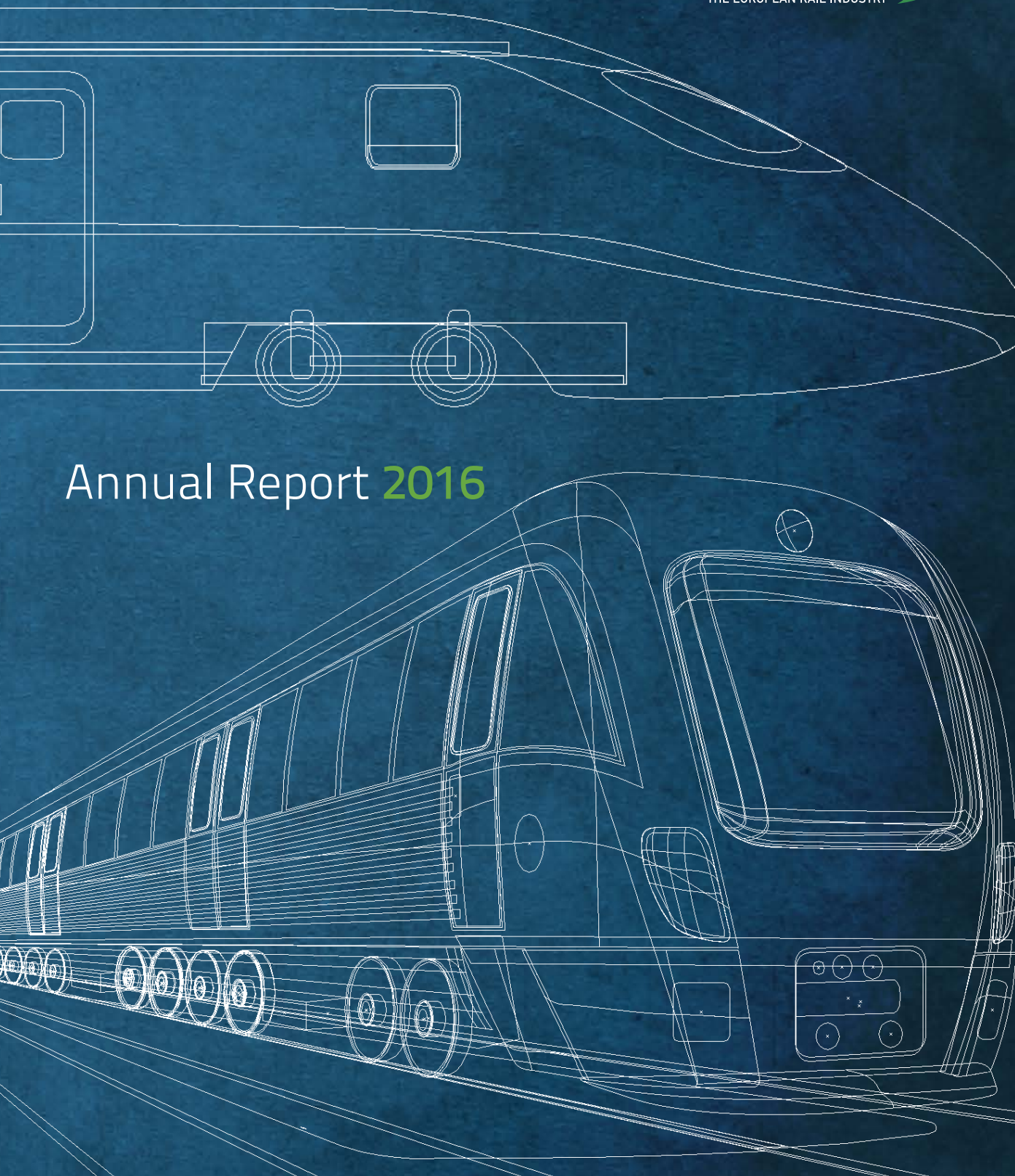


Annual Report 2016



**Published in December 2016 by
UNIFE – THE EUROPEAN RAIL INDUSTRY**

Avenue Louise 221, Bte 11
B – 1050 Brussels
Tel: +32 2 626 12 60 | Fax: +32 2 626 12 61
www.unife.org | general@unife.org
Twitter: @UNIFE | LinkedIn: UNIFE Brussels

Paper

FSC® certified recycled paper

Online version



The 2016 UNIFE Annual Report is available online at www.unife.org. Download QR code reader for your smartphone and Scan QR code for quick access to the pdf version. Hard copies of the report are available at UNIFE's office.



Images courtesy of

ADIF
Alstom
Bombardier
CAF
CEN-CENELEC
Delegation of the European Union to Canada
European Commission
European Parliament
European Union Agency for Railways
Faiveley
InnoTrans
IRJ
ITF
IWC
Lucchini
OBB
VR

UNIFE Annual Report
2016

Table of Contents

Message from the Chairman and the Director General 6

UNIFE IN 2016	9
UNIFE Mission	10
UNIFE Structure	11
UNIFE Committees and Working Groups.	12
UNIFE Presiding Board	15

EUROPEAN AFFAIRS	17
Preparation of the Presidencies of the Council. . .	18
Industrial Policy	19
Fourth Railway Package	20
EU Investment Policy and Financing for Rail . . .	22
Urban mobility.	25
Sustainable Freight Transport	26
EU public procurement policy.	27
EU SME policy	27
2030 Framework for Climate & Energy	28
Non-Road Mobile Machinery (NRMM)	29
Platform for Electro-Mobility	29
Rail Forum Europe	30

INTERNATIONAL AFFAIRS	33
EU and Japan Free Trade Agreement negotiations	34
EU and China trade relations	34
EU-US Transatlantic Trade and Investment Partnership negotiations.	36
EU-Canada Comprehensive Economic and Trade Agreement	38
Revised proposal of the European Commission on the International Procurement Instrument.	38
EU legislation on conflict minerals	39
Cooperation with Russia	39
Cooperation with Brazil	40
Cooperation with Iran	40
Cooperation with Gulf Countries.	41
Cooperation with the US	42
UNIFE participates in COP22.	43

WORLD RAIL MARKET STUDY.	45
---	-----------

STANDARDS & REGULATION	49
Overview	50
UNIFE Technical Working Groups.	54
Other activities	60

RESEARCH AND DEVELOPMENT ACTIVITIES	63
Horizon2020	64
STRIA – The Strategic Transport Research and Innovation Agenda	70
Knowledge4Innovation (K4I)– Signature of Pact for Innovation (INPACT).	71
The European Rail Research Advisory Council . . .	72
Finalised European research projects	73
Ongoing European research projects coordinated by UNIFE	75
Ongoing European research projects with UNIFE involvement	79
Transport Research Arena (TRA).	80
World Conference on Railway Research (WCRR) . .	81

SIGNALLING AND ERTMS.	83
ERTMS – Political highlights	84
ERTMS – Technical highlights	85
ERTMS Deployment statistics – 2016.	86
Promotion of ERTMS & Communications activities.	88

Railway Wheels and Wheelsets Committee (ERWA).	91
---	-----------

International Railway Industry Standard (IRIS). .	95
IRIS achievements and strategic development . .	96
Support by stakeholders	97
Technical evaluation	99

COMMUNICATIONS	101
Events	102
Interactive Analysis	109

UNIFE MEMBERS	111
Full Members	112
Associate Members	117

UNIFE STAFF	119
UNIFE Staff in 2016.	120
Best wishes to the UNIFE Staff that left the team in 2016	123



Message from the Chairman and the Director General

Dear UNIFE Members, Partners, and Supporters,

2016 was a very dynamic year for UNIFE and our industry—a year where we saw the acceleration of major movements in the global competitive landscape as well as major policy developments globally and at EU level (e.g. Brexit). UNIFE thoroughly communicated the needs and challenges of our industry and we have seen positive progress on our most pressing and important topics.

The European rail supply industry is now more than ever a key manufacturing sector for the EU, employing approximately 400,000 people. With absolute sales at €47 billion, it accounts for 46% of the accessible market for rail products worldwide. The industry's innovative strengths were highlighted this year as thousands of European suppliers promoted their latest innovations at InnoTrans. It was also there that the sixth UNIFE World Rail Market Study (WRMS), conducted by Roland Berger, was officially released. It is encouraging to see that growth is set to continue despite certain regional differences. In the years to come, the market volume will grow 2.6% per year on average worldwide and reach about €185 billion in 2021.

Nevertheless, InnoTrans also demonstrated the serious competition we are facing from the commercial offensive of an increasing number of non-European suppliers. This is particularly the case of Chinese state-owned rail suppliers (including CRRC, the world's largest train builder) which have impressive export ambitions, including towards the EU. While these companies have become major competitors across all product segments and on all continents, the 2016 WRMS worryingly shows a clear decline in market accessibility across the globe, especially in certain Asian markets which are slowly closing to outside suppliers.

The good news is that, following an intense advocacy campaign by UNIFE and its members, European institutions have indisputably recognised the strategic importance of our industry, the immense challenges that we are facing, and the subsequent need for action at EU level to safeguard our industrial leadership.

UNIFE therefore welcomed the unanimous adoption by the European Parliament in June of an official Resolution on the Competitiveness of the European Rail Supply Industry. Prepared at the initiative of Rapporteur MEP Martina

Werner, this Resolution puts forward measures that should be undertaken by the EU institutions 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 this regard, UNIFE welcomed the announcement by European Commission Vice-President Katainen last September of the creation of a "dialogue between stakeholders and Commission services [...] open to the representatives of the European Parliament and of the Member States" to "provide a platform to assess regularly the competitiveness of the sector and to address its challenges". The kick-off meeting of this promising dialogue will take place early 2017 under the lead of DG GROW.

In other highlights, UNIFE enthusiastically welcomed the final adoption of the Technical Pillar of the Fourth Railway Package in April 2016. Member States have until 16 June 2019 to transpose the Directives into domestic legislation. This is of key importance to our industry as this new legislative framework will create a streamlined and efficient process for vehicle authorisation in Europe and enhance the role of the European Union Agency for Railways (ERA), making it a one-stop-shop for vehicle authorisation and safety certification.

Furthermore, UNIFE fully supports the Shift2Rail Joint Undertaking (JU) and particularly welcomes the awarding of 27 grants – for a total value of €167 million co-financed by S2R up to €88 million – following the Shift2Rail 2015/2016 first calls for proposals.

Digitalisation has become an increasingly important topic for UNIFE and its members. EU Transport Commissioner Violeta Bulc has made it one of the top priorities of her mandate. In this regard, it is important to highlight that the European rail industry plays a key role as suppliers of new IT technologies, automation, sensors and monitoring tools, traffic/asset/energy/big data management solutions (including ERTMS/ETCS) or security systems. This is why UNIFE created a Digitalisation Platform in 2016, and with its support, adopted an ambitious Position Paper on Digitalisation of Railways.

UNIFE was especially active this year in advocating for EU investment in rail projects, particularly around rail

infrastructure, rolling stock and ERTMS deployment. We closely followed and supported the Commission's TEN-T policy and Connecting Europe Facility (CEF) funding, and ensured that the European Fund for Strategic Investment (EFSI) provides opportunities for our industry without diverting existing European funds earmarked for rail.

