

**Representing
the European
rail manufacturing
industry in Brussels
since 1992.**

UNIFE

ANNUAL REPORT
2017

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Message from the Acting Chairperson and Director General

Dear UNIFE members, Partners and Supporters,

Our industry continues its journey towards greater innovation and digitalization. 2017 was a big year for us, from major regulatory wins to setting the course of the next influx of research funding, we continued our work to ensure all that we can to secure the continued worldwide leadership of the European rail industry.

On the regulatory front, several major milestones came about this year. A Deployment Action Plan for ERTMS was presented by EU Transport Commissioner Bulc in summer 2017. It identifies barriers to achieving interoperability while recognizing that the basic regulatory framework is in place and focusing on the concrete actions and defined deadlines. UNIFE and UNISIG heavily contributed to this plan.

2017 saw the positive vote in the Railways Interoperability and Safety Committee (RISC) on the Implementing Regulation on practical arrangements for the railway vehicle authorisation and railway vehicle type authorisation process. This is key to establishing a simplified and harmonised vehicle authorisation process throughout Europe and for achieving the benefits of the Technical Pillar of the Fourth Railway Package. This year also marked the start of the cooperation with the Commission for the implementation of the Resolution on the Competitiveness of the European Rail Industry, adopted by the European Parliament in 2016 under the leadership of MEP Martina Werner.

A lot of our work this year has looked deep into the future. While so much of what we do is on the ground, we must also ensure that the right steps are in place to ensure our long-term success. Based on the long-term visions of the sector, the ERRAC 2050 vision document put out this year reflects the rail sector's priorities in order to ensure that railway transportation is the backbone of the mobility of the future. Meanwhile, UNIFE also coordinated the work on a Joint Rail Sector Position Paper on the

post-2020 Multiannual Financial Framework (MFF) and on the future of the Connecting Europe Facility, which emphasised why it is so important for the EU to continue investing in rail projects, particularly considering the benefits of rail transport for the economy, the environment and the whole society.

As we all know, our industry is propelled by innovation. Shift2Rail is an example of just how much our industry can achieve. This year UNIFE started working on its vision for Shift2Rail 2.0, which is based on the global trends impacting rail transport in the future (e.g. urbanisation, digitalisation, societal changes). The vision is being shared with other rail stakeholder associations in our initial efforts to include Shift2Rail 2.0 in the next European Research Framework Programme (FP9).

Collaboration has been a big theme this year in our work. One of our greatest collaborative achievement of 2017, was the setting up #Industry4Europe, a massive coalition of European industry associations. Over the course of the year, we brought together over 120 industries from across the spectrum to work together on influencing the European Commission to support an ambitious and long-term EU industrial strategy. The outcomes of this effort have gone beyond our initial expectations – and we, as a coalition have become one of the strongest voices for European Industry at EU level. A voice we will continue to use to ensure our objectives.

Because trade and a level playing field across international markets are crucial to the global competitiveness of European rail suppliers, we worked tirelessly this year to continue pushing our agenda on this topic. In particular, the EU concluded negotiations on a free trade agreement with Japan in December, with long-awaited and positive results for our industry. Japanese public rail operators will indeed be bound by rules on transparency and non-discrimination, as it is the case in Europe, while the big private operators have committed to pursue similar efforts. UNIFE has also increased its efforts and ac-

tions to tackle unfair competition both on the international stage and in Europe. Finally, UNIFE has intensified its international activities, with the signature of a very important Memorandum of Understanding with the Secretariat General of the Gulf Cooperation Council (GCC).

The new IRIS Certification™ rev.03 system launched this year. It combines the international standard ISO/TS 22163 with the IRIS Certification™ rules. With 1600 certifications worldwide, the certification continues to build worldwide recognition and support.

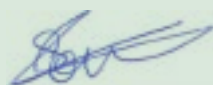
UNIFE increased its new members from last year, welcoming 13 new companies into our fold at the General Assembly in Barcelona. The companies help us improve our geographic diversity and bolster the representation of a wider variety of business segments as well as SMEs.

While only a few of our main topics are outline above, this Annual Report delves into much greater detail about our achievements and activities over the course of this packed year. We would like to thank the UNIFE staff for their dedication and sincerely thank our members for their work and support. We look forward to working with you in 2018 on the many opportunities ahead.

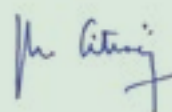
Sincerely,



Sabrina Soussan
UNIFE Acting Chairperson



Philippe Citroën
UNIFE Director General





UNIFE in 2017

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UNIFE Mission

Promoting Rail Market Growth for Sustainable Mobility

THE FOUR PRIORITIES TO ACHIEVE OUR MISSION

- Promoting European policies favourable to rail
- Shaping an interoperable and efficient European railway system
- Ensuring European rail supply industry leadership through advanced research, innovation and quality
- Providing UNIFE members with strategic and operational knowledge created UNIFE SME Committee.

I. EU Standardization & Harmonisation

- Collaborating and liaising with the European Union Agency for Railways and other rail stakeholders in defining rail regulations (including the Technical Pillar of the Fourth Railway Package, and TSIs)
- Supplying expertise for European and International Standardisation Bodies (e.g. CEN-CENELEC, ISO)
- Promoting an interoperable Single European Rail Area

II. Public Affairs

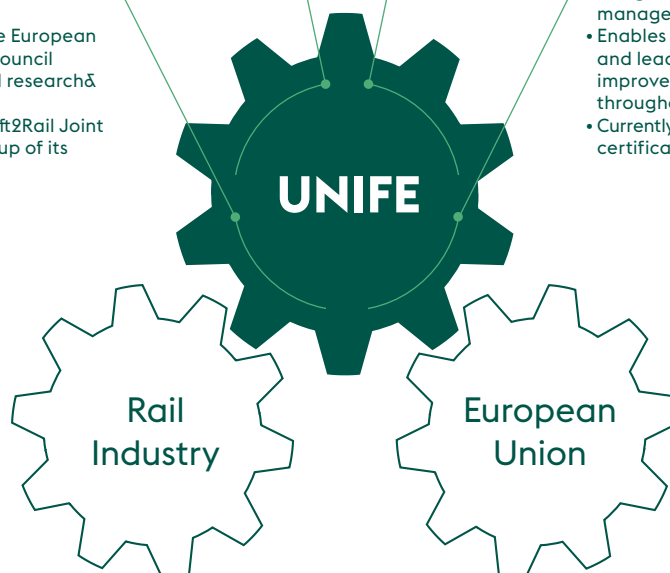
- Supporting policies that increase the competitiveness of the European Rail Industry
- Promoting modal shift policies
- Encouraging investment in rail projects
- Advocating rail transport as the best solution to meet social challenges of the future

III. European Rail Research

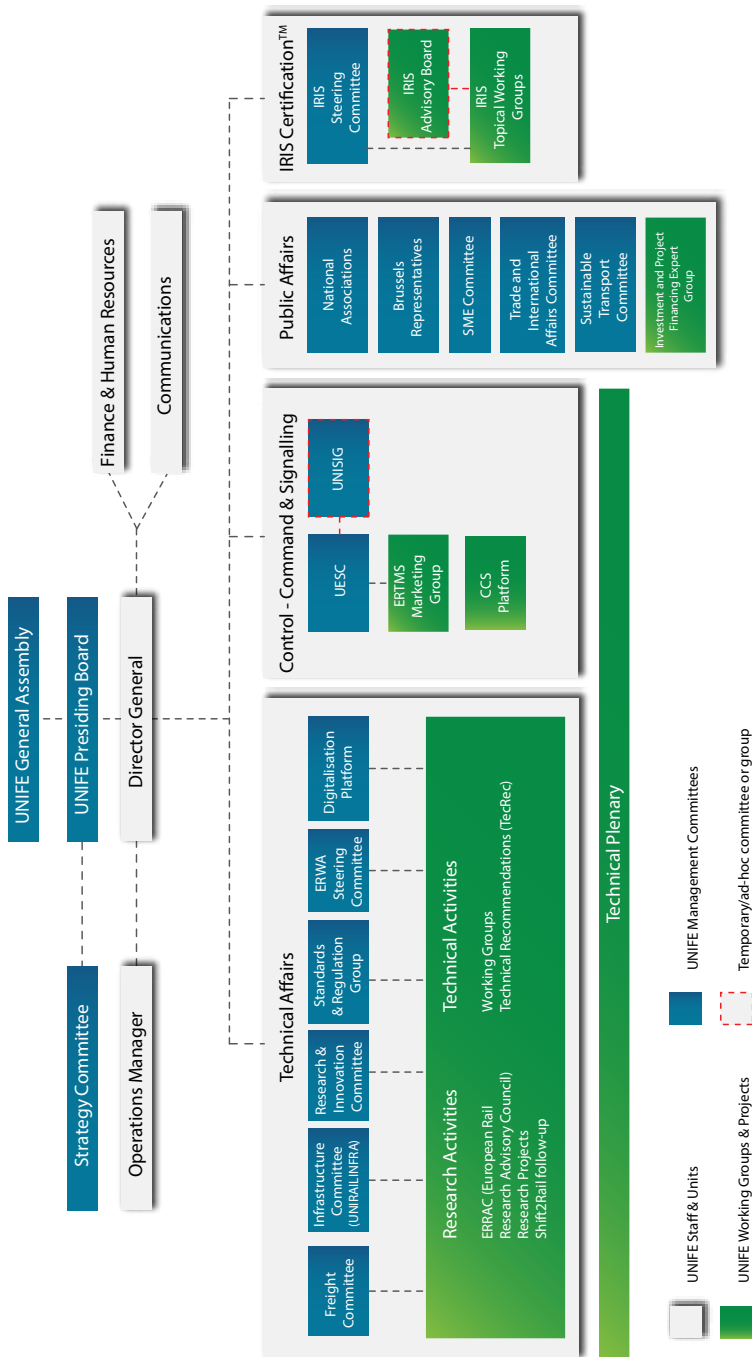
- Coordinating EU-funded research projects
- Active role in ERRAC - the European Rail Research Advisory Council
- Shaping the future of rail research & innovation in Europe
- Cooperation with the Shift2Rail Joint
- Undertaking and follow-up of its activities

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
- Currently over 1600 IRIS Certification™ certificates issued worldwide



UNIFE Structure



Committees and Working Groups

The UNIFE Presiding Board is the highest UNIFE Committee and is accountable for the management of the association. It takes any measure and action required to achieve the objectives and general policies of the association. It submits the admission of new Full and Associated members to the General Assembly for ratification. The Presiding Board is composed of 9 members elected by the General Assembly for three years on the proposal of the retiring Board. As of January 2015, a seat has been assigned to the Chairman of the newly created UNIFE SME Committee.

The UNIFE Strategy Committee is the second highest UNIFE body after the Presiding Board. It steers our activities, provides expertise and advises UNIFE management on strategic and political issues and advises the agenda of the Presiding Board. The members of this committee are high-level managers from the most prominent UNIFE Members.

The UNIFE Technical Plenary covers in a balanced way all EU research, regulation and standardisation matters. In addition to exchanging information on the different national perspectives, this committee enables UNIFE members to have a better understanding of the ongoing EU research, regulation and standardisation issues, their background and implications for the industry all over Europe and beyond. The Technical Plenary gives input to be considered by the other UNIFE technical committees (SRG, UNIRAILINFRA, ERWA, etc.) and is the interface to UNISIG regarding research, standardisation and regulation topics.

The Freight Committee gathers companies active in the rail freight business and aims at strengthening the position of the industry in the policy framework of the EU. The committee provides its members with information and support on EU funding opportunities for their R&I projects, EU policies dedicated to rail freight, as well as the opportunity to lobby on EU rail freight issues and strengthen the discussion on ongoing and upcoming TSIs/Standards.

The UNIFE Infrastructure Committee (UNIRAILINFRA) brings together suppliers, contractors, and

integrators active in the fields of engineering, production, installation, etc. The committee provides a platform for consensus building on infrastructure and energy topics at a pre-competitive stage, aiming at promoting investment and innovation in the railway infrastructure sector. Within this context, the purpose of the UNIRAILINFRA Committee is to discuss and promote the development of the rail infrastructure and energy sector.

The UNIFE Research & Innovation Committee steers UNIFE's technical activities in the field of the European research framework (including Shift2Rail). The committee manages the preparation of Shift2Rail n°2 and the follow-up of Shift2Rail, Horizon 2020, and ERRAC activities. This committee is composed of technical directors from the main UNIFE system integrators and subsystem suppliers.

The Standards and Regulation Group (SRG) steers UNIFE's technical activities in the fields of the European regulatory framework (Railway Directives, TSIs, and other regulations applicable to the railway system). The SRG also manages rail standardisation initiatives and assesses the impact of UNIFE research projects on the standardisation and regulation activities. The SRG is composed of technical directors from the main UNIFE system integrators and subsystem suppliers.

The ERWA Steering Committee aims at promoting usage benefits, life cycle cost improvement and standardization of railway wheels and wheelsets. The committee is composed of the CEOs of the European wheels and wheelsets manufacturers. Two additional committees support it: the ERWA Development Committee dealing with political issues, market strategy and communications; and the ERWA Technical Committee dealing with standardization, regulation and research.

The UNIFE Digitalisation Platform aims at responding to the challenges and changes in railway transport due to the rapid evolution of digital technologies. The platform brings together UNIFE members providing solutions for digital and intelligent

mobility (e.g. information and communication technologies). This platform is in charge of monitoring EU discussions on the digital evolution as applied to the railways (e.g. rolling stock, infrastructure, signalling, passenger/ freight customer information).

The UNIFE Cyber-Security Working Group brings together UNIFE member companies with an expertise in cyber-security. It is a working group to discuss and identify opportunities for cooperation on cyber-security issues in the European rail sector, strengthening the position of the European industry vis-à-vis competitors and stakeholders.

The UNIFE ETCS Steering Committee (UESC) is in charge of coordinating UNIFE activities in the field of ERTMS from a strategic and political perspective. It is composed of high-level representatives of ERTMS suppliers.

The UNIFE ERTMS Marketing Group (UEMG) is in charge of coordinating marketing activities related to ERTMS, in particular deployment statistics, events, common publications and the ERTMS website.

The UNIFE Control Command and Signalling Systems Platform provides expertise in the field of signalling and telecommunications to UNIFE. It is a platform for consensus building on signalling-related issues, aiming to promote investment and innovation in the railway signalling sector. It plays an advisory role to UNIFE's technical and political activities impacting signalling. The committee is composed of representatives from the UNIFE membership active in signalling.

The UNIFE National Associations Committee is made up of 15 National Associations representing more than 1,000 large and medium-sized rail supply companies from all over Europe. As associate members of UNIFE, they engage in an important exchange, addressing UNIFE positions nationally while bringing national issues to the European level. The committee is composed of the directors of 15 National Associations from 14 different countries.

The Brussels Representatives Working Group aims to provide a platform for idea exchange on EU policy dossiers, reflecting on lobbying strategies and identifying potential synergies between UNIFE and EU representatives of the member companies. The group is composed of the EU representatives of UNIFE members in Brussels.

The SME Committee brings together the small and medium-sized companies of UNIFE. The objective of this committee is to provide the SMEs of our sector with information on EU policies and EU funds dedicated to SMEs, support them in accessing these EU funds and facilitate a direct and fruitful exchange between the rail-supply SMEs and the EU Institutions.

The UNIFE Trade & International Affairs Committee (TIAC) is in charge of monitoring EU trade negotiations with important stakes for the European rail industry, and coordinating UNIFE's positions in this respect. The TIAC is also a platform of exchange and information dissemination on bilateral cooperation activities undertaken by UNIFE on international markets.

The UNIFE Sustainable Transport Committee (STC) is the platform for exchanging and defining common positions on environmental sustainability topics. The STC provides early information and outreach actions on EU policy changes to UNIFE members, and also focuses on the communication of environmental performance of products and growing stakeholder demands with respect to more eco-efficient products and service solutions. The STC is supported by several Topical Groups, which provide the technical content on the main dossiers and regularly report to the STC.

Sustainable Transport Committee		
Life Cycle Assesement Topical Group	Chemical Risk Topical Group	Energy Efficiency Topical Group

The Investment and Project Financing Expert Group brings together high-level executives responsible for the long-term financing of infrastructure and industrial projects (including PPPs) and in charge of their companies' relationships with multilateral development banks (such as the European Investment Bank and the European Bank for Reconstruction and Development).

The IRIS Steering Committee steers the activities relevant to the promotion and development of the IRIS Certification TM, the globally recognised business management system of the rail sector. The committee is composed of high level representatives of System Integrators and Equipment Manufacturers from UNIFE member companies.

The Communications Committee steers the UNIFE Communication Strategy. It is composed of the communications directors from UNIFE member companies.

UNIFE Technical Working Groups

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

UNIFE Presiding Board 2017



Sabrina Soussan
UNIFE Acting Chairperson
—
CEO,
Siemens Mobility Division



Henri Poupart-Lafarge
Member of the Presiding Board
—
Chairman and CEO,
Alstom



Roger Dirksmeier
Member of the Presiding Board
—
Managing Director,
FOGTEC (representing the UNIFE SME Committee)



Laurent Troger
Member of the Presiding Board
—
President,
Bombardier Transportation



Klaus Deller
Member of the Presiding Board
—
Chairman of the Executive Board and Responsible for the Rail Vehicle Systems division
Knorr-Bremse AG



Andrés Arizkorreta García
Member of the Presiding Board
—
Chairman,
CAF Group



Augusto Mensi
Member of the Presiding Board
—
CEO,
Lucchini RS



Stephane Rambaud-Measson
Member of the Presiding Board
—
Chairman and CEO,
Faiveley Transport



Aike Schoots
Member of the Presiding Board
—
CEO,
Strukton Rail



Millar Crawford
Member of the Presiding Board
—
Executive Vice President, Ground Transportation Systems,
Thales Group



European Affairs

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Preparation of the Presidencies of the Council



The Presidency of the Council of the European Union rotates among the Member States every six months. The Presidency's function is essential as the responsible Member State determines the political agenda and sets the work programme for the semester as well as facilitates dialogue at Council meetings and

with other EU institutions. For this reason, UNIFE works hard to establish close contacts with EU Presidencies well in advance of the start of their mandate to convey our messages and influence their political agenda.

In 2017, Malta and Estonia respectively held the Presidency of the EU Council during the first and second semester. UNIFE's Director General therefore met with both former Maltese Transport Minister Joe Mizzi and Estonian Minister of Economic Affairs and Infrastructure Kadri Simson and provided them with the special Briefing that UNIFE publishes for every Presidency.

Two key achievements stand out in this area of work:



Kadri Simson (Estonian Minister of Economic Affairs and Infrastructure) and Philippe Citroën

- ✎ UNIFE convinced the Maltese Presidency to organise in April 2017 in Malta a European conference on promoting urban rail transport; and
- ✎ The Estonian Minister of Economic Affairs and Infrastructure invited UNIFE's Director General to speak about industrial competitiveness in front of the Economy Ministers of all EU Member States during the Competitiveness Council on 30 November 2017.

As it is extremely important to meet Member States' Ministries as early as possible to contribute to their future work programmes, UNIFE has already had several meetings with high-level representatives of the two Governments that will hold the Presidency in 2018: Bulgaria and Austria.

Industrial policy

RAIL SUPPLY INDUSTRY LEADERSHIP AND COMPETITIVENESS

The European rail supply industry is at a crossroads and requires proactive efforts from the European institutions and Member States to maintain its leadership of the global rail supply market and its 400.000 jobs in Europe. One of UNIFE's achievements on this issue had been to convince the European Parliament to prepare and adopt in 2016 an official *Resolution on the Competitiveness of the European Rail Supply Industry*. Prepared by the Committee for Industry, Research and Energy (ITRE) under the leadership of MEP Martina Werner, this Resolution puts forward very concrete recommendations that should be undertaken by the EU institutions in order to boost the competitiveness of the European rail supply industry in the face of aggressive Asian competition and create a more level playing field in the global market for rail equipment.

In order to ensure a concrete follow-up and implementation, the European Commission's Directorate-General for Industry (DG GROW) organised on 2 March 2017 the long-awaited kick-off meeting of the Forum on the Competitiveness of the Euro-

pean Rail Supply Industry in Brussels, in the presence of MEP Martina Werner and numerous representatives of the rail supply industry, the Member States, trade unions, and of course the Departments of the European Commission responsible for industry, public procurement, trade, research & innovation, and transport. In the same framework, the European Commission organised on 5 October 2017 the first Workshop on Trade and Public Procurement entirely dedicated to the European rail supply industry. On this occasion, the Commission confirmed the upcoming formalisation of the Forum through the creation of a 'Commission Expert Group' that would be set up after the launch of a dedicated Call for Members. At the time of writing, the Commission has not launched yet this Call for Members and UNIFE continues to push for its swift publication.



Kick-off meeting of the Forum on the Competitiveness of the European Rail Supply Industry

THE INDUSTRY4EUROPE CAMPAIGN

In February 2017, UNIFE initiated a large coalition called Industry4Europe with an unprecedented number of European industrial federations adopting for the first time a *Joint Declaration for an ambitious EU industrial strategy* in which they called on the European Commission to adopt a long-term action plan to help safeguard the world leadership of European manufacturers and jobs in Europe.

In the following months, both Member States and the European Parliament also clearly stated their full support for a strong European industrial strategy via the Competitiveness Council Conclusions on a future EU industrial policy strategy (29 May 2017)



Signatories of the Joint Declaration for an ambitious EU industrial strategy

and the Parliament Resolution on building an ambitious EU industrial strategy (5 July 2017). Eventually, the European Commission accepted to publish on 13 September 2017 a Communication on "Investing in a smart, innovative and sustainable Industry - A renewed EU Industrial Policy Strategy". We of course welcome this as an important first step as it puts industry back to a high position on the political agenda and provides a comprehensive overview of current Commission's initiatives and measures related to industrial competitiveness.

In the aftermath of this Communication, 124 European industrial federations prepared - under the coordination of UNIFE - and co-signed a Joint Reaction Paper entitled *For an ambitious EU industrial strategy: going further* in which they identify all key objectives and missing measures that should be at the heart of any ambitious and longer-term EU industrial strategy, taking the Commission Communication as a starting point.

UNIFE's Director General was officially invited by Estonian Minister of Economic Affairs Kadri Simson to present this Joint Reaction Paper to the Economy Ministers of all EU Member States at the occasion of the Competitiveness Council on 30 November 2017. The Ministers adopted on that same day Council Conclusions on "A renewed EU Industrial Policy Strategy" as well as a Presidency Report which both take onboard many messages put forward by the Industry4Europe coalition.



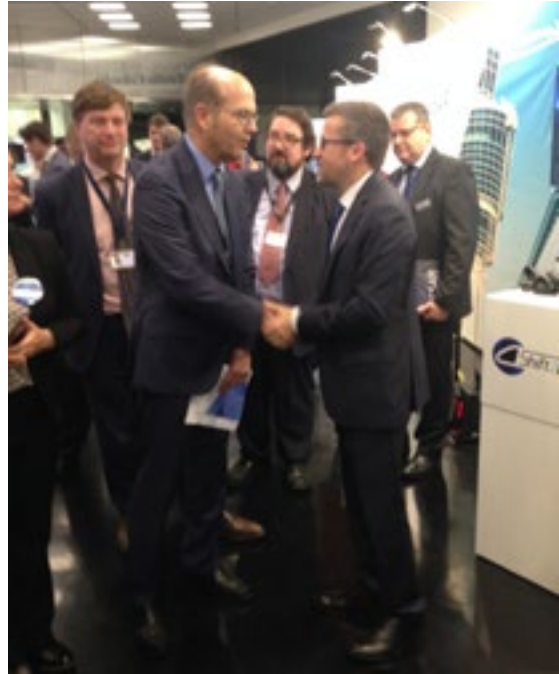
Presentation of the Joint Reaction Paper during the Competitiveness Council on 30 November 2017

Research & Innovation policy

Staying at the forefront of research and innovation is critical if Europe wants to maintain its industrial lead against the threat of foreign (and particularly Asian) competition. In this respect, and as rightly pointed out by the European Parliament in its *Resolution on the Competitiveness of the European Rail Supply Industry* (June 2016), the Shift2Rail Joint Undertaking (JU) – a PPP under Horizon 2020 – plays a key role in helping Europe “maintain a technological and innovative advantage”.

