension of interoperability into non-EU countries was finished and approved by RISC in November 2020.

UNIFE was even more involved in the revision process than it was in 2019. The focus of this work was mostly on the TAF TSI Revision, change management and monitoring of the TAF/TAP TSI implementation. UNIFE also contributed to the RNE TrainID Pilot project, which was completed in July of this year. Our work linked to the impact assessment has been postponed due to the COVID-19 pandemic, as are many other actions.

The implementation process continued successfully and UNIFE members continued their efforts establishing TAF TSI in CEF projects and through their engagement as suppliers of individual projects submitted by railway undertakings (RUs) or infrastructure managers (IMs).

The working group has also been dealing with the cyber security topics and new TAF/TAP TSI system architecture, which is focused more on the CDM and Shift2Rail LinX4Rail project. UNIFE is a member of this initiative's Advisory Board. UNIFE members are considered significant actors in the TAF and TAP TSI sector community, contributing to the preparation of the rail sector for increasing competition in the coming years.

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

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## 2. UNIFE Topical Groups (TG)

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### Brakes Topical Group

In 2020, the Brakes topical group was re-launched to assist the UNISIG experts in several brakes-related topics in connection to TSI change requests. UNISIG experts contribute to the work of ERA via the extended core team and were supported in their work by Brakes TG experts on several topics such as Improvements regarding low adhesion

for ETCS. This group has thereby delivered valuable inputs to the further developments in the CCS domain.

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For more information on the Brakes Topical Group, please contact UNIFE Technical Affairs Manager **David Kupfer** at [david.kupfer@unife.org](mailto:david.kupfer@unife.org)

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### Diesel Working Group (TG)

The non-road mobile machinery (NRMM) Regulation (EU) 2016/1628 was published in September 2016, setting out more stringent emission limits for internal combustion engines installed in non-road mobile machinery and repealing the previous NRMM Directive. The UNIFE Diesel Topical Group provides a forum for UNIFE members to monitor and discuss the implementation of the regulation and development of supplementary ones detailing test methods, EU type-approval procedures and in-service monitoring of future NRMM engines. The group also exchange views on the NRMM and other regulatory or standardisation items impacting diesel vehicles, together with EUROMOT and UIC.

This year, the UNIFE Diesel TG continued to monitor the implementation of the new NRMM Regulation and the amended regulation regarding the introduction of in-service monitoring on Stage V rail vehicle engines being drafted by the DG GROW and consulted in the European Commission's *Group of Experts on Machinery Emissions under the Non-Road Mobile Machinery Directive*.

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Contact **Nicholas Shrimpton**, Technical Affairs Manager at UNIFE, at [nicholas.shrimpton@unife.org](mailto:nicholas.shrimpton@unife.org) to hear more about the Diesel Working Group.

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### Fire Safety Working Group (TG)

The Fire Safety Working Group has updated and improved the *UNIFE Manufacturer Declaration and Fire Certificate Inventory List* (FCIL), which are widely accepted and useful aids for manufacturers in fire safety certification. UNIFE experts continue to contribute to the ERA Working Parties on the development of the fire safety requirements within the TSI on safety in railway tunnels (SRT).

Contact **David Kupfer**, Technical Affairs Manager, at [david.kupfer@unife.org](mailto:david.kupfer@unife.org) to stay in the loop as these regulations heat up.



### 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 UNIFE members. This group exchanged on the existing requirements for special vehicles, with the aim of preparing a change request for the new TSI revision package. This request produced aims to improve the consistency of the TSI LOC&PAS for special vehicles regarding definitions and other text in line with the recast Interoperability Directive and European standards to

facilitate the authorisation of special vehicles in Europe. This ad hoc group also provided a forum for open exchange on other questions related to the application of regulations and standards for this type of vehicles.

Contact **Nicholas Shrimpton**, UNIFE Technical Affairs Manager, at [nicholas.shrimpton@unife.org](mailto:nicholas.shrimpton@unife.org) to hear more about the Special Vehicles Ad Hoc Group.



### Cabin Working Group (TG)

The Cabin Working Group members have finalized their work on harmonising standardisation activities at the European level for the specifications of the driver's cabin elements. The main purpose was to identify possible synergies, differences, inconsistencies and overlaps in current cabin specifications. After conveying recommendations to relevant standardisation bodies to develop more consistent specifications and submitting a change request for modification of the ERTMS

specification, the group worked on tailoring the already submitted Change Request 1380 to consider the recommendations coming from ERTMS Control Change Management group. For the time being, feedback to the proposed modification is pending.

Contact **Jose Bertolin**, UNIFE Technical Affairs Manager, at [jose.bertolin@unife.org](mailto:jose.bertolin@unife.org) to hear more about the Cabin Working Group.



### Electromagnetic Compatibility Working Group (EMC TG)

UNIFE experts have worked in close cooperation with EIM and CER experts within the Train Detection Compatibility Working Group, coordinated by ERA. This working group is providing inputs for the updates to the mandatory ERA/ERTMS/033281 specification, describing the interfaces between CCS track-side and other subsystems. Topics discussed in 2020 included the standardization activities, DC vehicle/substation Impedance and AC vehicle impedance.

The group is currently working on the request of a Technical Opinion (T.O.) for modification on the interface document also referenced in the TSI LOC PAS 2019.

In particular, the group is proposing a modification in the section 3.1.3.5, related to the Metal and inductive components-free space between wheels, to eliminate the newly introduced requirements: “dynamic stimulation” and “maximum width of 130 mm for magnetic track brakes”. This was included as it could lead to non-compliances concerning the minimum vertical distance of 40 mm above the top of the rail for brakes.

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For more information, please contact  
[jose.bertolin@unife.org](mailto:jose.bertolin@unife.org)

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## 3. MG/TG Combined Consultations for ERA TWGs

Several other UNIFE Technical Working Groups have been active in the combined consultations for the ERA Topical Working Group (TWG) activities for the TSI 2022 revision as introduced before. This has included the following:

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**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). The activities of this TWG address multiple change requests on the improvement of interface requirements between the LOC&PAS, ENE and INF TSIs, improve TSI requirements with regards to multiple pantograph use and traffic loads, and improve provisions when applying the TSIs in case of upgrade or renewal.

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**The Topical Working Group on Composite Brake Blocks (TWG CBB)** has consulted a combination of the UNIFE Noise and Wagon Mirror Groups and the Brakes Topical Group (NOI MG, WAG MG and Brakes TG). The activities of this TWG aim 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 the Appendix F of TSI Noise and amend the appendix G of WAG TSI in the TSI 2022 package.




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Contact **Nicholas Shrimpton**,  
 UNIFE Technical Affairs Manager,  
 at [nicholas.shrimpton@unife.org](mailto:nicholas.shrimpton@unife.org)  
 to hear more about the ERA Topical  
 Working Group activities.

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## 3) Cybersecurity activities

Cybersecurity represents one of the fastest-developing digital trends, moving as rapidly as the digital transformation itself. As cyber-threats are constantly shaping the security environments of every industry and economic sector, securing European network and information systems is essential to keeping the economy running and ensuring prosperity, as repeatedly declared by the European Commission. The European rail supply industry - with its complex interdependences and legacy infrastructure systems - has recognised that protecting digital assets against cyber-threats is a vital element of maintaining a safe and reliable railway. Promising the integrity of rail systems and maintaining operational continuity standards is an objective which is shared by the whole rail sector.

This year, the UNIFE cybersecurity working group has delivered UNIFE's Vision on *Cyber-Security in Railways*, presenting the European rail supply industry's stances on the challenges of cybersecurity for the European railway system and sets short-, medium- and long-term priorities and targets as a basis for further engagement with EU institutions and other rail stakeholders. This paper also presents, and shortly describes, the main standardisation and technological challenges which have been identified by UNIFE members. The completion of these objectives will ensure the full alignment and commitment of the European Rail Supply Industry

towards the European strategy for tackling cybersecurity. The position paper was promoted in bilateral exchanges with the European Commission and the European Union Agency for Cybersecurity (ENISA).

Furthermore, UNIFE is actively involved in various activities at the European level aimed at developing targeted cybersecurity-related skills and knowledge, as well as increasing awareness of cyber-threats within each company and organization. The association's participation in meetings with the European Rail - Information Sharing and Analysis Center (ER-ISAC Platform) and strengthening our

relations with ENISA have sought to contribute and improve cybersecurity within the Rail sector.

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Contact **Marta Garcia**, UNIFE Technical Affairs Manager, at [marta.garcia@unife.org](mailto:marta.garcia@unife.org) to hear more about tUNIFE cybersecurity activities.

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## 4) UNITEL

Established in 2018, 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 within the next iterations of ERTMS. This committee succeeds the Railway Operational Communications Industry Group (ROC-IG), which was formally discontinued in 2019, and has adopted its activities. All former ROC-IG members are now participating in UNITEL and the committee welcomed two new members this year.



**In 2020, the UNITEL Committee continued its works as the recognised voice of the European railway telecom supply industry towards the European institutions and sector partners.**

UNITEL experts are 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 experts shifted focus this year to the preparation of the FRMCS specifications and the planned introduction to the TSIs in 2022 and beyond. Furthermore, the UNITEL Committee is currently defining the railway telecom supply

industry's positions on the long-term support for GSM-R and the migration path to FRMCS.

Following the 2019 UNIFE position paper on the need for 'EU-funded and -coordinated FRMCS pilot projects', UNIFE and several UNITEL Committee members were part of a successful consortium answering the DG Connect Horizon 2020 open call on '5G for Connected and Automated Mobility (CAM)'. The resulting project, **5GRAIL**, was launched in November 2020 and will validate the first set of FRMCS specifications by developing and testing prototypes of the FRMCS ecosystem for both trackside infrastructure and on-board. This includes the core technological innovations for rail expected from the latest 5G releases.



UNITEL members are also involved in the DG CONNECT-DG MOVE Rail Digitisation initiative and have supported the preparation of Shift2Rail's successor programme within Horizon Europe. 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.

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

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In 2020, the UNITEL Committee continued its work as the recognised voice of the European railway telecom supply industry towards the European institutions and sector partners.

# 06

## UNIFE R&I ACTIVITIES

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# 01. HORIZON 2020

After years of intense work by the European rail industry, with UNIFE's coordination, Shift2Rail (S2R) was established in July 2014 as a Joint Undertaking with support from the European Union's Horizon 2020 programme. S2R's mission is to promote our sector's competitiveness by accelerating the integration of new and advanced technologies into innovative rail product solutions.



S2R projects contribute to creating technologies needed to meet changing transport needs, complete the Single European Railway Area (SERA), increase the European rail system's capacity and improve both the reliability and quality of rail services. These actions also help significantly reduce costs. To meet these ambitious goals, S2R has a robust framework and a multiannual budget of €920 million. It is jointly funded by the private sector, which contributes €470mn, and the EU, which invests €450 million.





## 1. Main activities of the Shift2Rail Joint Undertaking in 2020



### a. Support for Research and Innovation projects

Following the announcement of calls for proposals in early 2020, 19 grants totalling €147,7 million have been awarded. This includes €75,4 million dispersed through S2R.

The S2R Joint Undertaking members, excluding the EU, have submitted project proposals to 8 call topics reserved for them. These proposals hold a total value of €125,7 million, including €55,4 million from S2R.

The S2R open calls covered 11 topics. The combined budgets of these projects have a total value of €22,0 million, of which up to €20,0 million will be funded by the S2R JU.

**For more information** on Shift2Rail, please visit [www.shift2rail.org](http://www.shift2rail.org)

For further information, please contact **Nicolas Furio**, Head of Technical Affairs at UNIFE, by email at [nicolas.furio@unife.org](mailto:nicolas.furio@unife.org)

**b. Shift2Rail User Requirements/Implementation and Deployment working group**

The S2R User Requirements/Implementation and Deployment working group met five times this year - UNIFE attended all of them. The role of this working group is to assist the S2R Joint Undertaking in ensuring the market uptake of the technical solutions developed through its activities and facilitate information exchanges on initiatives, projects and partnerships dealing with the thematic areas of each of the Innovation Programmes and Cross-Cutting Activities.

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**For more information**, please contact **Nicolas Furio**, Head of Technical Affairs at UNIFE, by email at [nicolas.furio@unife.org](mailto:nicolas.furio@unife.org).

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### c. Shift2Rail Innovation Days

The 2020 Shift2Rail Innovation Days, held on 22 and 23 October, was an opportunity to hear from high-level representatives about rail's crucial role in the mobility and transport recovery effort, Shift2Rail's progress and the preparation of Shift2Rail-2's programme (successor of Shift2Rail within Horizon Europe).

Henri Poupert-Lafarge, Chair of UNIFE and Chairman & CEO of Alstom, spoke on the event's *High-level Panel on the Future of Rail Research & Innovation*. During the discussion, he underlined the benefits of Shift2Rail and requested that the European Commission match the rail sector's ambitions by allocating significant EU funding to Shift2Rail-2, namely

€1.5 billion in funding earlier requested by rail stakeholders.

Philippe Citroën, Director General of UNIFE, participated in the event's Conclusions session. He underlined the importance of Shift2Rail-2 in achieving EU Green Deal objectives, positioning rail transport as the backbone of future mobility and increasing the competitiveness of the European rail supply industry.

This event was also an important opportunity to learn more about solutions delivered by the Shift2Rail projects and foster exchanges on future European rail research and innovation priorities.

**For more information** about the Shift2Rail Innovation Days, please visit this [website](#).

For more information, please contact **Nicolas Furio**, Head of Technical Affairs at UNIFE, by email at [nicolas.furio@unife.org](mailto:nicolas.furio@unife.org)



2020 Shift2Rail  
Innovation Days  
(22-23 October, 2020)



2020 Shift2Rail  
Innovation Days  
(22-23 October, 2020)

## 2. Shift2Rail projects



### a. NEXTGEAR

**NEXTGEAR (NEXT generation methods, concepts and solutions for the design of robust and sustainable running GEAR)** is a two-year project within the 1<sup>st</sup> Innovation Programme (IP1) of Shift2Rail, 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 gener-

ate 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:

- o Updating the Universal Cost Model (UCM) from the Roll2Rail project to make it possible to judge the economic impact of the innovation suggested for an operator using the vehicle
- o 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
- o 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

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



## b. OPTIMA

**OPTIMA (Communication Platform for Traffic Management Demonstrator)** is a project within S2R's 2<sup>nd</sup> Innovation Programme. The consortium includes research organisations, industrial rail stakeholders and Infrastructure Managers actively performing Traffic Management and Traffic Control in dedicated Control Centres.