Promoting ERTMS and supporting the ERTMS deployment plan, recently approved by the Commission, has always been an area of intense focus for UNIFE. The Commission, ERA and the representatives of the European railway sector signed, on the occasion of the 2016 InnoTrans, a new Memorandum of Understanding on cooperation for the deployment of the ERTMS. Its focus is on stabilising specifications, complying with the Control Command Signalling Technical Specification for Interoperability (CCS TSI), reducing national rules and preparing, in coordination with Shift2Rail, the evolution of the ERTMS system.

Trade and international market access are crucial to the global competitiveness of European rail suppliers. The Parliament, in its Resolution, aptly insists on "the need for a fair and level-playing field in global competition and reciprocal market access to avert the risk of job losses and to safeguard industrial know-how in Europe". This is why UNIFE welcomes the final approval of the EU-Canada Comprehensive Economic and Trade Agreement (CETA), which we supported. We have also been deeply engaged in the Free Trade Agreements (FTA) that the EU is negotiating with Japan and the US (TTIP); as well as the EU-China Investment agreement. The EU-Japan FTA should be concluded soon, and UNIFE has been and remains at the forefront of these talks, insisting that the Japanese truly open their rail market and deliver concrete outcomes for EU suppliers, which is not the case today. After three years of TTIP negotiations, UNIFE is concerned by the lack of progress on public procurement and the disappointing US offer in this area. As for China, UNIFE has been calling on the EU to use all the tools available – from the EU-China Connectivity Platform to the future EU-China Investment agreement – to achieve a level-playing field and facilitate European business in China.

Now that the Paris Agreement has entered into force, it is time for concrete actions to be taken to achieve these ambitious objectives. This is why the 22nd Conference of the Parties (COP22) – held in Marrakech in November – focused entirely on action and implementation. UNIFE participated and pushed the message that the development of tram, metro, freight and passengers rail transport is a crucial part of addressing climate challenges.

UNIFE has continued to mobilise its significant and increasing number of SME members within the UNIFE SME committee, and has had meaningful exchanges with the EU institutions on SME policy as well as learning how they can better take advantage of EU policy and funding tools.

IRIS Certification™ has continued its growth, reaching almost 1500 certificates worldwide. This past year was mainly dedicated to preparing for the next evolution of our scheme: UNIFE's proposal as endorsed by the ISO rail committee and dispatched for final ballot in December. We expect the publication of the related ISO/TS before summer 2017.

UNIFE saw a considerable jump in membership numbers this year, as we welcomed 11 new companies at the 2016 General Assembly in Amsterdam. These companies add greater geographic diversity and bolster the representation of both business segments and SMEs, further compounding our industry's influence at the EU level.

We have highlighted a few of the main topics above, but this Annual Report is packed with details on our work throughout 2016. We would like to thank the UNIFE staff for their dedication on these many topics and projects. We also sincerely thank our members for their work and support. We are confident that with your continued support, 2017 will be an equally outstanding year and we look forward to working with you on the many opportunities and challenges ahead.

Sincerely,



Laurent Troger,
UNIFE Chairman



Philippe Citroën,
UNIFE Director General

UNIFE in 2016



UNIFE IN 2016

01

- A. UNIFE Mission
- B. UNIFE Structure
- C. UNIFE Committees and Working Groups
- D. UNIFE Presiding Board



A 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

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

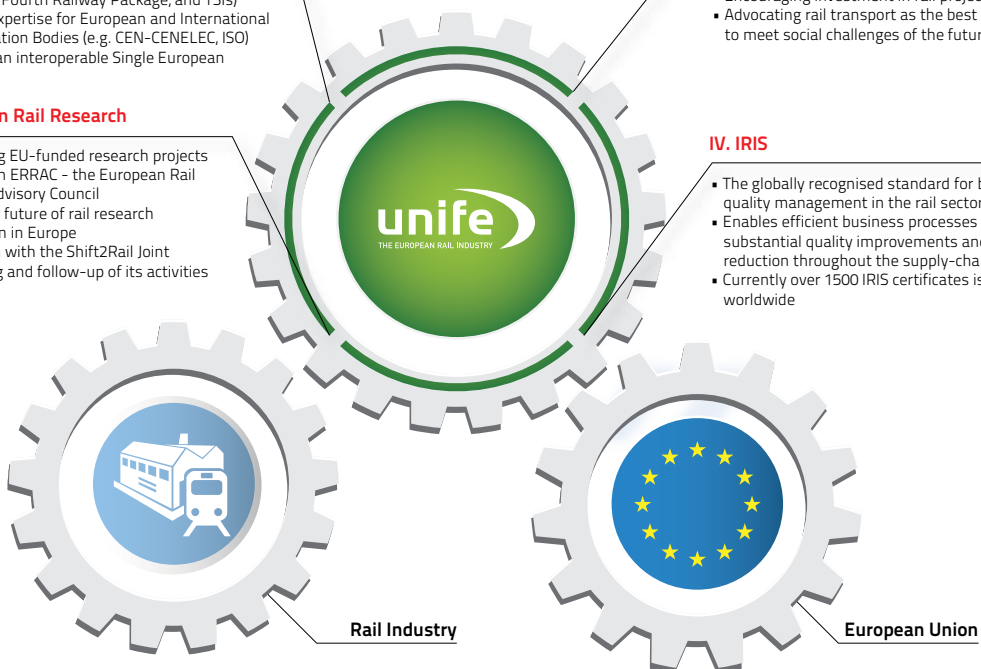
- Supporting policies that increase the competitiveness of the European Rail Industry
- Promoting modal shift policies
- Encouraging investment in rail projects
- Advocating rail transport as the best solution to meet social challenges of the future

III. European Rail Research

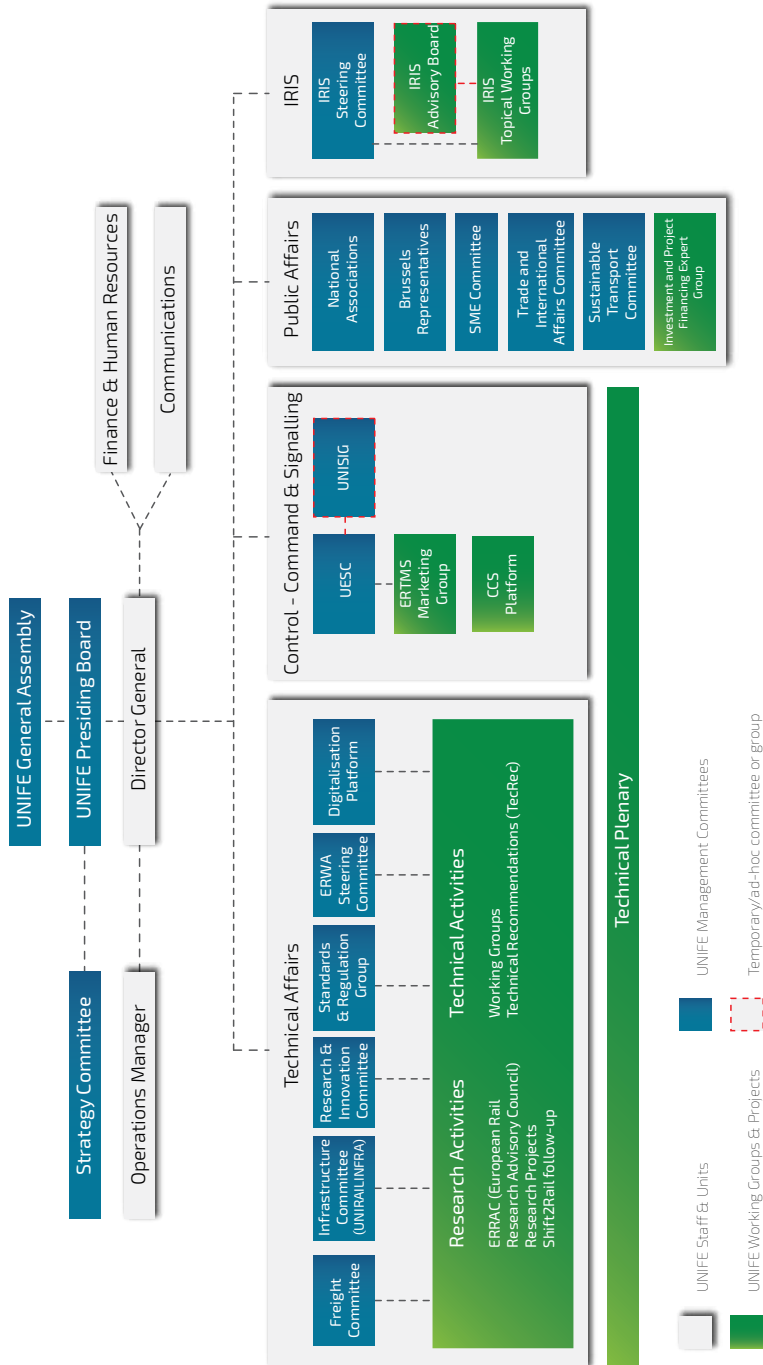
- Coordinating EU-funded research projects
- Active role in ERRAC - the European Rail Research Advisory Council
- Shaping the future of rail research & innovation in Europe
- Cooperation with the Shift2Rail Joint Undertaking and follow-up of its activities

IV. IRIS

- The globally recognised standard for business and quality management in the rail sector
- Enables efficient business processes and leads to substantial quality improvements and cost reduction throughout the supply-chain
- Currently over 1500 IRIS certificates issued worldwide



B UNIFE Structure





C 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 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 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
Assessment
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 standard, 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

Vehicle Authorisation	Infrastructure
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	Wagon (WAG)
Fire Safety (SRT)	



D UNIFE Presiding Board 2015



Laurent Troger

UNIFE Chairman

President,
**Bombardier
Transportation**



Henri Poupart-Lafarge

Member of the Presiding Board

Chairman and CEO,
Alstom



Jochen Eickholt

Member of the Presiding Board

CEO,
**Siemens Mobility
Division**



**Stephane
Rambaud-Measson**

Member of the Presiding Board

Chairman and CEO,
Faiveley Transport



Aike Schoots

Member of the Presiding Board

CEO,
Strukton Rail



Klaus Deller

Member of the Presiding Board

Chairman of the Executive
Board and responsible for the
Rail Vehicle Systems division,
Knorr-Bremse AG



Millar Crawford

Member of the Presiding Board

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



Miroslav Fukan

Member of the Presiding Board

Executive Director,
**Oltis Group (representing
the UNIFE SME Committee)**



UNIFE in 2016



The background of the entire page is a close-up photograph of a train's mechanical components. On the left, a large, dark metal wheel is visible, showing its spokes and the hub. To the right of the wheel, various mechanical parts, including pipes, hoses, and structural beams, are visible, suggesting the engine or undercarriage of a train. The lighting is somewhat dim, with some highlights on the metallic surfaces.