Since it was launched three years ago, Shift2Rail has definitely proven itself to be the correct and necessary tool to address both EU challenges in terms of sustainable and interoperable transport as well as industrial leadership and jobs creation. This is why UNIFE is actively supporting the extension of Shift2Rail activities under the next programming period post-2020. To do so, UNIFE:

- prepared and disseminated among decision-makers a new Position Paper entitled “Shift2Rail 2.0: the much-needed EU R&I tool to maintain jobs and the global leadership of the European rail supply industry”
- initiated a Joint Position Paper on the “post-2020 Multiannual Financial Framework” in which all major European rail stakeholders including CER, EIM,



Philippe Citroën and Carlos Moedas (EU Commissioner for Research, Science and Innovation) during a special session on Innovation in action - Joint Undertakings at the European Parliament in Strasbourg

ERFA, UIP and UITP Europe highlight “the need for Shift2Rail 2.0 in the 9th Framework Programme for Research and Innovation”

- supported the insertion of a reference to PPPs in the R&I chapter of the Joint Reaction Paper “For an ambitious EU industrial strategy: going further” co-signed by 124 European industrial federations in the framework of the Industry4Europe campaign
- worked with the European Associations representing other industrial sectors involved in PPPs under Horizon 2020 to adopt a Joint Position Paper entitled “Industry and research associations’ position on EU Institutional Public Private Partnerships in Research and Innovation”.

Public procurement

Among the important developments of the new European public procurement framework (which should have been transposed by Member States by April 2016), it is now specified that ‘contracting entities shall base the award of contracts on the most economically advantageous tender’ (so-called MEAT principle) and that award criteria ‘shall be identified on the basis of the price or cost, using a cost-effectiveness approach, such as life-cycle costing’.

In a public procurement initiative released on 3 October 2017, the European Commission nevertheless stressed that 55% of procurement procedures still use the lowest price as the only award criterion and acknowledges that ‘to achieve optimum outcomes in public procurement, strategic criteria need to be applied systematically’.

Throughout the year, UNIFE has used the opportunity of meetings with Member States authorities (Ministries of Transport, railway operators...) to advocate the use and enforcement of the MEAT principle since there are numerous factors other than price that directly or indirectly determine the total cost of ownership and life cycle cost. UNIFE also welcomed the voluntary ex ante assessment mechanism set up by the European Commission to support and guide Member States through public procurement procedures for large infrastructure projects. This is a key aspect to avoid non-compliance with EU public procurement rules, especially when it comes to projects funded by foreign direct investment.

SME policy

With a third of our membership composed of Small and Medium-sized Enterprises (SMEs), UNIFE continues to be vocal to increase the European Commission’s efforts to:

- ✎ support SMEs’ internationalisation
- ✎ support SMEs’ capacity to innovate
- ✎ facilitate SMEs’ access to finance
- ✎ make national administrations more responsive to SME needs; and
- ✎ reinforce skills development to overcome the shortage of skilled labour

UNIFE heartily welcomed the strong support for SMEs demonstrated by the Members of the European Parliament – and particularly by Rapporteur MEP Martina Werner – in the 2016 *Resolution on the Competitiveness of the European Rail Supply Industry*. The SME Committee conveyed this message to the Commission when meeting altogether in February 2017 with the Head of the Unit for the Commission’s Directorate for Industry and SMEs (DG GROW) in charge of the new Forum on the Competitiveness of the European Rail Supply Industry.

UNIFE regularly offered the opportunity to its SME Members companies to take the floor this year during high-visibility events dedicated to the competitiveness of our industry, including during a UNIFE event during the last SIFER trade fair in Lille on 21 March, the kick-off of the Forum on the Competitiveness of the European Rail Supply Industry organised by the European Commission on 2 March or more recently the Commission’s Workshop on Trade and Public Procurement for the European rail supply industry on 5 October.

EU Investment Policy

2017 has been a crucial year for UNIFE in working towards more investments for mainline, regional, and urban rail projects both in the current 2014-2020 EU programming period and in the post-2020 Multiannual Financial Framework (MFF) – for infrastructure, rolling stock or signalling (especially ERTMS deployment).

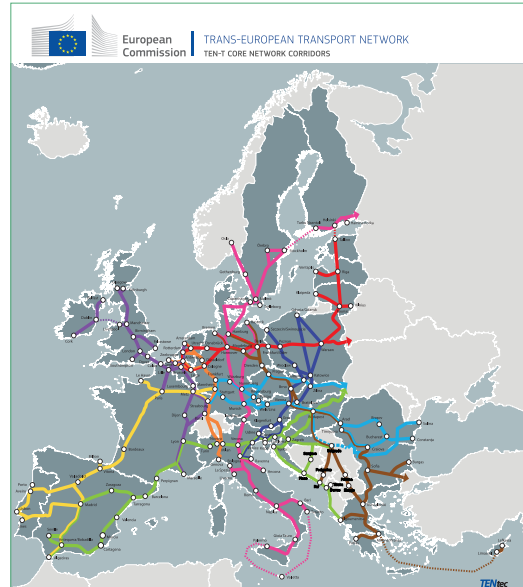
LOOKING AHEAD: THE NEXT POST-2020 MULTIANNUL FINANCIAL FRAMEWORK



With regard to the next Multiannual Financial Framework (MFF), UNIFE has been working on arguments for continued EU support for rail projects in the post-2020 programming period. As the EU institutions have started to prepare for the negotiations on how the

EU Budget will be spent over in the next post-2020 period, UNIFE coordinated the work on a Joint Rail Sector Position Paper on the post-2020 MFF. Co-signed by five other transnational rail associations (CER, EIM, ERFA, UIP, and UITP Europe), the Position Paper emphasised why it is so important for the EU to continue investing in rail projects, particularly considering the benefits of rail transport for the economy, the environment and the whole society. The paper was handed to EU Transport Commissioner Violeta Bulc and other high-level European Commission officials, Members of the European Parliament, and widely distributed to the Member States' officials. It will also be a key lobbying document in the first half of 2018, as the European Commission is expected to publish its proposal for the next MFF in May 2018.

TEN-T POLICY AND CONNECTING EUROPE FACILITY (CEF)



The cornerstone of the European transport infrastructure policy is the TEN-T Guidelines and the Connecting Europe Facility (CEF) Regulation. The TEN-T Guidelines define the geographic scope and technical requirements for the future European transport network until 2050, with the aim to replace by 2030 the patchwork of priority projects with a single multimodal European core network. By 2050, the broader comprehensive network should be developed as “ground layer” to ensure accessibility and common standards.

The TEN-T Policy is supported by a significant funding mechanism – the Connecting Europe Facility (CEF) with a total budget of €22.4 billion for Transport (the funding has been increased 3 times compared to 2007-2013 period). The vast majority of CEF grant funding goes for major cross-border projects and projects addressing main bottlenecks on the nine TEN-T multimodal Core Network Corridors. It is also a key funding instrument to help deploy the European Rail Traffic Management System (ERTMS) throughout Europe. From this budget, €11.3 billion is reserved for projects in Member States eligible for the Cohesion Fund.

UNIFE fully supports the role of the European Coordinators appointed for each of the nine Core Network Corridors. In particular, UNIFE and its member companies continue to be actively engaged in supporting the activities of Karel Vinck, horizontal Coordinator for the deployment of ERTMS.

In view of the very high demand for EU co-funding, as exemplified by the 2014, 2015, and 2016 CEF Transport Calls which were all significantly oversubscribed, UNIFE has been emphasizing the need for increased budget for this very successful EU investment programme. The importance of EU grants support, in particular through CEF, is also one of the key messages of the Joint Rail Sector Position Paper on the post-2020 MFF.

In this context, UNIFE Director General, during numerous meetings with Transport Ministers and key decision-makers in capitals across Europe urged Member States to submit well-prepared rail projects for the 2017 CEF Transport Blending Call in which the Commission invited the applicants to submit projects that could be financed by combining grants with other sources of financing. The number of submitted projects for the first cut-off date (14 July 2017) gives us reason to think that this Blending Call might be successful for the rail sector. For example, the oversubscription rate for ERTMS was almost four times higher (EUR 397 m requested funding for €100 million made available during this call). With the second deadline for the 2017 CEF Transport Blending Call postponed to 12 April 2018, UNIFE hopes that many important rail projects will be still sub-

mitted. Nevertheless, UNIFE remains cautious about the “blending” approach, as it will be important to see the final list of the selected projects and the ratio of grants support vs other financing for each project to evaluate the success of this Call.

In order to discuss the implementation of the CEF and its future in the post-2020 period, UNIFE has held frequent meetings with the European Commission and participated in several high-level events: the Regional Transport Investment Conference in Sofia on 23-24 March 2017, the Connecting Europe conference in Tallinn on 21-22 September 2017, and “Investing to Connect Europe” conference in Strasbourg on 15 November 2017.

COHESION POLICY AND RAIL INVESTMENTS IN CENTRAL AND EASTERN EUROPE

Through the Cohesion Fund and the European Regional Development Fund (ERDF), the EU makes several billion euros available for investment in transport projects. While 2017 saw an acceleration of the implementation of projects funded by the Member States’ Operational Programmes for the 2014-2020 programming period, unfortunately, some of Central and Eastern European Member States still find it challenging to make use of the funds which would enable them to rebuild their railway infrastructure (except for €11.3 billion from the Cohesion Fund that are centrally managed by CEF where the absorption rate has been 100%). By facilitating cooperation and exchange of information between all rail stakeholders and through meetings with decision-makers in many CEE Member States, UNIFE continued to promote efficient absorption of EU funds available for rail. This will, of course, remain a critical task for railway companies and public authorities in 2018.

In view of the forthcoming negotiations on the post-2020 MFF, UNIFE also insisted that the EU Member States, and in particular the Cohesion countries, should continue to benefit from Structural Funds support for rail projects, as many countries still need to bridge the significant investment gap. In view of the abovementioned absorption problems, capacity-building measures should be prioritised to ensure that the available resources are spent efficiently and produce



Cristóbal Millán de la Lastra (HoU CEF Transport: East Mediterranean, Black Sea, SE Europe+Marco Polo, ATM; INEA), Olivier Silla (Head of Unit Transport Investment, DG MOVE, European Commission), Andrey Novakov (Bulgarian MEP, EPP Group), Philippe Citroën, and Anguel Popov (Bulgarian Dep. Minister of Transport, Information Technology & Communications) exchanging views on post-2020 EU investments for transport in Sofia



Andrzej Bittel (Polish Undersecretary of State of the Ministry of Infrastructure & Construction) receives the *Views of the rail sector: Post-2020 Multiannual Financial Framework* from Philippe Citroën

the maximum result. These issues have been discussed in several meetings with the European Commission, the Chair (MEP Iskra Mihaylova) and key MEPs of the European Parliament Committee on Regional Development, and Member States' authorities.

MOBILISING PRIVATE INVESTMENT FOR RAIL

While public grants will remain of vital importance to financing rail projects, UNIFE continues to co-operate closely with the European Institutions and the European Investment Bank (EIB) to ensure that EU initiatives aimed at mobilising private investment for strategic projects also benefit the rail sector. The UNIFE High-Level Expert Group on Investment and Project Financing has been particularly engaged throughout 2017 in considering ways to mobilise more investment for the rail projects.

The key instrument in this context is the European Fund for Strategic Investments (EFSI or the so-called "Juncker Investment Plan") which aims to mobilise about €315 billion of additional investments by 2018 and €500 billion by 2020. Unfortunately, by the end of November 2017, there were only four signed rail-related EFSI projects (up from three by the end of 2016). While several approved EFSI rail projects are still waiting for the final sign-off, the overall results are not satisfactory. Therefore, UNIFE will continue in 2018 the intensive dialogue with the European institutions, the EIB, and other stakeholders to ensure that the extended EFSI benefits the rail sector.

Transport decarbonisation and EU climate policies

The transport sector still accounts for around a third of EU greenhouse gas emissions, which makes it the second-biggest sector, after energy, for greenhouse gas emissions. However, not only does rail rely very little on imported fossil fuels, it clearly stands out for its high energy efficiency, low specific emissions of CO₂, and growing use of renewables.

UNIFE has therefore continued to be very vocal to promote the essential role of rail in meeting EU targets for decarbonising the transport sector. At a time when political attention risks shifting towards connected cars, UNIFE has advocated more strongly than ever for a modal shift from road and air to rail, the most environmentally friendly major mode of transport.



As a leading member of the Platform for Electro-Mobility,

UNIFE has continued to articulate the need for a regulatory level playing field between road and rail transport in the context of the Mobility Package, recently presented by the European Commission and being currently discussed in the European Parliament. In particular, the review of the Eurovignette Directive should emphasise that pricing must reflect the 'polluter-pays' and 'user-pays' principles for all transport modes.

Finally, UNIFE participated again in COP23 last November in Bonn, promoting rail solutions as the key to addressing transport decarbonisation and climate challenges. UNIFE is a major supporter of the international climate agreement reached during the 21st Conference of Parties (COP21), which took place in Paris in December 2015. By committing to hold the increase in the global average temperature to below 2°C above pre-industrial levels, and to limit the temperature increase to 1.5°C above pre-industrial levels, this ambitious agreement provides a major opportunity for decision-makers to design more sustainable transport policies with rail as their backbone.

Digitalisation

With the support of its Digitalisation Platform, UNIFE adopted in 2016 an ambitious Position Paper on the Digitalisation of Railways, which sets out short and long-term priorities and targets for the rail supply industry's contribution to the digital transformation of rail. UNIFE actively disseminated this Position Paper throughout 2017 towards EU institutions and other rail stakeholders. In this respect, UNIFE Digitalisation Platform Chairman Yves Perreal (Thales) participated in the Digital Transport Days organised by the Estonian Presidency of the EU in Tallinn on 8-10 November and presented UNIFE's view on digitalisation and how it will help rail to be the backbone of the European transport system.

UNIFE also coordinated in 2017 the work on a Joint Rail Sector Declaration on Digitalisation of Railways, co-signed by CER, EIM, ERFA, UIP, UITP Europe and UNIFE, which was handed over to the Director-General of DG MOVE (European Commission), Mr Henrik Hololei, during the Digital Transport Days.



Nicolas Furio and Yves Perreal (Chairman, UNIFE Digitalisation Platform) presenting to Henrik Hololei (Director General, DG Move, European Commission) the Joint Rail Sector Declaration on Digitalisation of Railways



UNIFE presenting to Violeta Bulc (EU Commissioner for Transport) our vision for Shift2Rail 2.0 and our digitalisation priorities

Urban mobility

Urbanisation has been a major trend of the past decades which is expected to continue. As a result, urban transport now accounts for 40% of CO₂ emissions and 70% of emissions of other pollutants arising from road transport; in addition, it is the main source of congestion, which costs nearly €100 billion, or 1% of the EU's GDP, annually. Urban transport must therefore meet the challenges of an increased demand for mobility and safety while reducing pollutant emissions.

In 2017, UNIFE continued its active involvement in the ongoing debates on urban mobility and strengthened its partnership with like-minded associations. In particular, UNIFE collaborated with POLIS, EUROCITIES and UITP to support the Maltese Presidency of the Council of the EU in the organisation of a dedicated event on "Developing urban rail transport: environmental performances and financing solutions", held in Malta from 27 to 28 April 2017. It was a unique opportunity to learn about best practices in Europe on developing and financing urban rail systems and brought together representatives of local governments, urban operators and rail equipment suppliers from all over Europe.

Funding and financing for urban rail has been a particularly important topic for UNIFE in 2017, as urban mobility is a key market segment for UNIFE Members. How to boost investments in urban rail was not only the central element of the above-mentioned Maltese EU Presidency conference, it was also the topic of an event organised by UNIFE on 27 September 2017 during the TRAKO Fair in Gdańsk, Poland. Furthermore, on 12 October, UNIFE together with EUROCITIES co-organised a lunch-debate on “Financing Sustainable Cities: Ensuring Long Term Investments for Urban Transport (Tram, Light Rail, and Metro Systems)”. Hosted by MEP Dominique Riquet and moderated by MEP Andrey Novakov in the framework of the European Parliament’s Long-Term Investment and Reindustrialisation Intergroup, the event brought together high-level officials from the European institutions, financial institutions, cities, and rail stakeholders. Following the speech by UNIFE Director General Philippe Citroën, Mark Sontag, Executive Director Mobility Finance at Siemens Financial Services, made a presentation sharing Siemens’ expertise in structured finance and PPPs, and provided insightful policy recommendations.



Alain Flausch (Secretary General, UITP), David Briginshaw (Editor-in-Chief, IRJ), Philippe Citroën, Markku Markkula (President of the European Committee of the Regions), Joe Mizzi (Maltese Minister for Transport & Infrastructure), Karmenu Vella (EU Commissioner for Environment), Pim Van Ballekom (Vice-President, EIB), Karen Vancluysen (Secretary General, POLIS), Christian Specht (Vice-Chair of the EUROCITIES Mobility Forum, Deputy Mayor of Mannheim)

Freight Transport

Over the course of 2017, UNIFE continued to advocate for sustainable freight transport, in light of the new agenda for rail freight published by the Commission in September 2015. This agenda aims to cope with the challenge of shifting 30% of long-distance road freight to more energy-efficient transport modes by 2030 and 50% by 2050 posed by the Transport White Paper. In fact, although rail’s freight market share has been relatively stable for several years, it is not growing and in some Member States it is declining.

Decisive support for the modal shift objectives will come from the Shift2Rail Joint Undertaking. Shift2Rail’s Innovation Programme 5 (IP5) should be the backbone of the strategy to achieve a more sustainable and attractive European rail freight.

Moreover, UNIFE took active part with other rail stakeholders in the Sector Statement Group (SSG) to follow up on the Joint Declaration signed during the TEN-T Days in Rotterdam in 2016. The rail sector committed to the aim of enhancing the competitiveness of the Rail Freight Corridors for the benefit of all customers, and to improving the quality, reliability and efficiency of transporting goods by rail across Europe. The sector declaration identified important measures which are needed to improve the competitiveness of the Rail Freight Corridors in order to make rail freight a more attractive option for all customers, enhance the operational efficiency of rail freight operators, and ensure adequate capacity for all.

UNIFE is supporting the Commission’s efforts to make rail freight more competitive and attractive through the UNIFE Freight Committee, which is currently developing its own freight agenda by highlighting the main challenges and objectives foreseen by the European rail industry.

UNIFE participated in the European Rail Freight Day which took place in Vienna on 9 December 2017. Similar to previous editions, UNIFE and its Freight Committee were instrumental in helping the Commission organise this important event on rail freight.

Women in Transport – EU Platform for Change



On 27 November 2017, European Economic and Social Committee President Georges Dassis and EU Transport Commissioner Violeta Bulc officially launched the EU Platform for Change aiming at increasing female employment and equal opportunities in the transport

sector. Karima Delli, Chairwoman of the Transport Committee in the European Parliament and Estonian Minister for Economic Affairs and Infrastructure Kadri Simson also spoke as part of the high-level panel. UNIFE attended the event and signed the Declaration and thus becoming a founding member of the Platform. Stakeholders from all transport sectors will now be able to make visible their concrete actions in favour of women's employment and to exchange good practices.



Violeta Bulc (EU Commissioner for Transport)



Karima Delli (Chairwoman of the TRAN Committee, MEP)



Karima Delli (Chairwoman of the TRAN Committee, MEP), Pierre Jean Coulon (President TEN Section, EESC), Violeta Bulc (EU Commissioner for Transport), Georges Dassis (President, EESC), Kadri Simson (Estonian Minister of Economic Affairs & Infrastructure), Madi Sharma (Member of the EESC and rapporteur for the EESC opinion on Women and transport – Platform for Change)



Rail sector signatories of the Declaration on equal opportunities for women and men in the transport sector

Rail Forum Europe



Over the course of 2017, UNIFE continued to successfully manage the secretariat of Rail Forum Europe (RFE), the MEPs' platform dedicated to rail transport, under the lead of Chairman MEP Michael Cramer and Vice-Chairs MEP Gesine Meissner and MEP Georges Bach. Created in 2011 by a group of Members of the European Parliament with a genuine interest in rail, RFE plays an important role in bringing together all the stakeholders in the rail sector with EU decision-makers to formulate and discuss rail policy in Europe. Its role is very well perceived by stakeholders and decision-makers and RFE events are now a widely recognised rendez-vous in the Brussels arena, providing a platform for fruitful exchanges on hot topics in the European rail community.

In addition to the Chair and Vice-Chairs, the following Members of the European Parliament – active across various Parliamentary Committees – are currently full Members of RFE: Ines Ayala-Sender, Ismail Ertug, Jo Leinen, Dominique Riquet, Andreas Schwab, Karima Delli, Boguslav Liberadzki, Lucy Anderson, Tomasz Poreba, Franck Proust, Christine Revault d'Allonnes-Bonnefoy, Jozo Rados, Massimiliano Salini, Istvan Ujehlyi, Wim Van de Camp and Martina Werner. Forty-two Associate Member companies and associations directly involved in the rail sector also support RFE.

In 2017, RFE organised the following events, which provided a good opportunity to discuss the main topics on the agenda of the EU institutions, featuring the participation of a total of 190 attendees:

- ✧ 27 February 2017: The MEAT principle: Implementing best bidder criteria in railway infrastructure procurement – why wait any longer? (sponsored by Voestalpine)
- ✧ 3 May 2017: Shift2Rail - The present and future of European rail research (sponsored by UNIFE and Shift2Rail JU)
- ✧ 19 June 2017: Will autonomous vehicles derail trains? (sponsored by Transdev)
- ✧ 26 September 2017: Developing and modernising rail infrastructure: what role for the private sector? (sponsored by AGIFI)

RFE activities will continue in 2018, with a number of events throughout the year, addressing some of the legislative dossiers of interest to the EU institutions and the European rail community.

FOR MORE INFORMATION,
PLEASE VISIT THE WEBSITE OF RAIL FORUM EUROPE AT
WWW.RAIL-FORUM.EU









International Affairs

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EU-Japan Free Trade Agreement (FTA)



On 8 December, the European Commission and Japan finalised their negotiations on a bilateral free trade agreement (FTA) following the agreement in principle reached in July.



UNIFE welcomed the agreement as providing satisfactory guarantees to European rail suppliers on public procurement, in particular:

- The long-awaited announcement of the removal of the Operational Safety Clause (OSC) – a major non-tariff barrier impacting the European rail supply industry – within a reasonable transition period of maximum one year after entry into force of the agreement
- The guarantee that EU companies can access the large procurement markets of 48 Japanese cities of on average 300.000 inhabitants each under a non-discrimination regime (i.e. no requirement for local establishment as it was the case until now). This will open the Japanese market for local transport
- The recommitment of three Honshu Japanese Railways (JR East, Central and West) and JR Kyushu to pursue their codes of conduct providing guarantees of transparency and non-discrimination of a similar nature than the ‘one-year package’ of measures agreed in 2014

Based on the agreement in principle, negotiators from both sides will continue working to resolve all the remaining technical issues and conclude a final text of the agreement. Then, the European Commission will proceed to the legal verification and translation of the agreement into all EU official languages, and will consequently submit it for the approval of EU Member States and the European Parliament.