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

The consortium finalised the design phase with the consolidation of all the requirements for the different components, integrating the Com-

munication Platform disparate elements: Integration Layer, business clients/services, Hardware and Software, Conceptual Data Model (CDM) and Databases. The development phase started in September 2020 with the preparation of the development/test environment and will last until Autumn 2021. During this phase, a strong collaboration with complementary projects (X2Rail-4 and Fine-2) is expected to ensure the alignment of the project and the success of the development.

### The OPTIMA's main objectives are to:

- o 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
- o Develop, validate and verify the Communication Platform
- o Provision of a fully available and documented communication platform for installing and testing complementary projects prototypes

### For more information on

OPTIMA, please visit

[www.optima-project.eu](http://www.optima-project.eu)

or contact UNIFE Technical

Affairs Manager **Jose Bertolín**

at [jose.bertolin@unife.org](mailto:jose.bertolin@unife.org)



**For more information**  
on TRANSIT, please visit  
[www.transit-prj.eu](http://www.transit-prj.eu) or contact:  
**Marta García**, Technical Affairs  
Manager at UNIFE, via email at  
[marta.garcia@unife.org](mailto:marta.garcia@unife.org)

### c. TRANSIT

TRANSIT (**TR**Ain pass-by **N**oise **S**ource characterization and separation Tools for cost-effective vehicle certification) is a three-year project within S2R's 'Cross-Cutting Activities' category. This project began in December 2019.

TRANSIT aims to provide the railway community with a proven set of innovative tools and methodologies to reduce rail's environmental impact and improve 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 expenses. In the future, conducting these processes virtually should reduce these expenses. Furthermore, increasing energy efficiency of railway transport is a key goal of Shift2Rail and efforts are ongoing to reduce vehicle weight – 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 to increase sound transmission loss and absorption are being developed, leading to an improved interior sound quality within the weight constraints.



#### d. RIDE2RAIL

RIDE2RAIL is a Shift2Rail 4<sup>th</sup> Innovation Programme (IP4) open call project. It was launched in December 2019 and will end in May 2022.

RIDE2RAIL aims to develop solutions and tools that will facilitate the efficient combination of ride-sharing and scheduled transport services such as 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 transport services, fighting congestion and pollution.

The project aims to integrate multiple public, private and social data sets, sources and existing transport platforms to promote effective ride-sharing by citizens. Providing them with this information will make it a complementary transport mode that extends public transport and rail networks. The RIDE2RAIL framework for intelligent mobility will integrate and harmonise real-time, diverse information about rail, public transport, ride-sharing and crowd-sourcing in a social ecosystem. Doing so will allow users to compare and choose between multiple options and services

classified by a set of criteria – such as environmental impact, travel time, comfort, cost – according to their preferences. This will make the travel experience more positive for individual users and, globally, more sustainable.

RIDE2RAIL will design, develop and test in real demonstrators a set of software components for the IP4 ecosystem. These include 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. Its aim is to facilitate swift 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 in four diverse European cities: Padua, Athens, Brno and Helsinki.



#### For more information

on RIDE2RAIL, please visit <https://ride2rail.eu/> or contact [stefanos.gogos@unife.org](mailto:stefanos.gogos@unife.org)





**For more information on**  
ETALON, please visit  
[www.etalon-project.eu](http://www.etalon-project.eu)  
or contact  
[jose.bertolin@unife.org](mailto:jose.bertolin@unife.org)

#### e. ETALON

ETALON (Energy harvesting for signalling and communication systems) is a project within S2R's 2<sup>nd</sup> Innovation Programme (IP2). The project started in September 2017 and finished in February 2020.

The main objective of the project is the adaptation of energy harvesting methodologies for trackside and on-board signalling and communication. In particular, the project focuses on train integrity and Smart Radio-connected wayside objects technologies.

ETALON laid the foundations for the functional and system requirements specification of energy harvesting and radio communication solutions for trackside and on-board use. Additionally, the project designed, manufactured and validated two prototypes, one related to the On-board Train Integrity (OTI) and a second one focused on Trackside Energy Harvesting (TEH).

Main achievements of ETALON can be summarized as follow:

- o Investigated, implemented and tested technologies (i.e. sensors, communications and energy harvester) for the On-Board Train Integrity System, specifically for the freight trains
- o Investigated, implemented and tested technologies relative to usage of Energy Harvester for the New Wayside Object Controller
- o Made an economic analysis of the usage of trackside Energy Harvester for the New Wayside Object Controller in different scenarios





## f. SPRINT

SPRINT (**S**emantics for **P**erfo**R**mant and scalable **I**nteroperability of multimodal Transport) is a Shift2Rail 4<sup>th</sup> Innovation Programme (IP4) project. It is now in its final stretch, with the final conference scheduled on the 23 February 2021.



SPRINT's objectives are to improve the performance and scalability of the Interoperability Framework being developed through IP4, to sustain a large deployment and to simplify or automate all the necessary steps needed to integrate new services and sub-systems into the IP4 ecosystem. SPRINT also contributes to the realisation of the Interoperability Framework by masking the complexity of interoperability to travel applications by publishing in the Interoperability Framework's Assets Manager uniform abstractions of services. This enables travel applications to know how to

communicate with them (e.g. web service/API interfaces, communication protocols).

Lastly, SPRINT will provide additional technical means to operate on the "web of transportation data"; for example, the Interoperability Framework will enhance its ability to act as a distributed broker to communicate with different services and as a means to dynamically discover, bind and inject data and services - including the Mobility Service Providers identification - on the basis of their geographical area and offered service capabilities.

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**For more information on**  
SPRINT, please visit  
<http://www.sprint-transport.eu/>  
or contact  
[stefanos.gogos@unife.org](mailto:stefanos.gogos@unife.org)

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#### g. GATE4RAIL

GATE4RAIL (**GNSS Automated Virtualized Test Environment for RAIL**) is a Shift2Rai 2<sup>nd</sup> Innovation Programme (IP2) project. It entered operation in December 2018 and will conclude in February 2021.

GATE4RAIL aims to define, design and develop a geo-distributed simulation and verification infrastructure to evaluate the GNSS performances in the railway environment. GATE4RAIL also foresees the identification of methodologies and tools aiming at simulating GNSS behaviour in different railway

scenarios and situations and automated updating of tests environment.

The consortium is currently finalising the project's activities – notably, the preparation of a demonstration that will take place in January.

For more information, please visit [www.gate4rail.eu](http://www.gate4rail.eu) or contact Jose Bertolín, Technical Affairs Manager, at [jose.bertolin@unife.org](mailto:jose.bertolin@unife.org)

#### Main preliminary achievements of GATE4RAIL can be summarised as follow:

- o The consortium has identified a set of scenarios with typical railway environments and common operations or procedures of interest for the sector
- o A simulation and verification platform for the evaluation of the GNSS performances in the railway environment has been already designed, developed and will be finally tested. A set of users, functional, system and operational requirements have been identified as the foundation for the definition and implementation of the GATE4RAIL system level architecture (SLA)
- o The consortium has performed an investigation, selection and test of different methodologies for automated update of test environment. ARCADIA/CAPELLA solution has been chosen and demonstrated as the best Model Based Systems Engineering approach for the project
- o The consortium has also performed an investigation, selection and test of concepts and methodologies definition for continuous integration, automated testing, repetition and evaluation. GitLAB solution has been chosen and demonstrated as the best approach in terms of continuous integration for the project

#### h. TER4RAIL

**TER4RAIL (Transversal Exploratory Research Activities for Railway)** is a Shift2Rail project associated with ERRAC.

In 2020, the project mapped rail innovation research and organised interactions with non-rail actors that could be valued collaborators in the future. The mapping of rail-related work developed by other sectors will be a valuable tool for the further transfer of knowledge and cross-fertilisation.

TER4RAIL also developed “arguments for rail” in the form of success stories from passenger and freight rail transport. The work performed under TER4RAIL has been widely communicated to the transport community. The project concluded with a final conference in November 2020.



**For more information** on TER4RAIL, please visit [www.ter4rail.eu](http://www.ter4rail.eu) or contact **David Kupfer**, UNIFE Technical Affairs Manager, at [david.kupfer@unife.org](mailto:david.kupfer@unife.org)

### 3. Shift2Rail projects launched in 2020



#### a. RECET4Rail

RECET4Rail (**R**eliable **E**nergy **a**nd **C**ost-**E**fficient **T**raction system for **R**ailway) is a thirty-month long project under S2R's 1<sup>st</sup> Innovation Programme.

Mastering the breakthrough developments of new technologies is of capital importance for the railway industry as we seek to deliver smart and efficient solutions. Essential to the rail industry's growth is the reduction of overall lifecycle exploitation costs

of all rail sub-systems. The Traction Drive sub-system is one of a train's main sub-systems. This component helps move the train, converting energy from an electrical source (directly or via a chemical source) into a mechanical one.

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

**RECET4Rail will focus** on the following new technologies for the Traction Drive sub-system:

- o Development of design approaches, end-to-end conception time evaluation and feasibility/performance study of 3D printing technologies for new traction's components use cases
- o Dynamic Wireless Power Transfer system sizing for actual city profiles focused on opportunistic charging
- o Improving the understanding of the robustness and reliability of high voltage SiC modules
- o Development of smart maintenance approaches enabled by predictive analytics, trained on big data

RECET4Rail will provide essential knowledge that will lead to future improvement of the high TRL level S2R traction demonstrations on trains built by S2R Members, preparing future S2R key work on domains like digitalisation applied to Traction, environmental sustainability (especially devising carbon-free traction systems) or reinforcement of standardisation to lower complexity and costs.



## b. GEARBODIES

The aim of the proposed GEARBODIES project is to develop new inspection methods and technology for the inspection of new materials in carbody applications and to employ innovative approaches for developing novel concepts with enhanced lifetimes for key running gear components. The project will start in December 2020 and continue for a duration of 25 months.



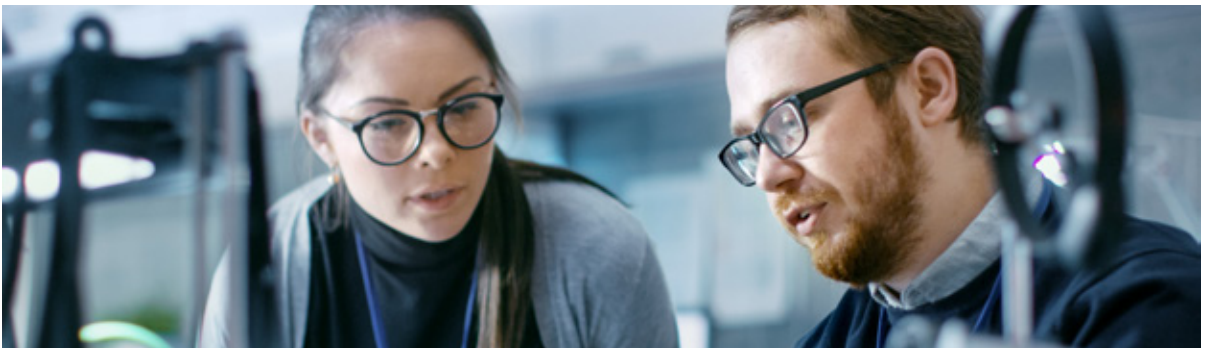
The GEARBODIES project will work towards the development of cost-efficient and reliable trains by contributing with specific innovations towards the Shift2Rail Technology Demonstrators (TD) of Innovation Programme 1 (IP1), through two dedicated work streams:

- **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 contact [stefanos.gogos@unife.org](mailto:stefanos.gogos@unife.org)





### c. SAFE4RAIL-3

Safe4Rail-3 (**Advanced safety architecture and components for next generation TCMS in Railways**) is a 32-month long Shift2Rail IP1 research project. The consortium, coordinated by UNIFE, is going to work on the development of ***“Technical solutions for the next generation of TCMS”***.

Safe4RAIL-3's main goals, in collaboration with the S2R CONNECTA-3 project, are to increase the flexibility and reliability of the TCMS communications, reduce development

and maintenance costs, and achieve novel train functionalities. It will do so while paying special attention to manufacturer interoperability and the availability of multiple sources.

Its activities will be based on the development of three technological pillars aimed at advancing the maturity of the technologies and devices needed for the next generation of Train Control and Monitoring System (TCMS) to achieve TRL 6/7:

- o Development of the Drive-by-Data (DbD) devices in the train network, i.e. Ethernet Train Backbone Nodes, Car Switches and End Devices, using Time-Sensitive Network technology for adding determinism to TCMS communications
- o Development of high TRL wireless devices and antennas that are suitable for Wireless TCMS (WLTB and WLCN domains), along with analysis of antenna installation based on ray-tracing simulations and on-site validations to identify the most optimal antenna locations and radiation patterns in the different wireless TCMS domains
- o Integration of a Heating, Ventilation and Air Conditioning (HVAC) functionality on top of a Functional Distribution Framework platform and a DbD communication layer, taking advantage of the expertise obtained from the automotive industry and specialised on AUTOSAR

**For more information** on Safe4RAIL-3, please contact **Jose Bertolín**, Technical Affairs Manager, at [jose.bertolin@unife.org](mailto:jose.bertolin@unife.org)

Safety and Security assessments for these technological developments will be analysed and studied based on the upcoming standardisation. All these technological developments will be further validated in two real demonstrators that will be set up by the Shift2Rail CONNECTA-3 project.

#### d. DAYDREAMS

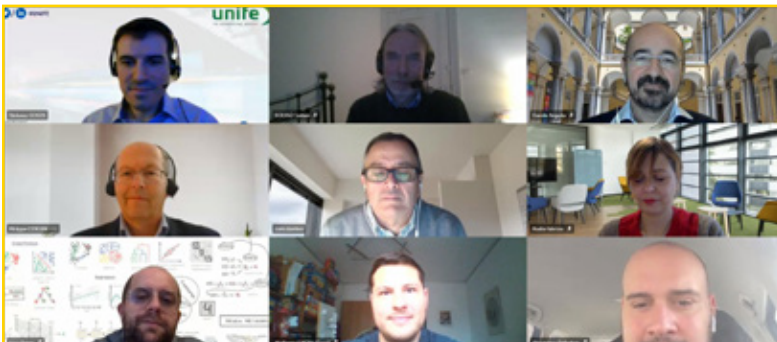
DAYDREAMS (Development of prescriptive **Ana**lytics based on **a**rtificial int**El**ligence for **i**AMS) is an open call project linked with the 3<sup>rd</sup> Innovation Programme (IP3) of Shift2Rail. The project started in December 2020 will last 30 months.