EUROPEAN AFFAIRS

02

- A. Preparation of the Presidencies of the Council
- B. Industrial Policy
- C. Fourth Railway Package
- D. EU Investment Policy and Financing for Rail
- E. Urban Mobility
- F. Sustainable Freight Transport
- G. EU Public Procurement Policy
- H. EU SME Policy
- I. 2030 Framework for Climate & Energy
- J. Non-Road Mobile Machinery (NRMM)
- K. Platform for Electro-Mobility
- L. Rail Forum Europe



A Preparation of the Presidencies of the Council

The Presidency of the Council of the European Union rotates among the EU Member States every six months. The Presidency's function is essential as the responsible Member State not only chairs the meetings of the Council but also 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 makes a great effort to meet future EU Presidencies well in advance of the start of their mandate to convey our messages for their political agenda. In 2016, the Netherlands and Slovakia, respectively, held the Presidency of the EU Council. UNIFE's Director General, therefore, met with high-representatives of the Dutch Government on several occasions, including Mark Frequin, Director General for Transport at the Dutch Ministry of Infrastructure, during a bilateral meeting in November 2015 in the Hague. A meeting with Rastislav Chovanec, State Secretary at the Slovak Ministry of Economy, also took place in Bratislava in December 2015.

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 2017: Malta and Estonia. Notably, UNIFE met with Joe Mizzi, the Maltese Minister for Transport and Infrastructure, in December 2015, as well as in May, October and November 2016. Mr. Citroën met with Ahti Kuningas, Deputy Secretary General for Transport at the Estonian Ministry of Economic Affairs and Communications in May 2016.

As it is an important and useful tool to convey the Association's messages, UNIFE also published and widely circulated two briefings for the Netherlands and Slovak Presidencies and will be publishing one for the Maltese Presidency in early January 2017.



Peter Hondebrink (Ministry of Infrastructure) speaking at the UNIFE General Assembly on behalf of the Netherlands Presidency of the Council of the EU (June 2016)



Philippe Citroën (UNIFE Director General) during his first meeting with Joe Mizzi (Maltese Minister for Transport and Infrastructure) in December 2015



B Industrial Policy

The European rail supply industry is a strategic economic sector for the EU. It is an innovative and export-oriented manufacturing industry with approximately €47 billion in annual global sales and employing approximately 400.000 people in Europe. As shown in the 2016 World Rail Market Study, rail markets will continue to grow on all continents and there are, therefore, great business opportunities to seize for European suppliers. However, European rail supply companies face a critical challenge to their global market leadership with an industrial competition from Asia, and especially China, that has become extremely fierce.

The European rail supply industry is now at a crossroads and requires proactive action from the European institutions and Member States to safeguard its leadership of the global rail supply market. In this respect, **UNIFE particularly welcomed the unanimous adoption by the European Parliament of an official Resolution on the Competitiveness of the European Rail Supply Industry on 9 June.** Prepared by the Committee for Industry, Research and Energy (ITRE) at the initiative of Rapporteur MEP Martina Werner, this resolution has been a strong positive sign to this job-creating and export-oriented European industry.

This is all the more encouraging since Industry and Economy Ministers from 16 EU Member States officially and explicitly recognised the rail supply industry as one of the most strategic manufacturing sectors for the reindustrialisation of Europe in the "Joint Warsaw Declaration" of the Friends of Industry, signed on 22 April 2016. The French Permanent Representation to the EU also organised on 7 September 2016 an important event in Brussels on: "Rail Supply Industry at a Crossroads: Reinforcing European Leadership of the World Market – What can the EU do?" to demonstrate its support for the European Parliament resolution and for our industry.

More specifically, this resolution puts forward strategic measures 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 on the global market for rail equipment. More specifically, it reflects the European Parliament's ambition to set up, with the Commission and the Member States, a coordinated European industrial strategy for the rail supply industry (as that which already exists for the automotive and steel industries) with concrete recommendations covering all topics of EU competence impacting industrial competitiveness (including research and



UNIFE Director General Philippe Citroën with Rapporteur MEP Martina Werner and DG GROW Director Gwénoële Cozigou during Innotrains 2016



Event on EU Rail Supply Industry competitiveness organised by the French Permanent Representation to the EU in Brussels (7 September 2016)





innovation, skills and training, internal market, public procurement, trade/access to foreign markets, SME policy and the recommendations of the European Parliament are fully in line with the industrial approach that UNIFE has been advocating for. Indeed, to enable the industry to maintain its leadership position in the world and its 400 000 jobs in Europe, UNIFE has called for strong EU measures targeting three inseparable pillars:



UNIFE thanks European Commission Vice-President Jyrki Katainen for announcing in September 2016 the creation of a "dialogue between stakeholders and Commission services [...] open to the representatives of the European Parliament and of the Member States" with the objective of discussing "possible measures in the follow-up to the Parliament Resolution" and more generally to "provide a platform to assess regularly the competitiveness of the sector and to address its challenges". **The creation of this Industrial Dialogue for our industry was confirmed by the European Commission in an official document sent to the European Parliament in November 2016.**

Fourth Railway Package

2016 was a decisive year for a top priority of the European rail industry. After more than three years of discussions following the publication of the Commission's proposal in January 2013, on 28 April the European Parliament's Plenary formally adopted the Technical Pillar of the Fourth Railway Package, as agreed during the trialogue negotiations that came to an end in June 2015. It is composed of the following three pieces of legislation:

- Directive (EU) 2016/797 of the European Parliament and of the Council of May 11 2016 on the interoperability of the rail system within the European Union (recast);
- Directive (EU) 2016/798 of the European Parliament and of the Council of May 11 2016 on railway safety (recast);
- Regulation (EU) 2016/796 of the European Parliament and of the Council of May 11 2016 on the European Union Agency for Railways and repealing Regulation (EC) No 881/2004.

The three texts comprising the Technical Pillar of the Fourth Railway Package were then published in the Official Journal of the European Union on 26 May.

Member States have until 16 June 2019 to transpose the directives into domestic legislation but may delay implementation by one year if they provide justification to the European Commission and the European Union Agency for Railways (formerly the European Railway Agency). The ERA Regulation is directly applicable and does not require transposition.

UNIFE enthusiastically welcomed this major legislative step, as this new legal framework will deeply reform the EU rail sector by fostering competition and encouraging innovation in railway markets, and is a major step towards the achievement of a Single European Railway Area. 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 Technical Pillar is extremely important as it addresses one of the heaviest burdens on the rail sector: the complex and expensive authorisation procedures in Europe that currently immobilise assets worth €1.2 billion.

UNIFE is working closely with the European Commission and the Agency to ensure a fast and smooth transition towards the new certification and authorization systems and an effective implementation as of 2019. In this respect, UNIFE supports the European Commission and the Agency in their efforts to speed up the cleaning-up of the National Rules.

Given the utmost importance of the implementation of the Technical Pillar for the entire rail sector, UNIFE is proactively committed to ensuring that Member States complete the transitional phase by the agreed deadline of June 2019 so that the Technical Pillar becomes immediately operational for the sake of the competitiveness of the European rail sector as a whole.

In parallel, the three EU Institutions (Commission, Parliament and Council) have concluded negotiations on the more controversial Market Pillar of the Fourth Railway Package, addressing public service contracts for domestic passenger transport services and the governance of the railway infrastructure. The formal adoption and publication in the Official Journal is expected in early 2017.



On 28 April the European Parliament's Plenary formally adopted the Technical Pillar of the Fourth Railway Package
From left to right: Michael Cramer (Chairman TRAN Committee, MEP Greens/EFA, DE), Violeta Bulc (EU Transport Commissioner), Izaskun Bilbao Barandica (MEP ADLE, ES), Roberts Zile (MEP ECR, LV)





D EU Investment Policy and Financing for Rail

2016 has been an extremely busy year for UNIFE in working towards more investments for rail projects – including at urban level – be it for infrastructure, rolling stock or signalling (especially ERTMS deployment).

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 with a total budget of €22.4 billion for Transport (the funding has been increased three times compared to 2007-2013 period). The vast majority of CEF grant funding goes to major cross-border projects and projects addressing main bottlenecks on the 9 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.

In this regard 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.

The European Commission estimates that €430 billion is required in rail investment by 2030. The enormous needs were exemplified by the extremely high number of projects submitted for the 2015 CEF Transport Call, for which the deadline was 16 February 2016. The total funding made available within this second CEF Transport call was €7.5 billion, with €6.5 billion reserved for the Member States eligible for the Cohesion Fund. Just like the 2014 CEF Transport Call, this second Call largely oversubscribed (2.9 times for the General call and 1.5 times for the Cohesion call). For instance, for the pre-identified Core Network Corridor projects, €6 billion out of the €7 billion requested were related to railways (with a total of €5 billion available for three transport modes).



EU Transport Commissioner Violeta Bulc and DG MOVE Director General Henrik Hololei during TEN-T Days in Rotterdam

In this context, during numerous meetings with Transport Ministers and key decision-makers in capitals across Europe, Philippe Citroën urged Member States to submit well-prepared rail projects for the 2016 CEF Transport Calls for Proposals that were launched on 13 October 2016. The total budget for this 3rd CEF Call is €1.9 billion (with €1.1 billion earmarked for the Member States eligible for the Cohesion Fund). UNIFE has also held frequent meetings with the European Commission and participated in the TEN-T Days in Rotterdam on 20-22 June 2016.

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. 2016 was a crucial year to ensure that the implementation of the Member States' Operational Programmes for the 2014-2020 programming period started at a full speed. 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. In several Member States the successful implementation of the new Operational Programmes is starting very slowly due to the significant delays due to the projects from the previous 2007-2013 period taking away available managerial resources (many projects are being phased into to the current 2014-2020 programming period) and the slow process of adoption of the administrative procedures for the current period that, in turn, delayed the implementation of the projects to be funded under the 2014-2020 programming period.

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 2017.**

Mobilising Private Investment for Rail

While public grants will remain of vital importance to financing rail projects, UNIFE has cooperated 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 Working Group on Investment and Project Financing has been particularly engaged throughout 2016 in considering ways how 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. However, until the end of 2016, the majority of EFSI projects in the transport sector were for the widening and modernisation of motorways. At the end of November 2016, there were only three signed rail-related EFSI projects. Therefore, with regard to the proposed extension of the EFSI beyond 2018 and the doubling of the investment target to at least half a trillion euros in investments by 2020, UNIFE welcomed the Commission's proposal to set a minimum target for climate-friendly projects and limit EFSI's support for motorways (confining support for motorways to only those involving private investment in cohesion countries or in cross-border projects involving at least one cohesion country). UNIFE also underlined the important role of the European Investment Advisory Hub (EIAH) in helping project promoters and public authorities to prepare projects that could benefit from EFSI support. UNIFE will continue in 2017 the intensive dialogue with the European institutions (especially during the legislative negotiations on the Commission proposal) and other stakeholders to ensure that the extended EFSI benefits the rail sector.



Commission President Jean-Claude Juncker, EC Vice-President Jyrki Katainen and EIB President Werner Hoyer signing the EFSI agreement setting out the working methods between the European Commission and the European Investment Bank



UNIFE presenting the industry's position at the OECD Consultation between Civil Society Organisations and Members of the OECD's Working Party on Export Credits and Credit Guarantees (ECG) and the Participants to the Arrangement on Officially Supported Export Credits (Paris, 15 November 2016)

The Working Group on Investment and Project Financing has also actively worked on other investment-related issues, including the use of Public-Private Partnerships for rail projects. Furthermore the Working Group has also prepared the European rail supply industry's position on the review of the OECD Sector Understanding on Export Credits for Rail Infrastructure (RSU), to be undertaken no later than 20 June 2017. In light of the ever-increasing international competition around financing, this will remain a major topic for UNIFE in the first half of 2017.