In spite of these good prospects, UNIFE has already stressed at the highest level that the enforcement of the commitments made by Japan in the framework of the FTA will be key to ensure actual changes in business practices and a true level-playing field between the European and Japanese rail markets.

Another positive development was the EU Gateway to Japan programme, which organised a mission focused on rail in November 2017. This successful initiative was launched by the EU Delegation to Japan to support the European Rail Supply Industry to access the Japanese rail market. Over 30 European small and medium-sized companies participated.

In parallel to the negotiations, the EU-Japan Industrial Dialogue on Railways continued, with the last meeting held on 27 February 2017 (Tokyo). Even more so than the past meetings, this sixth edition showed a growing interest from the European rail supply industry, and UNIFE members were again able to present their solutions to a high-level, wide range of Japanese rail operators. The Industrial Dialogue will continue even after the end of the negotiations as it considered to be a useful tool to strengthen links and mutual understanding between European suppliers and Japanese operators.



Donald Tusk (President, European Council), Shinzo Abe (Japanese Prime Minister) and Jean-Claude Juncker (President European Commission)



The 6th EU-Japan Industrial Dialogue on Railways in Tokyo (27 February 2017)

BY THE NUMBERS...

1 year

Maximum deadline for the removal of the Operational Safety Clause (OSC) by Japan after the entry into force of the FTA

6

Number of EU-Japan Industrial Dialogues on Railways organised since their launch in 2014

49

Number of European participants in the last Industrial Dialogue on Railways held on 27 February 2017 in Tokyo

30

Number of European companies participating in the EU Gateway to Japan mission on railways mission in November 2017

?

Number of future rail tenders launched in Japan following the removal of the Operational Safety Clause (OSC)

EU and China trade relations



Over the past few years, UNIFE members have encountered increasing difficulties in the Chinese rail market, the accessibility of which has steadily decreased to only 20% for the period 2013-2015. Not only are some market segments now de facto closed to foreign suppliers, but additional constraints are imposed by contracting authorities (non-transparent public procurement procedures, increasing localisation rates, etc.) on the market segments that are accessible.

parent public procurement procedures, increasing localisation rates, etc.) on the market segments that are accessible.

At the same time, Chinese state-owned companies are increasingly challenging competitors in all product segments and on all continents through unfair competition. It is particularly the case for CRRC, the largest rolling stock supplier in the world, but also with CRCC and CREC (infrastructure) or CRSC (signalling).

Against this background, UNIFE has closely monitored several initiatives and dossiers throughout 2017:

ACCESS TO CHINA'S MARKET

In November 2013, negotiations between the EU and China on an Investment Agreement were officially launched. Following an agreement on the scope in 2016, both parties agreed that the future agreement should improve market access opportunities for investors by establishing a genuine right to invest and by guaranteeing that there be no discrimination against companies. Furthermore, the future agreement will address key challenges of the regulatory environment, including those related to transparency, licensing and authorisation procedures. While these aspects are extremely important for UNIFE members, we also called upon the Commission to accelerate negotiations with China as market access is rapidly degrading.

UNIFE continues to monitor the potential access of China to the WTO Agreement on Government

Procurement (GPA) and supports China's access on the basis of reciprocity with the EU's offer. Throughout 2017, the European Commission has been encouraging Chinese authorities to come up with a new and more ambitious offer also including state-owned enterprises, as previous offers it has provided since 2007 have been deemed insufficient in terms of guarantees and coverage of procuring entities by other GPA parties. This new offer could be expected in 2018.

COOPERATION AND COMPETITION WITH CHINA

During the last EU-China High-level Economic Dialogue in September 2015, a MoU was signed on the 'EU-China Connectivity Platform' to enhance synergies between China's One Belt One Road' initiative and the EU's connectivity initiatives (TEN-T policy). In May 2017, a second meeting Chairs' meeting between DG MOVE and China's NDRC was held, along with a meeting of the expert group on investment and financing. Discussions have been continuing on a second list of pilot projects of mutual interest in the EU and in China. UNIFE has been actively supporting the joint commitment to promote transparency and a level-playing field based on market rules and international norms, and has defended this position in many fora across the year (Asia-Pacific Research and Advice Network roundtable on connectivity, EU-China Belt & Road Conference, FERRMED Silk Road Conference...). However things are progressing very slowly.

Finally, UNIFE is actively participating in the review of the OECD Sector Understanding on Export Credits for Rail Infrastructure (RSU) and its promotion to the Chinese government, as well as in the enforcement of EU public procurement rules on investment projects, in order to ensure that a level playing field can be guaranteed between all rail market players. This has become all the more important as China is discussing investing in rail infrastructure and connecting Asia and Europe via the Silk Road Economic Belt with some EU Member States. UNIFE has also been following the setup of interesting initiatives such as a dialogue on state aid control between the EU (DG Competition) and China.

TRADE DEFENCE INSTRUMENTS

Throughout 2017, UNIFE monitored the political developments around EU trade defence instruments.

On 9 November 2016, the European Commission presented a proposal for a new method for calculating dumping on imports from countries where there are significant market distortions, or where the state has a pervasive influence on the economy. This proposal was in fact deeply linked to the legal dispute on whether Market Economy Status (MES) should be automatically granted to China on 11 December 2016. The European Parliament and the Council found an agreement in trialogues on 3 October 2017, and both institutions validated the final text. This means that the new methodology can now enter into force.

Furthermore, a political agreement was reached between the Commission, the Council and the European Parliament on the modernisation of the EU's trade defence instruments, which had been in discussion since 2013. This proposal will streamline procedures and allow the EU to impose higher duties in certain circumstances. The European Parliament and the Council will need to formally approve the final text early 2018.



UNIFE participating at the EU-China Belt & Road Conference

The International Procurement Instrument

In January 2016, the Commission revised a 2012 proposal to promote a level playing field for international public procurement. It included substantial changes compared to the previous one, and allows the EU to take proportionate and more targeted action in cases of alleged discrimination of EU companies in procurement markets.

Despite a revived enthusiasm on this topic, the revised proposal has been facing significant difficulties in the Council, with many Member States still opposing it for various reasons. Throughout 2017, UNIFE has been working with the European Commission and the European Parliament to maintain the momentum and help break the deadlock within the Council. However, the support of UNIFE members, especially at Member State level, is more crucial than ever to reach an agreement at EU level in the near future.

Framework for screening of foreign direct investments into the European Union

Amidst growing concerns about non-European investments in strategic sectors, the European Commission made a proposal in September 2017 to set up a European framework for screening foreign direct investment into the European Union. The proposal would enable Europe to preserve its essential interests and includes a European framework for screening of foreign direct investments by Member States on grounds of security or public order, as well as a cooperation mechanism between Member States and the Commission.

In a position paper finalised in November and disseminated to European institutions, UNIFE welcomed the European Commission proposal and made recommendations on how to reinforce it and provide it with more credibility. In the next months, UNIFE will work closely with the European Parliament and the Council to ensure that the proposal can become law.

EU-US transatlantic relations



In spite of the freeze of the Transatlantic Trade and Investment Partnership (TTIP) negotiations between the EU and the US, UNIFE continues to monitor the situation with the US market due to increasing issues related to public procurement. Indeed, US content requirements can constitute a major non-tariff barrier, since the 'Buy America(n)' provisions can deter foreign companies from investing when the thresholds are set at unreasonably high levels.

Against this background, UNIFE has maintained regular contact with European institutions to inform them of the evolution of the situation in the rail sector. In particular, UNIFE met with the EU Delegation to the EU during a trip to Washington D.C. in June 2017. UNIFE has also worked in close cooperation with the European Commission to convey its messages via other forums such as the WTO Agreement on Government Procurement (WTO GPA).

EU-Canada Comprehensive Economic and Trade Agreement (CETA)



Following the signature of the Comprehensive Economic and Trade Agreement (CETA) in October 2016 by EU leaders and the Prime Minister of Canada, the agreement was ratified by the European Parliament on 17 February 2017.

On 21 September, CETA entered into force provisionally. In practice, this means that most aspects of the agreement, including the public procurement provisions, are now implemented. However, CETA will only enter into force fully and definitively, when all EU Member States have ratified the Agreement.

The agreement will provide EU rail suppliers the best access ever offered to companies from outside Canada to bid on the country's public procurement contracts, not just at the federal level but also at provincial and municipal levels. The government procurement market access for European rolling stock in the Canadian Provinces and Territories will be unlimited, with the exception of Ontario and Québec which also open their market to EU bidders while lowering and simplifying local content requirements.



Justin Trudeau, Prime Minister of Canada, presenting CETA to the European Parliament before its ratification on 17 February 2017

EU Free Trade Agreements with Mexico and Mercosur



In 2016, the EU and Mexico launched negotiations to modernize the Global Agreement, which has existed since 2000. The first round of negotiations followed in June 2016, but the pace of negotiations accelerated throughout 2017 as the political objective is to reach an agreement rapidly.

In 2010, the EU started negotiations with the four founding members of Mercosur (Argentina, Brazil, Paraguay and Uruguay). The negotiations were put on hold in 2012 and resumed in 2016, but intensified especially in 2017 as both blocs would like to strike a deal as soon as possible.

On both files, UNIFE has worked in close cooperation with the European Commission to convey the messages of European rail suppliers on public procurement. In particular, UNIFE has stressed the need to tackle domestic preferential systems and provide guarantees of transparency and non-discrimination at both central and sub-central level.

Brexit



On 29 March 2017, the United Kingdom notified the European Council of its intention to leave the European Union, in accordance with Article 50 of the Treaty on European Union. In April, the heads of state and government of the 28 EU countries adopted a set of political guidelines setting out the EU's overall positions and principles, and negotiations with the UK started.

Brexit will impact the business of many UNIFE members and could potentially disrupt supply chains and exports within and outside the European Union. Therefore, UNIFE has been monitoring the negotia-

tions, which are expected to accelerate as the future trade relationship will need to be defined in of the lead up to the March 2019 deadline.

Cooperation with Russia (NP UIRE)



Russia continues to be an important and attractive market for the European rail industry, with significant investments foreseen especially in rolling stock.

In 2017, UNIFE strengthened its cooperation activities with its Russian counterpart, the Non-Commercial Partnership of the Russian Rail Industry (NP UIRE), to bring UNIFE members and the Russian railway sector even closer. On August 30-31, UNIFE participated in the 6th International Fair of Railway Equipment and Technologies EXPO 1520, in Scherbinka, Moscow.

At the EXPO 1520, UNIFE and NP UIRE unveiled the 'Glossary of Railway Terms'. This joint document is the latest outcome of the technical cooperation between the two associations and provides an update and expansion of the glossary found in previous joint publications, to include terms from five Russian texts. The joint publications with NP UIRE act as practical reference guides to assist both respective member companies in understanding and complying with the requirements in the different regulatory systems.



UNIFE participating in the 6th International Fair of Railway Equipment and Technologies EXPO 1520

BY THE NUMBERS...

3

Number of joint UNIFE-NP UIRE publications since the launch of the cooperation

5

Number of NP UIRE events UNIFE has participated in since 2013



Cooperation with Gulf Countries (GCC-SG)

The Gulf Countries region is a priority market for UNIFE members. It is one of the most important growth drivers to the industry, with considerable investments foreseen both for mainline and urban transport.

Since 2014, UNIFE has built a solid cooperation the GCC Secretariat General (GCC SG), which oversees economic developments in the region, to share knowledge and experience on rail-related topics. A crucial milestone in the bilateral relationship was the signature of a Memorandum of Understanding between the GCC SG and UNIFE on 1 December 2017 in Paris. The scope of the MoU includes market developments for freight and passenger transport, EU and GCC railway standards, interoperability of rail networks on cross-border corridors, deployment of the European Rail Traffic Management System (ERTMS).

During the Middle East Rail Conference, which was held on 7-8 March in Dubai, UNIFE presented the contribution of the European rail supply industry to a competitive rail network in the region. Building on this opportunity, a second joint EU-GCC Seminar on Railways was organised by the European Commission and the GCC SG on 6 March. The objective was to deepen cooperation and exchange on GCC rail developments, interoperability and industry-related topics (technologies, ERTMS, research...). In this context, UNIFE Director General made a presentation to GCC-SG and Member State representatives.



GCC-SG, UNIFE, ERA and UIC sign Memorandums of Understanding to deepen cooperation on rail development

BY THE NUMBERS...

2

Number of joint EU-GCC Seminars on Railways (2016 and 2017) held in the GCC region

5

Number of rail conferences in the GCC region in which UNIFE has promoted European technologies since 2013

2

Number of study tours from GCC delegations in Europe with involvement of UNIFE and its members since 2013

Cooperation with the US



Throughout 2017, UNIFE has maintained close contacts with US rail stakeholders on the basis of its Memorandum of Understanding with APTA (American Public Transportation Association).

In June 2017, a delegation from UNIFE participated in the APTA Rail Conference, which was held in Baltimore. UNIFE's Director General presented an overview of the state of the European Rail Industry and the various elements affecting it. UNIFE also had the opportunity to have bilateral meetings with key actors in APTA, the Federal Railroad Administration and the EU Delegation, gaining valuable insights into the issues currently affecting the US rail industry, as well as areas to potentially come together on - in particular on public procurement and the Most Economically Advantageous Tender (MEAT) principle.



Philippe Citroën, Valerie McCall (Past APTA Chair), Doran Barnes (Past APTA Chair), Nathaniel Ford (Current APTA Chair), and Richard White (Acting President & CEO, APTA)

BY THE NUMBERS...

5

Number of conferences in North America (APTA, TRB...) in which UNIFE promoted European technologies and the transatlantic cooperation since 2013

4

Number of partners of the transatlantic cooperation on rail established in 2013 (APTA, FRA, ERA and UNIFE)

UNIFE participates in COP23

Over the past years, UNIFE has been more active in promoting rail as the backbone of a sustainable transport system in order to address greenhouse gas emissions from the transport sector and effectively tackle climate change.

Following the 21st Conference of the United Nations Framework Convention on Climate Change (COP21 or CMP 11), an international climate agreement was reached. This ambitious, landmark agreement entered into force in November 2016 and provides a major opportunity for decision-makers to design more sustainable transport policies centred on rail solutions. However, it needs effective implementation and a coherent financing framework.



The 2017 United Nations Climate Change Conference (COP23) was held in Bonn from 6 to 17 November. As in previous years, UNIFE supported the Sustainable Low Carbon Transport (SLoCaT) initiative in its joint initiatives with the Paris Process on Mobility and Climate (PPMC). In particular, a

Transport Thematic Day was held on 11 November. The event was organized by the UNFCCC-led Marrakech Partnership on Global Climate Action (MPG-CA), supported by the Transport, Content Group consisting of non-state actors International Transport Forum (ITF), Paris Process on Mobility and Climate (PPMC), International Union of Railways (UIC) and International Association of Public Transport (UITP).

During COP23, UNIFE also attended the World Climate Summit, which was held on 14-16 November. The Summit provided a global leaders' forum for climate action where stakeholders from government, business and finance met to discuss climate change and the implementation of the Paris Agreement.

OECD Rail Sector Understanding

Throughout 2017, UNIFE continued to lobby for the extension of the OECD Sector Understanding on Export Credits for Rail Infrastructure (Rail Sector Understanding - RSU) beyond the initial four-year trial period (2014-2017). While the participating countries to the RSU have agreed to extend it until 2020, UNIFE participated in the OECD Consultation meeting on 14 November 2017 in order to insist on the need for more flexibility under the RSU (e.g. longer repayment periods and inclusion of a bigger share of local costs), in order to make it a more efficient tool enhancing the competitiveness of the European Rail Supply Industry.



UNIFE presenting the industry's position on the OECD RSU during the OECD Consultation in Paris on 14 November 2017



Standards & Regulation

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Overview

UNIFE continues to coordinate the input of the rail supply industry towards the development of regulations and other documents drafted by the European Union Agency for Railways (the Agency or ERA) and the European Commission (EC). The UNIFE Standards and Regulation Group (SRG) and the various UNIFE technical working groups are platforms for UNIFE members to influence technical regulations concerning interoperability and safety, and UNIFE experts have participated in the various working groups and workshops organised by the European Institutions. The SRG plays a pivotal role in coordinating the technical position of UNIFE for all the Fourth Railway Package implementation activities.

Since ERA was established, UNIFE has held the status of observer in its Management and Executive Boards. UNIFE regularly attends these meetings and, where relevant, provides input on important topics such as the ERA work-programme and on-going activities for the implementation of the Fourth Railway Package.

The UNIFE SRG has also interacted with other stakeholders such as other sector associations (CER, EIM, etc.) via the Group of Representative Bodies (GRB) and with the European Standardisation Organisations, in particular with CEN and CENELEC through the Sector Forum - RAIL.

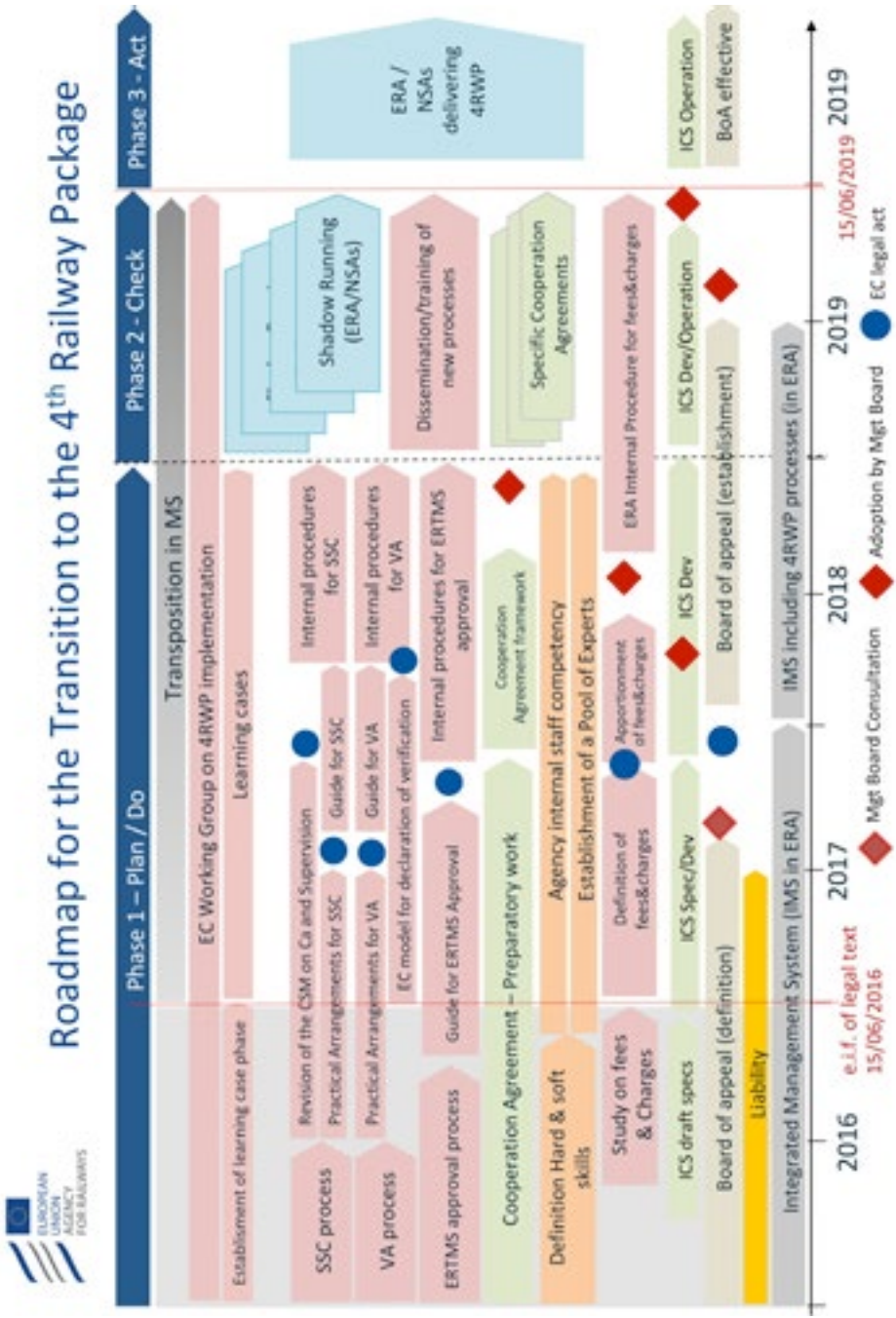
2017 KEY HIGHLIGHTS:

IMPLEMENTATION OF THE TECHNICAL PILLAR OF THE FOURTH RAILWAY PACKAGE

2017 marked a milestone for the EU legal framework regulating safety and interoperability with the implementation of the Technical Pillar of the Fourth Railway Package, representing a major step towards the achievement of a Single European Railway Area. The Technical Pillar, comprising of the recast Interoperability and Safety Directives and revised ERA Regulation, was approved by the European Parliament on 28 April 2016 and entered into force on 15 June 2016. The long awaited final adoption of the Technical Pillar will cut the time and cost necessary to obtain authorisation for locomotives and rolling stock for use on the European rail network. The transposition time is three years, with the possibility of an extension of one additional year if required by Member States, so the ERA and the European Commission have worked intensively in 2017 to draft the necessary practical arrangements and needed implementing acts and delegated acts following under the interoperability and safety directive.

UNIFE continues to coordinate the input of the rail supply industry towards the development of regulations and other documents drafted by the European Union Agency for Railways and the European Commission

As shown in the diagram below, the implementation phase roadmap of ERA is very challenging:



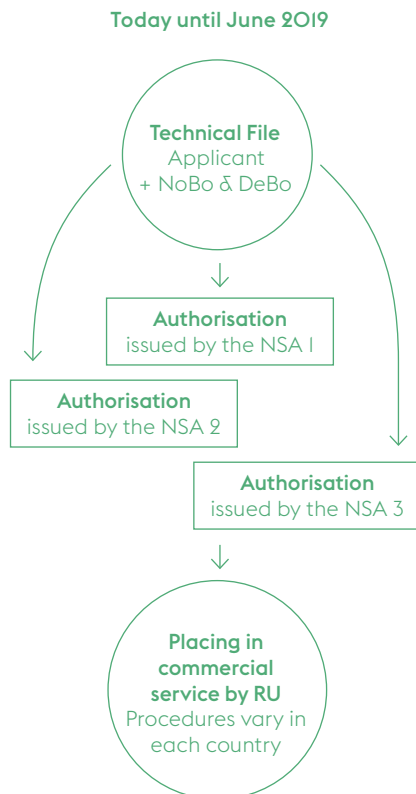
Roadmap for the Transition to the 4th Railway Package

A major milestone for 2017 was the positive vote in the Railways Interoperability and Safety Committee (RISC) on 16 November 2017 regarding the Implementing Regulation on practical arrangements for the railway vehicle authorisation and railway vehicle type authorisation process pursuant to Directive (EU) 2016/797 of the European Parliament and of the Council. This is a critical milestone since the practical arrangements for vehicle authorisation is a key document for establishing a simplified and harmonised vehicle authorisation process throughout Europe and for achieving the benefits of the Fourth Railway Package Technical Pillar.