DAYDREAMS's overall objective is to advance the integration and use of data and artificial or 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 thus taking into account all possible - 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 or metrics and models
  - Assess why and how the model predicts something ("opening the black-box")
  - Steer models by setting parameters
  - Evaluate alternatives using parameter steering and extending this process through speculative execution



While previous projects involving DAYDREAMS partners (e.g., IN2RAIL and IN2DREAMS) have successfully addressed condition-based and predictive maintenance approaches, improving traditional reactive and preventive maintenance methodologies, DAYDREAMS will exploit state-of-the-art technologies to tackle the complexity and exploit the business value of the prescriptive approaches already showing up in several industrial fields. DAYDREAMS will take care also of adding trust by means of 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 contact**  
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DAYDREAM kick-off meeting [December 2020]



#### e. STREAM

STREAM (Smart Tools for Railway work safEty and performAnce iMprovement) is a thirty-month long project that fits into the 3<sup>rd</sup> Innovation Programme of S2R. It seeks to deliver a resilient, consistent, cost-efficient and high capacity European rail infrastructure.

STREAM's main objective is to develop innovative technologies to improve rail inspection and maintenance operations in a way that creates benefits in quality of operations and workers' health, safety, and dignity by enhancing current OTMs to create multi-purpose autonomous devices and systems. These solutions will increase the level of task execution safety, quality and productivity by applying robotic principles deploy wearable assistive exoskeletons that use advanced proprioceptive solutions to supply on-demand mechanical power. These devices will reduce the risk of injury and related costs.

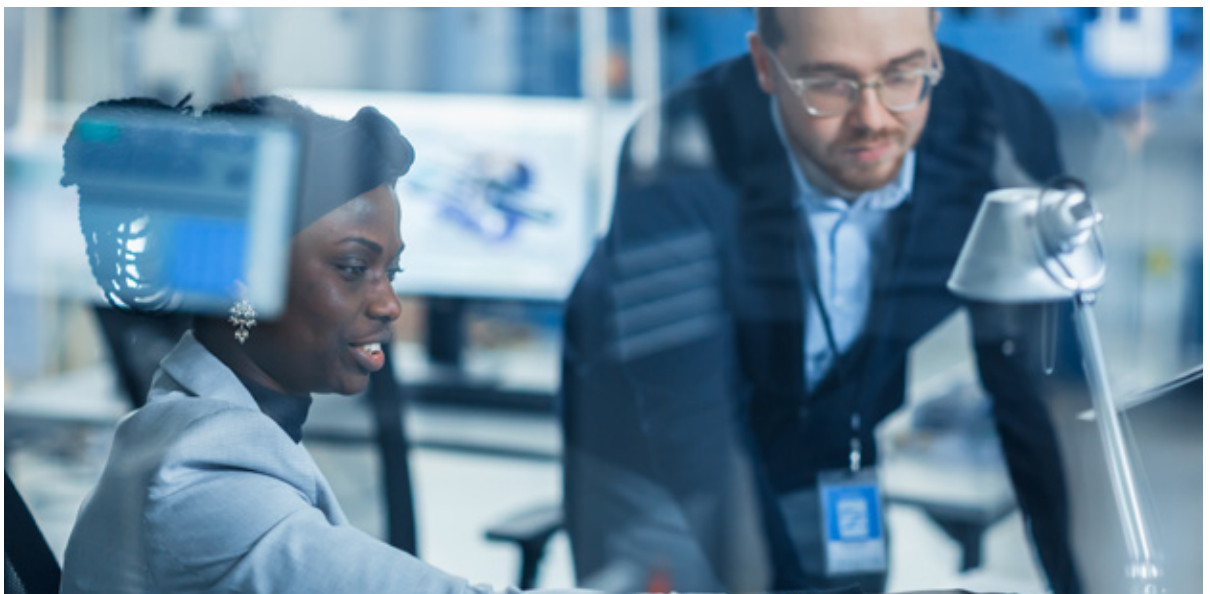
This project has two main objectives. The first is the development of a generic design framework for an On-Track Autonomous Multi-purpose

Mobile Manipulator (OTA3M). This truly multi-purpose OTA3M will be capable of replacing a large set of current railway operations carried out by human workers and/or special purpose OTMs in construction, inspection, maintenance and renewal operations. It will be capable of manipulating heavy rail infrastructure components and materials, ranging from a few kilograms to several tonnes. These tools will have an arm reach of several meters. The second objective is to develop a Modular Multitasking Powered Exoskeleton (MMPE). The exoskeleton will reduce musculoskeletal loading by up to 50% during manual handling tasks and will be usable in unstructured working environments and with unstructured methodologies.

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## f. IN2ZONE

IN2ZONE (**The next generation of railway transition zones**) is a thirty-month long project under S2R's 3<sup>rd</sup> Innovation Programme that seeks to enable infrastructure to boost the economic viability, sustainability and resilience of the European rail network.



IN2ZONE aims 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:

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

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IN2ZONE is excellently placed in the current market to make genuine advancements towards developing the next generation of transition zones.



#### g. IP4MaaS

IP4MaaS is the latest open call project directly linked with the 4<sup>th</sup> Innovation Programme (IP4) of Shift2Rail. It brings together 26 partners across Europe and commenced in December 2020. IP4MaaS is set to last 30 months

Within IP4, more than 10 projects have created a wide array of technologies which address various aspects of the traveller experience. Those outputs seek to improve 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 lessons learned. Today, IP4 has a large toolset of proven technologies that need to go to the next level and be implemented in large scale products.

IP4MaaS will therefore assist IP4 projects to demonstrate the technologies at an unprecedented level - in 6 different locations in Europe - by including more than 10 transport operators (Public Transport and Mo-

bility-as-a-Service), authorities and agencies. IP4MaaS will develop the scenarios for the demonstrations and a thorough assessment strategy that illustrates both their performance and impact on users and the environment in urban and suburban setups. IP4MaaS will also create strategic plans for the demonstrations that will be updated in two iterations leading to two demonstration phases.

Furthermore, the project will provide recommendations regarding 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 European project history 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 contact:

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## h. SILVARSTAR

SILVARSTAR (**SoIL** Vibration and **AuR**alisation **S**oftware **T**ools for **A**pplication in **R**ailways) is a two-year project that fits into the "Cross-Cutting Activities" category of S2R.

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

It will develop a commonly accepted, practical and validated methodology and a user-friendly prediction tool for ground vibration impact studies. This tool will be used for environmental impact assessment of new or upgraded railways on a system level. It will provide access to ground vibration predictions to a wider range

of suitably qualified engineers and will facilitate project planning and implementation by improved simulation processes. The second overall objective of SILVARSTAR is to develop a fully functional system for auralisation and visualisation, based on physically correct synthesised (exterior and interior) railway noise, providing interfaces with Virtual Reality visualisation software. This system will facilitate communication with the public, decision makers and designers through virtual experience before delivery of projects.

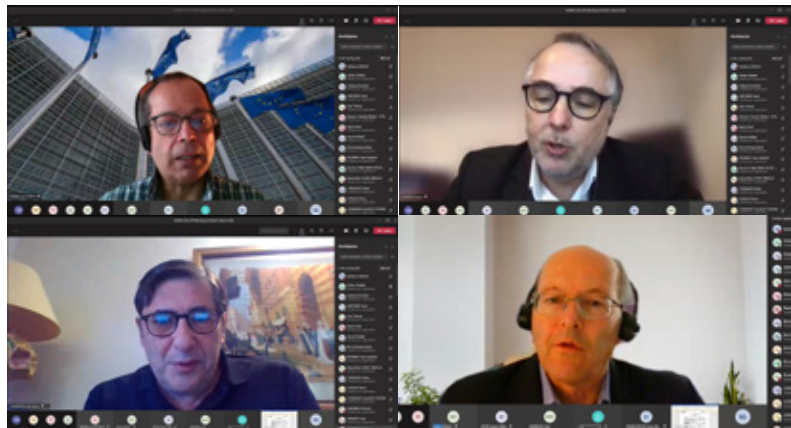


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## 02. New Horizon 2020 project – 5GRAIL

The Horizon 2020 ICT-053 5GRAIL (5G for Future RAILway Mobile Communication System,) EU-funded Project officially started on 1 November 2020. The 30-month and €13m project consists of 8 Work Packages, which aim to validate the first Future Railway Mobile Communication System (FRMCS) specifications by developing and testing prototypes for the FRMCS ecosystem for both trackside infrastructure and on-board use.

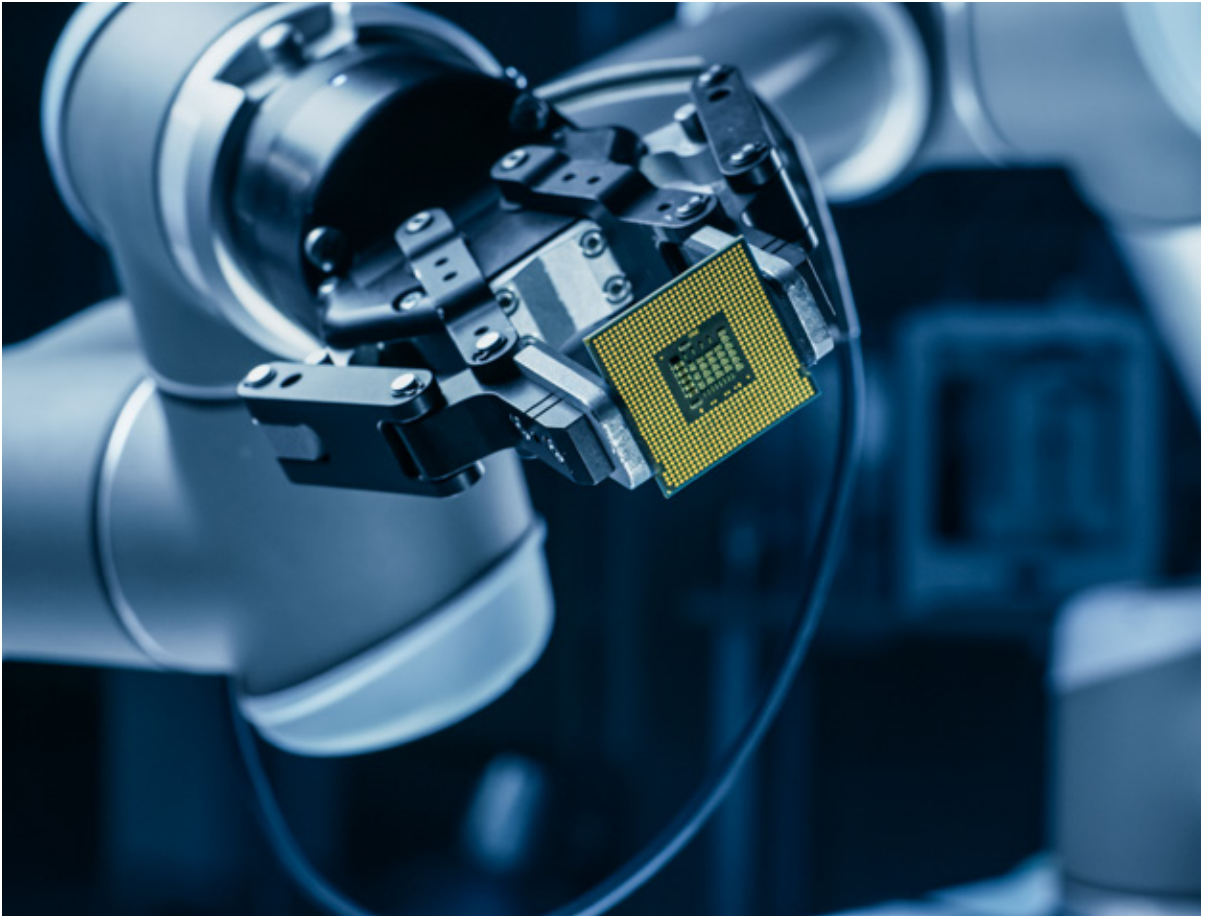


5GRAIL kick-off meeting  
(1<sup>st</sup> November, 2020)

FRMCS will be the 5G worldwide standard for railway operational communications, conforming to European regulation and responding to the needs and obligations of rail organizations outside of Europe.

The main objective of 5GRAIL is to verify the first set of FRMCS specifications by developing and testing prototypes of the FRMCS ecosystem for both trackside and on-board infrastructure. Regarding onboard





systems, 5GRAIL aims to reduce specific equipment costs and installation engineering time by combining all train-to-ground communications into a single device, called the Telecom On-Board Architecture (TOBA), in alignment with the sector's technical vision.

5GRAIL will also aim to cooperate with railways regulatory and standardisation bodies, especially the European Union Agency for Railways (CCS TSI). Cooperation will also be established with Shift2Rail, the first European rail

Research and Innovation Partnership working on a new communication system for railways.

The 5GRAIL prototypes will be tested in laboratories and real track conditions. They will support European Train Control System (ETCS), voice group calls and railway emergency calls. Cross border scenarios and coexistence with roads will be also studied.

5GRAIL outcomes are viewed by the railway sector as a key milestone in the plan for Europe to lead global FRMCS market readiness.

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

## 03. European GNSS Agency activities

Satellite-based technologies are very important for various next generation train control solutions such as train positioning, telecommunications and precise time synchronization. The European GNSS Agency, situated in Prague, plays a central role in promoting and enabling new or improved services that properly respond to user needs.



UNIFE, which is recognised by the Agency as representing the railway industry, has been consulted throughout the year on several topics and contributed to the definition of the future of European satellite-based services - most significantly, Galileo and EGNOS.

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

### a. Project RAILGAP



In 2020, UNIFE was informed that the RAILGAP (**RAIL**way **G**round truth and digital **mAP**) proposal had been selected by the European GNSS Agency. Following its acceptance, it will be a 36-months H2020 project slated to start in early 2021. This past year has been dedicated to the preparation of the RAILGAP Grant Agreement. The consortium is composed of various stakeholders with a wealth of experience and expertise on ERTMS and EGNSS domains, suitable to cover the scope of the call and maximize the results of the previous projects funded by the European GNSS Agency (e.g. ERSAT-EAV, RHINOS, STARS, and ERSAT-GGC).