In 2016, UNIFE continued to actively cooperate with the European Parliament's Long Term Investment and Reindustrialisation Intergroup. Chaired by MEP Dominique Riquet (ALDE Group, France), the Intergroup is a prominent forum within the Parliament which gathers more than 70 Members of the European Parliament from various political groups, and UNIFE is one of its official partner organisations. On 29 June, UNIFE co-organised a lunch-debate on "Ensuring Long Term Investment for a Sustainable Railway Sector" bringing together more than 50 high-level decision-makers from the European Parliament and Commission, officials from the EIB as well as private banks, investors and railway sector stakeholders.



Dominique Riquet, Vice-Chair TRAN Committee speaking at the European Parliament's Long Term Investment and Reindustrialisation Intergroup event on "Ensuring Long Term Investment for a Sustainable Railway Sector" (29 June 2016)

E Urban Mobility

Urbanisation has been a major trend of the past decades that 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 EUR 100 billion, or 1% of the EU's GDP, annually. Urban transport must therefore meet the challenge of an increased demand for mobility and safety while reducing pollutant emissions.

The 2016 edition of the UNIFE World Rail Market Study reveals that urban transport is a growing segment for the worldwide rail business. The European rail supply industry provides solutions with low, or even zero emissions of CO₂ and other pollutant gases. Light rail, metros and commuter trains are the least polluting public transport means in urban areas. Moreover, the rail supply industry is committed to improving the energy-efficiency of its products through different technologies and methods, such as hybrid technologies, weight reduction, regenerative braking, energy storage, new traction technologies, optimised operational parameters or alternative green power supply solutions.

In 2016, UNIFE followed up on the European Parliament's own initiative report on sustainable urban mobility, adopted on 2 December 2015 under the coordination of Rapporteur MEP Karima Delli. In particular, UNIFE contributed to the European Commission's public consultation on EU financial support to sustainable urban mobility. Moreover, in 2016 UNIFE strengthened its partnership with like-minded associations, such as POLIS, EUROCITIES and UITP.



Philippe Citroën speaking at the roundtable on urban mobility during the International Transport Forum in Leipzig (May 2016)

A modal shift from private vehicles to public transport is the most effective way to reach the goal of more sustainable urban mobility in European cities, and thus contribute to meeting the 2011 Transport White Paper CO₂ emission reduction targets of 60% by 2050 compared to 1990. In particular, rail is by far the largest provider of electric mobility for both urban and interurban transport. As a consequence, rail-bound solutions should be the starting point for any future EU policies aimed at promoting electric mobility.

UNIFE's main message is that rail should play a central role in future EU policies on sustainable urban mobility as it is a key part of the solution to current issues, such as pollution, GHG emissions and congestion. In order to support progress towards sustainable mobility, adequate financing, at both EU and national level, should be ensured for rail-bound projects in light of their high economic, environmental and social impacts. In addition to public funding, alternative sources of financing from the private sector should be explored as well.

UNIFE hopes that the European Commission will follow-up on the Parliament's own initiative report on sustainable urban mobility adopted at the end of 2015 by proposing initiatives aimed at promoting and financing sustainable transport solutions. This should also be pursued in the framework of existing financial tools such as the Connecting Europe Facility (CEF) and the European Fund for Strategic Investments (EFSI). As investments in urban transport are essential, UNIFE calls on the Commission to increase or at least maintain the current level of public investments in sustainable urban transport and on local and national authorities to potentially explore alternative sources of financing for rail-bound urban transport projects.

UNIFE is actively involved in discussions with urban authorities and operators, aimed at promoting the potential positive impact of rail projects. In this context, UNIFE presented examples of technological and financial innovation for urban rail projects in the POLIS conference held in Rotterdam on 1-2 December 2016.





F Sustainable Freight Transport



Throughout 2016, UNIFE advocated 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, as determined in the Transport White Paper. In fact, although rail's freight market share has been relatively stable for several years, it is not growing and is even declining in some Member States.

The agenda focuses on a few specific challenges, including:

- Improving reliability and punctuality through higher interoperability and better co-operation across borders in the field of traffic and infrastructure managers;
- Strengthening cost competitiveness through higher productivity and more efficient train operations;
- New added-value service features, supported by the deployment of innovative technology, allowing rail to (re-)enter new / lost market segments;
- Securing societal and political acceptance and support of rail freight, particularly around the issue of rail noise.

Decisive support for the agenda's goals 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.

In 2016, the European Commission launched a public consultation on the evaluation of Regulation (EU) 913/2010 concerning a European rail network for competitive freight, in the context of a new phase

starting for the initial nine Rail Freight Corridors (the establishment of which are foreseen by the Regulation), now that they are all operational.

The evaluation will be the basis on which to determine whether further action is needed to improve the policy framework. UNIFE took this opportunity to reinforce its key messages on the need to implement the modal shift objectives of the 2011 Transport White Paper through investments in rail freight projects and research.

Moreover, on 21 June 2016, the rail sector and its customers, represented by CER, CLECAT, EIM, ERFA, ERTMS Users Group, ESC, UIP, UIRR, and UNIFE, and supported by the Rail Freight Corridors, presented a declaration at the TEN-T Days in Rotterdam, committing themselves to enhancing the competitiveness of the Rail Freight Corridors and to improving the quality, reliability and efficiency of transporting goods by rail across Europe. The sector declaration complements the one presented by the Transport Ministers of the EU Member States, and seeks to boost the development of rail freight transport. It identifies important measures needed to improve the competitiveness of the Rail Freight Corridors, to make rail freight a more attractive option for all customers, to enhance the operational efficiency of operators, and to ensure adequate capacity for all.

UNIFE is actively supporting the Commission's efforts in this regard through the UNIFE Freight Committee, which represents more than 20 UNIFE members. The Committee is currently developing its own freight agenda which highlights the main challenges and objectives foreseen by the European rail industry. The European Rail Industry Freight Agenda (ERIFA) will be presented in 2017 at an event which will be organized by UNIFE and will be open to all European rail stakeholders and public authorities.

UNIFE actively participated in the European Rail Freight Day which took place in Vienna on 9 December 2016. The event was opened by the new Deputy-Director General of DG MOVE, Matthew Baldwin. Similar to previous years, UNIFE and its Freight Committee were instrumental in helping the Commission organise this important event.



G EU Public Procurement Policy

In 2016, UNIFE reinforced its activities in the wake of the modernisation of the EU public procurement framework. Indeed, public procurement accounts for a significant share of the EU economy (around 20% of EU GDP), and is crucial for UNIFE members. Three new Directives entered into force on 17 April 2014 (2014/24/EU; 2014/25/EU; 2014/23/EU), with their transposition into national law and practice set to be concluded by 18 April 2016. Among the important developments of this new framework, it is now specified that “contracting entities shall base **the award of contracts on the most economically advantageous tender**” (the 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”.

Throughout the year, UNIFE has monitored the implementation of the new directives. We strongly advocated for the use and enforcement of the MEAT principle since, outside of the mere purchase price, there are numerous other factors that directly or indirectly determine the total cost of ownership and life cycle cost. UNIFE actively participated in a conference on ‘Getting the Award Criteria Right in Public Procurement’, which was held by DG GROW in May 2016. Furthermore, discussions with railway infrastructure managers (EIM) continued throughout the year. In May 2016, UNIFE and EIM jointly organised an event on ‘Stimulating the Demand for Sustainable Rail Infrastructure’ addressing the question of sustainable procurement and MEAT.



DG GROW speaking at the event on MEAT co-organised by UNIFE in Brussels (May 2016)

H EU SME policy

With the input of its SME Committee, UNIFE advocate throughout 2016 for a revised “Small Business Act” that would benefit rail-supply SMEs by:

- supporting their internationalisation;
- supporting their efforts to innovate;
- facilitating their access to finance;
- making national administrations more responsive to SME needs; and
- reinforcing skills development to overcome the shortage of skilled labour.

UNIFE heartily welcomes the strong support for SMEs demonstrated by the Members of the European Parliament – and particularly by Rapporteur MEP Martina Werner – in the Resolution on the Competitiveness of the European Rail Supply Industry. The resolution reflects UNIFE's views on SMEs' needs and challenges, as expressed to Rapporteur MEP Martina Werner when she met with the Members of the SME Committee in October 2015.

Importantly, the resolution calls on the European Commission and the Member States to “consider all options for support to rail-supply SMEs”. This would notably include an increase of the Horizon 2020 SME Instrument's budget to support SMEs' efforts to innovate. The European Parliament also asked the Commission to “exploit further the existing support programmes for SME internationalisation and to give them more visibility among European rail-supply SMEs”. Interestingly, the resolution calls on the Commission to “develop Sector Groups on Rail in the framework of the Enterprise Europe Network, which could advise and train RSI SMEs on different innovation funding schemes, grants and internationalisation”.

UNIFE will continue to fight for these recommendations to be turned into concrete actions that benefit the SMEs of our industry.





I 2030 Framework for Climate & Energy

The 'Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy' addressed five dimensions, including energy efficiency.

In 2015, the Energy Union package stated the need to achieve a 'decarbonised transport sector', acknowledging for the first time the specific role of transport. In July 2016, the European Commission presented the Communication on transport decarbonisation, centred on three main elements: Increasing the efficiency of the transport system, speeding up the deployment of low-emission alternative energy for transport and removing obstacles to the electrification of transport, and moving towards zero-emission vehicles.

UNIFE closely monitored this file and prepared the ground for the publication of the Communication through many activities:

- In a joint position paper published on 6 June, UNIFE and CER (Community of European Railway and Infrastructure Companies) called on the European Commission to promote rail as the backbone of sustainable mobility and its interconnectivity with other low-carbon modes, in the upcoming Communication.
- UNIFE and CER reaffirmed their support for the objectives set in the Transport White Paper of 2011, notably the 60% reduction target for transport emissions by 2050 compared to 1990 levels and suggests adding a binding target for 2030.
- A joint letter with CER, EIM, ERFA, UITP and T&E, recalling inter alia the need for a 60% GHG reduction binding target for 2050, was sent to the European Commission in June.
- A Rail Forum Europe dinner on rail and the decarbonisation of transport was organised on 15 June, with representatives from the European institutions and the transport community.



Jocelyn Fajardo (Member of Cabinet of EU Transport Commissioner Violeta Bulc) speaking at the Rail Forum Europe event on decarbonisation (June 2016)



J Non-Road Mobile Machinery (NRMM)

In September 2014, the European Commission proposed measures to cut emissions of major air pollutants from engines in non-road mobile machinery and reduce the complexity of the legal framework for the sector. The proposal provided for more stringent emission limit values for internal combustion engines installed in non-road mobile machinery (NRMM) and aimed at repealing an extremely complex directive amended eight times since it was adopted in 1997.

Following trilogues, the European Parliament and the Council reached a final agreement on the text, which was published in September 2016. The regulation takes into account UNIFE's messages on the exemption for contracts already in place at the time the new regulation enters into force or on the transition periods and emission limits.