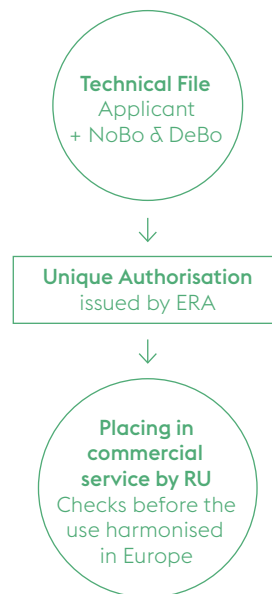
ERA will play a central role in removing technical barriers with its enhanced role - under the revised Regulation - of issuing vehicle authorisations and safety certifications, making those procedures faster and easier for railway manufacturers and operators.



Railways Interoperability and Safety Committee (RISC) vote on 16 November 2017



**The Fourth Railway Package
from June 2019**



Throughout 2017, ERA organised several regional workshops (Single European Rail Area Workshops) in Europe (Budapest, Helsinki, Valetta, Berlin, Amsterdam and Brussels) to promote the implementation of the Technical Pillar. UNIFE attended all these workshops to present the European Rail Supply Industry position.



Keir Fitch (Head of Unit Rail Safety & Interoperability, DG MOVE, European Commission) at the SERA Conference in Helsinki



Violeta Bulc (EU Commissioner for Transport) at the SERA Conference in Brussels



Michael Cramer (MEP, TRAN Committee) at the SERA Conference in Berlin



Josef Doppelbauer (Executive Director, ERA) opening the SERA Conference



Carlo Borghini (Executive Director, Shift2Rail Joint Undertaking) at the SERA Conference in Brussels

TASK FORCE FOR THE IMPLEMENTATION OF THE TECHNICAL PILLAR

Piloted by the SRG with nominated experts, UNIFE's internal task force for the implementation of the Technical Pillar was predominantly active in the following activities:

- The EC Expert Group on the Technical Pillar of the Fourth Railway Package
- Vehicle Authorisation process
- One-Stop Shop (IT tool)
- ERTMS trackside Implementation
- Fees & Charges
- Board of Appeal
- TSI Delegated Act

UNIFE in particular focused on shaping the vehicle authorisation process, by attending numerous ERA workshops, EC Expert Group meetings and organising bilateral meetings with the EC and the Agency on the highest priority topics for the rail supply industry.

EUROPEAN COMMISSION EXPERT GROUP ON THE TECHNICAL PILLAR OF THE FOURTH RAILWAY PACKAGE.

UNIFE is a permanent member of the EC's Expert Group on the Technical Pillar of the Fourth Railway Package, together with representatives of Member States and other official Representative Bodies. The objective of this expert group is to better prepare the vote of legal acts in the Railway Interoperability and Safety Committee (RISC) and to give recommendations to the EC on adoption of legal acts. In 2017, this expert group played a fundamental role in the drafting and adoption of the legal acts arising from the Technical Pillar of the Fourth Railway package, in particular the Delegated Act on TSIs and the Implementing Acts on the Single Safety Certification, Vehicle Authorisation, Fees and Charges and Board of Appeal.

UNIFE attended all meetings, providing to the forum and to the EC representatives the comments from the rail supply industry on the various topics discussed. It should be noted though that this Expert Group does not replace the RISC, where Members States attend and vote on the final Implementing Acts.

COOPERATION WITH THE GROUP OF REPRESENTATIVE BODIES (GRB)

As an official Representative Body of the European railway sector, UNIFE is member of the Group of Representative Bodies (GRB). The GRB is a grouping of railway associations in Europe with the role of supporting, in a transverse way, the rail sector's input to ERA's work programme and its effect on safety and interoperability.

Cooperation with GRB was highly active throughout 2017, with the sector working as a whole to find common positions on the development of the implementation for the Fourth Railway Package where possible. Several joint position papers were sent on behalf of the GRB to the EC and ERA this year, and GRB continues to actively follow all ERA activities.

CLEANING-UP NATIONAL TECHNICAL RULES

As in previous years, UNIFE paid close attention in 2017 to the Agency activity leading to the reduction of national technical rules to facilitate the authorisation of rail products in Europe. Work is still ongoing despite the deadline set at the end of 2016 to finish the cleaning-up process. UNIFE closely monitors these activities, and is actively working through its network of experts to achieve this objective and establish a comprehensive set of rules (TSIs and necessary Notified National Technical Rules) as soon as possible.

COOPERATION WITH OTIF



OTIF is the intergovernmental organisation for international carriage by rail. Its membership includes most European countries as well as several Middle Eastern states and former Soviet republics. Its objective is to facilitate international railway traffic. It developed transport legislation, for instance, regarding contracts of carriage for the international carriage of passengers and goods (CIV and CIM), and carriage of dangerous goods (RID).

UNIFE follows the activities of OTIF in order to avoid any clashes between the requirements of the directive and TSIs, which are law throughout the EU, and requirements stemming from OTIF.

This is particularly relevant for the validation of technical standards and adoption of uniform tech-

nical prescriptions for railway material (APTU) and the procedure for the technical admission of railway vehicles and other railway material used in international traffic (ATMF), and their updates as a result of the adoption of the Fourth Railway Package. UNIFE has supported the transformation of European Technical Specifications for Interoperability (TSIs) into OTIF documents, and the subsequent scope extension of the TSIs that is realised by this. Whereas in the majority of cases, OTIF transposes TSI requirements into its own documents without modifications of the technical content, some initiatives might clash with the European legal framework. This concerns, for instance, the wish of OTIF to set up a successor to the RIC (International Coach Regulations) in order to have interchangeable coaches.

UNIFE INVOLVEMENT IN STANDARDISATION

Standardisation is extremely important for our industry and several UNIFE members are involved in standardisation activities. UNIFE provides a platform for its members to coordinate their standardisation activities, the industry's priorities and their involvement in National Standardisation Bodies.

To support the work that is done nationally at European level, UNIFE has established close links with the relevant organisations related to standardisation in Brussels. UNIFE works closely with the European Commission which sets the policy framework in which standardisation takes place, and with the CEN-CENELEC Management Centre which coordinates the activities of both standardisation organisations. UNIFE is part of Sector Forum Rail, formerly known as the Joint Programming Committee Rail (JPC-R), in which the standardisation priorities of the sector are discussed directly with the CEN-CENELEC Management Centre.

At international level, UNIFE holds A-Liaison status with the ISO Rail Technical Committee 269 (ISO TC 269), which enables UNIFE and its members to take part in the regular meetings of this ISO technical committee.

UNIFE is also a member of the new Rail Standardisation Coordination Platform for Europe (RASCOP). The platform brings together parties involved in the planning and development of railway-related legislation, standards and technical documents in Europe, in



Workshop Railways of the Future: Putting Science into Standards, organised by CEN-CENELEC and the Joint Research Centre, EC

order to coordinate the activities related to the development of European standards and other related technical documents in the railway sector. This platform is chaired by the European Commission (DG Move) supported by ERA. In 2017, RASCOP started its activities by working and analysing the various specifications in place for the Cabin Driver Machine Interface.

In 2017, UNIFE took part in the Steering Group and followed various actions linked to the 'Joint Initiative on Standardisation' made between the European Commission, European Standardisation Organisations and the cross-industry standardisation community, which UNIFE signed in 2016 in Amsterdam. The Joint Initiative sets out a shared vision to better prioritise and modernise the current European standardisation system, laying out a series of proposed actions to achieve this. UNIFE is continuing to follow this initiative to effectively support EU policies and help consolidate Europe's leadership in international standardisation.

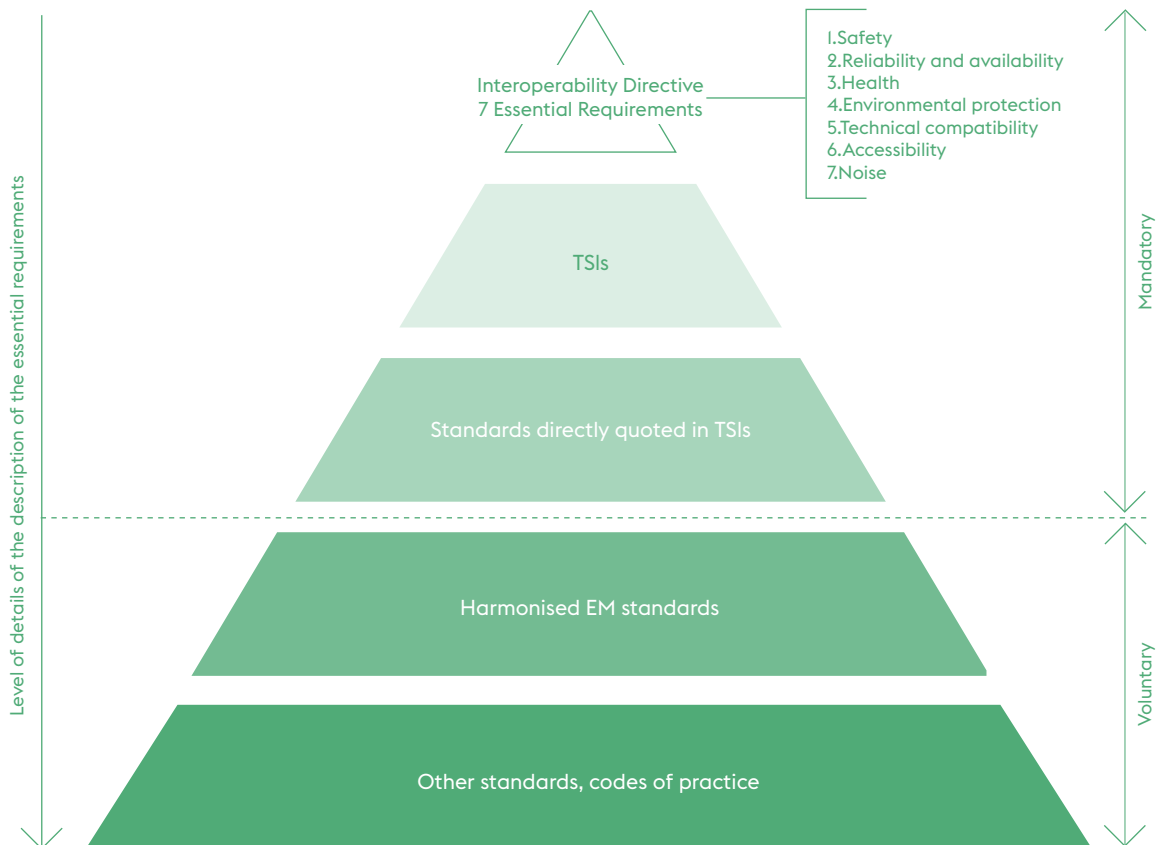
Furthermore, UNIFE continued its cooperation with the urban transport operators in the field of standardisation through the Urban Rail Platform, a forum driven by UNIFE and UITP (the International Association of Public Transport). The platform aims to support, among other things, standardisation in urban rail following a mandate given by the EC. Preparatory work has progressed substantially over the past years and both UNIFE and UITP have now agreed to speed up the standardisation process so that both the urban rail supply industry and the

operators can reap the benefits of this process as soon as possible. This platform was also an opportunity to discuss regulation as well as research & innovation topics.

In addition to this focus on standardisation, UNIFE is also a partner of the EuroSpec initiative, which complements the work of the European Standardisation Organisations. EuroSpec is a consortium of several large European railway operators that work together to develop joint technical specifications that should be used in their tender documents. The EuroSpec initiative shares their documents with UNIFE in order to obtain feedback from the manufacturing industry with the goal of improving the quality of its specifications.

FOR MORE INFORMATION ON ALL THESE TOPICS,
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FOR FURTHER INFORMATION ON GRB,
PLEASE VISIT: WWW.GRBRAIL.EU



UNIFE Technical Working Groups

UNIFE Technical Working Groups steer its work on standardisation, regulation and research. The overall coordination is done by the respective UNIFE committees. The UNIFE Technical Working Groups are split into two categories:

- ✧ Mirror Groups (MG), which are temporary groups active during the drafting and revision of regulations and Technical Specifications for Interoperability (TSIs), mirroring the groups active in ERA where delegates of UNIFE participate as official representatives of the European rail supply industry; and
- ✧ Topical Groups (TG), which follow specific topics, mainly related to standardisation and research activities.

The SRG in its role as a supervisor of the UNIFE Technical Working Groups periodically reviews the activities of these various groups and ensures that they operate in line with the overall UNIFE objectives for standards and regulation.

THE UNIFE MIRROR GROUPS (MG)

ENERGY WORKING GROUP (ENE MG)

Following the adoption of the Commission Delegated Decision (EU) 2017/1474 on the TSIs, ERA reopened the ENE Working Party to begin the necessary TSI amendments under the Fourth Railway Package. UNIFE experts will continue to provide input to the ERA working parties to develop the necessary concepts on route compatibility and modifications, introduced by the recast Interoperability Directive.

FOR MORE INFORMATION,
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INFRASTRUCTURE WORKING GROUP (ING MG)

Following the adoption of the Commission Delegated Decision (EU) 2017/1474 on the TSIs, ERA reopened the INF Working Party to begin the necessary TSI amendments under the Fourth Railway Package. UNIFE experts will continue to provide input to the ERA working parties to develop the necessary concepts on route compatibility and modifications, introduced by the recast Interoperability Directive.

FOR MORE INFORMATION,
PLEASE CONTACT NICOLAS.FURIO@UNIFE.ORG

NOISE WORKING GROUP (NOI MG)

Following the adoption of the Commission Delegated Decision (EU) 2017/1474 on the TSIs, ERA reopened the NOI Working Party to begin the necessary TSI amendments under the Fourth Railway Package. UNIFE experts will continue to provide input to the ERA working parties to develop the necessary concepts on route compatibility and modifications, introduced by the recast Interoperability Directive.

However, the first stage of the revision of the TSI Noise will focus on freight wagons. The noise limit values or the assessment procedure of other rolling stock will not be discussed during the first phase of the Noise TSI revision. The alignment of the Noise TSI with the Fourth Railway Package and additional technical issues as requested in the Commission Delegated Decision (EU) 2017/1474 on the TSIs will be dealt a later stage, starting on February 2018.

FOR MORE INFORMATION,
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ROLLING STOCK WORKING GROUP (RS MG)

At the start of 2017, UNIFE's Rolling Stock Mirror Group finalised the activities of ERA's LOC&PAS Working Party undertaking the limited revision of the LOC&PAS TSI (Regulation (EU) 1302/2014) and resulting in recommendations for the closure of open points in the TSI clause on 'unique authorisation' and an update to the TSI application guide. These recommendations are still to be adopted by the RISC.

Following the adoption of the Commission Delegated Decision (EU) 2017/1474 on the TSIs, ERA reopened the LOC&PAS/WAG Working Party to begin the necessary TSI amendments under the Fourth Railway Package. UNIFE experts will continue to provide input to the ERA working parties to develop the necessary concepts on route compatibility and modifications, introduced by the recast Interoperability Directive and to be in place by the time of the new authorisation regime from June 2019. The UNIFE Rolling Stock Mirror Group also provided the European Commission with a recommendation on the revision timeline of the TSI to ensure a timely update of technical content while providing acceptable stability for the rail supply industry.

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SAFETY ASSURANCE WORKING GROUP (SA MG)

The Safety Assurance Working Group supported the tasks performed by ERA, as requested by the Safety Directive, as well as supported the SRG and other Working Groups with expertise on risk assessment and the application of Common Safety Method (CSM) Regulation (EU) 402/2013. In 2017, UNIFE continued to support ERA in finalising the application guide for the CSM Design Targets. The Safety Assurance Mirror Group has provided extensive support to the SRG regarding the development of Implementing Regulation on practical arrangements for the Railway Vehicle Authorisation and introduction of requirements capture and CSM within the process, also attending the dedicated ERA subgroup on the topic.

Additionally, the working group participated in the workshops and provided industry positions for the consultations of ERA's Common Occurrence Reporting (COR) project. They evaluated the Agency's Safety Alert IT Tool (SAIT) which can be used to exchange information among the relevant railway actors across the EU, relating to defects and construction non-conformities or malfunctions of technical equipment and requested further development and consultation on the tool.

The Safety Assurance Mirror Group also provides the industry's position to the ERA working party on the revision of the ECM Regulation, with the in-

roduction of Safety Critical Components, as introduced by the recast Safety Directive.

Finally, UNIFE experts participated in the revision of the EN50126 standard, completed this year.

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VEHICLE AUTHORISATION WORKING GROUP (VA MG)

The UNIFE Vehicle Authorisation Mirror Group had the major task to follow the development of the Implementing Regulation on practical arrangements for the railway vehicle authorisation in the framework of the Fourth Railway Package Technical Pillar. This group has been particularly active in 2017, attending several workshops and subgroups organised by the Agency and providing detailed input and feedback on the various topics linked to the vehicle authorisation process to the Agency and the EC Expert Group. Great effort was made in clarifying and simplifying the processes and conditions for vehicles to be placed in the market with the goal of developing a single and harmonised understanding of the authorisation process under the new Interoperability Directive, that will enter into force from June 2019. Particular attention was paid to the transition conditions between the 2008 and 2016 Directives, the One-Stop Shop tool, the Fees and Charges and the Board of Appeal implementing acts.

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THE UNIFE TOPICAL GROUPS (TG)

CABIN WORKING GROUP (TG)

The Cabin Working Group members their work, launched on 2016, on standardization activities at European level for the specifications of the driver's cabin elements. The analysis concerns CEN prEN 16186-3, CENELEC TS 50459-1-2-3, the UIC Leaflet 612-01-02-03-04-05, CENELEC TR 50452-1-2-3 and ERA/ERTMS/015560 documents. Their objective is to identify possible synergies, differences, inconsistencies and overlaps in the current cabin specifica-

tions. Recommendations towards a more consistent set of specifications will be provided to the relevant standardisation bodies, and a practical guide for UNIFE members will be prepared on the applicability of all relevant rules for the current or future cabin products.

The Cabin Working Group agreed to actively participate in RASCOP and in an ad-hoc group created for the CAB topic, following interest from RASCOP in the Cabin Driver Machine Interface.

Cabin Working Group members also supported the members of the Technical Committee CEN-CENELEC/TC 9X WG12, in developing the prEN/TR 50542-X set of recommendations. The main topic for the UNIFE experts was to provide to the WG12 proper inputs on possible developments for the interface specifications of the interchangeable components.

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CHEMICAL RISK WORKING GROUP (TG)

The Chemical Risk Working Group aims to develop a common understanding and harmonised rules for the rail industry, as well as provides support to railway system integrators and their suppliers in understanding legal obligations. This working group has covered European legislation - including REACH, CLP, WEEE, and RoHS - and presented the point of view of the railway industry during consultations.

In 2012, the UNIFE Chemical Risk Working Group developed and launched the "UNIFE Material Declaration Template". The goal was to harmonise the information requested by some of the main system integrators and develop a common form which could be recognised by all stakeholders. The document simplifies the reporting on hazardous substances for suppliers in a format that could be delivered for each system integrator. Based on feedback from the supply chain, the group began working on a more simplified version of the Material Declaration Template in order to optimise the answers received. The next step will be to establish a common need for data material portal for the industry to access information on materials in one place that simultaneously gathers substance declarations from suppliers. To

achieve this and reach an agreement at the level of the industry, the working group will review potential solutions, define the data field and compliance aspects needed, and go through the list of standards one at a time.

These documents are part of the series of actions the European rail industry launched in order to best comply with EU regulation on substances and can be found under the Railway Industry Substance List section of the UNIFE website <http://unife.org/railway-industry-substance-list.html> which is regularly updated with the latest list of prohibited substances under the REACH regulation.

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DIESEL TOPICAL GROUP (TG)

The non-road mobile machinery (NRMM) Regulation (EU) 2016/1628 was published in September 2016, setting out more stringent emission limit values for internal combustion engines installed in non-road mobile machinery and repealing the complex NRMM Directive.

The UNIFE Diesel Topical Group (TG) provides a forum for UNIFE members to monitor and discuss the implementation of the regulation and development of the supplementary regulations detailing the test methods, EU type-approval procedures and in-service monitoring of future NRMM engines.

In 2017, the group monitored the implementation and worked with Euromot and UIC on developing an FAQ Guide on Regulation 2016/1628 specific to rail vehicle applications. The UNIFE Diesel TG is also following in detail the proposed introduction of in-service monitoring on Stage V rail vehicle engines and will provide the rail supply industry's position the European Commission's 'Group of Experts on Machinery Emissions under the Non-Road Mobile Machinery Directive' (GEME) chaired by DG Grow, where the texts are developed.

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EMC WORKING GROUP (TG)

Ongoing work runs in close cooperation with EIM and CER experts within the Train Detection Compatibility Working Group, coordinated by ERA. This working group provides inputs to the updates of the mandatory ERA/ERTMS/033281 specification, describing the interfaces between CCS track-side and other subsystems. Topics covered in 2017 include the closure of open points on the specifications for wheel diameters and axle distances for high speed train operations, the update of the frequency management for axle counters, and the definition of axle counter as interoperability constituents.

Working group members have been in close contact with UNISIG experts and providing valuable feedback on the specifications for ERTMS EURO-BALISE. As part of this cooperation, a joint expert group developed a test methodology for measuring rolling stock EMC emissions, which is now in the process of validation by various rolling stock manufacturers.

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LIFE CYCLE ASSESSMENT WORKING GROUP (TG)

The Life Cycle Assessment Topical Group (LCA TG) works on improving the eco-performance of the rail sector and optimizing production and tendering costs, taking into consideration both increasing customer demands and legislative and standardisation requirements, especially at EU level.

To achieve this, the working group engages in various activities like the monitoring of the last phase of the EC Product Environmental Footprint (PEF) and the ISO Recycling Calculation.

The members of the LCA TG also closely follow the management of the Product Category Rules (PCR) and provide recommendations on how to update the PCR document. The ultimate goal is to put out a position paper comparing rail with other modes of transport in relation to Environmental Product Declarations (EPD).

Another activity of the LCA TG is to identify environmental strengths of railway systems when compared with other transport modes (e-mobility).

FOR MORE INFORMATION,
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TELEMATIC APPLICATION FOR PASSENGERS AND FREIGHT (TAP/TAF) WORKING GROUP (MG)

In 2017, UNIFE members contributed to several interoperability issues including the TSI related to freight and passenger subsystems. A revision process was launched (1st meeting took place in July 2017) for the TAP TSI, while the European Union Agency for Railways has been organising regional workshops across Europe to promote the implementation of the TAF TSI. TAP and TAF TSI related activities have a complicated structure in terms of the different working groups active around the subject, but UNIFE members have been actively involved in the Agency's working groups.

Over the past year, UNIFE involvement focused mainly on the processes of change management and monitoring the implementation of TAF TSI. At the level of change management, individual change requests related to technical annexes of each TSI were negotiated. Change management is gaining more importance with the increasing number of implementation activities, because individual actors (users) in TAF and TAP TSI are speeding up the processes of implementation. These activities require constant familiarity with the implementation process, because change requests necessary to be reflected in the technical annexes of TSIs are generated from this process. Therefore, active involvement of UNIFE members is also required in the executive bodies of TAF and TAP TSI. In this respect, the establishment of a TAP TSI Services Governance Association (TSGA) has brought up discussions to transform the TAP TSI Steering Committee into the TSGA Advisory Board to ensure synergies and avoid duplications.

In terms of next steps, the working group will focus on the finalisation of the TAP revision and will monitor and analyse the impact of the ITS Directive Delegated Regulation and of the General Data Protection Regulation (GDPR) to the overall TAF and

TAP system. In parallel, there are also discussion about the possibility of having regional workshops across Europe to promote TAP TSI implementation, the same way it was done for TAF TSI.