This project is focused on developing innovative High Accuracy, High Precision Ground Truth and Digital Maps, essential elements for an EGNSS train positioning system and a Validation & Verification Environment.

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

## B. ERRAC

Late last year, the rail European Technology Platform ERRAC (European Rail Research Advisory Council) published a **Strategic Rail Research and Innovation Agenda (SRIA)** on behalf of the sector. This SRIA explains how a new programme of technical and operational innovation can transform the railways' contribution to mobility in Europe, while addressing the needs of railway users, the economy and society, as well as protecting the environment.

As explained in the SRIA, system transformation implies working on delivering, through successful outputs from high quality scientific work, new services, optimised operations and innovative assets throughout Europe. This ambitious goal is framed within key "Transforming Projects" bound within a common system vision.



The "Transforming Projects" described in the SRIA are clustered into 3 categories:

### 1) New services

- a. Smart Integration for railways within door-to-door mobility
- b. Rail as the backbone of a green freight logistic chain

### 2) Transformation of the rail system and optimisation of its operations

- a. Connected and open rail framework for the European mobility
- b. Network Management Planning and Control
- c. Environmentally Friendly and Attractive Sustainable Mobility

### 3) Innovative assets

- a. Assets for Automated and/or Autonomous and/or remotely piloted Operations
- b. Smart Asset Management and maintenance of the future
- c. Non-Traditional and Emerging Transport Models and Systems will focus on core innovation
- d. Railways Digital Twins, Simulation & Virtualisation



**Alberto Parrondo**  
Chairman of ERRAC

UNIFE has contributed to the SRIA thanks to the comments received from the UNIFE Technical Platform and Research & Innovation Committee. ERRAC has officially sent the SRIA to the European Commission as an input for the preparation of the technical programme of Shift2Rail-2 in 2021.



During the ERRAC Plenary events that took place in April and November 2019, representatives from the EC's DG MOVE and DG Research reported on the progress of Horizon Europe discussions and the preparation of the future rail research public private partnership. Carlo Borghini, Shift2Rail's Executive Director, also reported on his organisation's ongoing activities and 2020 Open Calls.

The ERRAC plenary events also offered an excellent opportunity to present the S2R-funded project TER4RAIL, that enjoys UNIFE participation.

**The ERRAC SRIA can be downloaded [here](#).**

For more information, please visit [www.errac.org](http://www.errac.org) or contact **Nicolas Furio**, Head of UNIFE's Technical Affairs unit, at [nicolas.furio@unife.org](mailto:nicolas.furio@unife.org)



**Mariya Gabriel**  
European Commission  
COMMISSIONER  
(2019-2024)

### C. Preparation of Shift2Rail-2 / Horizon Europe

If Europe wants to maintain its industrial leadership in the face of intensifying foreign competition, it must stay at the forefront of research and innovation. Shift2Rail Joint Undertaking (S2R JU), supported by the EU through its Horizon 2020 framework programme, plays a key role in helping Europe retain a technological and innovative advantage.

UNIFE has been successfully working on the establishment of a successor to S2R JU (Shift2rail-2) – in the form of an institutionalised partnership pursuant to Article 187 TFEU – within the forthcoming framework programme for Research & Innovation Horizon Europe 2021-2027.

2020 was dedicated to the preparation of the technical programme of the future rail's collaborative-research partnership also named "Transforming Europe's Rail System".

Throughout the year, challenging negotiations around the future EU budget – i.e. the Multi-Annual Financial Framework or MFF – have continued among Member States. The spark of the Covid-19 sanitary crisis added further uncertainty regarding the resources to be allocated for Research & Innovation. An agreement at the Council was reached in July, halving considerably reduced the allocated budget to Horizon Europe.

UNIFE has been relentlessly working with the European Parliament and fellow sector - and cross-sector - stakeholders to limit the budget cut as much as possible. In November, after additional tough intra-institutional negotiations, the Council agreed with the European Parliament to discuss a channel back to Horizon Europe budget, approximately € 4 billion.





### → Intense lobbying for Shift2Rail-2

On 23 July, The European Commission published the [Draft proposal for a European Partnership under Horizon Europe Transforming Europe's Rail System](#), also known as Shift2Rail-2. This document, initially called a “High-Level Paper”, is the result of a joint effort by the Commission’s DG MOVE and DG RTD, and rail sector representatives - including UNIFE. Our association has been involved in the preparation of this draft proposal through consultations with UNIFE Committees and the Technical Platform. This document addresses key Shift2Rail-2 topics such as objectives, scope, budget, structure, membership and governance.

UNIFE has also carefully followed the preparation of the Shift2Rail-2 regulation embedded in a single common draft regulation for all the partnerships called the “Single Basic Act”.

During the whole year, UNIFE and its members have pressured the European Parliament, the European Commission and national Research, Finance and Transport Ministries to support the rail sector’s €1,5 billion budgetary request for Shift2Rail-2.

### → Shift2Rail-2 System and Innovation Pillars

The novelty of Shift2Rail-2 is its proposed structure; it is based on two pillars: The **System Pillar** and the **Innovation Pillar**.

Shift2Rail-2 is expected to act as the single coordinating body, bring the whole sector together to develop operational concepts, functional system architecture, and associated specifications and standards, as well as consolidating and coordinating current initiatives. Notably, the development of the overall operational concept and functional system architecture should happen within the so-called System Pillar and in coordination with the Innovation Pillar. The aim of the latter is to deliver user-focused research, innovation, and demonstration - including delivery of projects - providing well-defined input to the system pillar.

The proposal was well received by all sector representatives, but the design of both the System and Innovation Pillars will really start in 2021. That’s why UNIFE and its members have prepared a position paper on their vision for the System Pillar that was shared with the European Commission in November 2020.

Regarding the Innovation Pillar, UNIFE was actively involved in the preparation of the ERRAC Rail Strategic Research and Innovation Agenda which identifies Shift2Rail-2’s high level, targeted impact and foresees its portfolio of activities, measurable expected outcomes, resources, deliverables, and milestones within its lifetime.

### → Research and Innovation Committee and UNIFE Technical Platform

In 2020, the UNIFE research and Innovation Committee was consulted to help define the association’s position on Horizon Europe and the preparation of Shift2Rail-2 (S2R2). It also organized a virtual Technical Platform addressing Shift2Rail-2 to exchange with UNIFE’s members on preparations pertaining to the proposed future rail R&I public private partnership. Members had the opportunity to learn about the association’s recent technical activities and latest developments concerning the preparation of Shift2Rail’s successor within Horizon Europe. This occasion allowed them to better understand potential future opportunities that may arise from the partnership and help position themselves to seize them.

### → Events

In addition to the Shift2Rail Innovation Days event, another great opportunity to promote the UNIFE’s vision for Shift2Rail-2 was the jointly organised UNIFE, Shift2Rail and Knowledge4Innovation “Shift2Rail Shift2Green” session. This discussion was held during the 11<sup>th</sup> European innovation Summit at the European Parliament in Brussels.

It brought together MEP **Maria Da Graça Carvalho**, MEP **Henna Virkkunen**, **Fuel Cells and Hydrogen Joint Undertaking** Head of Unit Operations and Communications **Mirela Atanasiu**, UNIFE Director General Philippe Citroën, **ERRAC** Chairman **Alberto Parrondo** and **Shift2Rail Joint Undertaking** Head of Research and Innovation **Giorgio Travaini**.

In front of an audience of more than 100 attendees, this session was an opportunity to:

- Present our shared vision of the European rail sector’s developments by 2030 and 2050 as articulated by **ERRAC** and the sector’s expectations for Horizon Europe
- Highlight the benefits of, and innovations delivered by, the Shift2Rail Joint Undertaking
- Discuss the need to set-up a new Horizon Europe Rail institutionalised partnership explicitly aimed at accomplishing the Green Deal’s objectives
- Share views about existing and future cooperation between the EU rail sector and the fuel cell and hydrogen sector

For more information, please contact **Nicolas Furio**, Head of UNIFE’s Technical Affairs unit, at [nicolas.furio@unife.org](mailto:nicolas.furio@unife.org)

## 04. UNIFE Freight Committee and Digital Automatic Couplers

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The UNIFE Freight Committee spent 2020 addressing a number of freight policy developments and coordinating UNIFE's input to the freight-related proceedings at the European Union Agency for Railways' Topical Working Groups on Freight and on Facilitation of Combined Transport. Both groups are preparing important TSI changes to be implemented in the coming 2022 revision.



Moreover, one of this year's main activities for the UNIFE Freight Committee concerned the **"Digital Automatic Coupler"** (DAC) - a key technology to revitalising European rail freight. Introducing the DAC will only be possible through an EU-wide, coordinated effort based on a technical interoperable solution and with the necessary investments. Committee experts contributed to its achievement through their active involvement in the ERA Topical Working Group on Freight, preparing the necessary TSI changes for the DAC introduction.

UNIFE has also been actively involved in the new Shift2Rail DAC delivery programme launched in October 2020. As a member of the programs' supervisory board, UNIFE Director General Philippe Citroën is involved in all of the

programme's key decisions and, with 5 UNIFE members seated on its board, manufacturers are playing a key role in validating the outputs. A number of UNIFE experts from various manufacturing companies are involved in the different work packages where the main focus concerns Technology, Operations and Standardisation, Testing and Demonstrators, Migration, Rail System Capacity, Business Cases and Financing, Communication and Intelligent Freight Train.

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# 07

## SIGNALLING AND ERTMS

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# Introduction

Simultaneously grappling with the climate crisis and a pandemic which has spurred economic instability, the European Union has faced a multitude of unprecedented international challenges over the past year. They have illustrated the need for investment in ambitious rail projects to drive progress on meeting the EU Green Deal objectives, provide sustainable, uninterrupted mobility across Europe, creating jobs and convey essential goods. The key role railways will be playing in the reduction of greenhouse gas emissions created by transport in the coming years, as well as the overall move to digitalised rail, have put the **European Rail Traffic Management System (ERTMS)** high on the political agenda of numerous Member States.



**Matthias Ruete**, European ERTMS Coordinator, stated in his recently published ERTMS Work Plan that “We are at a critical point for ERTMS deployment in Europe and worldwide. Climate change, digitalisation and the need for an industrial renewal all speak in favour of an acceleration”. This clearly shows once more that this is a favourable time to accelerate the European ERTMS deployment as this technology remains at the core of the digital railway evolution.

ERTMS is undoubtedly a political priority for the European Commission, which continues to commit political and financial support to this important European transport project and persists in proving the positive business case for investing and deploying ERTMS all over Europe.

However, the ERTMS deployment is not the only challenge which has preoccupied the ERTMS community over the past few months. The European Commission, together with the European Union Agency for Railways (ERA) and the Shift2Rail Joint Undertaking (S2R), has recently called on the ERTMS stakeholders to:

- o Start preparing the next **Control-Command Signalling Technical Specifications** for Interoperability (CCS TSI), which is likely to be published in 2022
- o Discuss and agree at the sector level on a common **European vision for the future Control-Command Signalling (CCS)** European System based on ERTMS

UNIFE (UNISIG) experts have been actively and significantly contributing to both discussions in a number of high-level **European stakeholders working groups** led by ERA and DG MOVE, which were tasked with the preparatory works for this important future transition (see section ‘C’).

The UNISIG members fully recognise that ERTMS has reached a turning point, as pressure grows to accelerate deployment alongside research into “game changer” technologies which can underpin the future com-

mand, control and signalling framework. The future rail sector evolution will be based on the following pillars:

- o A harmonised and coordinated **deployment of ERTMS** in Europe to accelerate the achievement of the European Deployment Plan (EDP) targets is a prerequisite to moving the system forward
- o For the next CCS TSI (2022), priority should be given to the introduction of stable specifications only (e.g., ATO

or “FRMCS ready” specifications), showing the quick wins of **game changers**

- o **Shift2Rail-2** and the **System Pillar** will play a key role in boosting the European rail sector through the definition of a well-balanced European Rail System framework and Architecture involving all European rail stakeholders

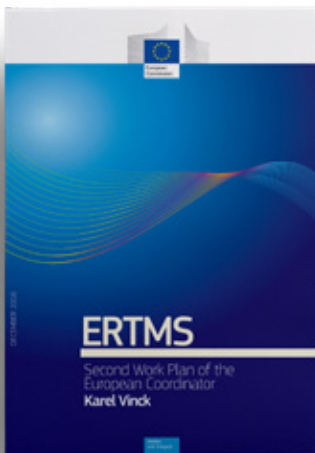


# ERTMS – Political highlights and communication activities in 2020

## ERTMS Stakeholders Platform Board meeting

On 3 June 2020, the ERTMS Stakeholders Platform Board convened virtually to discuss the latest, most important ERTMS developments.

The European Commission and ERA opted for the Platform Board to officially present European ERTMS Coordinator **Matthias Ruete's first ERTMS Work Plan**. During this occasion, the European Commission also presented its proposal for the **future CCS Framework**, with a focus on its **governance** and the future role of the **Shift2Rail Joint Undertaking**.



First Work Plan of the European Coordinator Matthias Ruete.

### Matthias Ruete's first ERTMS Work Plan

In his exhaustive document, Matthias Ruete evaluates the current ERTMS deployment status by explaining its positive business case and outlining existing funding possibilities. He also envisaged next steps in ERTMS' evolution.

The Work Plan highlights that we are at a critical point for ERTMS deployment in Europe and abroad. Climate change, digitalisation and the need for an industrial renewal all necessitate the system's accelerated implementation. Deployment, both track-side and on-board, must be sped up with strong support from EU Member States throughout the entire European rail network by 2030, not only on the Core Network Corridors (CNC).

Providing a reliable and stable European funding framework for ERTMS deployment will be essential in the coming years.

UNIFE welcomes Matthias Ruete's first ERTMS Work Plan and fully shares his belief that this is a crucial moment for the system's European full deployment. European institutions and its 27 Member States must provide adequate political and financial support for ERTMS deployment in the coming years. Additionally, UNIFE recommends updating the ERTMS deployment action plan to make the comprehensive wish list of measures, included in the Work Plan, happen in the coming years.