With the support of its Diesel Working Group, UNIFE continues to monitor the implementation of the regulation, focusing in particular on the Commission delegated acts (draft delegated regulation on procedures and calculations for measuring pollutant emissions of in-service engines installed non-road mobile machinery, and draft delegated regulation on procedures and requirements required for testing and homologate engines to be installed non-road mobile machinery).

K Platform for Electro-Mobility



In 2016, UNIFE continued its active involvement in the work of the Platform for Electro-Mobility. With 24 active members, including CER, EIM, UNIFE, Alstom,

Siemens and ABB, the vision of the Platform for Electro-Mobility is a sustainable, multimodal transport system in which people and goods are predominantly moved across land in Europe using sustainable electricity. Its aim is to drive the development, implementation and support for sustainable European Union policies, programmes and initiatives that support this vision.

The platform's activities include joint inputs and outreach actions around relevant EU policies (e.g. Energy Union and EU Energy and Climate Package), future research, development and demonstration of e-mobility within Horizon 2020, and EU institutional awareness of e-mobility benefits. Several working groups have been created to support activities around EU policies, including one on 'Electric Rail & Rail Freight'.

On 21 April 2016, the platform held its official launch event which featured the participation of DG MOVE Director General Henrik Hololei as well as representatives from DG CLIMA and the Council Presidency the Netherlands. Philippe Delleur, Senior Vice President for Public Affairs at Alstom, represented the rail sector in a panel discussion on how electro-mobility could contribute to the decarbonisation of European transport.

UNIFE published a position paper on the role of electro-mobility for transport decarbonization ahead of the publication of the European Commission's Communication on transport decarbonization in July 2016. The position paper provides concrete recommendations to realise the full potential and benefits of electro-mobility in the European internal market.

The platform, which has gained wide recognition among EU decision makers, aims to further increase its visibility through dedicated events in 2017.





L Rail Forum Europe

Throughout 2016, 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 the stakeholders in the rail sector and EU decision-makers to formulate and discuss rail policy in Europe. Its role is very well perceived and RFE events are now a widely recognised rendezvous in the Brussels arena, providing a platform for fruitful exchanges on hot topics for the European rail community.

In addition to the Chair and Vice-Chairs, the following MEPs – 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.

Fourty-two Associate Member companies and associations directly involved in the rail sector also support RFE. Leonardo Dongiovanni, Public Affairs Manager at UNIFE, is the Executive Secretary of the Association.

In 2016, RFE organised the following events, which provided a good opportunity to discuss the main topics on the agenda of the EU institutions:

- 12 January 2016: Track Access Charging and the Competitiveness of European Rail Freight (sponsored by CER, ERFA and UIRR);
- 16 March 2016: Erasing borders: connecting Europe with rail services (sponsored by Transport & Environment and Train2EU);

- 25 May 2016: ATO – Automation of rail vehicles and safety: beyond the concept? (sponsored by AZD Praha and SNCF);
- 15 June 2016: On-track to our climate targets? How rail can best contribute to the decarbonisation of transport (sponsored by Transport & Environment);
- 26 September 2016: Fresh ideas for urban rail: planning, financing and implementing (sponsored by UITP and UNIFE)
- 5 December 2016: Future of rail freight (sponsored by CER, ERFA, UIRR)







A high-speed train, possibly a Shinkansen, is shown in a station. The train has a green and white livery. The background shows the station's infrastructure, including tracks and overhead power lines. A green semi-transparent box is overlaid on the right side of the image, containing the title and a list of topics.

INTERNATIONAL AFFAIRS

03

- A. EU and Japan Free Trade Agreement negotiations
- B. EU and China trade relations
- C. EU-US Transatlantic Trade and Investment Partnership negotiations
- D. EU-Canada Comprehensive Economic and Trade Agreement
- E. Revised proposal of the European Commission on the International Procurement Instrument
- F. EU legislation on conflict minerals
- G. Cooperation with Russia
- H. Cooperation with Brazil
- I. Cooperation with Iran
- J. Cooperation with Gulf Countries
- K. Cooperation with the US
- L. UNIFE participates in COP22



A EU and Japan Free Trade Agreement (FTA) negotiations



As a result of UNIFE's pressure to level the playing field between the EU and Japan, rail was identified as one of the key sectors in the EU-Japan FTA negotiations, which began in March 2013. Following an agreement between the European Commission and the Japanese Government, a package of measures to guarantee transparency and non-discrimination along the Japanese rail procurement process (the 'one-year package') was enforced in October 2014.

Throughout 2016, UNIFE closely monitored the EU-Japan FTA negotiations and progress on rail. Despite some progress on transparency, the guarantees derived from the 'one-year package' are not sufficient for the European rail industry – a concern echoed by several Member States such as France and Germany. UNIFE has continuously called upon European Institutions to be ambitious in the market access negotiations to create the right business conditions for the European rail supply industry and achieve a true level-playing field. UNIFE conveyed these messages in various fora, including to and with the support of the business community (e.g. BUSINESSEUROPE).



Philippe Citroën during EU-Japan Industrial Dialogue on Railways in Brussels (May 2016)

In parallel to the negotiations, the EU-Japan Industrial Dialogue on Railways continued, with meeting held in May 2016 (Brussels). Even more so than the past meetings, this fifth edition aimed at strengthening links and mutual understanding between European suppliers and Japanese operators, and showed a growing interest from the European rail supply industry. UNIFE members were again able to present their solutions to a high-level, wide range of Japanese rail operators. Philippe Citroën particularly insisted on market access related topics, making concrete recommendations for improvements in procurement procedures, but also on technical cooperation between the European Commission and the Japanese Government.

B 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.

At the same time, Chinese state-owned companies are becoming increasingly challenging competitors in all product segments and on all continents through unfair competition. The most recent development in this respect is the merger between the two main Chinese train manufacturers CNR and CSR. The merger process was finalised on 1 June 2015, with the two companies establishing CRRC, the largest rolling stock supplier in the world.



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

European Commission Joint Communication on China

To reflect the changes that the EU and China have both undergone since the European Commission's last specific Communication on China from 2006, the Commission released a Communication on 22 June 2016. UNIFE welcomed the messages in this new document, especially the statement that the EU should 'ensure reciprocity and a level playing field in all aspects of its trade and investment relationship with China. To that end, [the European Commission] will step up its monitoring of access to Chinese markets'. Furthermore, the European Commission affirms that 'EU Member States' engagement with China must comply with EU laws, rules and policies' – which is of crucial importance given that CRRC has initiated a long-term strategy to access new markets between China and Europe via the 'One Belt One Road' (OBOR) initiative.

Access to China's market

In November 2013, negotiations between the EU and China on an Investment Agreement were officially launched. The EU-China Investment Agreement aims to improve access to the Chinese market and provide EU investors in China with a high level of investment protection in a single, coherent text. In this respect, UNIFE welcomed the agreement found on the scope of the agreement in January 2016. During the 9th round, 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.

Furthermore, China has been trying to join the WTO Agreement on Government Procurement (GPA) since 2007, and the offers it has provided so far have been deemed insufficient in terms of guarantees and coverage of procuring entities by other GPA parties. Since the last revised offer from December 2014, the European Commission has been encouraging Chinese authorities to come up with a new and more ambitious offer also including state-owned enterprises. This new offer could be expected next year. UNIFE supports China's access to the WTO GPA on the basis of reciprocity with the EU's offer.

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) and 'promote cooperation in infrastructure, equipment, technologies and standards'. The first chairs' meeting of the Connectivity Platform was held on 29 June and led by Violeta Bulc, European Commissioner for Transport, and by Xu Shaoshi, Chairman of the National Development and Reform Commission (NDRC). The main outcome of the meeting was the endorsement of an expert group on investment and financing jointly led by DG MOVE and the China Development Bank, with the participation of financing institutions of both sides. Furthermore, the chairs took note of an initial list of pilot projects of mutual interest, both in the EU and in China. Discussions will continue and concrete work on the pilot projects is expected to kick off soon, with UNIFE actively supporting the joint commitment to promote 'transparency and a level-playing field based on market rules and international norms'.

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.

Trade defence instruments

Throughout 2016, UNIFE monitored the 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. The purpose of this proposal is to make sure that Europe has trade defence instruments able to deal with current realities – notably overcapacities – in the international trading environment, while fully respecting the EU's international obligations in the legal framework of the WTO. It is 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 will now decide on the proposal through the ordinary legislative procedure (former co-decision).

Furthermore, a proposal for the modernisation of the EU's Trade Defence Instruments has been under discussion since 2013. This proposal would streamline procedures and allow the EU to impose higher duties in certain circumstances. After almost four years in Council due to major divergences, an agreement was found on 13 December 2016 based on a compromise from the Slovak Presidency. Discussions will continue throughout 2017, with the European Parliament next in line.

EU-US Transatlantic Trade and Investment Partnership (TTIP) negotiations

Throughout 2016, UNIFE closely monitored the Transatlantic Trade and Investment Partnership (TTIP) negotiations between the EU the US, and the fifteen rounds of negotiations that took place since their launch in June 2013. Although both parties are committed to move swiftly towards the conclusion of a deal, the negotiations have progressed at a slower pace than expected due to a number of political obstacles and the recent US presidential elections, which cast uncertainty on the future of TTIP.



For UNIFE, public procurement is a key priority in the TTIP negotiations. 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. To this day, public procurement appears to be one of the most sensitive issues addressed in the negotiations, with difficulty appearing around US commitments at the sub-central level (state and municipal). A first exchange of offers was held in February 2016, but the US offer was considered by the European Commission to be far from ambitious enough to match EU expectations.

UNIFE has actively promoted it and maintained regular contact with European institutions to inform them of the position of the rail sector. Furthermore, on 20 April, Philippe Citroën was invited by the INTA and IMCO Committees of the European Parliament to present the main stakes of public procurement in the TTIP for the European rail industry. Mr. Citroën stressed the necessity to achieve a level-playing field and address the increasing requirements hampering access to the US rail and mass transit market.

What is the ambition of EU trade?