FOR MORE INFORMATION,
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TRAIN CONTROL MANAGEMENT SYSTEM (TCMS) WORKING GROUP (TG)

The TCMS working group restarted its activity in 2017. New members were admitted to the working group after SRG approval, because it is of paramount importance to get new ideas into the different TCMS activities.

A TCMS working group meeting that took place in Brussels on 8 November. The main objectives of the meeting was the dissemination European research projects like Roll2Rail, Connecta, TCNOpen, and TRAINET.

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UNIFE provides a platform for its members to coordinate their standardisation activities, the industry's priorities and their involvement in National Standardisation Bodies



Research & Development

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P. 68 → UNIFE Digitalisation Platform
Activities

P. 69 → Cyber-Security Activities



5

Horizon 2020

SHIFT2RAIL



After years of significant mobilisation and intense work by the European rail industry under the coordination of

UNIFE, Shift2Rail became a reality in July 2014 as an established European Joint Undertaking (JU) that will manage a long-term R&D Programme for the rail sector. The Shift2Rail (S2R) Joint Undertaking (JU) was established by Council Regulation (EU) n° 642/2014 of 16 June 2014.

SHIFT2RAIL OVERVIEW

S2R is the first large-scale European rail research JU to seek focused research and innovation (R&I) and market-driven solutions by accelerating the integration of new and advanced technologies into innovative rail product solutions. S2R endeavours to boost the competitiveness of the European rail industry and meet changing European transport needs. As such, the Research & Innovation carried out within this Horizon2020-funded initiative will create the necessary technologies to help complete the Single European Railway Area (SERA). Furthermore, S2R aims to double the capacity of the European rail system, increase its reliability and service quality by 50%, all while halving lifecycle costs. In order to meet these ambitious targets, S2R has a robust framework and a sizeable multiannual budget of €920 million, jointly funded by the private sector (€470 million) and the EU (€450 million).

The Research & Innovation in S2R will seek to achieve its overall objectives by working on new technologies that will be tested and applied across the entire rail system and on all segments of the rail market (High-Speed/ Mainline, Regional, Urban/ Suburban, and Freight). In order to achieve such system-wide developments, the work is organised into five Innovation Programmes (IPs) and a number of Cross-Cutting Activities.

The S2R JU is a public-private partnership, providing a platform for the actors of the European rail system to work together with a view to driving innovation in the years to come, by implementing a comprehensive and coordinated research and innovation strategy.

S2R JU has twenty eight members: the European Union, represented by the Commission, and Aerfitec consortium, Alstom Transport SA, Amadeus IT Group SA, Ansaldo STS S.p.A, AZD Praha s.r.o., Bombardier Transportation GmbH, CFW consortium, Construcciones y Auxiliar de Ferrocarriles, Deutsche Bahn AG, DIGINEXT, EUROCC consortium, Faiveley Transport, HaCon Ingenieurgesellschaft mbH, Indra Sistemas S.A., Kapsch CarrierCom AG, Knorr-Bremse GmbH, MER MEC S.p.A., Network Rail, Siemens Atkiengesellschaft, Smart DeMain consortium, SmartRaCon consortium, SNCF, Railenium SwiTracken consortium, Patentes Talgo S.L.U., Thales, Trafikverket, Virtual Vehicle Austria consortium+.

FOR MORE INFORMATION ON SHIFT2RAIL,
PLEASE VISIT WWW.SHIFT2RAIL.ORG

MAIN ACTIVITIES OF THE SHIFT2RAIL JOINT UNDERTAKING IN 2017

Shift2Rail awarded Grants following the Shift2Rail 2017 calls for proposals

Following the publication of the S2R 2017 calls for proposals, 17 grants have been awarded for a total value of €110.9 million, co-financed by S2R up to €60.1 million.

The 27 S2R JU members, other than the European Union, have submitted project proposals to all seven call topics reserved to them, for a total value of €91.4 million co-funded by S2R up to €40.6 million.



Violeta Bulc (EU Commissioner for Transport), and Carlo Borghini (Executive Director, Shift2Rail JU)

The S2R open calls covered 10 topics, for which 53 proposals were received with a request of co-financing totalling €95.9 million. Taking into consideration the budget availabilities, 10 proposals were selected for funding for a total amount of €19.5 million.

FOR MORE INFORMATION ON SHIFT2RAIL,
PLEASE VISIT WWW.SHIFT2RAIL.ORG

Shift2Rail JU's Multi-Annual Action Plan – Executive View (MAAP Part A)

The S2R JU published the new S2R JU Multi-Annual Action Plan - Executive View (MAAP Part A). This document highlights, in the form of Innovation Capabilities, the solutions that will bring about the most sustainable, cost-efficient, high-performing, time driven, digital, and competitive customer-centred transport mode for Europe, for its citizens and freight business. It 'translates' the S2R JU vision into detailed, results-oriented R&I activities, performed in the S2R Programme by the JU Members together with SMEs, Research Centres and Universities. UNIFE was consulted during the preparation of this document.



Carlo Borghini (Executive Director, Shift2Rail JU) presenting the Shift2Rail Multi-Annual Action Plan to Henrik Hololei (Director General, DG Move, European Commission)

FOR MORE INFORMATION ON SHIFT2RAIL,
PLEASE VISIT WWW.SHIFT2RAIL.ORG

Launch of the Shift2Rail Annual Work Plan 2018 with UNIFE's support

The S2R JU published its Annual Work Plan 2018 (AWP 2018) in November 2017. The AWP 2018 contains the description of the new round of 2018 calls for proposals for S2R members (Calls For Members)

and non-JU members (Open Calls). The calls for members are reserved only to the 27 S2R JU members including both Founding Members and Associated Members. The open calls are addressed to any non-member of the S2R JU and cover all S2R Innovation Programmes and cross-cutting activities.

Like for the past two Shift2Rail Open Calls, UNIFE organized a dedicated workshop for non-JU members at the UNIFE Technical Plenary 2017 in November 2017. UNIFE presented the Open Call topics 2018 and shared information on how best submit a successful bid. UNIFE will coordinate some Open Call proposals based on the feedback received from its members and try to ensure the highest possible participation of the members in its consortia.



Carlo Borghini (Executive Director, Shift2Rail JU) at the UNIFE Technical Plenary

FOR MORE INFORMATION,
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ANDREA.DEMADONNA@UNIFE.ORG

FOR FURTHER INFORMATION ON SHIFT2RAIL,
PLEASE VISIT WWW.SHIFT2RAIL.ORG

Shift2Rail User Requirements/Implementation and Deployment working group

The S2R User Requirements/Implementation and Deployment working group met twice in 2017. UNIFE attended both meetings with other stakeholders' associations. The role of this working group is notably to assist the S2R JU in ensuring the market uptake of the technical solutions developed through S2R activities, and facilitate exchanges of information on initiatives, projects and partnerships dealing with the thematic areas of each of the Innovation Programmes/

Cross-Cutting Activities. Working group members were informed of the review of the S2R JU's Multi-Annual Action Plan - Executive View (MAAP Part A), the preparation of the S2R Annual Work Plan 2018, the cooperation between S2R and regulation/standardisation bodies and the preparation of the S2R Annual Work Plan 2019.

FOR MORE INFORMATION,
PLEASE CONTACT NICOLAS.FURIO@UNIFE.ORG

Shift2Rail & UNIFE participation at the EU Innovation in action event

Joint Undertakings are key instruments to push innovative products into the market and help address major global challenges. In October, European Joint Undertakings including S2R gathered at the European Parliament in Strasbourg. It was an opportunity to present the S2R strategy and activities.

Philippe Citroën delivered a speech in front of the European Commissioner for Research, Carlos Moedas and MEPs. He underlined the benefits of Shift2Rail for the European rail industry and called on the Commission to include Shift2Rail 2.0 in the next European Research Framework Programme, so as to maintain the leadership of the European rail industry in the world.



Philippe Citroën delivering a speech on the benefits of Shift2Rail for the European rail industry

FOR MORE INFORMATION,
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Shift2Rail lighthouse projects:

A. Roll2Rail



The Roll2Rail project, coordinated by UNIFE, aims to develop key technologies and remove already identified blocking points for radical innovation in the field of railway vehicles, as part of a longer-term strategy to revolutionise the rolling stock of the future. The results will contribute to an increase in operational reliability and a reduction in life cycle costs. This project started in May 2015 and it is supported by the Horizon 2020 programme of the European Commission. Roll2Rail is one of the Shift2Rail lighthouse projects and will contribute to Innovation Programme 1. The project ended in October 2017 in Munich with a Final Conference that saw the participation of almost 90 experts from all around Europe. The event was the occasion for Work Package leaders to present the main results of the project and their important links to Shift2Rail.



Roll2Rail Final Conference in Munich

FOR MORE INFORMATION ON ROLL2RAIL,
PLEASE VISIT WWW.ROLL2RAIL.EU
OR CONTACT ANDREA.DEMADONNA@UNIFE.ORG

B. IT2Rail



The IT2Rail project, coordinated by UNIFE, one of the "Shift2Rail lighthouse" projects, is the first step towards the longer-term Innovation Programme 4 (IP4) - "IT Solutions for Attractive Railway Services", one of the Shift2Rail Joint Undertaking's five Innovation Programmes. Like IP4, this project aims at providing a new seamless trav-

el experience, giving access to a complete multimodal travel offer which connects the first and last mile to long distance journeys.

This is achieved through the introduction of a ground breaking Technical Enabler based on two concepts:

- ✎ The passenger is placed at the heart of innovative solutions with the ability to access all multimodal travel services (shopping, ticketing, and tracking) through a travel-companion application;
- ✎ An open published framework provides full interoperability whilst limiting impacts on existing systems, without prerequisites for centralised standardization.

This Technical Enabler will be completely settled in the context of Shift2Rail IP4, and IT2Rail is proposing a reduced approach to the scale of a specified use case without weakening any of the key concepts of IP4, such as the usage of Semantic Web technologies, meta planning on distributed data, travel companion with a protected and secured personal wallet stored in the cloud and containing the passenger's travel rights.

IT2Rail is structured such that the technological components of the project are delivered into three major releases: the Core Release (C-REL), the Additional Release (A-REL) and the Final Release (F-REL). The project is now in its final stage, all releases have been completed, and partners are now focusing on the integration tests of all the components.

FOR MORE INFORMATION ON IT2RAIL,
PLEASE VISIT WWW.IT2RAIL.EU OR CONTACT
STEFANOS.GOGOS@UNIFE.ORG



C. In2Rail

The In2Rail project lays the foundation for a resilient, consistent, cost-efficient, high capacity European network by delivering important building blocks that unlock the innovation potential that exists in Shift2Rail. Innovative technologies will be explored and resulting concepts embedded in a systems framework where infrastructure, information

management, maintenance techniques, energy, and engineering are integrated, optimised, shared and exploited. In2Rail will make advances towards Shift2Rail objectives: enhancing the existing capacity, fulfilling user demand, increasing reliability, delivering better and consistent quality of service, reducing the LCC, and increasing the competitiveness of the EU rail system. To achieve this, a holistic approach covering Smart Infrastructures, Intelligent Mobility Management (I2M) and Rail Power Supply and Energy Management will be applied. This project started in May 2015 and it is supported by the Horizon 2020 programme of the European Commission. In2Rail is one of the lighthouse projects of Shift2Rail and will contribute to Innovation Programmes 2 and 3.

FOR MORE INFORMATION ON IN2RAIL,
PLEASE VISIT WWW.IN2RAIL.EU
OR CONTACT ANDREA.DEMADONNA@UNIFE.ORG

Shift2Rail projects started in 2016



A. Dynafreight

Started in November 2016 and coordinated by UNIFE, DYNAFREIGHT (Innovative technical

solutions for improved train DYNAMics and operation of longer FREIGHT Trains) is a 20-month project which includes 10 partners from six EU Member-states. The final vision of DYNAFREIGHT is fully in line with the objectives of the EU White Paper on Transport. It will contribute to this vision and overall concept of the EU rail freight transport by focusing on the next generation of freight bogie locomotives and preparing the path for regular operations of long freight trains (up to 1,500m), providing the first steps for the development of S2R Technology Demonstrator 5.5 "New Freight Propulsion Concepts" within S2R Innovation Programme 5.

DYNAFREIGHT will address two main areas: freight running gear for locomotives and operation of long freight trains, with the following high-level objectives:

- ✎ Improved performances: traction, speed, running dynamics and wheel/rail efforts
- ✎ Reduced rail freight noise at the source

- Enhance capacity/traffic throughput with the operation of longer trains (up to 1,500m)
- Reduced of operation and maintenance costs (reduce wheel and rail wear, smarter maintenance, etc.)

FOR MORE INFORMATION ON DYNAREIGHT,
PLEASE VISIT WWW.DYNAREIGHT-RAIL.EU
OR CONTACT ANDREA.DEMADONNA@UNIFE.ORG

B. GoF4R



GoF4R (Governance of the Interoperability Framework for Rail and Intermodal Mobility) is a two-year project which includes 16 partners from eight different EU Member States. This project is coordinated by UNIFE.

The objectives of GoF4R are to analyse the economic determinants of the market for customer-centric mobility services as they are shaped by the introduction of the Interoperability Framework technology like:

- Network effects, externalities, the effect of the introduction of matchmaking platforms and social networks in the market place
- Economic Incentives / disincentives for adoption on market agents
- Constrains on the supply of critical inputs, including human resources

Additionally, the project aims at designing specific governance structures and processes that maximize the effect of market forces on the adoption of the technology, while providing mitigating measures for residual market failures. Lastly, it will generate recommendations on possible needed adaptations of the legal framework regulating the provisioning of compatible networked customer centric mobility services.

GoF4R is directly linked with the 4th Innovation Programme of Shift2Rail.

FOR MORE INFORMATION ON GOF4R,
PLEASE VISIT WWW.GOF4R.EU
OR CONTACT STEFANOS.GOGOS@UNIFE.ORG

C. ST4RT



ST4RT (Semantic Transformations for Rail Transportation) is a two-year project which includes eight partners from five different EU Member States.

This project is coordinated by UNIFE.

The objectives of ST4RT are to develop cost-reducing translator technologies drawing from the ontology repository and the service registry hosted by the Interoperability Framework. It will achieve this by:

- Analysing the availability and maturity of semantic transformation tools and technologies
- Designing methodologies for annotation/mapping between legacy data models and ontologies
- Developing extensions to the IT2Rail reference ontology
- Developing automatic mapping between the IT2Rail reference ontology and legacy data models, i.e. TAP-TSI
- Developing KPIs and metrics for the transformation evaluation.

ST4RT is directly linked with the 4th Innovation Programme of Shift2Rail.

FOR MORE INFORMATION ON ST4RT,
PLEASE VISIT WWW.ST4RT.EU
OR CONTACT STEFANOS.GOGOS@UNIFE.ORG

D. INNOWAG



INNOWAG (INNOvative monitoring and predictive maintenance solutions on lightweight WAGon) is a 30-month project co-financed by the European Commission's S2R initiative aimed at increasing rail freight competitiveness and the development of the next generation of lightweight and intelligent freight wagons.

INNOWAG will consider the compatibility between the solutions proposed and researched in the three areas, as well as their integration into a novel concept of wagon. The project aims to develop intelligent cargo monitoring and predictive maintenance solutions integrated into a novel concept of light-

weight wagon, which would respond to major challenges in rail freight competitiveness.

UNIFE is leading the work on exploitation as well as contributing to the dissemination and communication strategy of the project.

FOR MORE INFORMATION ON INNOWAG,
PLEASE VISIT WWW.NEWRAIL.ORG/INNOWAG
OR CONTACT ANDREA.DEMADONNA@UNIFE.ORG

Shift2Rail projects launched in 2017

Following the November 2016 publication of S2R JU's 2017 calls for proposals for non-JU Members (open calls), UNIFE organised a workshop for its members to provide them with information on Horizon 2020 and S2R. Based on member feedback, UNIFE elected to coordinate the preparation of four proposals and join another two proposals as a partner.

Five out of the six proposals submitted, described in this section, were selected by the S2R JU.

A. RUN2RAIL



The RUN2RAIL project explores an ensemble of technical developments for future running gear, looking into ways to design trains that are more reliable, lighter, less damaging to the track, more comfortable and less noisy. These innovations will be proposed in the form of case studies supported by the methods and tools elaborated in the project. The project works across four Thematic Work Streams:

- ✎ Innovative sensors & condition monitoring
- ✎ Optimised materials & manufacturing technologies
- ✎ Active suspensions & mechatronics
- ✎ Noise & vibration

The project will provide a coordinated set of technical key contributions to each of these areas, including (but not limited to): - smart sensors and smart running gear components with self-diagnosing capability; - use of novel materials and manufacturing methods in combination with intelligent / active sus-

pensions to enable nonconventional running gear concepts; - identification of efficient fabrication processes for the running gear (3D metal printing, automated tape layering of composite materials); - assessment of existing off-the-shelf technology for active control coming from other sectors; development of a novel and comprehensive methodology for predicting the transmission of noise and vibration from the running gear to the carbody.

Within the four workstreams, the project will also perform a preliminary evaluation of the related regulatory and standardisation issues, together with a careful assessment of the impacts of the new solutions proposed. The research conducted will be multidisciplinary, i.e. based on the integration of different branches of engineering such as mechanical, materials, electronic and electrical engineering, and will establish models and formal methods to explore a full set of technological developments, exploiting at best the matching mix of talent and diverse skills offered by the Consortium.

The RUN2Rail kick-off meeting was held in September 2017, in Brussels. During the event, partners presented the planned work and a fruitful discussion with members of the corresponding CFM project PIV-OT took place, ensuring the full alignment of the two projects in terms of activities and transfer of results.

UNIFE is Project Coordinator and Dissemination Leader.



RUN2Rail kick-off meeting

FOR MORE INFORMATION ON RUN2RAIL,
PLEASE VISIT WWW.RUN2RAIL.EU
OR CONTACT ANDREA.DEMADONNA@UNIFE.ORG

B. ETALON



ETALON (Energy harvesting for signalling and communication systems) is a 30-month IP2 Shift2Rail Open Call project with a budget of around €1.7 million. The consortium coordinated by UNIFE is made up of nine members from six EU Member States.

The main objective of “ETALON” is to adapt energy harvesting methodologies for trackside and on-board signalling and communication. ETALON will contribute to the enhancement of train integrity functionalities, providing a suitable energy supply for on-board train integrity and a robust radio communication system between vehicles. ETALON will also contribute to the reduction of costs, providing an energy harvesting solution for Smart Radio connected wayside objects and implementing an off-board radio communication system with object controllers.

As a result, ETALON envisages the specification and development of energy harvesting solutions to support on-board train integrity and Smart Radio connected wayside objects which are economically viable and suitable. It will take into consideration onboard and offboard radio communication solutions, safety critical aspects as well as reliability and availability in difficult rail environments.

The ETALON kick-off meeting took place in September in Brussels.



ETALON kick-off meeting in Brussels

FOR MORE INFORMATION ON ETALON,
PLEASE VISIT WWW.ETALON-PROJECT.EU
OR CONTACT JOSE.BERTOLIN@UNIFE.ORG

C. IN2DREAMS



The predicted growth of transport, especially in European railway infrastructures, is expected to introduce a dramatic increase in freight and passenger services by the end of 2050. To support the sustainable development of these infrastructures, novel data-driven ICT solutions are required. These will enable monitoring, analysis and exploitation of energy and asset information for the entire railway system including power grid, stations, rolling stock and infrastructure.

IN2DREAMS (INtelligent solutions toward the Development of Railway Energy and Asset Management Systems in Europe) will address these challenges through two distinct work streams (WS): WS1, focusing on the management of energy-related data and WS2, focusing on the management of asset-related data.

IN2DREAMS will develop and demonstrate a modular cloud-based open data management platform (ODM) facilitating ubiquitous support of both energy and asset services. WS1 will provide energy metering services through a dynamically reconfigurable platform offering improved reliability, ease of monitoring and on-the-fly optimisation for the entire railway system. This will include a heterogeneous secure and resilient telecommunication platform comprising both wireless and wireline technologies converging energy and telecom services. This infrastructure will interconnect a plethora of monitoring devices and end-users to the railway control centre and will include an ODM platform for data collection, aggregation and analysis, able to scale with the railway operators' needs. This platform will be non-intrusive, exploiting advanced signal processing and intelligent learning algorithms. Within WS2, IN2DREAMS will concentrate on defining IT solutions and methodologies for business-secure decision support in the field of data processing and analytics for railway asset management. The general aim is to study and proof the application of smart contracts in the railway ecosystems, by addressing also legal and regulatory implications, and advanced visual and rule-based data analytics, including metrics for performance assessment.

IN2DREAMS is a two-year project coordinated by UNIFE, which started in September 2017, bringing together 14 partners. The kick-off meeting was held on the 29 September in Brussels. During the event, participants showcased their planned activities and discussed about future collaboration.



IN2DREAMS kick-off meeting in Brussels

FOR MORE INFORMATION ON IN2DREAMS,
PLEASE VISIT WWW.IN2DREAMS.EU
OR CONTACT STEFANOS.GOGOS@UNIFE.ORG

D. ASTRAIL



Started in September 2017, ASTRAIL (Satellite-based Signalling and Automation

Systems on Railways along with Formal Method and Moving Block Validation) is a 24-month IP2 Shift2Rail Open Call project with a budget of around €1.8 million. UNIFE is leading the work on exploitation as well as contributing to the dissemination and communication strategy of the project.

The main objective of the ASTRAIL project is to increase efficiency and safety in the railway sector. ASTRAIL will contribute to enhancing the signalling and automation of the railway system thanks to innovative solutions that exploit cutting edge technologies already present in sectors different from the rail, such as the avionics or the automotive sector. Investigating such technologies and assessing their reusability in the railway field will be done taking in particular care all issues related to safety and performance in the rail system. The ASTRAIL kick-off meeting was held on 5 September.

The first ASTRAIL Plenary in-person meeting took place in November in Torino. On this occasion, all the members of the consortium presented the status of the activities in progress, the preliminary results and the future activities. The Plenary also addressed a first discussion of the Collaboration Agreement with X2Rail 1, including the participation of X2Rail1 Coordinator.



ASTRARAIL Plenary meeting

FOR MORE INFORMATION ON ASTRAIL,
PLEASE VISIT WWW.ASTRAIL.EU
OR CONTACT JOSE.BERTOLIN@UNIFE.ORG

E. SMaRTE



SMaRTE (Smart Maintenance and the Rail Traveller Experience) is a Shift2Rail Open Call 2017 project within the Horizon2020 Programme of the European Commission.

SMaRTE brings together two related but distinct areas of research. Smart maintenance and human factors are concerned with digitisation and the use of information to enhance decision making, either by industry players in respect of maintenance decisions, or by users of the system in employing smart applications to navigate the rail system and its interaction with other modes.

SMaRTE works across two thematic Work Streams:

- **Smart Maintenance.** SMaRTE aims to improve current railway train maintenance systems, through the integration of predictive data analysis algorithms and online optimization tools within an improved Condition Based Maintenance (CBM) strategy
- **Human Capital.** The goal here is to understand the current and future needs of passengers from the railway, and other transport systems characterised by rapid advances in technology and demographic change, and consider human centred design in identifying aspects of the customer experience which could be improved and simplified through information and mobility support

Started in September 2017, the project will last 24 months and will end in August 2019. UNIFE leads the Dissemination/Exploitation Work Package.