### European Commission proposal on the future CCS Framework

At the basis of this initiative, there is a concrete opportunity to move towards a genuinely integrated European CCS system beyond the current specifications in the CCS TSI, with greater standardisation and less variation than in its current form. This would resolve some difficulties being experienced attempting to align customer and supplier interests, particularly during the “design phase”.

The **Shift2Rail**'s successor programme, **Europe's Rail Joint Undertaking**, is expected to act as the single coordinating body to bring the whole sector

together to develop operational concepts, functional system architecture, and associated specifications and standards, as well as consolidating and coordinating current initiatives like RCA, Smartrail, EULYNX and OCO-RA. Notably, the development of the overall operational concept and functional system architecture should happen within the so-called “**System Pillar**” and in coordination with the “**Innovation pillar**”. The aim of the latter is to deliver user-focussed research, innovation, and demonstration - including delivery of projects.

The proposal was well received by all sector representatives and is currently being further developed with the support of all the stakeholder representatives. From suppliers' side, UNIFE members have decided to prepare a position paper on their vision for the System Pillar which was shared with the European Commission in November 2020. For further information, please consult our earlier explanation of Shift2Rail activities in 2020.

### Publication of the EC ERTMS On-board retrofitting strategy for Funding and Financing

During the September ERTMS Platform Coordination Subgroup virtual meeting, the Commission briefly presented the final Report on **ERTMS Retrofitting strategy Funding and Financing**, prepared by the Deployment Management Team (DMT).

Through this report, the Commission aims to demonstrate continued, and growing, European financial support to retrofitting over the coming decade.

This analysis demonstrated that the best deployment strategy for ERTMS at the corridor level is the **dual on-board strategy**. However, applying this strategy proved to be challenging, as the benefits and costs are not always equally distributed between stakeholders: Railway Undertakings are facing high and near-term costs of retrofitting and upgrade, but their direct benefits are uncertain -

depending on the readiness of the network - and is difficult to capture, whether it is socio-economic benefits or passed to end customer.

Overall, the report shows that it is more difficult for Railway Undertakings to prove a positive business case, creating a bottleneck to the overall deployment. Therefore, the solution that would allow it to move forward would be a combination of financial support from the EU-, national- and regional-levels for retrofitting and upgrading the on-board units in order to foster overall system benefits and remove any remaining bottlenecks.

UNIFE suppliers supported this Strategy by recalling that industrial capacity is not to be considered a bottleneck for the industry suppliers of the on-board systems as this will eventually decrease the units' price.



ERTMS Retrofitting strategy Funding and Financing Executive Summary - ERTMS On-board strategy



### High-level virtual meeting between UNIFE Presiding Board and ERTMS Coordinator Matthias Ruete

Following the publication of the ERTMS Work Plan, UNIFE organised a follow-up session with Matthias Ruete to have a broad discussion on the number of positive initiatives he put forward in his plan and to better understand which measures the Commission is planning to put in place to make these initiatives happen in the coming years.

As a result of this meeting, it was decided to invite Matthias Ruete to the UNIFE Presiding Board meeting in October to address the most important topics related to ERTMS in the current evolving context. This included topics such as the content and timeline of the next CCS TSI 2022 and CCS TSI specificities and the level of the industry capacity needed to meet ERTMS deployment targets and support the European ERTMS Retrofitting strategy properly.

UNIFE members recalled that the evolution of TSI 2022 is to be mainly driven by the **game changers** which are mature enough to be implemented (e.g., ATO, Braking Curves, possibly FRMCS ready concept), bearing in mind upward compatibility and easy upgradeability are essential. Several positive effects of TSI stability were also stressed during the meeting, such as:

- o The optimisation of revenue, protecting the investments made by all the stakeholders: early ERTMS users can approach ERTMS without being penalized
- o Stable specifications are paramount for the development and deployment of mature and stable products and systems, therefore, resulting in optimal applications
- o Synchronised ERTMS/ETCS deployment between the Member States is easier to achieve with a far-sighted policy at European level

It was reiterated that the European railway industry is fully supportive of achieving an efficient Single European Railway Area (SERA). Nevertheless, on the suppliers' side, there is a general concern posed by the continued change in technical regulations that is compelling the sector to continuously invest to adapt its products and is preventing it to benefit from harmonised technical requirements and return of experience of products. These regulatory changes will be based on an agreed technical readiness level supported by positive economical benefits. Besides, the European railway industry is convinced that today's TSIs have reached a maturity level that provides solid ground for a safe and interoperable target system. It was stressed that regulatory stability is key for business and the regulation should provide the framework for the market to operate.



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

Last year, the **EULYNX consortium** and **UNIFE CCS Platform** formally agreed to cooperate on the review of interface specifications for interlocking technology.

Representatives of the railway suppliers are regularly invited to take part in the review of specifications and make suggestions from the products development perspective.

The cooperation has represented a way to enable both parties - suppliers and railways - to improve the specifications. On the one hand, the need for queries and changes after the publication of the specifications decreases significantly; on the other hand, EULYNX can benefit from suggestions for improvement from the suppliers. The cooperation takes place within the **Change Control Board (CCB)** and in the form of on-request advices from the industry to the **EULYNX Architecture Cluster**. Based on the production of extensive review comments, the re-

turn of experience has proved to be positive and has marked a first step towards a wider collaboration with the industry, which will be the user of EULYNX-enabled products which feature those specifications currently in development. The review process is complex and regularly produces extensive comments. A number of specific joint workshops have been recently organized to allow experts from both sides to discuss and reflect on possible suitable solutions.

For the future EULYNX specifications, the suppliers can bring in their point of view earlier in the process and actively contribute to their improvement and feasibility. This is the only way to ensure a continuous development of EULYNX specifications.



# ERTMS – Technical achievements 2020

## UNISIG contribution to the maintenance of the Baseline 3 ERTMS/ETCS specifications

Under the leadership of ERA, within the EECT (ERA Extended Core Team), UNISIG and the ERTMS Users Group have continued carrying out the analysis and assessment of a set of Change Requests (CRs), considered to be as a matter of priority to reaching the **interoperability target**.

This work led to the publication of the second [ERA Technical Opinion](#) on 7 May 2020, including 73 ETCS Change Requests (CRs) classified as errors - assessed in terms of impact on the compatibility and stability of the existing specifications.

## UNISIG contribution to the ERTMS/ETCS evolution and the next CCS TSI 2022.



Dedicated UNISIG workgroups - Supergroup, ATO, Level 3, System Group, Euroradio, RAMS and Cyber-security - have been working in coordination with Shift2Rail on preparing the technical inputs for the evolution of the ERTMS system, mainly in the field of ATO, future communication system (FRMCS), ERTMS Level 3 and braking curves.

While the ATO specifications are close to completion, the focus for 2021 will be the preparation of the “ETCS over FRMCS principles”. These principles are essential to preparing ETCS products for the next generation communication system.

To prepare the CCS TSI 2022 to further facilitate ERTMS deployment and introduce the mature game changers, UNISIG is active in all DG MOVE and ERA coordination groups. In particular, UNISIG has been collaborating with the ERTMS Stakeholders Platform working groups focused on coordination, game

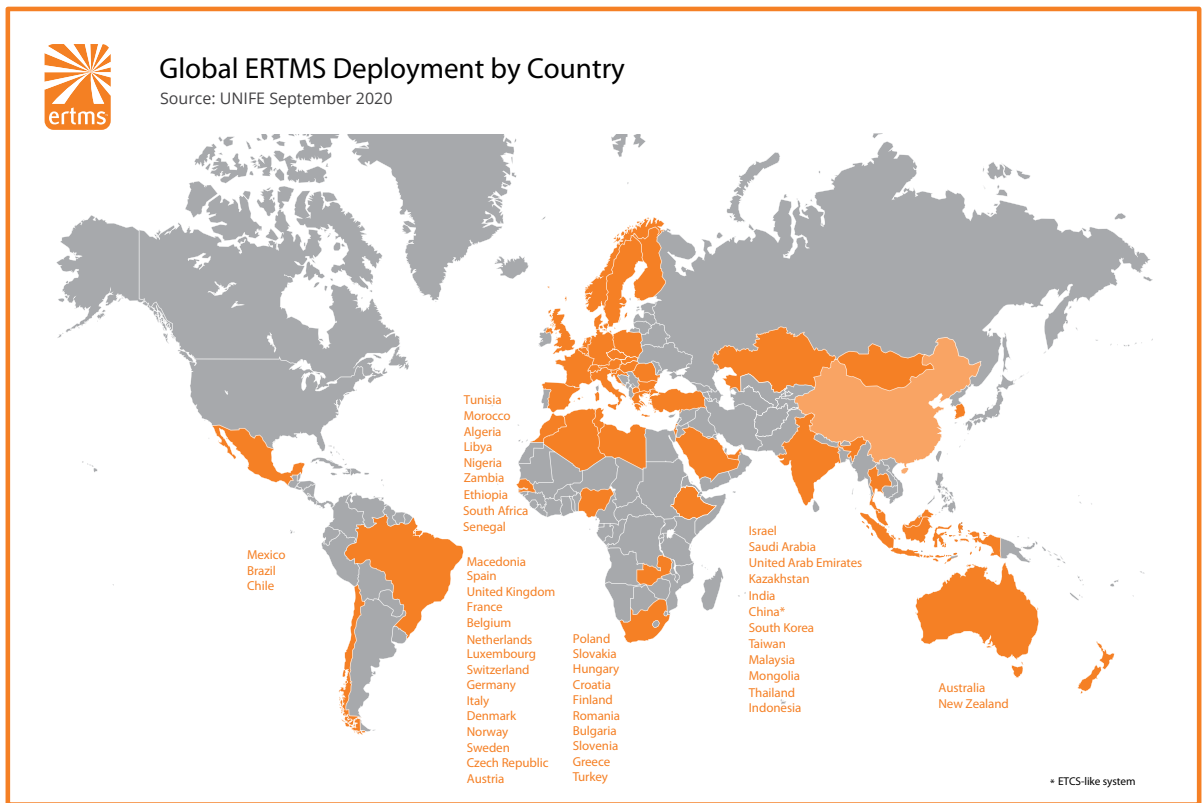
changers, error correction, retrofit and test and validation, ERA Control Group and CCS TSI working party.

Following the pressure made by some operators and their recent initiatives aiming at modularization and standardization of the on-board architecture, ERA has decided to create a topical working group dedicated to this subject.

Due to the possible important impact of the actual train-borne products, UNIFE (UNISIG) has decided to create a dedicated mirror group on their architecture. This work package is preparing the suppliers’ input to the ERA topical working group. The UNIFE (UNISIG) mirror group objective is to propose an evolutive on-board architecture, with proposals for the CCS TSI 2022 and a longer-term vision.



# ERTMS deployment statistics



**51**  
countries

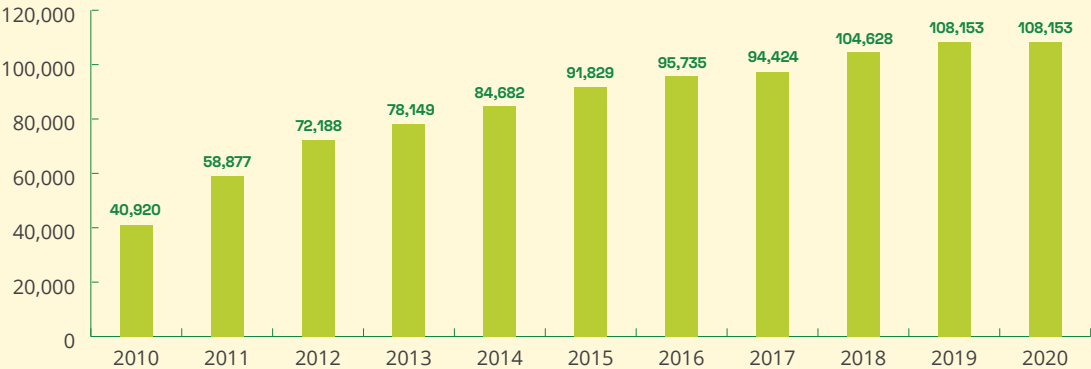
**+100,000 Km**  
of ERTMS tracks contracted

**+20,000**  
OBUs contracted

# ERTMS trackside contracts

In tracks km, comparison September 2010 - September 2020

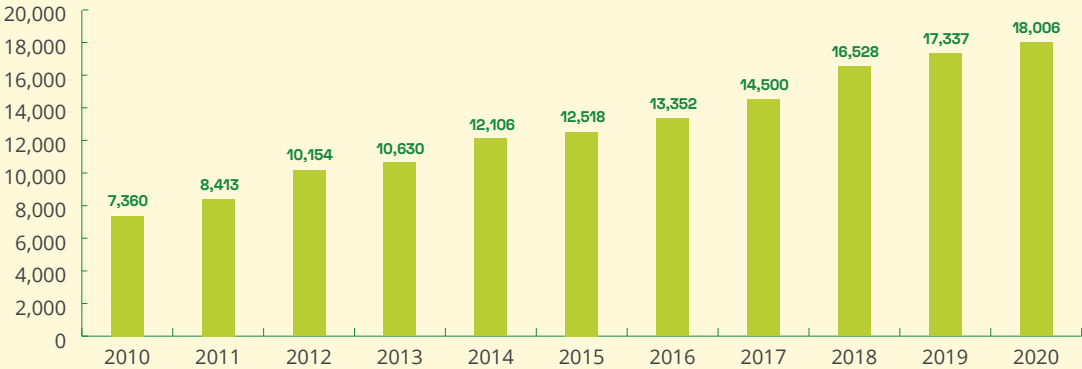
ERTMS EQUIPPED TRACKS WORLDWIDE (KM) CONTRACTED (2010-2020)



# ERTMS vehicles contracted

Comparison September 2010 - September 2020

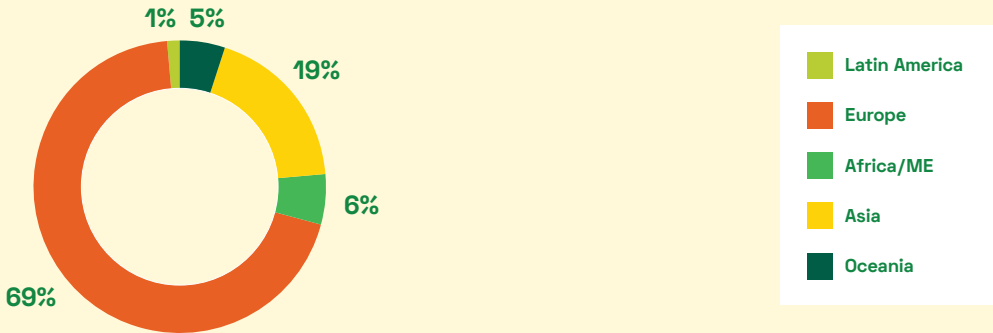
NUMBER OF VEHICLES EQUIPPED (OR TO BE EQUIPPED) WITH ERTMS IN THE WORLD (ETCS L1 &/or L2) (2010-2020)