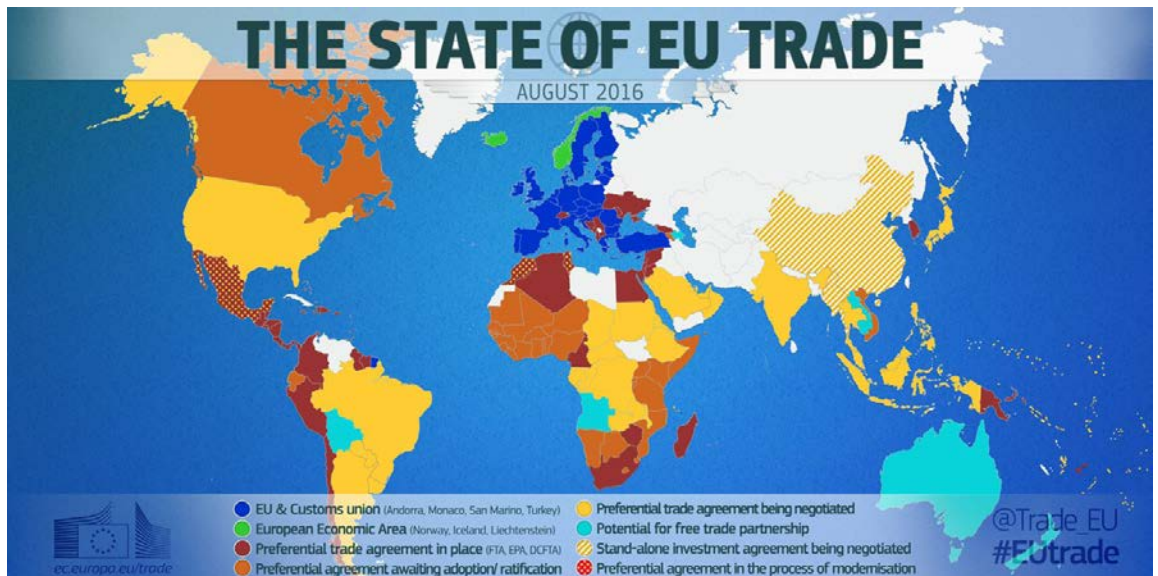
“ We are negotiating more than 20 agreements with more than 50 countries. ”

Cecilia Malmström, EU Trade Commissioner
#TradePolicyDay, 9 November 2016

#EUtrade @Trade_EU



Cecilia Malmström, European Commissioner for Trade



The state of EU trade (August 2016)

D EU-Canada Comprehensive Economic and Trade Agreement (CETA)



Signature of the Comprehensive Economic and Trade Agreement (CETA): From left to right: Jean-Claude Juncker (President of the European Commission), Justin Trudeau (Prime Minister of Canada), Donald Tusk (President of the European Council), Robert Fico (Prime Minister of Slovakia)

Following the unveiling of the Comprehensive Economic and Trade Agreement (CETA) in September 2014, the text went through a comprehensive legal revision and translation process. In September-October 2016 however, several Member States expressed reservations about signing the CETA at the upcoming EU-Canada Summit. After very difficult negotiations, the CETA was finally signed by EU leaders and Justin Trudeau, Prime Minister of Canada, at the 16th EU-Canada Summit, held on 30 October.

A provisional application of the agreement can be expected in early 2017, depending on the date and outcome of the vote in plenary session of the European Parliament. However, as the Commission announced in July 2016 that the CETA is a 'mixed agreement', ratification by the 28 Member States will be necessary for the full application of CETA. Should the ratification of outstanding provisions fail in any Member State, the provisional application of the entire deal will cease to apply.

It is expected that the agreement will provide a €12 billion increase to Europe's GDP and will tackle a whole range of issues to facilitate business between the EU and Canada, including the removal of 99% of customs duties and the end of limitations in access to public contracts. The agreement especially provides many positive developments for public procurement. The CETA will significantly limit the use of 'buy domestic' policies at all levels of government, including provincial and municipal ones. Apart from Ontario and Québec (for which a clear and reasonable threshold has been set), no province in Canada will be allowed to require domestic content provisions in transit equipment procurement. Canada will also create a single electronic procurement website that combines information on all tenders to ensure that EU companies can effectively take advantage of these new opportunities.

E Revised proposal of the European Commission on the International Procurement Instrument

In March 2012, the European Commission published a proposal to promote a level playing field for international public procurement, which is particularly important for the railway sector. Although very encouraging signs were sent by the European Parliament, discussions remained blocked in the Council. On 29 January 2016, the Commission therefore made a revised proposal with substantial changes to allow the EU to take proportionate and more targeted action.

The new instrument would allow the Commission to initiate public investigations in cases of alleged discrimination of EU companies in procurement markets. As a last resort, the Commission could,



after consulting with EU Member States, apply 'price adjustment measures' – i.e. bids consisting of goods and services from the country concerned would be considered as offering a higher price than the one put forward, which would provide European bids a competitive advantage.

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. UNIFE is working to enable an agreement on this tool long-awaited by the European rail supply industry, but the support of UNIFE members, especially at Member State level, will be crucial to reach an agreement at EU level.

F EU legislation on conflict minerals

In March 2014, the European Commission published a legislative proposal intended to create a responsible sourcing strategy for tin, tungsten, tantalum (3Ts) and gold, and to break the link between minerals extraction, minerals trading, and the financing of armed conflicts in certain conflict-affected areas. UNIFE welcomed the proposal and supported the Commission's voluntary approach to focus on upstream companies, which alone can create the necessary transparency in the supply chain – thus helping downstream companies make better commercial decisions.

After difficult negotiations between the European Parliament and the Council, especially on the question of the voluntary nature of the regulation and the responsibilities of downstream companies (i.e. those that use these minerals as components to produce goods), a political understanding on the core elements of the regulation was reached in June 2016. After several trilogues, the Council, the Parliament and the Commission reached an informal agreement on 22 November 2016.

The regulation is a step in the right direction as it carries clear obligations to source responsibly for the 'upstream' part of the production process, which involves the extraction and refining of these minerals – ensuring sustainable sourcing for more than 95% of all EU imports of tin, tantalum, tungsten and gold, which will be covered by due diligence provisions as of 1 January 2021. In addition, the Commission will carry out a number of other measures to improve due diligence by EU 'downstream' companies.

G 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 (replacement and extensions of trams, light rail and locomotives).



The Ninth International Conference 'Railway Engineering: Partnership of 1520 and 1435 Rail-Gauge Manufacturers'

In 2016, UNIFE strengthened its cooperation activities with its Russian counterpart, the Non-Commercial Partnership of the Russian Rail Industry (NP UIRE), to bring even closer UNIFE members and the Russian railway sector. In particular, UNIFE and some of its members travelled to Moscow in July to pursue discussions on investment projects and technical





activities on regulations and standards (authorisation process, use of specific standards in Russia etc.). These are key aspects for many UNIFE members wishing to enter the Russian market or to better understand the requirements and rules for the certification of their products in the Customs Union.

Building on this cooperation framework, UNIFE and NP UIRE released a new publication entitled 'Features of technical regulations in railway transport'. The publication was unveiled at the Ninth International Conference 'Railway Engineering: Partnership of 1520 and 1435 Rail-Gauge Manufacturers', which took place at InnoTrans in Berlin on September 21. The booklet explains in detail the process of respective authorisation systems for UNIFE and NP UIRE members to better understand and comply with the requirements. It provides updates and more detail on the technical regulation and authorisation concepts introduced in the last joint publication two years ago. It also provides case studies and experiences from manufacturers.

H Cooperation with Brazil (ANTT)



Brazil is the EU's largest trading partner in Latin America, and is a key market for European railway business with significant investments foreseen in the coming years by Brazilian authorities (infrastructure, signalling etc.).

In the framework of a Memorandum of Understanding (MoU), which was signed between the European Railway Agency (ERA) and the Brazilian National Ground Transportation Agency (ANTT) in September 2014, several visits from the European and the Brazilian side have been organised on topics such as interoperability, regulations and standards or investment.



Signature of Memorandum of Understanding with Brazilian Industry Association (ABIFER) at InnoTrans (20 September 2016)

In April 2016, a delegation from ANTT came to Europe for a rail and multimodal transport study tour. This included a one-day seminar organised in Brussels focused on multimodal policies and investment (TEN-T corridors). UNIFE participated in the exchanges.

On 20 September 2016, UNIFE signed an MoU with ABIFER – the Brazilian Association of the Railroad Suppliers – during InnoTrans. Its aim is to promote mutually beneficial cooperation in different fields of the rail transportation system to achieve a favourable environment for the development of both the European and the Brazilian railway sectors.

I Cooperation with Iran

In April 2016, Henrik Hololei, Director General of DG MOVE, and Josef Doppelbauer, Executive Director of the European Union Agency for Railways (ERA), met with the Chairman of the Board and President of Islamic Republic of Iran Railways (RAI). Both sides expressed interest in developing a mutually beneficial bilateral cooperation. This was confirmed when EU Transport Commissioner Violetta Bulc visited Iran before the summer.



The EU Delegation at the first seminar on railway policy organised by the European Commission and RAI in Tehran (17-18 October 2016)

Against this background, a first seminar on railway policy was organised by the European Commission and RAI on 17-18 October in Tehran. The seminar was attended by over 150 participants. Representatives from the rail supply industry included UNIFE and its member companies, which had the opportunity to present industry solutions to participants (rolling stock developments, ERTMS). The seminar addressed topics of common interest including the key principles of transport policy, infrastructure policy, safety and interoperability, control command and signalling, rail market policy, international rail freight and the latest technical developments.

The discussions showed that Iran has ambitious plans to invest in heavy rail and urban transport in the coming years, and to increase the modal share and quality of rail, thus opening up many business opportunities across all market segments. This is confirmed by the 2016 World Rail Market Study, which shows that the Iranian rail market is expected to grow significantly in coming years with major rolling stock and rail control orders.

J Cooperation with Gulf Countries

The Gulf Countries region is a priority market for UNIFE members. The region is one of the most important growth drivers to the industry and foresees considerable investments, with the Gulf Cooperation Council's (GCC) ongoing rail project estimated to cost around US\$15.5 billion.



Philippe Citroën representing UNIFE at the GCC Rail and Metro Conference held in Muscat

Since 2014, UNIFE has been discussing, with the GCC – a strategic body overseeing the economic developments in the region – a plan to foster knowledge exchanges and strengthen the dialogue between Governments and the European rail industry. With the GCC rail project endeavouring to connect the six GCC Member States, the GCC Secretariat General is concerned with issues such as interoperability, safety and open access.

Building on the opportunity of the Middle East Rail Conference on 8-9 March in Dubai, Henrik Hololei (Director General DG MOVE), Matej Zakonjšek (Head of Cabinet of the EU Transport Commissioner), Josef Doppelbauer (ERA Executive Director) and Philippe Citroën travelled to the Gulf Countries:

- A first workshop on railways took place on 7 March in Riyadh (Saudi Arabia) to deepen cooperation between the EU and the GCC and exchange on GCC rail developments, interoperability and industry-related topics (technologies, ERTMS...).



In this context, UNIFE's Director General made a presentation to GCC-SG and Member State representatives.

- During the Middle East Rail Conference, UNIFE presented the contribution of the European rail supply industry to a competitive rail network in the region. Furthermore, the European Commission stressed the need for enhanced cooperation between the EU and the GCC, especially from an industry point of view.
- Also during the Middle East Rail Conference, UNIFE and the European Delegation in Dubai organised a briefing and networking meeting with DG MOVE, ERA, EU Member States' Embassies and the EU industry to discuss current projects and challenges in the region.

K Cooperation with the US

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

In January 2016, a delegation from UNIFE participated in the 95th Annual Meeting of the Transportation Research Board (TRB), which took place in Washington D.C. UNIFE presented its activities in various fora, and had an opportunity to meet with various US and European stakeholders in the fields of rail research and business. Furthermore, discussions on regulatory and standardization systems continued between UNIFE, APTA (American Public Transportation Association), the European Railway Agency (ERA) and the Federal Railroad Administration (FRA).