FOR MORE INFORMATION,
PLEASE VISIT WWW.SMARTE-RAIL.EU
OR CONTACT ANDREA.DEMADONNA@UNIFE.ORG

Preparation of Shift2Rail 2.0 and the next European research Framework Programme (FP9)
 In 2017, the UNIFE Research & Innovation Committee prepared UNIFE's vision for Shift2Rail 2.0. It is based on the global trends impacting rail transport in the future (e.g. urbanisation, societal changes). Shift2Rail 2.0 should redefine the place and ambition of rail transportation in the future mobility landscape. Shift2Rail 2.0 should also develop solutions addressing the challenges of future urban and intercity traffic in a multimodal transport context.

UNIFE Research & Innovation Committee members identified nine Key Enablers that should be covered by a potential Shift2Rail 2.0: automated rail transport, mobility as a seamless service, digitalisation, towards an efficient zero emission railway, maintenance of the future, enhancing the security and the protection of the rail system, optimized infrastructure, digitization of the supply chain (Industry 4.0) and new certification framework.

The vision, approved by the UNIFE Presiding Board in 2017, has been shared with other rail stake-

holder associations in order to promote the creation of the Shift2Rail 2.0 Joint Undertaking within the next European research Framework Programme (FP9).



UNIFE presenting to Violeta Bulc (EU Commissioner for Transport) our vision for Shift2Rail 2.0 and our digitalisation priorities

FOR MORE INFORMATION,
PLEASE CONTACT NICOLAS.FURIO@UNIFE.ORG

HORIZON 2020 – 2018-2020 CALL

In 2017, the European Commission launched the Horizon 2020 - 2018-2020 work programme entitled "Smart, green and integrated transport". It contains a list of research topics that are addressed in the calls for proposals across 2018-2020. This Horizon 2020 - 2018-2020 work programme does not contain any pure rail research topics.

Nevertheless, there are some opportunities within Horizon 2020 for rail research within some cross-modal topics. UNIFE has informed its members about these topics and contacted stakeholders from other sectors in order to assess the opportunities for UNIFE members to join some consortia interested in those research topics.

FOR MORE INFORMATION ON THE HORIZON 2020 – 2018-2020
WORK PROGRAMME "SMART, GREEN AND INTEGRATED TRANSPORT",
PLEASE VISIT [HTTP://EC.EUROPA.EU/RESEARCH/PARTICIPANTS/DATA/REF/H2020/WP/2018-2020/MAIN/H2020-WP1820-TRANSPORT_EN.PDF](http://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-transport_en.pdf)
OR CONTACT NICOLAS.FURIO@UNIFE.ORG



EUROPEAN GNSS AGENCY ACTIVITIES

Year after year, satellite-based technologies become more important for the various next generation train control solutions, including train positioning, telecommunications or precise time synchronization. The European GNSS Agency, situated in Prague, has an important role in promoting and

enabling new or improved services that properly respond to user needs. UNIFE, identified by the Agency as the key stakeholder representing the railway industry, has been consulted throughout the year on several topics, contributing to the definition of the future of European satellite-based services, most significantly Galileo and EGNOS.

Following invitations from the European GNSS Agency, UNIFE attended several workshops and events in 2017, discussing the usage of the satellite positioning for modern signalling.

**FOR MORE INFORMATION ON
THE EUROPEAN GNSS AGENCY ACTIVITIES,
PLEASE CONTACT JOSE.BERTOLIN@UNIFE.ORG**



STARS

STARS (Satellite Technology for Advanced Railway Signalling) is a two-year Horizon 2020 research project with a budget of almost €4.5 million, started in February 2016. The project

consortium coordinated by UNIFE is composed of 17 partners, including the major railway signalling manufacturers, organisations with an expertise in space technologies, aviation and radio communication systems development and research centres.

The aim of this project is to fill the gap between ERTMS needs for safety critical applications and E-GNSS services, through a characterisation of the railway environment and of GNSS performance assessments in that environment.

In 2017, the project started a measurement campaign in three different locations around the Europe: 1. Switzerland, 2. Czech Republic, 3. Italy, and the analyses of the first raw data obtained from the field measurement campaign that will characterise the railway environment from GNSS signal reception perspective. This activity will help to better understand the impacts of local phenomena (multipath, signal blockage, RF interference) on GNSS performance, both at qualitative and quantitative levels.

The STARS project Mid-Term event was held in June in Toulouse. The event gathered more than 50 participants, including project consortium members, stakeholders from the rail as well as from the aerospace sector and research centres.

**FOR MORE INFORMATION ON STARS,
PLEASE VISIT WWW.STARS-RAIL.EU
OR CONTACT JOSE.BERTOLIN@UNIFE.ORG**

ERSAT GCC

ERSAT GCC (ERTMS on SATELLITE Galileo Game Changer) is a 24-month Horizon 2020 research project with a budget of almost €3.1 million. UNIFE is leading the work on exploitation as well as contributing to the dissemination and communication strategy of the project.

The primary goals of ERSAT GCC are to launch an operational line using satellite technology into ERTMS by 2020 and to accelerate the standardization process at European level for the inclusion of satellite requirements into the new ERTMS specifications.

The ERSAT GCC project was launched on 1 December 2017.

**FOR MORE INFORMATION,
PLEASE CONTACT JOSE.BERTOLIN@UNIFE.ORG**

K4i – Pact For Innovation (Inpact)



As a signatory of the PACT for Innovation, UNIFE attended two PACT working groups meetings organised by Knowledge4Innovation on in April 2017. The meetings focused on the “Mid-term review and the preparation of the next Framework Program for Innovation” and “the Creation of Regulatory framework encouraging innovation”. UNIFE was able to dialogue with MEPs and stakeholders involved in research and development on the future of European research. UNIFE emphasised the importance of maintaining/improving the support of the European Commission for setting-up a PPP for research in the next research Framework Program, in order to improve the competitiveness of European industry, and in particular the rail sector. UNIFE also called for a simplification and reduction of administrative burdens in this future PPP. Last but not least, participants agreed that any regulatory framework should not hamper innovations.

FOR MORE INFORMATION,
PLEASE CONTACT NICOLAS.FURIO@UNIFE.ORG

ERRAC & SETRIS

ERRAC



ERRAC's (European Rail Research Advisory Council) main challenge for 2017 was to implement the restructuration of ERRAC that was decided in 2016.

The new structure aims at ensuring a good level of cooperation between ERRAC stakeholders (including the Shift2Rail Joint Undertaking) in order to enhance the rail sector's market position and competitiveness through mobilising research and innovation efforts.

During the ERRAC Plenary event that took place in January in Brussels, a recommendation for the new structure was presented to ERRAC stakehold-

ers. This recommendation was officially approved in March 2017 during an ERRAC Steering Committee.

ERRAC is now structured with a Plenary, a Steering Committee and a number of topic-specific or transversal working groups (system approach): Strategy (ERRAC Working Group 1), Mobilisation (ERRAC Working Group 2) and Dissemination/Communication (ERRAC Working Group 3). In addition, ERRAC has two permanent advisory groups (PAG), one comprising of representatives from Academia (ERRAC Academia PAG) and the other comprising representatives of Member States (ERRAC States Representatives PAG).



Another milestone of ERRAC in 2017 was the endorsement by ERRAC stakeholders of the new ERRAC 2050 vision document at the ERRAC Plenary that took place on 23 November 2017. Based on the long-term visions of UNIFE, UIC and UITP, the ERRAC 2050 vision document reflects the rail sector's priorities in order to ensure that railway transportation is the backbone

of the mobility of the future. The ERRAC 2050 vision is in a nutshell: “In 2050, rail transport in Europe is the backbone of an intermodal “Mobility as a Service” within cities and beyond, for both passengers and goods, meeting the needs of customers, EU citizens and society. The suppliers and service organisations of the European rail industry are recognised as the world's thought leaders for railway products and services.”

Moreover in 2017, regular ERRAC Steering Committee, ERRAC working groups 1, 2 and 3 meetings took place during which the future missions/activities of ERRAC were discussed. These committees have also monitored the current activities of ERRAC and were informed about the progress of two European Coordination and Support Action project involving ERRAC members: and SETRIS.

FOR MORE INFORMATION ON ERRAC,
PLEASE VISIT WWW.ERRAC.ORG
OR CONTACT NICOLAS.FURIO@UNIFE.ORG

SETRIS

SETRIS

SETRIS (Strengthening European Transport Research and Innovation Strategies) is a two-year Horizon 2020 European Coordination and Support Action project that began in May 2015 with a budget of around €3 million. The SETRIS Project brings together five Transport European Technology Platforms (ETPs) – road, rail (ERRAC), air, water and logistics – and a variety of their membership as partners into one consortium. UNIFE represents ERRAC in the SETRIS project. SETRIS aims to deliver a cohesive and coordinated approach to research and innovation strategies for all transport modes in Europe.

The main objective of SETRIS is to update the strategic, research and innovation agendas (SRIAs) of the different ETPs within a multi-modal and integrated transport system framework. It will be needed for the later identification of synergies between the European platforms' and the relevant national platforms' agendas. This work will highlight not only innovations or research activities that need to be carried out but also the changes in governance that are necessary to facilitate these agendas. Furthermore, it will drive the transport sector to a more multimodal system in a coordinated framework. Moreover, there will be a complementary task to address the need to benchmark past and present rail-related research initiatives and projects in order to assess the viability of different research topics and the potential market uptake of the results.

FOR MORE INFORMATION ON SETRIS,
PLEASE VISIT WWW.NEWRAIL.ORG/SETRIS
OR CONTACT NICOLAS.FURIO@UNIFE.ORG

Finalised European Research Projects

NGTC



NGTC (Next Generation Train Control) is a 42-month FP7 European research project that began in September 2013 with a budget of around €11 million. The consortium comprises urban and mainline operators, major railway signalling companies and research centres.

The main objective of NGTC is to analyse the commonalities and differences of required functionality for both ETCS and CBTC systems. The target of the project is to propose reasonable evolutions of future train control systems benefiting from the effective experiences from both domains (urban and mainline).

Almost 80 participants attended the NGTC Final Conference, which took place in February 2017 in Brussels. Jointly organised by UNIFE, UITP and ERTMS Users Group, the event was the opportunity for the project partners to present the results and discuss the use of achieved outcomes with present participants.

FOR MORE INFORMATION ON NGTC, PLEASE VISIT WWW.NGTC.EU
OR CONTACT JOSE.BERTOLIN@UNIFE.ORG

CAPACITY4RAIL



Capacity4Rail (New Concept for Railway infrastructure and operation: adaptable, resilient and high capacity) was a four-year FP7 European research project that began in October 2013 with a budget of around €15 million. Coordinated by UIC, UNIFE's main role in the project was dissemination and exploitation.

Capacity4Rail aimed at paving the way for the future railway system, delivering coherent, demonstrated, innovative and sustainable solutions for track design, freight, operation and capacity as well as advanced monitoring. With a comprehensive system vision, Capacity4Rail contributed to the de-

velopment of guidance documents which identify further actions to be undertaken and future technologies and systems to be developed. The full sustainability of the developed solutions and innovations will be assessed and scenarios for a smooth migration of the system from its current to its future state will be evaluated.

Capacity4Rail held its final event on 21-22 September in Madrid. Attended by around 100 participants each day, this event brought together a wide range of stakeholders representing railway operators, infrastructure operators and maintainers, technical industries and research organisations. The final results of the project were then presented by the various sub-project leaders. The presentations covered innovative concepts, designs, methods and optimal strategies to face the future challenge of increased rail traffic and to create capacity at a lower cost.

FOR MORE INFORMATION ON CAPACITY4RAIL,
PLEASE VISIT WWW.CAPACITY4RAIL.EU
OR CONTACT NICOLAS.FURIO@UNIFE.ORG

Transport Research Arena (TRA)



The Transport Research Arena (TRA) conference is an intermodal conference organised by the European Commission and the main European Surface Transport Technology Platforms: the European Railway Research Advisory Council (ERRAC), the European Road Research Advisory Council (ERTRAC), WATERBORNE TP as well as the Conference of European Directors for Roads (CEDR) and Alliance for Logistics Innovation through Collaboration (ALICE), European Transport Research Alliance (ETRA), European Construction Technology Platform (ECTP) and Advisory Council for Aviation Research and Innovation in Europe (ACARE).

The 7th European Transport Research Arena Conference (TRA 2018) will take place in Vienna from 16 to 19 April 2018. TRA 2018 aims to contribute to

innovation in sustainable mobility for Europe, by bringing together stakeholders from throughout the transport system. This high-level research event is usually attended by the European Transport Commissioner and the European Research Commissioner.

In 2017, UNIFE was involved as an ERRAC representative in the different committees responsible for the organization of TRA. The role of UNIFE was to make sure that the rail sector and its messages will be represented during the TRA event. TRA is an opportunity for UNIFE's members to underline the key role of rail transportation in a multi-modal context.

FOR MORE INFORMATION ON TRA 2018,
PLEASE VISIT WWW.TRACONFERENCE.EU
OR CONTACT NICOLAS.FURIO@UNIFE.ORG

UNIFE Digitalisation Platform Activities

The UNIFE digitalisation platform, which gathers around 30 UNIFE members representing the entire value chain, serves as a dynamic forum for the industry's engagement on this key topic for the future of the railway sector.



After releasing its Position Paper on the Digitalisation of Railways at Innnotrans 2016, the Digitalisations Platform worked in 2017 on the implementation of its two main priorities:

- Cyber Security threats
- Access to data for greater efficiency

A position paper on cyber security was issued by the dedicated experts' group (see ahead for more details).

In order to progress on access to data, UNIFE contacted other sector associations, namely EIM, CER

and UITP. With this last one, which has promoted open data since 2015, UNIFE engaged in a bilateral discussion on a possible data exchange.

As a reminder, the UNIFE Position Paper, while outlining the existing contribution of the industry to digitalisation, also sets out the vision for further developments, with the following priorities:

- ✎ Better accessing and using data
- ✎ Enhancing the security of the rail system
- ✎ Improving end-user's experience
- ✎ Better use of the existing infrastructure, with two main objectives in this field:
 - ERTMS deployment as one of the key priorities for the rail supply industry
 - Predictive maintenance

UNIFE's Digitalisation Platform Chairman Yves Perreal (Thales) participated in the Digital Transport Days in Tallinn on 8-10 November and presented UNIFE's view on digitalisation and how it will help rail to be the backbone of European transport system.

UNIFE also coordinated the work on a Joint Rail Sector Declaration on Digitalisation of Railways, signed by CER, EIM, ERFA, UIP, UITP Europe, and UNIFE, which was handed to the DG Move Director-General Henrik Hololei at this landmark event.



Nicolas Furio and Yves Perreal (Chairman, UNIFE Digitalisation Platform), presenting to Henrik Hololei (Director General, DG Move, European Commission) the Joint Rail Sector Declaration on Digitalisation of Railways

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Cyber-Security Activities

Securing network and information systems in the EU is essential to keeping the online economy running and ensuring prosperity, as repeatedly declared by the European Commission. UNIFE is fully aligned with the EU vision and took a number of initiatives in order to place itself at the forefront of cyber-security in Europe.

Internally, UNIFE set-up a dedicated working group dealing with cyber-security and dependent on the newly established UNIFE Digitalisation Platform in May 2016. Its main goal is to develop a clear and coherent cyber-security roadmap to address the main threats challenging the European Union. The group is currently working on a Position Paper on rail cyber-security transformation and setting the priorities and targets for the short and long term, as a basis for further engagements with the EU institutions and the other rail stakeholders.

The UNIFE cyber-security sub-group offers UNIFE members a platform to discuss and identify opportunities of cooperation in relation to cyber-security issues in the European rail sector, strengthening the position of the European industry vis-à-vis the other competitors and stakeholders.

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Signalling and ERTMS

- p. 72 → Political highlights
- p. 74 → Technical highlights
- p. 75 → ERTMS deployment statistics
- p. 78 → Promotion of ERTMS & communication activities



6



Following the release of the ERTMS Baseline 3 release 2 set of specifications, a mature and stable version of the system, 2017 started with a major update of the ERTMS European Deployment Plan (EDP). Deployment is effectively the key target for the European Commission, supported by a comprehensive action plan made official at the ERA CCRC2017 conference in November 2017. UNIFE and UNISIG contributed actively to this plan and to the technical activities needed to maintain ERTMS, as required by a modern digital system.

In parallel, UNISIG contributed with its technical experts to the development of the ERTMS Game Changers, in close collaboration with Shift2Rail. In 2017, a specific focus was set on developing an interoperable ATO. UNIFE and UNISIG continued to develop promotional and communication activities for ERTMS, targeting both the European and international markets, as ERTMS is without any doubt recognised as the universal signalling system.

ERTMS – Political highlights

EUROPEAN COMMISSION ADOPTS THE ERTMS EUROPEAN DEPLOYMENT PLAN

The European Commission published on 5 January 2017 an *Implementing Regulation on the European Rail Traffic Management System European deployment plan* - ERTMS EDP as a revision of the last EDP adopted in 2009. The newly adopted ERTMS EDP sets new targets until 2023 by which about 50% of the Core Network Corridors shall be equipped. In 2023, the ERTMS EDP will be updated again setting out the precise dates for the remaining part of the Corridors between 2024 and 2030. This new deployment plan should facilitate the planning of investments of both railway undertakings and infrastructure managers.

In addition, Member States were asked to draw up National Implementation Plans and to submit them to the European Commission, which shall be updated at least every five years.

UNIFE SIGNALLING CEOS SIGNS LETTER OF INTENT TO SUPPORT THE UPDATED ERTMS EUROPEAN DEPLOYMENT PLAN

On 7 February 2017, the CEOs of Alstom, Ansaldo STS, AZD Praha, Bombardier, CAF, MerMec, Siemens and Thales, as members of UNISIG, renewed their commitment to the development of ERTMS by signing individual Letters of Intent in the presence of DG Move Director-General Henrik Hololei, ERTMS Co-ordinator Karel Vinck and EU Agency for Railways Executive Director Josef Doppelbauer.



UNIFE Signalling CEOs sign Letter of Intent to support the updated ERTMS European Deployment Plan

This commitment intends to secure long-term stability for the ERTMS specifications following the adoption of Baseline 3 Release 2 and promote a 'swift and coordinated' deployment across Europe. The Letter of Intent comes as a result of a fourth Memorandum of Understanding (MoU) signed by various rail sector associations including UNIFE and UNISIG with the EU Agency for Railways and European Commission in September 2016.

ERTMS DEPLOYMENT ACTION PLAN

On 20 June 2017, the first version of the ERTMS Deployment Action Plan was presented by EU Transport Commissioner, Violeta Bulc at the Single European Rail Area (SERA) Convention in Brussels, where UNIFE and UNISIG were part of the panel.

Commissioner Bulc emphasized that ERTMS is a cornerstone of digitalising the rail sector and essential for achieving a single and safe European Railway Area. However, ERTMS deployment must be accelerated to meet the European Deployment Plan targets.



Violeta Bulc (EU Commissioner for Transport) at the Single European Rail Area (SERA) Convention in Brussels



The ERTMS Deployment Action Plan was published at the ERA Conference “CCRCC - Control Command and Railway Communication Conference” in November 2017. It identifies barriers to achieving interoperability while recognizing that the basic regulatory framework is in place and focusing on the concrete actions and defined deadlines. A co-ordinated deployment will drive

down costs and deliver significant benefits to help the rail industry be more competitive.

The ERTMS Deployment Action Plan defines the necessary steps to reach the following objectives:

- ✎ Interoperable and compliant infrastructure;
- ✎ Standardisation of on-board units (OBU);
- ✎ Efficient testing and validation;
- ✎ Maintaining ERTMS in a reliable and consistent manner;
- ✎ Funding/financing support.

It includes most of the actions proposed by UNIFE to ERA and DG MOVE to speed-up the ERTMS deployment.

The follow-up of the ERTMS Deployment Action Plan will be performed by the ERTMS Stakeholder Platform Coordination Subgroup which includes representatives from UNIFE, UNISIG, DG Move, ERA, EIM, CER, ERFA and EPPTOLA.

ERTMS REPORT FROM EUROPEAN COURT OF AUDITORS



UNIFE data and statistics were considered to be an important asset by the European Court of Auditors during a survey performed for the publication of the 13th ERTMS report, “A single European rail traffic management system: will the political choice ever become reality”. The report assessed whether ERTMS has been properly planned, deployed and managed. It concludes that

ERTMS is acknowledged by the Member States and the rail sector as the universal signalling system in Europe, highlighting that the low status of deployment in EU and the reluctance to invest due to cost and lack of individual business case shall be addressed quickly. Detailed recommendations were raised to the European Commission, the Member States and ERA to help improve the deployment and financing of the system. Most of the corresponding actions are included in the ERTMS Deployment Action Plan.

ERTMS – Technical highlights

In 2017, UNISIG concentrated its activity on the maintenance of the ERTMS specifications, including the associated Baseline Compatibility Assessment.

Under the leadership of ERA, UNISIG and the ERTMS Users Group carried out the analysis and assessment of a set of Change Requests, considered to be addressed as a matter of priority to consolidate the interoperability target. To conclude this work, ERA issued its Opinion ERA/OPI/2017-2, including not only proposed technical solutions, but also the recommended processes by which to implement them. This Opinion paves the way to a long-term ERTMS maintenance process, mandatory for modern software system.

To complement this work, all UNISIG suppliers communicated to ERA the specific behaviours of their on-board units in order to evaluate in the field the possible changes to be implemented by the IMs, with the target to allow all compliant on-boards to run on compliant infrastructures.

The UNISIG suppliers also proposed a process for handling possible interoperability issues encountered within project execution.

Testing, Certification and Authorisation remains a crucial topic for ERTMS. All stakeholders recognise that, on top of constituents testing, compatibility testing between on-board equipment and real track-side configurations is mandatory.

The ERTMS Stakeholders Platform decided to create a Test & Validation sub-group under the chairmanship of UNISIG. This sub-group, made up of experts from the representative bodies, has developed a generic process. This process will be fully detailed before endorsement by the Platform Board in 2018.

Finally, UNISIG is involved in the development of the future ERTMS Game Changers, in coordination with Shift2Rail IP2. In 2017, priority was given to quick wins, mainly the development of the ATO specification, looking to minimise the impact on the core ETCS specifications. UNISIG is also active in all ERA coordination groups dealing with the ERTMS Game Changers, i.e. ATO, Level 3 and the future communication system.