# ERTMS vehicles contracted

- in percentage, by region

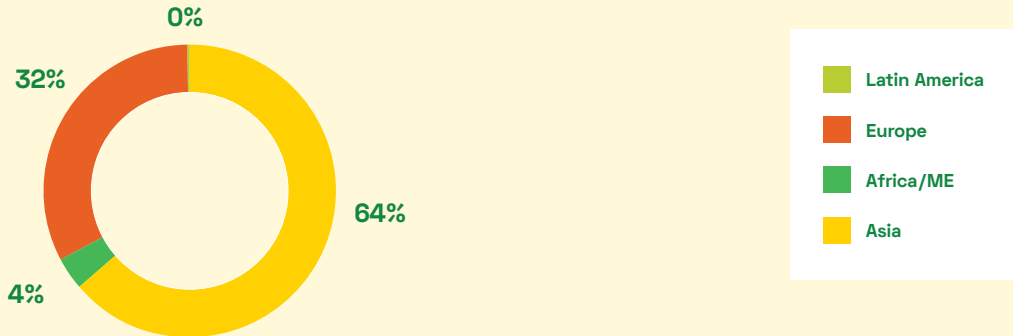
## CONTRACTED VEHICLES IN THE WORLD (ETCS L1 &/or L2)



# ERTMS trackside contracted

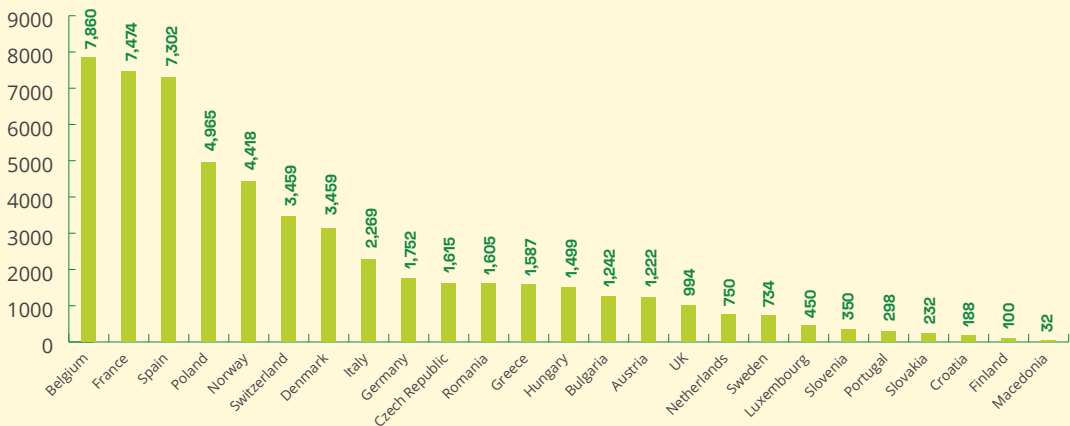
- in percentage, by region

## CONTRACTED TRACKS (KM) IN THE WORLD (ETCS L1 &/or L2)



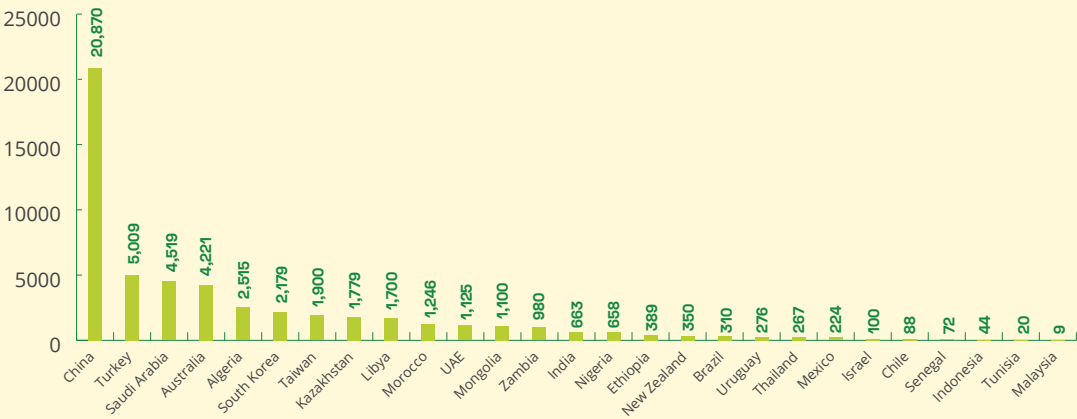
## Global ERTMS contracted tracks (km) in Europe

CONTRACTED TRACKS (KM) IN EUROPE, INCLUDING SWITZERLAND (ECTS L1 &/OR L2)



## Global ERTMS contracted tracks (km) in non-European countries

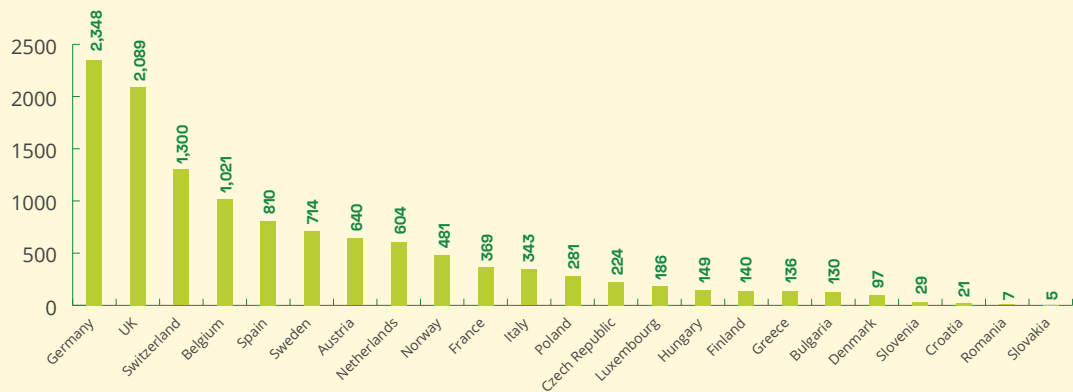
CONTRACTED TRACKS (KM) OUTSIDE IN EUROPE (ECTS L1 &/OR L2)





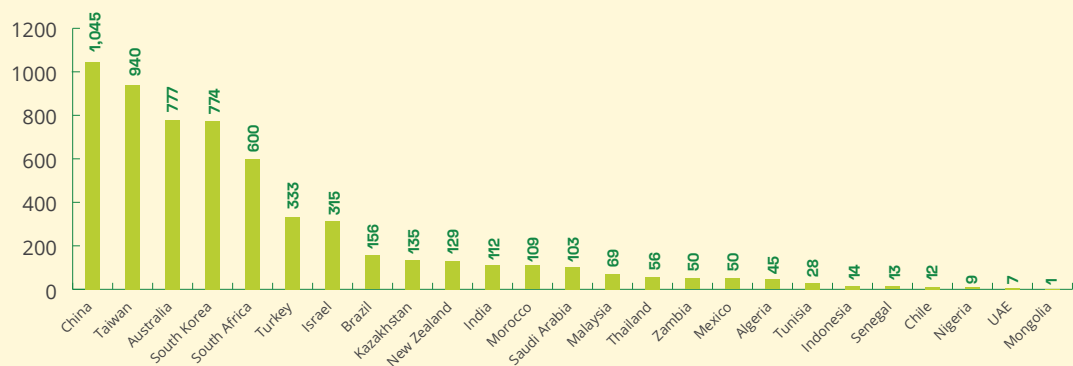
## Global ERTMS vehicles contracted in Europe, per country

### CONTRACTED VEHICLES IN EUROPE, INCLUDING SWITZERLAND (ETCS L1 &/OR L2)



## Global ERTMS vehicles contracted in non-European countries

### CONTRACTED VEHICLES OUTSIDE EUROPE (ETCS L1 &/OR L2)



On the [ERTMS website](#), it is always possible to get the latest updates regarding ERTMS deployment projects contracted by UNIFE members through an interactive map.

For more information on ERTMS, please contact **Jonathan Cutuli**, UNISIG/ERTMS Manager at [jonathan.cutuli@unife.org](mailto:jonathan.cutuli@unife.org).



# 08

## ERWA

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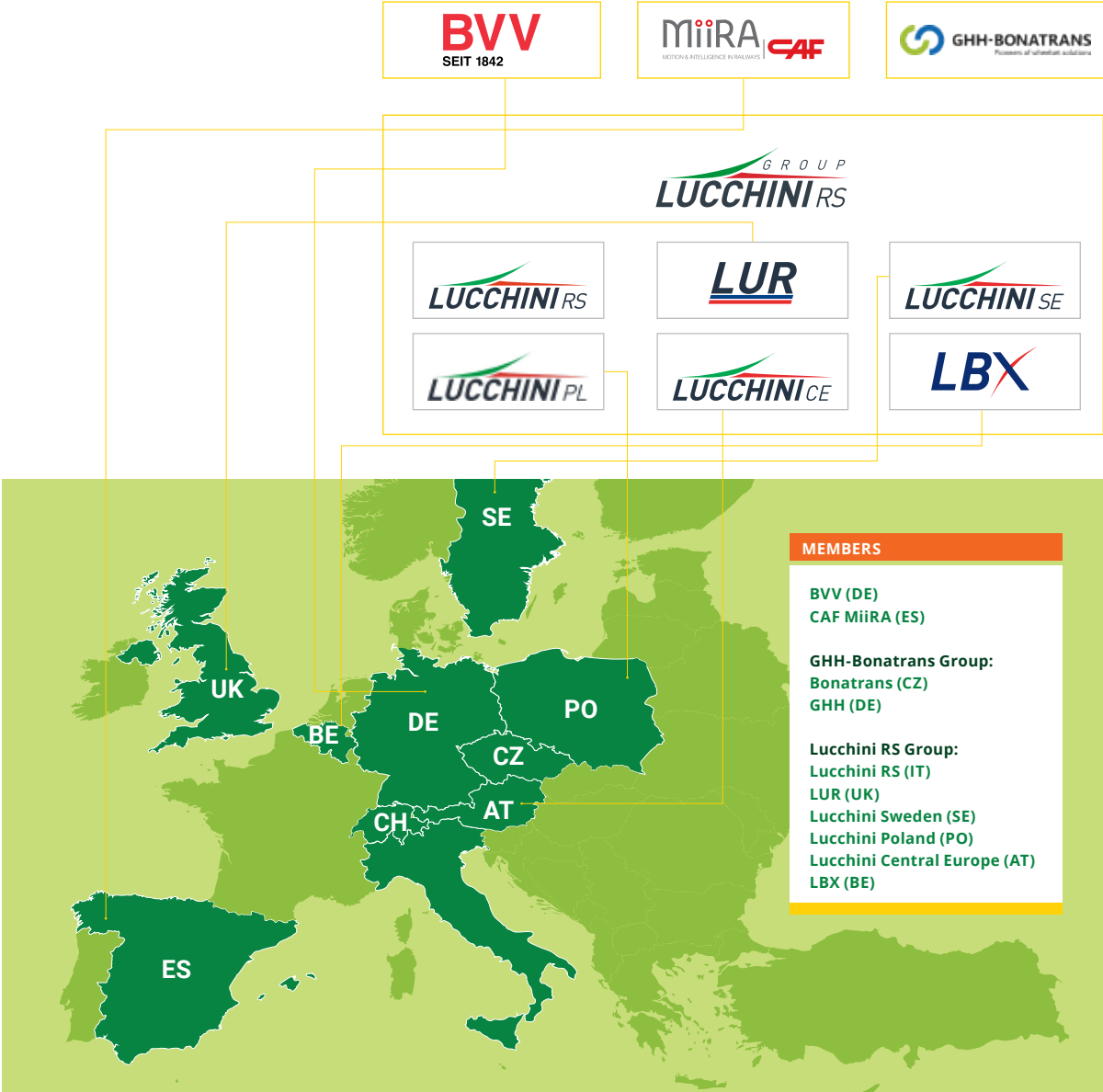
The UNIFE Railway  
Wheels Committee

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The UNIFE Railway Wheels Committee’s (ERWA) main mission is to contribute to the development of standards, promote innovation in safety and environmental friendliness and foster quality and best practices in the European market. ERWA members bring together over 4300 employees from across Europe. The committee consists of the following members:



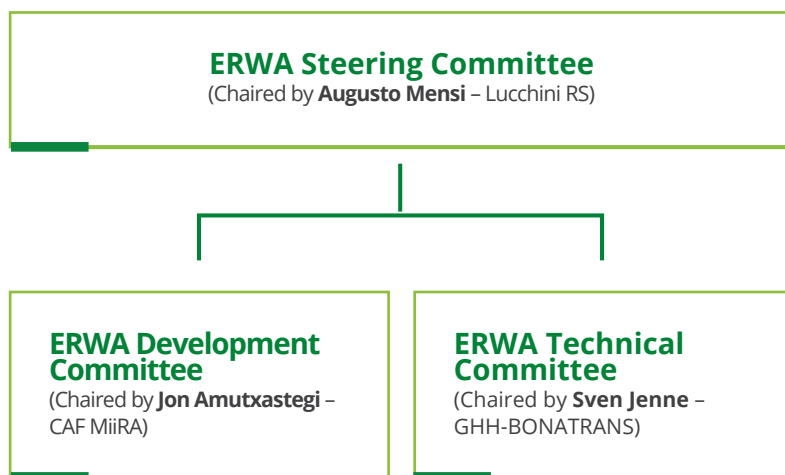


### In 2020, ERWA carried out numerous activities, amongst others:

- o Contributed inputs to Standardisation and Regulation
- o Maintained close links with EU Agency for Railways and standardisation bodies like CEN/CENELEC
- o Initiated ERWA Public Relations activities and publications
- o Conducted market trends evaluations and ERWA statistics, along with patent and trademark monitoring
- o Carried out analysis of MEAT principles compliance
- o Created its coating guideline document
- o Aided 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. The renewed chairs following the 2020 ERWA General Assembly is shown in the diagram on the right:

One of the Committee's main focuses over the past year has been the finalisation of the coating guideline document, which aims at improving the quality of axle coatings. The intention is the assurance of a durable corrosion protection of wheelsets, representing a fundamental step towards a safer, more efficient and competitive railway operation.