During InnoTrans 2016, a joint discussion between Philippe Citroën and APTA CEO Dick White was held at the UNIFE stand. White presented the role of rail in the US public transport system and the recent developments it has undergone. A discussion followed around key questions such as funding for rail projects, public procurement constraints and the future of high-speed and Positive Train Control in the US. During the event, UNIFE and APTA recommitted to their 2013 MoU and to pursuing cooperation activities in the future.



APTA CEO Dick White at the UNIFE stand during InnoTrans 2016

L UNIFE participates in COP22



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 to effectively tackle climate change. Following the United Nations Climate Change Conference (COP21 or CMP 11), an international climate agreement was reached 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 and landmark agreement entered into force on 4 November 2016 and provides a major opportunity for decision-makers to design more sustainable transport policies centred on rail solutions.

The 2016 United Nations Climate Change Conference (COP22) was held in Marrakesh from 7 to 18 November. It was focused on implementation and the concrete actions necessary to achieve the ambitious objectives defined in the Paris agreement. UNIFE conveyed once again the message that the development of tram, metro, freight and passengers rail transport is a crucial part of the answer to climate challenges. UNIFE participated in several transport-related initiatives and events, including:

- The Paris Process on Mobility and Climate (PPMC) Transport Day on 13 November, with plenary and breakout sessions on themes such as transport adaptation and resilience or multimodality and low-carbon transport;



TRANSPORT DAYS 2016

MARRAKECH

13 November 2016

- A side-event on the contribution of rail projects to climate and sustainable development, hosted in the ONCF Climate Train and organised by ONCF, SNCF and UIC;



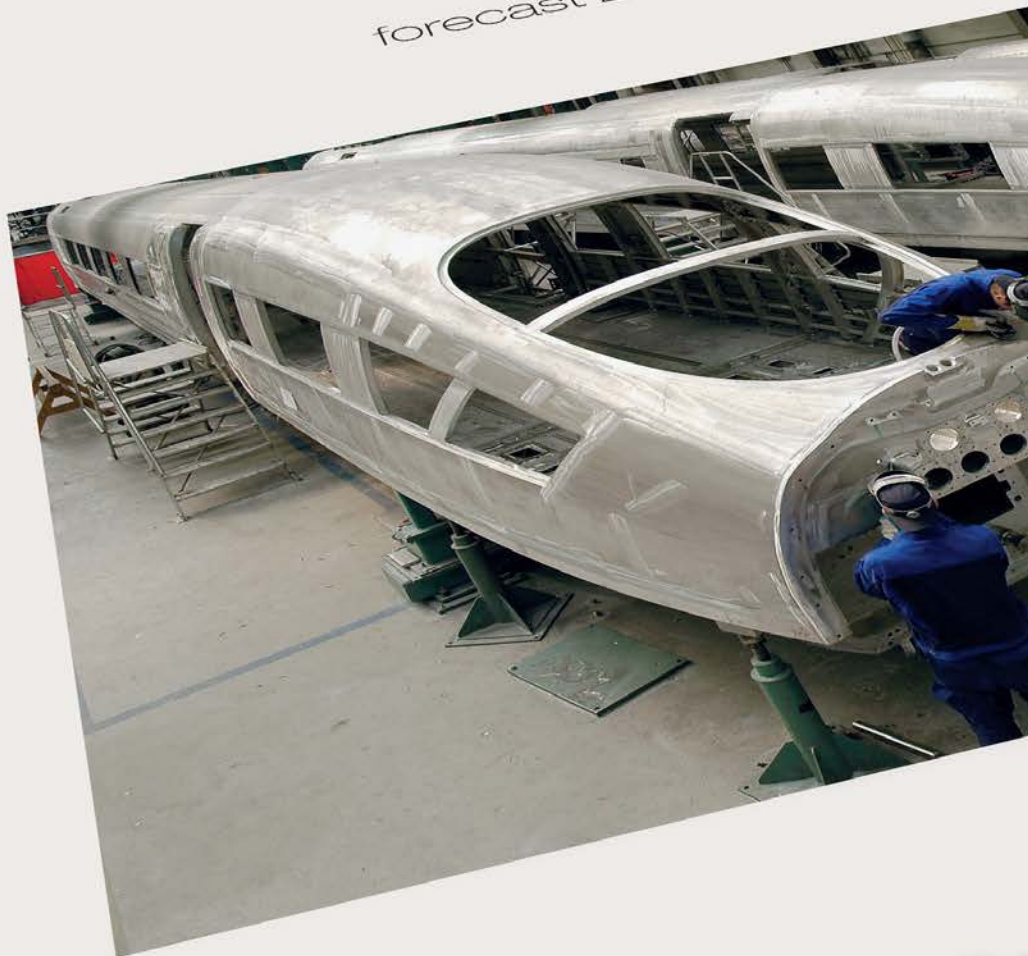
Mohamed Rabie Khlie (Director General, Office National des Chemins de Fer du Maroc-ONCF) during T1eres Assises de la Mobilité Durable event in Marrakech

- A side-event on climate financing and sustainable mobility, organised by the rail and public transport international community (ONCF, SNCF, UIC, UITP...).

unife

World market rail study

forecast 2016 to 2021



EU

WORLD RAIL MARKET STUDY (WRMS)

04



rail
press

Railway
Gazette

DVV Media Group



The sixth edition of the UNIFE World Rail Market Study was launched by the Chairman of the UNIFE World Rail Market Study Steering Committee, Martin Zimmek (Bombardier Transportation), on 20 September 2016 at the InnoTrans fair in Berlin. The study has been published biennially since 2006. In 2016 it was conducted by Roland Berger Strategy Consultants and published by DVV Media Group. The study covers the development of the global rail supply market. It provides a detailed analysis of 60 focus countries, including the major existing rail markets and the most promising emerging ones, clustered into seven regions.



EU Transport Commissioner Violeta Bulc receives the first copy of the World Rail Market Study during her visit at the UNIFE stand during InnoTrans, September 2016

The world rail supply market volume hit a record level of nearly 160 billion euros in 2015 – and growth is set to continue despite certain regional differences. In the years to come the market volume will grow 2.6 percent per year on average worldwide and reach about 185 billion euros in 2021.

Asia Pacific will continue to account for the biggest portion of the growth (32%), followed by Western Europe (26%). Western Europe leads in the growth stakes with 3.1 percent, just edging ahead of Africa/Middle East with 3 percent. Asia Pacific's growth averages 2.6 percent. All regional markets are assessed on their development of the rolling stock,

infrastructure, rail control, services, and turnkey integration development. The fastest growing product segments are rolling stock and services, which together accounted for 72 percent of the total market volume in the period 2013 through 2015. ERTMS and CBTC continue to play a prominent role in the rail signalling market.

Megatrends like population growth and the global increase in urbanization will ensure that demand continues to grow, especially in urban areas. Ongoing efforts to achieve the targets set at the 2015 UN COP21 climate conference will further enhance the role of rail in the near future. Digitalization and the resulting changes in customers' mobility habits are having a measurable effect as well. New rail technologies like driverless trains are bringing added safety, capacity and reliability to the railways, serving to make rail travel even more attractive and competitive with other transport modes. Moreover, several initiatives at the EU level will certainly improve the competitiveness of the European rail industry and meet the changing transport needs. In particular, the adoption of the Fourth Railway Package will have a positive impact on rail supply companies as well as on rail operators by supporting further harmonisation of European rail traffic.

Worldwide accessibility is a key factor that is continuously changing, and thus affecting the business of the rail supply industry. Across segments, worldwide market accessibility declined to 63 percent in 2013-15 compared to 68 percent in the 2011-13 period. The recently finalised EU-Canada (CETA), and ongoing EU-Japan, and EU-U.S. (TTIP) FTA negotiations, as well as the EU-China Investment Agreement negotiations, should help reverse the current trend of decreasing accessibility and further open non-European markets to European suppliers. Indeed, the European Commission supports open competition and public tendering, ensuring that all suppliers can evenly participate in ongoing tenders within the EU. Increased political efforts, however, are called for to ensure that these fair market conditions are implemented outside of the EU, and that a level playing field is achieved on the worldwide rail market.



This study elaborates on digitalisation, as an opportunity to create new possibilities for linking up the individual modes of transport. In addition, the Sub-Saharan African market is described in more detail to provide a comprehensive picture to the reader. Sub-Saharan Africa has become an attractive region for rail suppliers with unprecedented growth rates drawing investors' attention towards business opportunities.

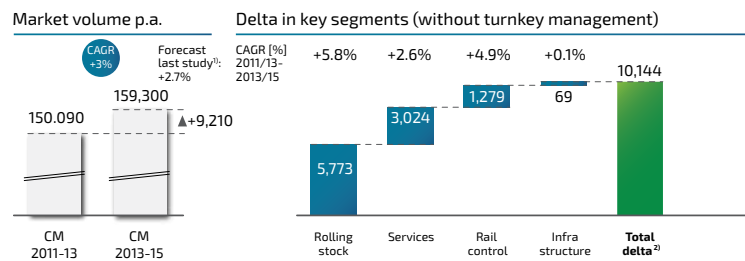
The outlook for the rail supply industry is positive overall, as the market volume is at a record high and will only increase as rail travel remains an attractive and important element of society's mobility.

The European rail supply industry will also have important challenges to face, such as advancing digitalisation, the need to secure adequate financing for rail projects and the increased difficulty in accessing certain markets. European rail suppliers are among the world's leading suppliers and can look forward to continued growth and market opportunities in both mature and emerging markets.

To order a copy of the UNIFE World Rail Market Study, please visit the UNIFE website: www.unife.org.

The market outgrew the forecast and reached a CAGR of 3.0% in the last two years - Rolling stock is the main contributor

Comparison of worldwide total market volume WRMS 2016 vs. 2014¹⁾ [EUR m]

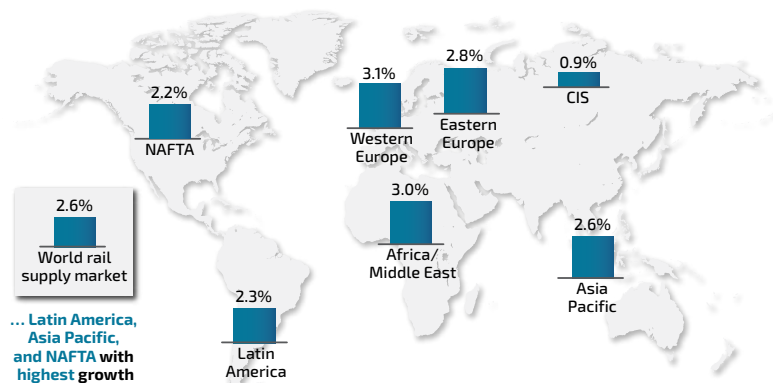


1) Forecast annual growth rate in WRMS 2014

2) Delta of EUR 934 m (10,144 - 9,210) between left and right side due to leaving out turnkey management on the right side

Western Europe and Africa/Middle East are expected to show strongest growth rates - Asia Pacific to remain at high levels

Total market growth rates, per region (CAGR¹⁾), %



1) Compounded annual growth rate 2019-2021 vs. 2013-2015

Standards & Regulation





STANDARDS & REGULATION

05

- A. Overview
- B. UNIFE Technical Working Groups
- C. Other activities



A 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 (ERA) and the European Commission. 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 our experts have participated in the various working groups and workshops organised by the European Institutions. The SRG plays a pivotal role in coordinating UNIFE's technical position on all the Fourth Railway Package implementation activities.