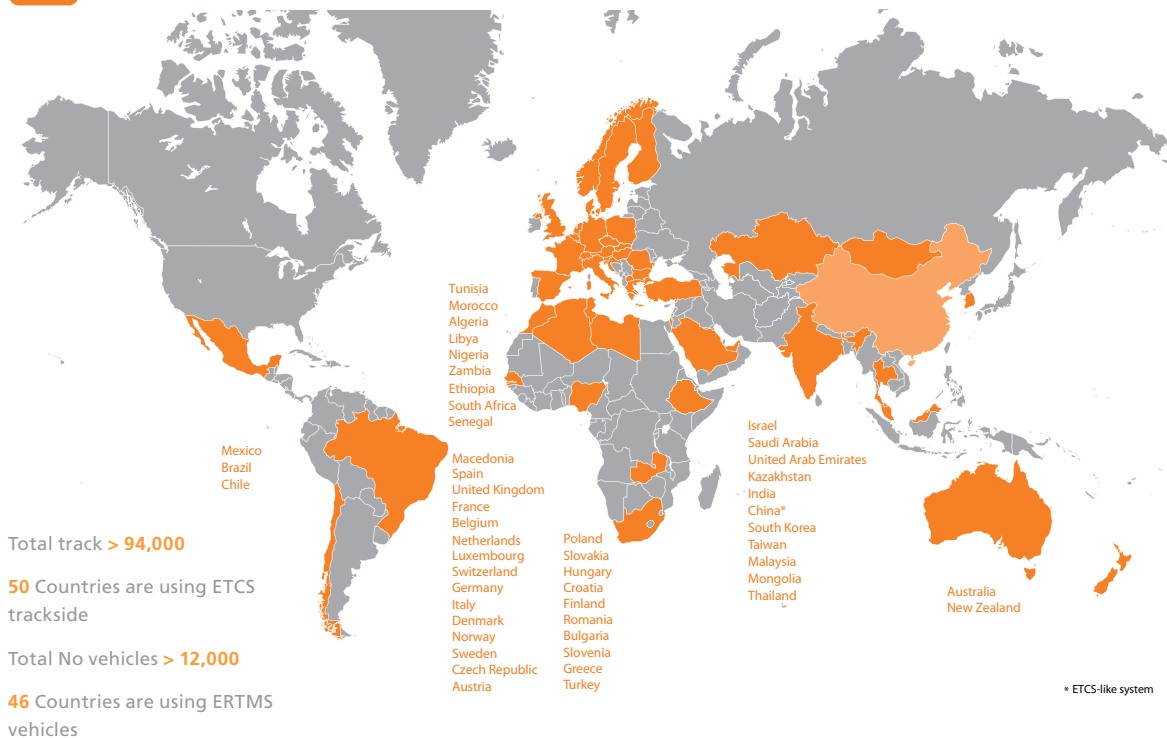
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ERTMS deployment statistics

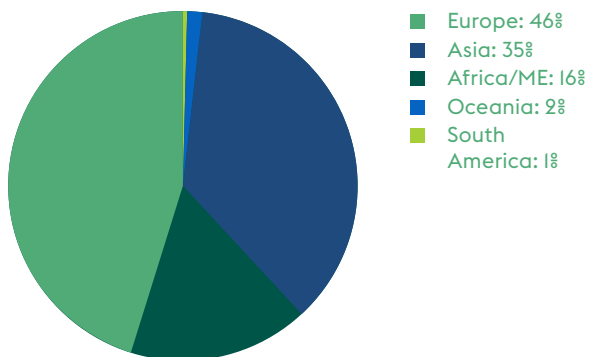


Global ERTMS Deployment by Country

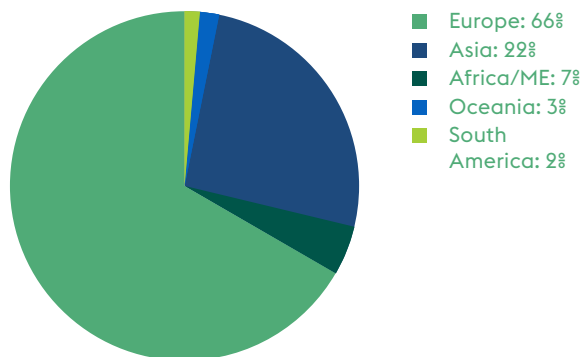
Source: UNIFE December 2017



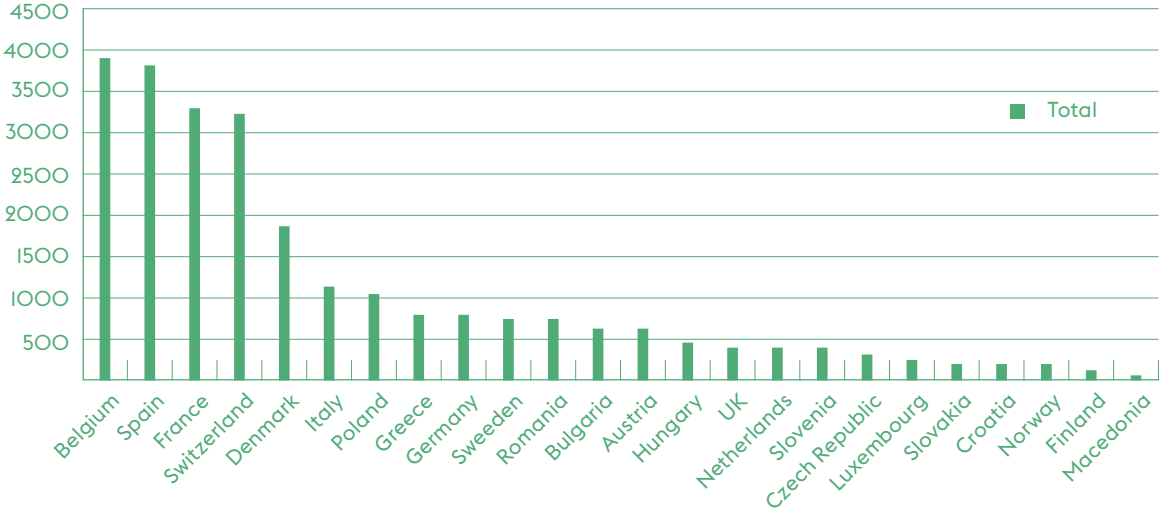
CONTRACTED ROUTE (KM) IN THE WORLD (ETCS LI &/OR L2)



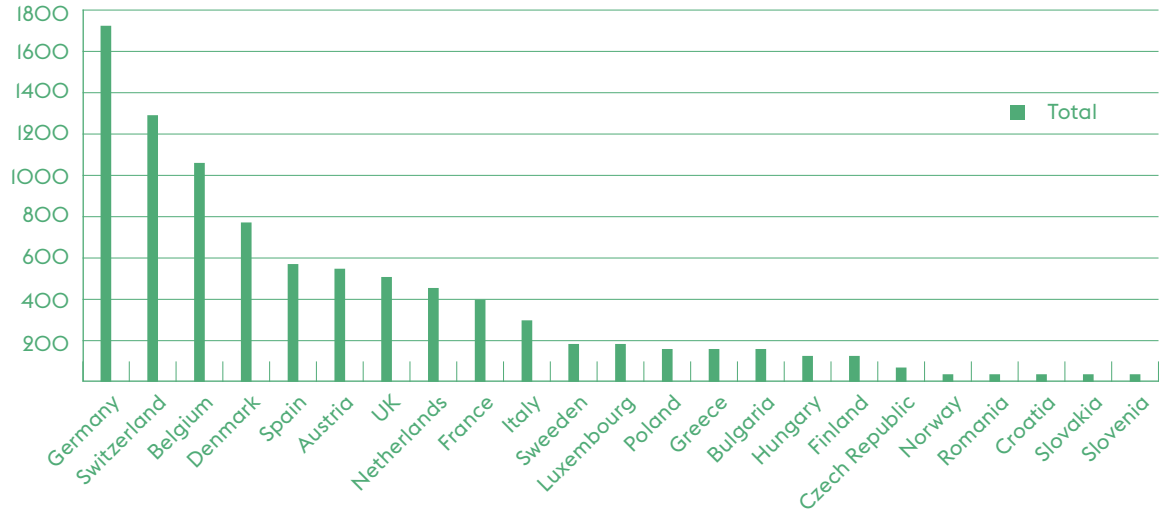
CONTRACTED VEHICLES IN THE WORLD (ETCS LI &/OR L2)



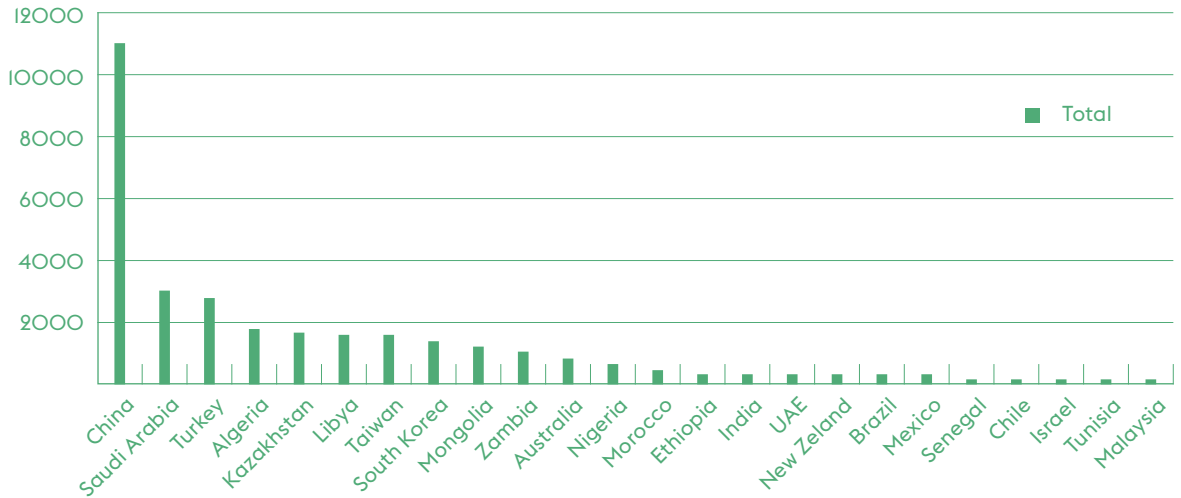
CONTRACTED ROUTE (KM) IN EUROPE, INCLUDING SWITZERLAND (ETCS LI &/OR L2)



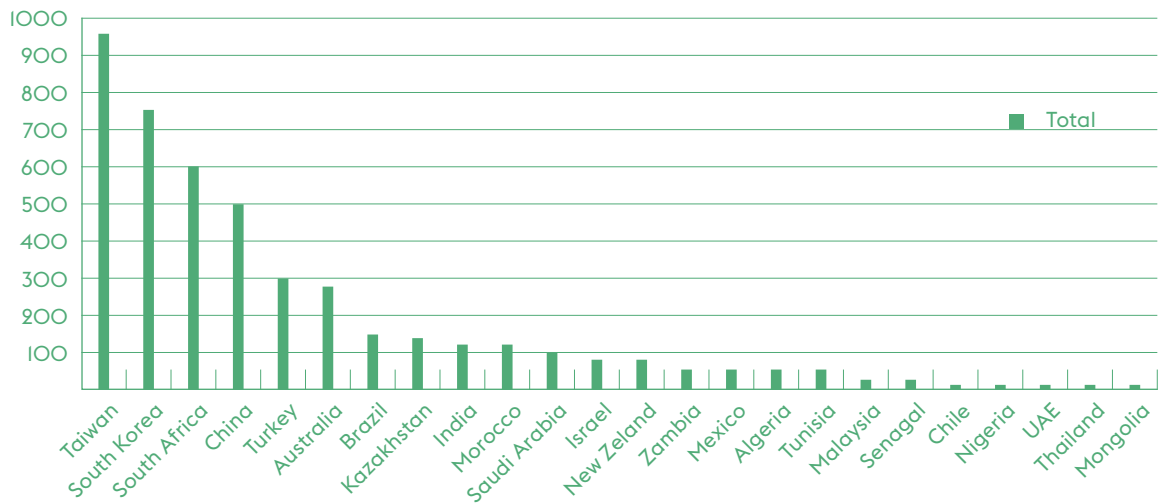
CONTRACTED VEHICLES IN EUROPE, INCLUDING SWITZERLAND (ETCS LI &/OR L2)



CONTRACTED ROUTE (KM) OUTSIDE EUROPE (ETCS L1 &/OR L2)



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



Promotion of ERTMS & communication activities

UNISIG MEMBERS PRESENT AT RAILTECH 2017 IN UTRECHT

On 28-30 March 2017, UNISIG companies, which are part of the UNIFE ETCS Steering Committee presented an ERTMS market status at the Railtech 2017 conference on ERTMS, Digitalisation and Maintenance, focusing on the deployment of Baseline 3 and future innovations of Game Changers like Automatic Train Operation and Level 3.

UNIFE PARTICIPATES IN THE 2017 TENT-T DAYS

The EU Commissioner for Transport, Violeta Bulc expressed her support to Philippe Citroën for the ERTMS European Deployment Plan during the TENT-T Days. The Connecting Europe Conference was organized by the Estonian Presidency of the Council and the European Commission, with the objective to identify policy actions and financing solutions to invest in the Transport sector with the perspective of the post-2020 EU financial framework. The conference was held in Tallinn, Estonia from 21-22 September, where UNIFE/ UNISIG was present with the ERTMS stand.



Violeta Bulc (EU Commissioner for Transport) and Philippe Citroën at the ERTMS stand during the TENT-T Days

CCRCC 2017 - CONTROL COMMAND AND RAILWAY COMMUNICATION CONFERENCE "ERTMS IS READY FOR EUROPE – OVERCOMING THE OBSTACLES"

The ERA "CCRCC 2017" conference brought together around 300 participants and was followed live on the web by more than 700 people. High level speakers and experts on ERTMS communicated on the important milestones the railway community reached together in the past two years since the last ERA event.



ERA CCRCC 2017 conference

The first session was dedicated to the "ERTMS current successes and challenges". Major tenders and projects were presented and key proposals made to reach a true interoperability.

The conference included a specific session on the future processes for ERTMS approval and authorisation by ERA as planned within the 4th Railway Package.

UNIFE/UNISIG played an important role throughout the organisation process of this event by actively participating on CCRCC Steering Committee meetings and building-up the programme.

Amongst many high-level panellists, Philippe Citroën presented the ERTMS supply market situation in Europe and recalled that there is a strong need to focus on ERTMS deployment involving all rail stakeholders and to boost financing.

In addition, on behalf of all UNISIG Signalling Suppliers, Vincent Passau, Chairman of the UNIFE ETCS Steering Committee presented the ERTMS Maturity and Challenges to support ERTMS Deployment and emphasized that UNISIG suppliers are prepared for the large scale deployment of ERTMS.

Michel Van Liefferinge moderated the 1st session, and invited railway experts to present major tenders and implementation projects in Europe. He also made a presentation on “Proposals on ETCS Compatibility Testing & Re-authorisation”, which triggered many questions from the audience.

NEW VIDEO ON ERTMS LEVEL 2 BASELINE 3 BENEFITS

The UNIFE ERTMS Marketing Group (UEMG) created a new video targeted to rail investment and business decision makers in or associated with the rail industry that are not yet aware of the purpose and challenges of ERTMS Baseline 3. The video has been received positively and viewed over 800 times.



UEMG also published a new ERTMS Factsheet called “How ERTMS has become the “de facto” worldwide standard for railway traffic management and safety”. The factsheet has been translated into Arabic, Farsi, French, German, Italian, Portuguese, Spanish and Russian language to widen the awareness of the application and advantages of ERTMS technology introduction into national rail networks. These translations are intended to act as a catalyst for new or intending ERTMS users to acquire more and deeper information from UNIFE and its supplier members.



factsheet #24

SEPTEMBER 2017



HOW ERTMS HAS BECOME THE “DE FACTO” WORLDWIDE STANDARD FOR RAILWAY TRAFFIC MANAGEMENT AND SAFETY

In the early 1990s, the European Rail Industry, with the backing of the EU Institutions, embarked on an initiative to design and create a common, single railway signalling system that would make rail transportation in Europe the most competitive, efficient safest and, as a world premiere, interoperable mode of transport. Factors which prompted this idea of a single, harmonized and interoperable system were the existence of more than 20 national train control systems that made cross-border train movements extremely technically complex, administratively very time consuming and consequently non-competitive against other modes of transport, particularly road transport.

Some national legacy rail control systems were only supported by a single and incumbent supplier whilst others were very expensive to maintain and support due to obsolescence issues. The situation was even further exaggerated by differences in track gauges, national electrification and traction power schemes.

Environmentally, however, rail transportation emerged not only as “the” alternative to road and air transport but also as the lowest CO₂-emission mode of transport contributor.

BACKGROUND BEHIND ERTMS

As a unique signaling system developed from a vision, ERTMS has been designed to be fully interoperable. The intention is to facilitate any train equipped with ERTMS to be able to operate on any line fitted with ERTMS, irrespective of the supplier, and be safe – the interoperability being geographical – across country borders and interoperable between different suppliers, either through the on-board fitment or the infrastructure fitment. This would produce an open supply market, increase competition across the rail market and benefit the Infrastructure Managers and the Railway Undertakings, and ultimately the services for passengers and freight operators.

SYSTEM ARCHITECTURE OF ERTMS - BASIC TECHNICAL DESCRIPTION

A top-level point of view of ERTMS shows three different sub-systems:

- 1st an interoperable safety and control system (ETCS);
- 2nd a radio system supporting cab signalling for driving without line side signals;
- 3rd an international traffic management system (ETML).

ERTMS offers various functional configuration options in line with the different ETCS levels as described.

ERTMS Level 1: the information required on board trains is provided via the on-board balise antenna from track mounted balises linked through an LEU linked to the lineside signals. In Level 1, movement authorities can also be issued over several sections, safely enabling operational speeds of up to 350 km/h.

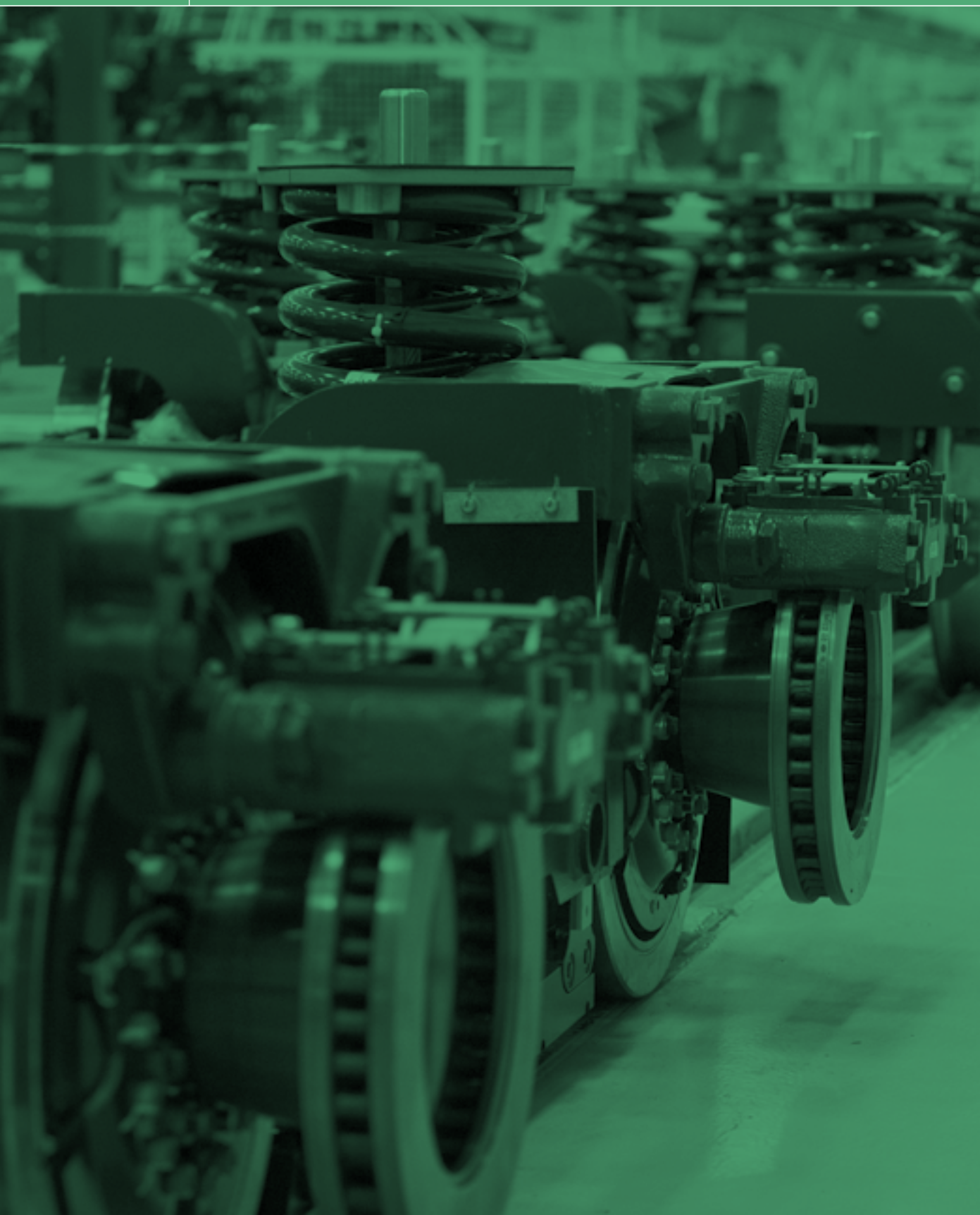
ERTMS Level 2: The key feature of ERTMS Level 2 is that information is transmitted by radio to the train from an RBC (Radio Block Centre). Fixed balises are needed to determine the train's position and to forward non-variable track data. Signals can continue to be used for mixed operation although they are no longer required for pure Level 2 operations. Track vacancy detection information and information about point positions are transmitted from the associated interlocking to the RBC which generates the train's movement authority and sends it to the ETCS on-board computer unit. Line throughput is considerably increased and driving “on electronic sight” through section blocks enables short headways at maximum speed.

ERTMS Level 3: The main infrastructure elements of Level 2 are retained - however, track vacancy detection components are no longer needed. Moving-block operations are possible. In Level 3, trains actively participate in route protection and have to reliably indicate their integrity to the RBC. The RBC is thus capable of optimizing train traffic. Level 3 is currently not standardized but work is actively progressing for this solution.

FOR MORE INFORMATION ON ERTMS, PLEASE VISIT

WWW.ERTMS.NET

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ERWA

p. 82 → Railway Wheels and
Wheelsets Committee



ERWA - Railway Wheels and Wheelsets Committee

OVERVIEW



ERWA, the UNIFE Railway Wheels Committee, currently comprises nine companies, all of which produce railway wheels and wheelsets in eight different European countries with deliveries to five continents. More specifically, these are: Bochumer Verein Verkehrstechnik, BONATRANS Group, CAF MiiRA, GHH Radsatz, Lucchini RS, Lucchini Sweden, Lucchini Unipart Rail, Lucchini Poland and LBX.

At present, these nine companies are organised in four European groups, each of which is vertically integrated from forge to finished products: BVV, CAF MiiRA, GHH-BONATRANS Group and Lucchini RS Group.

ERWA is divided into three sub-committees: the ERWA Development Committee, which is responsible for public relations, political issues and market trends; the ERWA Technical Committee, which deals with standardisation, regulation and research topics; and the ERWA Steering Committee, which coordinates all of the activities of these other committees as well as general management of ERWA.

ACTIVITIES IN 2017

In 2017, numerous activities coordinated by the ERWA Steering Committee were carried out:

- Inputs to Standardisation and Regulation
- Close links with EU Agency for Railways and standardisation bodies like CEN/CENELEC
- Finalisation of EURAXLES Technical Report to CEN/SC2/TC256
- ERWA public relations activities and publications
- Market trends evaluation and ERWA statistics

ERWA GENERAL ASSEMBLY

The ERWA General Assembly was held in Brussels in May 2017, where Josu Imaz of CAF MiiRA was elected as the new ERWA chairman, but was shortly thereafter replaced by Jon Aguirre (Managing Director, CAF MiiRA) following some internal restructuring in the company. The chairmanship of the Development and Technical Committees remained in the hands of Marcel Ujfaluši from GHH-BONATRANS Group and Steven Cervello from Lucchini RS respectively.