The 19<sup>th</sup> edition of the IWC, which focused on the wheelset as a system, was successfully organised by Lucchini RS in Venice, under the guidance of UNIFE and ERWA. Over 110 abstracts were submitted and several interesting papers have been presented under the following topics:

### Manufacturing and Production

- Integrated design of wheelset components
- Materials Development
- Manufacturing, production and assembling processes
- Qualification and certification of components and subsystems

### Maintenance, Management and Operation

- Condition based approach to maintenance: from the design stage to service experiences
- Inspections: equipment, techniques and methods
- Industry 4.0, automation and digitalization
- Solutions for improved service performance

The next edition of the IWC will take place in the US, with the exact date and location yet to be announced. For more information on the 19<sup>th</sup> IWC, please visit this edition's [website](#).

For further information about ERWA, please contact: [stefanos.gogos@unife.org](mailto:stefanos.gogos@unife.org)



# 09

## IRIS

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The International  
Railway industry  
standard

128



IRIS inspires greater quality in rail with new certification levels



The **International Railway Industry Standard** (IRIS) is a globally recognised evaluation scheme for business management systems unique to the rail sector. Promoted by UNIFE and supported by operators, system integrators and equipment

manufacturers, IRIS complements ISO 9001 quality standard by introducing rail-specific requirements. It also boosts customer satisfaction and implements a culture of quality in the rail sector by promoting quality-focused methods and behaviours.

IRIS Certification® Conformity assessment:2020

The **IRIS Certification® Conformity assessment:2020**, published on 1 May, is a major update to the Certification’s rules and methods for certifying rail stakeholders.

Since the 2017 publication of the IRIS rev.03 system, the new approach that focused on performance measurement was under scrutiny by the IRIS Management Centre and the working groups’ experts. The three level system – consisting of bronze, silver and gold - for measuring the quality performance of individual rail companies is expected to bring continuous quality improvements and enhanced customer satisfaction to the sector. These levels are essential to the acceptance of the audit results and continued trust in the certification process.

Evaluation part	Max. possible
Stakeholder analysis	30
Customer feedback	50
KPIs	
o Customer satisfaction	40
o Customer on-time delivery	40
o Nonconformities raised by the customer	40
	200

Pillar	Bronze	Silver	Gold
Enabler	achieve threshold	70% of the maximum score	80% of the maximum score
Process performance evaluation	-	80% of the maximum score (80 of 100 points max.)	90% of the maximum score (90 of 100 points max.)
Customer perception	-	75% of the maximum score (150 of 200 points max.)	85% of the maximum score (170 of 200 points max.) + positive direct feedback from customer



As a direct output from the IRQB working groups and their proposals, we have implemented the rules in the operational business. The main evolutions contained in the **IRIS Certification® Conformity assessment:2020** are:

- Rules for awarding IRIS Certification Silver quality performance level:
  - Customer Perception Performance based on
    - Stakeholder analysis
    - Customer feedback
    - Adherence to Key Performance Indicators (KPIs), namely: Customer satisfaction; On-time delivery and Non-conformities raised by the customer
- Rules for awarding IRIS Certification Gold quality performance level:
  - Direct customer feedback on:
    - On-time delivery
    - Customer perception of quality performance
  - Committee to validate candidates
- Increase of surveillance audit time

- Risk analysis for audits impacting the management system
  - Additional product scope
  - Change of main ownership
  - Change of location
- Documentation transparency:
  - Audit plans sent to the companies at least 30 days in advance
  - Data package sent to the Lead auditor at least 60 days in advance

The IRIS Certification® Conformity assessment:2020 can be purchased at [www.iris-rail.org](http://www.iris-rail.org). The document is sold to all newly registered IRIS Portal members as part of a mandatory package.

Similar to when UNIFE published the IRIS Addendum in 2019, we have again shared the evolutions during compulsory trainings that took place between May and June with all active IRIS auditors. Their ability to implement the rules was evaluated during an online examination.



## Quality performance levels

Quality performance levels have been awarded to audited companies since 2017. However, until last year, companies could only be awarded a Bronze quality performance level. After a year-long test period, the IRIS Management Centre launched the Silver quality performance level on 1 September 2020. The subsequent Gold quality performance level test period started at the same time and is scheduled to be made fully available this autumn. This quality performance level aims at increasing trust in the IRIS Certification® system and creating confidence towards product quality. As the role of IRIS auditors is crucial in this process, the IRIS Management Centre (IMC) has also increased the control and monitoring of all actors. A Master Witness Auditor position was created to synchronise and optimize the work of the witness auditor pool. **Ursula Tacke** has been responsible for this activity since February 2020.

The key word of the Gold level is *trust*.



## Covid-19 impact on audit process

2020 was a difficult year for the certification process. In February, we experienced the first effects of the COVID-19 pandemic as the disease appeared across Asia. Progressively, Europe and then the Americas were infected, impacting the organisation of the audits.

IMC immediately reacted by:

- o Close monitoring of the disease evolution country-by-country
- o Regular communication with certification bodies
- o Extension of the audit validity (3-4 months)
- o Waiving basic rules (scopes, number of audits)
- o Adaptation on long term evolution:
  - o Extension of all 2020 audits until 31/12/2020
  - o Creation of a remote activities procedure

By the end of the year, 50% of the audits have been postponed and are making use of these allowances. For 2021, we are currently preparing actions to prevent loss of certificates.

### Remote activities

As cross-border travels were heavily impacted by public health measures, IMC and IRQB called for a working group to develop contingency auditing processes:

- o Semi-remotely: an auditor is present on site, others are connected virtually
- o Fully remotely: all auditors are connected virtually

Since September, these auditing methods were gradually implemented and almost became the most used auditing method by the end of the year. The assessments are complemented by strong preparations and a video connection enabling the auditors to review documents or layouts.

The remote audit results are similar to those reached in a face-to-face one, noting that some remote ones were also witnessed.

Another remote activity commenced in November: remote auditor training. As COVID-19 did not allow for conducting face-to-face meetings, IMC developed a modular online training concept to conduct auditor training sessions remotely.

## IMC

In 2020, the IRIS Management Centre experienced several staff developments:

- o The UNIFE communication team dedicated **Artur Tännä** to support IRIS and IRQB dissemination topics

- o **Ursula Tacke**, already an IRIS Witness Auditor, took on additional responsibilities when she stepped into the new Master Witness Auditor position

- o **Angela de Heymer** decided, after eight years of strong involvement in

the IRIS Management Centre, to return to the exciting field of industrial business. We warmly thank her for her dedication and high-quality contributions during her tenure. **Jana Jung** has joined us to ensure stability in IRIS' development

## Development of the future ISO 22163

In 2020, **Bernard Kaufmann**, IRIS General Manager and Working Group (WG) 5 Convenor, planned to organise four working meetings, totally 12 days, for the ISO/TC 269 WG5. However, due to the coronavirus outbreak, ISO decided to cancel all physical meetings scheduled to take place from March 2020 onwards. Supported by the German secretariat, the working group held six web meetings that permitted a strong progress on pending points.

On average, 25 people attended these meetings and helped reach common understandings pertaining to:

- o Needed rail sector processes
- o A reliable approach to project management
- o A standardised view on business planning

Several other topics were discussed and agreed upon.

Finally, at the end of August, the group approved a proposal calling for the convenor to "freeze" work for six months and wait for better conditions to analyse the last challenging items. Thus, the general planning for delivering the draft standard will also be postponed for six months and is now scheduled to happen at the end of 2021.

Discussions on KPIs, tools, definitions and last evolutions in the industry

Categories	Clustered	Remaining points
01) Maturity (e.g. operational, ...)	5	5
02) KPI	15	15
03) Definitions	36	7
04) Processes	107	1
05) Competences	15	
06) SME	4	
07) Safety	8	
08) Risk	5	
09) Documentation	23	
10) General	5	1
11) Configuration and Change	10	3
12) EPPPS	15	
13) Business planning	6	
14) RAMS/LCC	6	
15) Obsolescence	9	
16) Consistency (e.g. typo, wording, ...)	52	3
17) Duplicities and references (e.g. double requirements, simplification, ...)	6	
18) BMS	8	7
19) Foreword	9	9
	<b>344</b>	<b>51</b>

have yet to be finalised. Since the beginning of the year, the group made a liaison with ISO/TC 176 SC2, which oversees the analysis of the next ISO 9001 standard. Currently,

they are investigating the needs and impacts of evolutions. We are closely monitoring this group's work as there might be a direct influence of the future ISO 22163.

## International Rail Quality Board (IRQB)

The International Rail Quality Board's 22 members had a successful year, resulting in the finalisation of many proposals and documents. The consortium's aim – to further develop the rail quality management system and the certification process at the rail sector level, thereby strengthening

the IRIS Certification® scheme – was largely achieved.

In 2020, the IRQB board met three times - once physically in Berlin and twice virtually - and defined multiple new work areas, culminating in the establishment of new IRQB

working groups. The previously existing groups had made substantial progress, with many of them having concluded their work. Their accomplishments are described in more detail in the graph below.



**Under IMC coordination, the following milestones have been reached:**

- o Silver and Gold quality performance levels were finalised and published:
  - o Silver quality performance level has been made fully available to companies audited after September 2020
  - o Gold level will be in its test phase until autumn 2021
- o The first three guidelines on Special processes, Maintenance and KPIs were published:
  - o These topics were urgently expected by the stakeholders to help maintain compliance with IRIS rules
- o The guidelines are available for free at: [www.irqb.org/publications](http://www.irqb.org/publications)

- o IRQB actively communication about its activities and achievements using various channels, such as:
  - o Regular posts on IRQB's Twitter and LinkedIn (created in summer 2020) accounts
  - o Development of a short newsletter, titled the "IRQB Bulletin"
  - o New articles published on the IRQB website
  - o Many articles on IRQB's activities published in various rail magazines
  - o First IRQB Webinar (see details below)
- o Review of the certification process and assessment methodology for finalisation of the Conformity assessment document

The pandemic did not allow for any physical meetings from February on. Therefore, this long list of accomplishments is even more impressive.



## First IRQB webinar

An IRQB webinar titled *How does focusing on quality help rail companies overcome a crisis?* took place on 5 November 2020.

The event attracted more than 300 registrations, with more than 250 eventually attending live or watch-

ing the recording of the event. The webinar brought together prominent speakers from IRQB member companies representing the rail industry, operators and quality experts. The webinar was a great success for this first online promotion of IRQB's activities and the solutions provided by IRIS

Certification to maintain quality during this exceptionally difficult period.

This webinar will be continued in 2021 with a monthly regular webinar series called 'quality monthly'.

### **IRQB Webinar: How does focusing on quality help rail companies overcome a crisis?**

**5 November 2020**



# 10

## COMMUNICATIONS

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**01** European Railway Award 136

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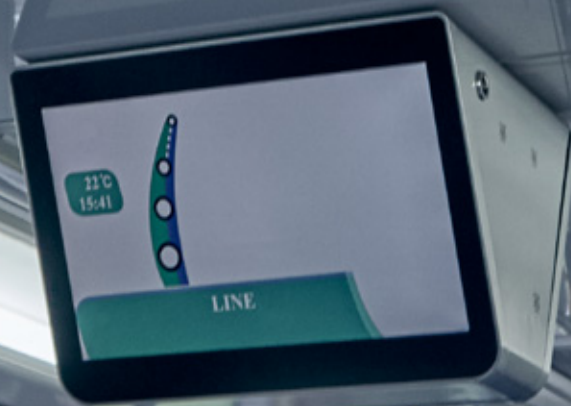
**03** Hop On For Our Planet! 139

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**02** UNIFE General Assembly 138

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**04** Metrics 140



# European Railway Award

For more than a decade, the European Railway Award has united our industry around our shared esteem for innovation and appreciation for those that advance the most sustainable form of mass transportation available. Each year, this annual event that marks the beginning of rail's year with addresses from high-level EU policymakers and an award recognising individuals, companies or projects that have contributed to the improvement of European rail.



The 13<sup>th</sup> European Railway Award - one of the last opportunities for our industry to convene before the coronavirus outbreak - was held on 18 February at Brussels's Royal Museum of Fine Arts and was followed by a **UNIFE** and **CER** co-hosted Annual Reception. The evening began with a video address by **European Commissioner** for Transport **Adina Vălean** who stressed that "decarbonising transport will depend strongly on rail increasing its market share". Subsequently, attendees enjoyed a roundtable discussion, titled "Working with rail for greener European mobility", with top EU transport policymakers and rail sector stakeholders, namely: **Henrik Hololei**, **European Commission** Director-General for Mobility and Transport; **Andrey Novakov**, Member of the **European Parliament** and Chair of **Rail Forum Europe**; **Sabrina Soussan**, **UNIFE** Chair and CEO of **Siemens Mobility**, and **Andreas Matthä**, **CER** Acting Chair and CEO of **ÖBB**.

In his intervention, Director General Henrik Hololei, highlighted: *"Rail must and - I am sure - will play a big role in delivering the European Green Deal. In particular, it must take a large*

*part of the 75% of land freight which currently goes by road. This means that the existing barriers must be overcome, the Single European Rail Area finally delivered, and the share of rail freight increased"*.

Mr. Novakov echoed this sentiment by underlining that *"Rail is one of the most powerful instruments to foster economic development, social cohesion and connectivity. We need to ensure it can decisively contribute to the revolutions shaping tomorrow's mobility: multimodality, digitalisation and sustainability"*.

In recognition of the importance of facilitating a modal shift of freight and passenger traffic to greener transport alternatives to achieving EU Green Deal objectives, **Geert Pauwels**, CEO of **LINEAS**, was this year's Award recipient. Mr. Pauwels succeeded in restructuring the Belgium's indebted freight incumbent into a modern, successful company, backed up by private investments. Furthermore, he has promoted the development of innovative services with a flexible transport offer, thereby boosting the attractiveness of rail freight and encouraging a modal





shift from road to rail. This accomplishment is essential as proven profitability will be a driving market force in Europe's energy transformation and key to our attempts to place rail at the backbone of the EU's sustainable mobility paradigm of the future. Mr. Pauwels, along with the Award, was presented a €10.000 donation for the charity of his choice - he decided to support **Natuurpunt**, Belgium's largest conservation organisation.