Jon Aguirre (Managing Director, CAF MiiRA / ERWA Chairman)

19TH INTERNATIONAL WHEELSET CONGRESS

Following the successful organisation of the 18th International Wheelset Congress (IWC), which took place in Chengdu (China) between 7 and 10 November 2016, preparations are underway for the 19th IWC which will take place in Venice from 16 to 20 June 2019. The organisers are Lucchini RS, but with UNIFE and ERWA, as owners of the IWC brand name, closely guiding the process. The event is going to take place in the prestigious venue of San Giorgio Maggiore, targeting the large involvement from various component manufacturers and end users (OEM & Railways) focusing on the wheelset as a system.



19th IWC venue – San Giorgio Maggiore, Italy

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IRIS Certification™

p. 87 → Main achievements

p. 88 → Management of the stakeholders

p. 89 → Technical evolutions on
IRIS Certification™ system

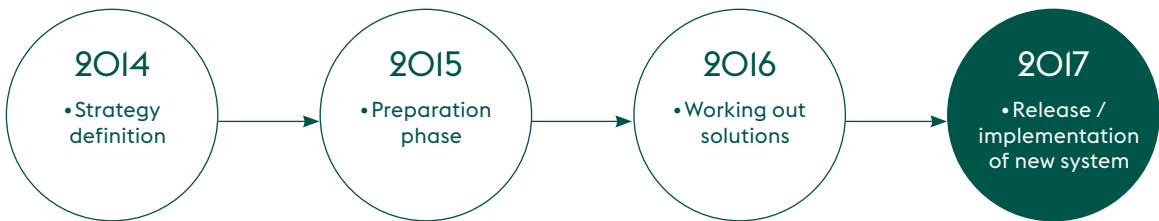
p. 89 → Transition from IRIS rev.O2 to IRIS
Certification™ rev.O3



8



2017 was a decisive moment for IRIS Certification™ with the recognition by ISO of an 11 year-long success story.



System

IRIS Certification™ rev. 03

Reference



Tools

IRIS Certification™ technology

Audit-Tool

Portal

Database

The new IRIS Certification™ rev.03 system has been active since 1st of June 2017. After several years of preparation focused on updating the technical requirements as well as defining a new assessment methodology enabling more customer recognition and global trust, the new system combines international standard ISO/TS 22163 with the IRIS Certification™ rules to put performance at the heart of the organizations for an improved product quality.

Main achievements

The work of UNIFE member experts around the IRIS Certification™ can be broken down into five categories:

- ✎ Lobbying
- ✎ Finalisation of the rules
- ✎ Dry run audits
- ✎ Promotion & communication
- ✎ Implementation of the certification in their premises

LOBBYING

Throughout the “A” Liaison with the ISO/TC 269, we were able to propose an evolution to the existing IRIS rev.02 requirements for larger acceptance within the ISO community. This document, which includes the ISO 9001:2015 requirements and the rail-specific supplemental requirements, garnered a positive assessment from the ISO/TC 269 AG 15 members.

In December 2016, a formal ballot to accept the document as an ISO Technical Specification was submitted. Thanks to a strong lobbying effort, we secured a positive vote from 85% of members.

All IRIS Certification™ Steering Committee members advocated for the work done at UNIFE level to their local contacts to ensure a positive vote country by country. This success highlights the good level of cooperation within the sector, mainly with the operators with whom UNIFE signed a Memorandum of Understanding on IRIS Certification™.

FINALISATION OF THE RULES

Based on the proposal validated at the end of 2016, the IRIS Certification™ Management Centre worked on the implementation of the new features into the assessment methodology and certification process.

The impacts of the new rules were checked against numerous scenarios and cases before starting to draft the document, to ensure full consistency across all aspects, including scope, company size, and legalities.

Another important part of the work carried out was updating the IT tools that support the system. Special atten-

tion was paid to the implementation process to ensure all new elements to the rules were completely reliable.

DRY RUN AUDITS

Due to the important evolutions in the assessment methodology, four dry run audits were conducted in 2017 to check and validate all audits configurations (certification, surveillance, re-certification), businesses (rolling stock, signalling), activities (design, manufacturing, maintenance), stakeholders (system integrators, equipment manufacturers, operators) and product types (rail specific, overall markets).

UNIFE would like to thank Knorr-Bremse, HARTING, Siemens and NS/Nedtrain for their participation in this essential step of the validation phase, as well as all the Working Group members and auditors involved in these actions.

PROMOTION AND COMMUNICATION

From April 2017 on, promotion and communicating around the new certification included:

- ✎ Certification Body seminar
- ✎ IRIS Certification™ Portal news
- ✎ Mailing to UNIFE members
- ✎ Detailed information to already certified companies
- ✎ Stakeholder newsletters

UNIFE also leveraged important events to promote and share information about the certification:

- ✎ EXPO 1520 in Scherbinka (Moscow) with NP-UIRE and the launch of the Russian version
- ✎ General Assembly of VDB (Germany) in Braunschweig, with a dedicated seminar on IRIS Certification™
- ✎ Information day with FIF (France) in Paris-Levallois.

IMPLEMENTATION IN STAKEHOLDER PREMISES

One of the major levers for the promotion of the IRIS Certification™ is its implementation within the premises of the direct stakeholders - UNIFE-IRIS Certification™ members and MoU signing operators.

The clear involvement of their management in the process ensures a large audience is exposed to the scheme. Each stakeholder took responsibility for spreading information about the importance of a quick alignment with the ISO/TS 22163 and its application rules to enhance the positive impact of performance.

Management of the stakeholders

AUDITORS

Over the course of 19 two-day face to face sessions, the IRIS Certification™ Management Centre trained around 300 official IRIS Certification™ auditors worldwide on the new material. Within four months, training was completed, including the addition of several new auditors.

BOARDS

The IRIS Certification™ Steering Committee - led by newly elected chairman Stefan Siegler - strongly supported all the efforts, which contributed to the success of the launch.



Philippe Citroën, Stefan Siegler (VP, Business Excellence & Quality Management, Siemens Mobility / Chairman IRIS Steering Committee and IRIS Advisory Board), and Bernard Kaufmann (IRIS Certification™ General Manager, UNIFE)

At the IRIS Certification™ Advisory Board level, it is worth highlighting the signature of an additional MoU between UNIFE and Metro Madrid on 17 No-

vember 2017. The addition of a second public transport company into the fold confirms the overall need of all rail businesses for safe and reliable products and systems.



Isaac Centellas, (Engineering and Maintenance Division Director, Metro Madrid) and Philippe Citroën

WITNESS AUDITORS

UNIFE's main contribution to the success of IRIS Certification™ rev.03 is the total control of the scheme. Through the engagement of the contractual stakeholders - the Certification Bodies - and their auditors, we ensure a rigorous application of the requirements and rules to ensure confidence and trust in the awarded certificates.

Witness audits are the operational tool to give confidence to the IRIS' stakeholders on the accuracy of the audits. IMC is currently extending its witness auditor pool to guarantee a strong global control of the system. This will allow us to monitor the right application of the IRIS Certification™ rev.03 rules, especially the new elements of the assessment methodology and through this, demonstrate to all IRIS certified companies and customers an equal level of high quality audits worldwide.

UNIFE and other sector players have a unique opportunity with the ISO/TS 22163 to be at the heart of the reliability and sustainability of our industry.

Technical evolutions on IRIS Certification™ system

ISO/TS 22163:2017

UNIFE's proposed draft was endorsed by ISO with a few editorial adjustments. It is composed of all the ISO 9001:2015 requirements and supplemental rail requirements derived from the previous version if still relevant. New needs and organisational trends were also taken into integrated. Overall, around 60% of the requirements from IRIS rev.02.1 were kept.

The full process approach in conjunction with risk based-thinking and the leadership focus requires an evolution of the quality mindset in our sector. With the ISO/TS label, we are able to take a cultural and decisive step towards excellence, as other industrial sectors have already done.

ASSESSMENT METHODOLOGY

As a response to rail stakeholder expectation, we have extended from focusing on effective process application over the past 10 years, to ensuring performance objectives through adequate measurement (KPIs).

Stakeholder analyses, customer feedback, process visualisation through “Turtle diagrams” and performance evaluations using a methodology inspired by the Aerospace sector, will generate progressively transparent behaviours and deeper relationships within the rail sector.

The assessment sheet containing all ISO/TS 22163 requirements will continue to be used in addition to the maturity level approach, both of which are supported globally by the rail sector.

The adaptation of the system in the IRIS Certification™ Audit-tool V5 ensures the strength of the scheme.

CERTIFICATION PROCESS

A stable certification process is a key expectation of IRIS' stakeholders. Therefore, only improvements gath-

ered through feedbacks, as well as the impacts of other evolutions (technical requirements and the assessment methodology) were considered. The most visible aspect will be the IRIS Certification™ quality performance level document which will confirm the performance achievements of each site year after year. It is based on a three level approach that will be progressively unveiled over the next few years. During the transition period, only the “Bronze” level will be awarded.

Transition from IRIS rev.02 to IRIS Certification™ rev.03

Time is running out and the deadline fixed by the International Accreditation Forum (IAF) for ISO 9001 updates to the last version is imposed to all conformity assessments based on it, including ISO/TS 22163.

All IRIS rev.02.1 certificates must be upgraded with an IRIS Certification™ rev.03 audit by 14 September 2018.

UNIFE has defined a specific approach for certified companies to ease into the switch and ensure a total respect of the rules. The IRIS Certification™ Management Centre oversees the piloting and monitoring of the audits as well as the management of the contractual stakeholders to ensure it.

WHAT'S NEXT?

On 24 November, 2017, ISO/TC 269 officially launched the new WG5, to work on a full ISO 22163 Standard for the future. Several UNIFE members are involved in it, contributing their expertise to a fruitful discussion with new stakeholders from Denmark, Israel, Kazakhstan, and Japan, among others.



FOR MORE INFORMATION ON
IRIS CERTIFICATION™ PLEASE VISIT
WWW.IRIS-RAIL.ORG



Communications

p. 92 → European Railway Award

p. 94 → UNIFE General Assembly

p. 96 → Other events in 2017

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European Railway Award



Since 2007, the European Railway Awards have celebrated and recognised personalities in the political and technical fields of the European rail sector, and kicked off the political year with addresses from high-level EU policymakers. The 2017 ceremony, which took place at the Square Conference Centre in Brussels, was followed by the joint CER-UNIFE Annual Reception and attracted more than 500 guests from all over Europe, including senior officials and transport stakeholders. In honour of the 10th anniversary of the ceremony, no awards were given out. Instead the event paused to mark this milestone in its history by paying tribute to the 18 past laureates, to the speakers and to all who contributed in making the European Railway Award what it is today.

The evening's political keynote speaker, European Commission Vice-President for Energy Union Maroš Šefčovič highlighted: "Rail is a very important transport mode. The European Commission works in three ways to specifically promote rail transport: by opening up the rail transport market to competition, by improving the interoperability and safety of national networks and by further developing railway infrastructure. This all happens in the context of the transition towards low-carbon emission in all sectors of the economy. Last year we have presented ambitious legislative proposals, such as the Clean Energy for all Europeans package on 30 November and the Low-Emission Mobility Strategy on 20 July. Now is the time of implementation."

Representing the European Parliament, MEP Karima Delli (Greens/EFA, FR), Chair of the Committee on Transport and Tourism stated: "There is a huge potential for rail within sustainable urban mobility: better air quality, useful working time, simplification through digitalisation. Train is a "win-win-win": it provides social, environmental and economic benefits."

Representing the Maltese Presidency of the EU, Maltese Minister of Transport Joe Mizzi commented: "In addition to waterborne transport by sea and inland waterways, heavy rail transport is one of the most environmentally sustainable modes for carrying bulky freight. And - in our cities - urban rail, light rail and metro systems can offer significant sustainable urban mobility benefits... During our Presidency of the EU Council we will aim to encourage further research and innovation in rail transport and will also take forward the upcoming proposal for a revision of the Regulation on Rail Passenger Rights, to improve the user experience for rail passengers within the EU."

The next edition - which is a revamped event concept - will be held at the Square in Brussels on 20 February 2018.

FOR MORE INFORMATION

PLEASE VISIT WWW.EUROPEANRAILWAYAWARD.EU



UNIFE General Assembly 2017



UNIFE held its 26th annual General Assembly in Barcelona, from 22 to 24 June, gathering 200 participants.

The 2017 General Assembly programme included presentations and commentary from industry CEOs and high-level speakers from the European Commission, the European Parliament, the European Investment Bank (EIB), Shift2Rail Joint Undertaking, the European Railway Agency and the Spanish State Secretariat for Trade. The event began with a keynote speech delivered by Begoña Cristeto Blasco (Secretary General for industry and SMEs, Spanish Ministry of Economy, Industry and Competitiveness) and a video address by Elżbieta Bieńkowska (European Commissioner for Internal Market, Industry, Entrepreneurship and SMEs).

Attendees then listened to a presentation on the development and outlook of the Catalan and Spanish rail systems, from Enric Cañas Alonso (TMB), Luis Rivero (RENFE), and Albert Tortajada (FGC). This was followed by three moderated roundtables on some of the main topics facing the European rail supply industry: EU investment for rail, EU rail industry competitiveness and market leadership, and rail and EU transport policy. Roundtable panellists included, among many others ERTMS coordinator Mr. Karel Vinck, and Member of the European Parliament Ms. Ayala Sender.

One year after the adoption of the European Resolution drafted by MEP Martina Werner, this year's General Assembly was the occasion for EU rail suppliers and decision-makers to together address the challenges faced by the industry. Participants recognised both the strategic importance of the manufacturing sector and the need to act without delay to ensure that European rail manufacturing companies keep their global leadership in a context of growing and fierce world competition.

The 2017 General Assembly also saw the election of Siemens Mobility CEO Dr. Jochen Eickholt as Chairman of UNIFE replacing Bombardier Transportation's Laurent Troger.

Finally, the event was also an opportunity to celebrate our significant growth in membership as UNIFE members ratified the admission of 13 new members: Andiman & Co, ContiTech Luftfedersysteme GmbH, Elma Electronic AG, ELPA Ltd., Funkwerk Systems GmbH, GERFLOR SAS, Global Display Solutions S.p.A., HIMA Paul Hildebrandt GmbH, Kapsch CarrierCom AG, NGRT, NKT cables GmbH & Co. KG, Prover Technology AB, and Sertec engineering.

FOR MORE INFORMATION
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The next UNIFE General Assembly will take place in Warsaw, Poland in June 2018



Other events in 2017



8/3 UNIFE at Middle East Rail Conference in Dubai



3/10 UNIFE at Railway Days in Bucharest, Romania



21/3 Philippe Citroën at SIFER in Lille, France



8/10 Digital Transport Days in Tallinn, Estonia



25/4 UNIFE at Rail Baltica Global Forum in Riga, Latvia



10/10 UNIFE at InnoRail in Budapest, Hungary



21/9 Baiba Rubesa (CEO, RB Rail AS) and Philippe Citroën during Connecting Europe Conference in Tallinn, Estonia

Interactive analysis

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vimeo

1,785 Views (+307%)



UNIFE Members

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UNIFE Members in 2017



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Associate Members in 2017



Association of the Czech Railway Industry (ACRI), Czech Republic
acri.cz



AGORIA, Belgium
agoria.be



Romanian Railway Industry Association (AIF), Romania
asifrom.ro



Associazione Industrie Ferroviarie (ANIE/ASSIFER), Italy
anie.it



Austrian Association of the Railway Industry, Austria
bahnindustrie.at



European Federation of Railways Trackworks Contractors (EFRTC)
efrtc.or



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fif.asso.fr



Spanish Railway Association (MAFEX), Spain
mafex.es



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rastia.org



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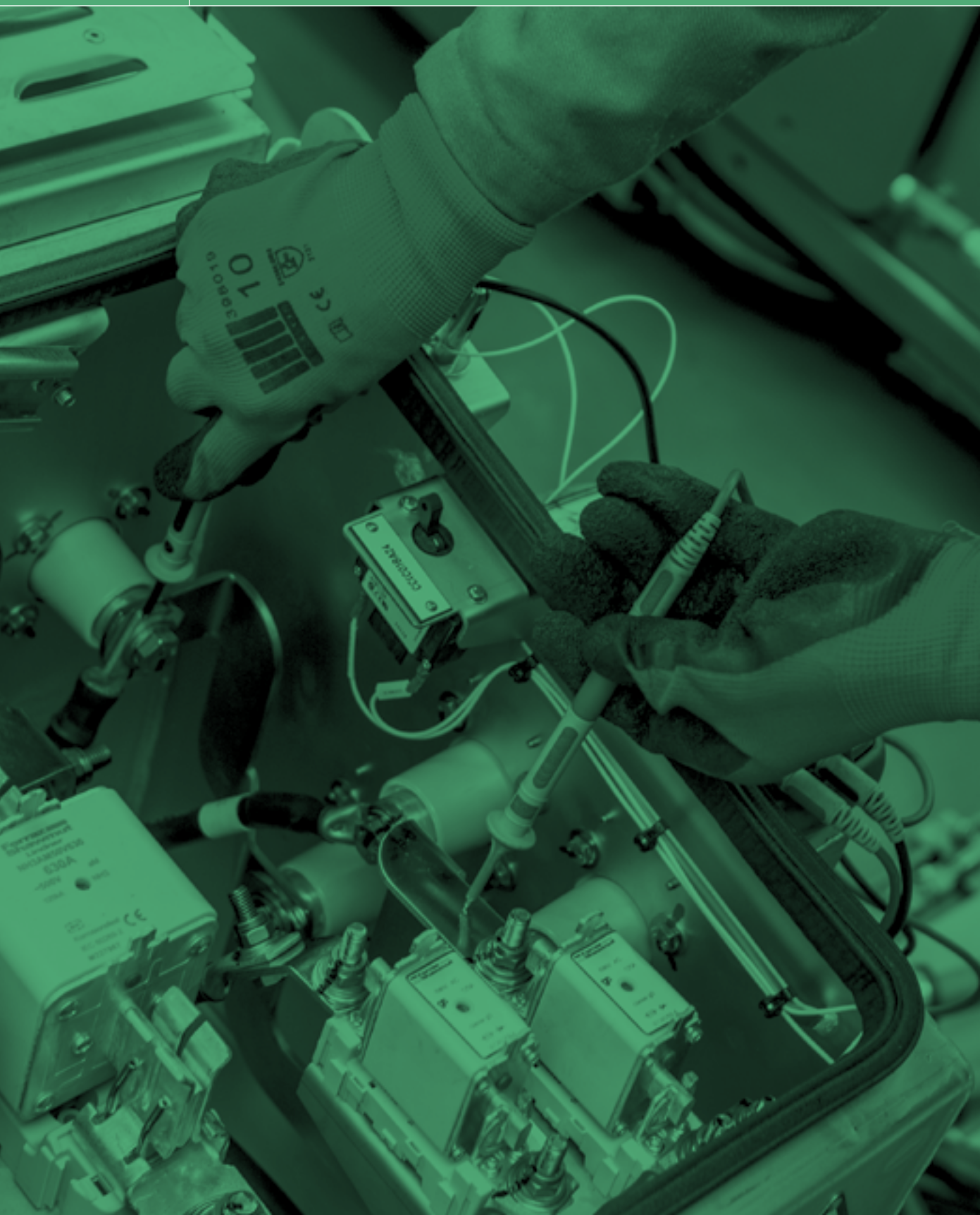
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Der Verband der Bahnindustrie in Deutschland (VDB), Germany
bahnindustrie.info



Zentralverband Elektrotechnik- und Elektronikindustrie (ZVEI), Germany
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UNIFE Staff

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p. IO9 → Best wishes to the UNIFE staff
that left the team in 2017



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UNIFE wishes all the best to those who left the team in 2017



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Eulàlia Peris



Alice Polo



Nuno Teixeira

Acronyms

APTA American Public Transportation Association

ATO Automatic Train Operations

CBTC Communications Based Train Control

CEE Central and Eastern Europe

CEF Connecting Europe Facility

CEN European Committee for Standardisation

CENELEC European Committee for Electro-technical Standardisation

CETA EU-Canada Comprehensive Economic and Trade Agreement

CER Community of European Railway and Infrastructure Companies

CIS Commonwealth of Independent States

COP(21) Conference of Parties

CSM Common Safety Methods

DG MOVE Directorate General for Mobility and Transport

DG R&I Directorate General for Research and Innovation

DG TRADE Directorate General for Trade of the European Commission

DMU Diesel Multiple Unit

EC European Commission

ECB Eddy Current Brakes

EFRTC European Federation of Railway Track-works Contractors

EFSD European Fund for Strategic Investments

EIB - European European Bank

EIM European Rail Infrastructure Managers

EMC Electro-Magnetic Compatibility

EP European Parliament

ERA European Union Agency for Railways

ERFA European Rail Freight Association

ERDF European Regional Development Fund

ERRAC European Rail Research Advisory Council

ERTMS European Rail Traffic Management System

ERWA European Railway Wheels Association

ETCS European Train Control System

ETS European Trading Scheme

EU European Union

EURNEX European Rail Research Network of Excellence

FP7 Seventh Framework Programme

FTA Free Trade Agreement

FRS Functional Requirement Specification

GCC-SG Gulf Cooperation Council Secretariat General

GHG Greenhouse Gas

GRB Group of Representative Bodies

GPA Government Procurement Agreement

GPRS General Packet Radio Service

IEC International Electro-technical Commission

IMC IRIS Certification™ Management Centre

IPs Innovation Programs

IRIS International Railway Industry Standard

ISAB Independent Safety Assessment Body

ISO International Organisation for Standardization

ITRE Committee on Industry, Research and Energy in the European Parliament

ITS Intelligent Transport Systems

JPCR Joint Programming Committee Rail

JU Joint Undertaking

LCC Life Cycle Costs

LOC & PAS Rolling Stock Locomotive and Passenger Carriages

LPAA Lima-Paris Action Agenda

MEP Member of European Parliament

MG Mirror Groups

MoU Memorandum of Understanding

NB-Rail Association of Notified Bodies

NIB National Investigation Bodies

NRB Network of Representative Bodies

NRMM Non Road Mobile Machinery

NSA National Safety Authority

NP UIRE Russian Union of Industries of Railway Equipment

OECD Organisation for Economic Co-operation and Development

ORS Operational Requirement Specification

OTM On Track Machines

NOx Nitrogen Oxide

PPMC Paris Process on Mobility and Climate

PPP Public Private Partnership

R&D Research and Development

RAMS Reliability, Availability,
Maintainability, Safety

RDD Register of Notified National Rules

RFE Rail Forum Europe

RINF Register of Infrastructure

RISC Railway Interoperability and Safety
Committee

RZD Russian Railways

S&R Standards and Regulation

S2R Shift2Rail

SMEs Small and Medium-sized Enterprises

SRG Standards and Regulation Group

SRRA Strategic Rail Research Agenda 2020

SRRIA Strategic Rail Research and
Innovation Agenda 2050

SRT Safety in Railway Tunnels

STC Sustainable Transport Committee

TAP/TAF Telematic Application for
Passengers and Freight

TCMS Train Control Management System

TecRec Joint UNIFE and UIC Technical
Recommendations

TEN Trans-European Networks

TEN-T Trans-European Network for
Transport

TG Topical Groups

TMP Technical Management Platform

TRAN Committee on Transport and
Tourism in the European Parliament

TRA Transport Research Arena

TRB Transportation Research Board

TSI Technical Specification for
Interoperability

TTIP Transatlantic Trade and Investment
Partnership

UIC International Union of Railways

UIP International Union of Private Wagon
Owners

UIRR International Union of combined
Road-Rail transport companies

UITP International Association of Public
Transport

UNFCCC United Nations Framework -
Convention on Climate Change

UNISIG Union Industry of Signalling

WTO World Trade Organization

WRMS World Rail Market Study

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