When accepting the Award, Pauwels said: *"I am extremely proud. This is recognition for the hard work of all our colleagues, for the trust of our shareholder, and for the belief of our customers in what we do."* He added: *"We have ten years to drastically shift to sustainable transport and keep our climate targets achievable. Let's reinvent rail and again challenge the status quo of how we do transport. We need everyone present here to unite behind the single purpose of Modal*

*Shift: rail companies, infrastructure managers, policymakers, everyone. By 2030, I hope to see that rail has become the backbone of the European transport system".*

For more on the European Rail Award, please visit [www.europeanrailwayaward.eu](http://www.europeanrailwayaward.eu)

# UNIFE General Assembly

For more than one reason, this year's General Assembly was unique. While UNIFE and its Members had the pleasure to convene in Dublin to plan the future of our association's activities and assess the track ahead for our industry the year before, we were forced to hold this important conference on 25 June remotely for the first time due to safety concerns created by the pandemic. While we are sad to see **Sabrina Soussan**, CEO of **Siemens Mobility**, come to the end of her 3-year term as UNIFE's chair, our association wisely elected **Henri Poupart-Lafarge**, Chairman and CEO of **Alstom**, to succeed her.



Upon his election, Henri Poupart-Lafarge stated: "I am extremely honoured to represent the rail industry at such a defining moment. Our industry will remain the backbone of the future of mobility, and has a tremendous role to play in the fight against climate change and Europe's economic recovery. I am looking forward to represent the rail industry and its interests on the eve of 2021, which will be the European Year of Rail."

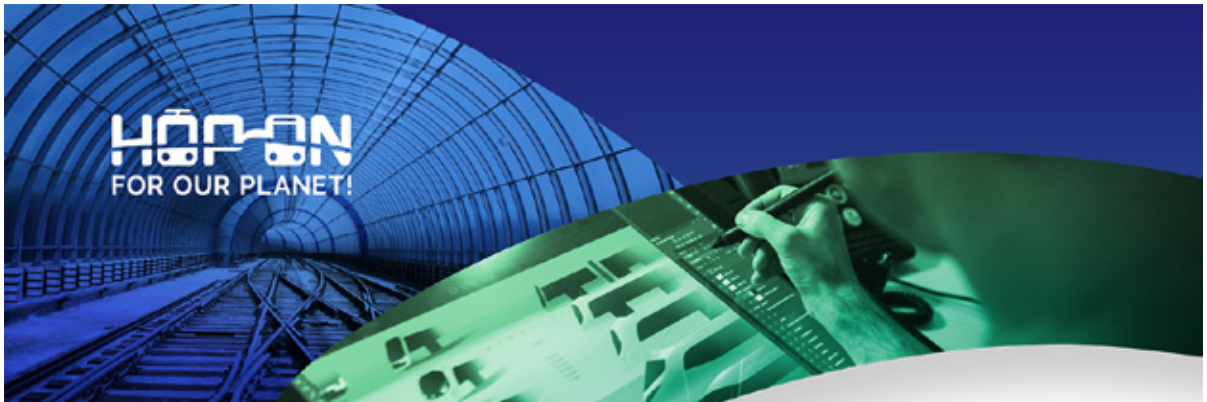
Ms. Soussan expressed her pleasure at having helped lead the industry in effectively communicating its commitment to *"reducing climate change, to creating value and jobs in Europe, but also to digital transformation of transport"*. Mr. Poupart-Lafarge, in outlining the vision he holds for his tenure, stated that our sector *"will remain the backbone of the future of mobility, and has a tremendous role to play in the fight against climate change and Europe's economic recovery"*.

In other news, the meeting also saw the signature of the Declaration of the European Rail Supply Industry.

This document helped raise awareness among EU and national decision-makers of our industry's crucial importance to achieving both European Green Deal objectives and our continent's economic recovery in the aftermath of COVID-19. The General Assembly concluded with the ratification of UNIFE's newest Members: **ERICSSON**, **ErvoCom AG**, **GESTE Engineering S.A**, **GMT Gummi-Metall-Technik GmbH**, **ITT Italia Srl**.

**The next UNIFE General Assembly will take place in Lisbon, Portugal on 16-18 June 2021.**

# Hop On For Our Planet!



UNIFE gathered on 21 October with experts from across the rail sector, the European Commission, and the European Parliament to launch **“Hop On For Our Planet!”**, a **jobs and skills communication initiative** being run across 6 EU Member States – France, Germany, Italy, the Netherlands, Poland and Spain.

**The campaign aims to attract work force entrants and experienced professionals into the rail supply industry by demonstrating the innovative, sustainable career opportunities in European rail supply.** It also seeks to provide our current colleagues with greater information about the training opportunities available to them. Utilising platforms such as Twitter, LinkedIn, Instagram, Facebook, YouTube, and a dedicated website replete with job listings, this step represents an ambitious milestone in our industry's outreach efforts. This was only possible due to the initiative and participation of UNIFE members.

Joined by more than 150 participants, this **digital event explored the career preferences of Gen Z, rail supply's unique offerings and the best way to address the current skills shortage that our industry is experiencing.** The event also saw some of our young rail supply industry colleagues to serve as **“Faces of the Industry”**, sharing their stories and encourage their generational peers to explore careers with us. UNIFE was fortunate to be joined by keynote speakers **Henri Poupart-Lafarge** (Chair of **UNIFE** and Chairman & CEO of **Alstom**), **Dominique Riquet** (MEP and Vice-Chair **Renew Europe**, Member of the **Committee on Transport and Tourism (TRAN)**), **Barbara Bonvissuto**, (Head of Unit **DG GROW**, **European Commission**), **Luc Triangle** (General Secretary, **IndustriAll Europe**), **Raffaella Alberi** (HR VP Europe, **Alstom**), **Andrea Gerosa** (Founder, **Think Young**), and **Sara Carrer** (Executive Vice President for Europe and Africa, **Burson Cohn & Wolfe (BCW)**).

Rail transport will play an increasingly important role in the near future as people continue to seek out greener, safer and more sustainable transport solutions. This is why the Hop On For Our Planet! campaign is an opportunity to demonstrate all the European Rail Supply Industry has to offer and the contributions its workforce makes every day to meaningful climate action.

Hop On For Our Planet! is an ambitious campaign launched by UNIFE with the support of [Alstom](#), [Bombardier Transportation](#), [CAF](#), [Faiveley Transport](#), [Hitachi Rail STS](#), [Knorr Bremse](#), [Lucchini RS](#), [Siemens Mobility](#), and [Strukton Rail](#).

**A recording of the launch event is [available here](#).**

More information on the Hop On For Our Planet! campaign on its dedicated website: [www.hoponrail.eu](http://www.hoponrail.eu)

# Metrics



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



26,919  
Visits

21,341  
Visitors

59,728  
Page views



LinkedIn - UNIFE - The European Rail Supply Industry Association



5,777  
Followers

2,531  
Visitors



Twitter - @UNIFE



686,169  
Impressions

12,500  
Profile Visits

493  
New Followers

191  
Tweets

611  
Mentions



Vimeo - UNIFE



1,306  
Views

999  
Unique viewers



UNIFE in the press



17  
Interviews

196  
Articles about or mentioning UNIFE

UNIFE publications



15+ Position papers/reports UNIFE produced or contributed to

# Communications leadership and support for



	<a href="http://www.unife.org">www.unife.org</a>
	<a href="https://twitter.com/unife">@unife</a>
	<a href="https://www.linkedin.com/company/unife">UNIFE - The European Rail Supply Industry Association</a>
	<a href="https://vimeo.com/user57233307">https://vimeo.com/user57233307</a>



	<a href="http://www.hoponrail.eu">www.hoponrail.eu</a>
	<a href="https://twitter.com/HopOnRail">@HopOnRail</a>
	<a href="https://www.linkedin.com/company/hop-on-rail">Hop On Rail</a>
	<a href="https://www.instagram.com/hoponrail">www.instagram.com/hoponrail</a>
	<a href="https://www.youtube.com/channel/UCVm3a3fKREqUeHQVidpOblg">www.youtube.com/channel/UCVm3a3fKREqUeHQVidpOblg</a>



	<a href="http://www.europeanrailwayaward.eu">www.europeanrailwayaward.eu</a>
	<a href="https://twitter.com/EU_RailwayAward">@EU_RailwayAward</a>



	<a href="http://www.railstaffer.eu">www.railstaffer.eu</a>
	<a href="https://twitter.com/Rail_Staffer">@Rail_Staffer</a>
	<a href="https://www.linkedin.com/company/rail-staffer">Rail Staffer</a>



	<a href="http://www.ertms.net">www.ertms.net</a>
	<a href="https://twitter.com/ERTMS">@ERTMS</a>



	<a href="http://www.rail-forum.eu">www.rail-forum.eu</a>
	<a href="https://twitter.com/RailForum_EU">@RailForum_EU</a>
	<a href="https://www.linkedin.com/company/rail-forum-europe">Rail Forum Europe</a>



	<a href="http://www.iris-rail.org">www.iris-rail.org</a>
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	<a href="http://errac.org">errac.org</a>
	<a href="https://twitter.com/ERRAC_Rail">@ERRAC_Rail</a>
	<a href="https://www.linkedin.com/company/the-european-rail-research-advisory-council">The European Rail Research Advisory Council (ERRAC)</a>



	<a href="http://www.irqb.org">www.irqb.org</a>
	<a href="https://twitter.com/TheIRQB">@TheIRQB</a>
	<a href="https://www.linkedin.com/company/irqb">IRQB - The International Rail Quality Board</a>



	<a href="http://www.industry4europe.eu">www.industry4europe.eu</a>
	<a href="https://twitter.com/Industry4Europe">@Industry4Europe</a>
	<a href="https://www.linkedin.com/company/industry4europe">Industry4Europe</a>



	<a href="http://www.aegiseurope.eu">www.aegiseurope.eu</a>
	<a href="https://twitter.com/AEGISEurope">@AEGISEurope</a>



A blurred figure of a person walking in a modern building with a yellow wall and curved black lines. The person is wearing a dark coat and light-colored pants. The background is a bright yellow wall with curved black lines. The floor is light-colored tiles.

11

UNIFE STAFF

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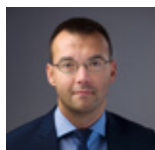
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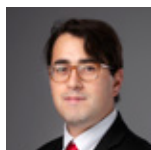


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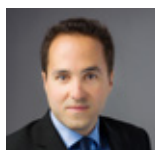
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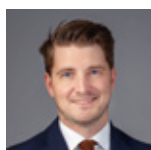


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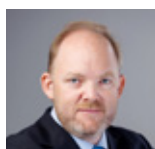


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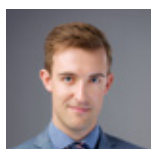


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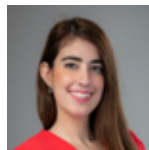


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\*\*acting as representative of QM370

\*\*\*acting as representative of MV4TECH SCRI



UNIFE wishes all the best to those who left the team in 2020



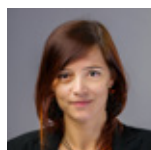
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**Arturs Alksnis**



**Angela de Heymer**



**Marta Andreoni**





12

UNIFE  
MEMBERS  
IN 2020

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Belam

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Blue Engineering

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Bochumer Verein Verkehrstechnik

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Bonatrans

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	CAF	<a href="http://www.caf.net">www.caf.net</a>
	CEG Elettronica Industriale	<a href="http://www.cegelettronica.com">www.cegelettronica.com</a>
	CENTRALP	<a href="http://www.centralp.fr">www.centralp.fr</a>
	Comesvil	<a href="http://www.comesvil.com">www.comesvil.com</a>
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	EKE Electronics	<a href="http://www.eke-electronics.com">www.eke-electronics.com</a>
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Eolane

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Evopro

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Faiveley Transport

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FOGTEC

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GERFLOR

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IVM

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Kalthoff

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	Nokia	<a href="http://www.networks.nokia.com">www.networks.nokia.com</a>
	NVENT	<a href="http://www.schroff.nvent.com">www.schroff.nvent.com</a>
	OLTIS Group	<a href="http://www.oltisgroup.com">www.oltisgroup.com</a>
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	Prolan	<a href="http://www.prolan.hu">www.prolan.hu</a>
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	Radiall	<a href="http://www.radiall.com">www.radiall.com</a>
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	Schaeffler	<a href="http://www.schaeffler.com">www.schaeffler.com</a>
	Schaltbau	<a href="http://www.schaltbau.com">www.schaltbau.com</a>
	Scheidt & Bachmann	<a href="http://www.scheidt-bachmann.de">www.scheidt-bachmann.de</a>



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STIMIO

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Strukton Rail

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Triorail

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AGORIA, Belgium

[www.agoria.be](http://www.agoria.be)



Romanian Railway Industry Association (**AIF**), Romania

[www.asifrom.ro](http://www.asifrom.ro)



Associazione Industrie Ferroviarie (**ANIE/ASSIFER**), Italy

[www.anie.it](http://www.anie.it)

**BAHNINDUSTRIE.at**  
Verband der Bahnindustrie

Austrian Association of the Railway Industry, Austria

[www.bahnindustrie.at](http://www.bahnindustrie.at)



Fédération des Industries Ferroviaires (**FIF**), France

[www.fif.asso.fr](http://www.fif.asso.fr)



Spanish Railway Association (**MAFEX**), Spain

[www.mafex.es](http://www.mafex.es)



Railway Industry Association

Railway Industry Association (**RIA**), United Kingdom

[www.riagb.org.uk](http://www.riagb.org.uk)



Association for Rail Industry Companies (**SWEDTRAIN**), Sweden

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



**Swissrail** Industry Association, Switzerland

[www.swissrail.com](http://www.swissrail.com)

**DIE BAHNINDUSTRIE.**  
VDB VERBAND DER BAHNINDUSTRIE IN DEUTSCHLAND E.V.

Der Verband der Bahnindustrie in Deutschland (**VDB**), Germany

[www.bahnindustrie.info](http://www.bahnindustrie.info)



Zentralverband Elektrotechnik- und Elektronikindustrie (**ZVEI**), Germany

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Published 2020, Brussels.

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