Throughout 2016, and like every year since the ERA was established, UNIFE held the status of observer on the ERA Administrative Board and Sub-Committees. Following the entry into force of the new ERA regulation in June 2016, the ERA Administrative Board and Sub-Committee have become the ERA Management Board and Executive Board. This didn't affect UNIFE's participation and involvement in the two boards in 2016: we regularly attended these meetings and, where relevant, provided input on important topics such as the ERA work-programme and the preparatory activities for the implementation of the Fourth Railway Package.

The UNIFE SRG 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 Join Sector Forum – RAIL.



DG MOVE Director General, Henrik Hololei and ERA Executive Director, Josef Doppelbauer renew and deepen their cooperation to implement the Fourth Railway Package

2016 Key highlights:

Approval and entry into force of the Technical Pillar of the Fourth Railway Package

2016 marked a milestone for the EU legal framework regulating safety and interoperability with the approval and entry into force 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, comprised 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. This long-awaited adoption will cut the time and cost necessary to obtain authorisation for locomotives and rolling stock for use on the European rail network.



Signature of the Interoperability and Rail Safety Directives and the European Rail Agency Regulation by President Schulz and Dutch Minister, Jeanine Hennis-Plasschaert, in the presence of the MEP Rapporteurs Izaskun Bilbao Barandica (ALDE, ES), Michael Cramer (Greens/EFA, DE) and Roberts Zile (ECR, LV)

Under the revised regulation, the European Railway Agency has become the European Union Agency for Railways (the Agency). The Agency will play a central role in removing technical barriers with its enhanced role of issuing vehicle authorisations and safety certifications, making those procedures faster and easier for railway manufacturers and operators.



Today until June 2019



The Fourth Railway Package - from June 2019



Fourth Railway Package - The impact on Vehicle Authorisation

Task Force for the implementation of the Technical Pillar

To follow and properly monitor all the Fourth Railway Package activities managed by the ERA, UNIFE has formed an internal task force for the implementation of the Technical Pillar. The task force is piloted by the SRG and has nominated experts to actively contribute to all the ERA activities linked to the implementation of the Technical Pillar. The most relevant activities to the rail supply industry are the following:

- Vehicle Authorisation process
- One Stop Shop (IT tool)
- ERTMS trackside Implementation
- Fees & Charges

- Board of Appeal
- TSI Delegated Act

UNIFE has been very active in all above-mentioned workstreams, in particular in shaping the vehicle authorisation process, by attending several workshops and organising bilateral meetings with 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.

The European Commission launched a call for candidate for an Expert Group on the Technical Pillar of the Fourth Railway Package mid-2016. UNIFE applied and was given a permanent seat in the group, 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 recommendation to the Commission on the adoption of legal acts.



Josef Doppelbauer (Executive Director, European Union Agency for Railways) and Philippe Citroën (Director General, UNIFE)

UNIFE has already attended several meetings, providing to the forum and to the Commission representatives feedback from the rail supply industry on the various topics discussed, such as the TSI Delegated Act or Fees & Charges for Vehicle Authorisation.

It is important to highlight that UNIFE will be entitled to vote and give an opinion to the Commission at the same level as the representatives of Member States in the framework of this Expert Group. It should be noted though that this Expert Group does not replace the RISC, where still only representatives of Members States may attend and vote. It is expected that in 2017, this expert group will play a fundamental role in the adoption of all legal acts arising from the Technical Pillar of the Fourth Railway Package.

Cleaning-up of National Technical Rules

In 2016, during the EU Dutch Presidency, UNIFE paid close attention to Agency activities leading to the reduction of technical rules to facilitate the authorisation of rail products in Europe. These activities are progressing quite well, but are still ongoing despite the deadline for finishing the cleaning-up process having been set for the end of 2016. UNIFE continues to carefully monitor these activities, and working actively through its network of experts to achieve this objective and establish a comprehensive set of rules (TSIs and necessary 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 European Technical Specifications for Interoperability (TSI) requirements, 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 technical prescriptions for railway material (APTU), and for the procedure for the technical admission of railway vehicles and other railway material used in international traffic (ATMF). UNIFE has supported the transformation of 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 in order to have interchangeable coaches.

UNIFE involvement in Standardization

Standardisation is extremely important for our industry and several UNIFE members are involved in activities around this topic. 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 on the European level, UNIFE has established close links with the relevant organisations related to standardisation in Brussels. UNIFE works closely with the 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 the 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.

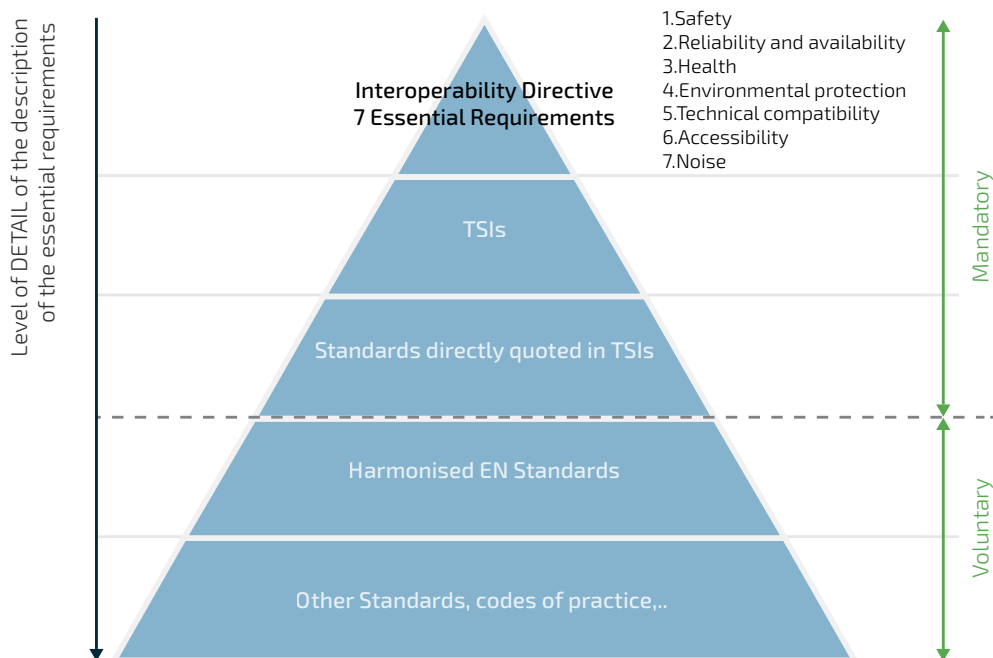
At the international level, UNIFE obtained A-Liaison status in the ISO Rail Technical Committee 269 (ISO TC 269) and attended its plenary meeting. A-Liaison status enables UNIFE to take part in the regular meetings of this ISO technical committee.

UNIFE is also a member of the newly established **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 order to coordinate the activities related to the development of European standards and other related technical documents in the railway sector. The kick-off meeting of the platform was on November 7 in Brussels. This platform is chaired by the European Commission (DG Move) supported by the ERA.

In 2016, UNIFE signed the 'Joint Initiative on Standardisation' made between the European Commission, European Standardisation Organisations and cross-industry standardisation community. 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 will continue to follow this initiative to effectively support EU policies and help consolidate Europe's leadership in international standardisation. These actions will be taken forward in the Joint Initiative Steering Group, which UNIFE will continue to support.

Furthermore, UNIFE continued its cooperation with urban transport operators in the field of standardisation in the form of the **Urban Rail Platform**, a forum driven by UNIFE and UITP (the International Association of Public Transport). The Urban Rail Platform aims to support, among other things, standardisation in urban rail following a mandate given by the Commission. The preparatory work has progressed substantially over the past three years and now UNIFE and UITP have 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 and 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, having signed a Memorandum of Understanding in December 2016. 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 its documents with UNIFE in order to obtain feedback from the manufacturing industry with the goal of improving the quality of its specifications.



For further information, please contact: alice.polo@unife.org or nicholas.shrimpton@unife.org.

B UNIFE Technical Working Groups



Alice Polo, UNIFE participating at the Standards4EU event on digital transformation

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

- The UNIFE Topical Groups (TG) which follow specific topics, mainly related to standardisation and research activities.
- The UNIFE 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 UNIFE delegates participate as official representatives of the European rail supply industry.

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

Cabin Working Group (TG)

The Cabin working group members are involved in several ongoing standardisation activities at European level regarding the specifications of driver's cabin elements. Due to the relatively large number of standards and applicable rules for rolling stock and signalling manufacturers related to the cabin topic, UNIFE experts this year finalised a comparison analysis mapping the current situation. The analysis covers 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. The purpose of this activity is to identify possible synergies, differences, inconsistencies and overlaps present in the current cabin specifications. The objective is to provide relevant standardisation bodies with proposals and recommendations to work towards a more consistent set of specifications and to prepare practical guidelines for UNIFE members on the applicability of all the relevant rules for the current or future cabin products.

Additionally, Cabin Working Group members have been supporting the members of the Technical Committee CEN-CENELEC/TC 9X WG12, in developing the prCEN/TR 50542-X set of recommendations. The main issue for UNIFE experts was to provide the WG12 with proper inputs on possible developments around the interface specifications of the interchangeable components.

For further information, please contact peter.gurnik@unife.org.

Chemical Risk Working Group (TG)

The Chemical Risk working group follows chemical risk issues and aims to develop a common understanding and harmonised rules for the rail industry as well as to provide support for railway system integrators and their suppliers in understanding legal obligations. This working group covers European legislation – including REACH, CLP, WEEE, and RoHS – and has 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". Its goal is to harmonise the information requested by some of the main system integrators and develop a common form which could be recognised by all stakeholders. With this document, the reporting on hazardous substances is simplified for suppliers, and the same format could be delivered for each system integrator. Based on feedback from the supply chain collected through a questionnaire, the group began working on a more simplified version of the template that takes into account the feedback received. The next step will be to develop a common data material portal for the industry to access information on materials in one place that simultaneously gathers substance declarations from suppliers. To achieve this, next year, the working group will define the data field and compliance aspects needed and go through the list of standards one at a time.



These documents, part of a series of actions launched by the European rail industry to best comply with EU regulation related to substances, 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.

For further information, please contact stefanos.gogos@unife.org.

EMC Working Group (TG)

The Electromagnetic Compatibility working group has been significantly involved in activities focused on the closure of open points in TSIs related to the electromagnetic compatibility between train detection systems, including track circuits, axle counters and other subsystems, such as rolling stock. Ongoing work is conducted in close cooperation with EIM and CER experts working together 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. The topics that were discussed in 2016 include the closure of open points on the specifications for wheel diameters and axle distances for high speed train operations, an update of the frequency management for axle counters, the definition of wheel detectors as interoperability constituents, and many others.

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

For further information, please contact peter.gurnik@unife.org.

Energy Efficiency Working Group (TG)

In 2016, the Energy Efficiency working group members started focusing on the activities in the main areas of intervention identified during the previous year:

- Strategy definition and links to EU policy: to define UNIFE's strategy with respect to relevant energy-related topics, to report on ongoing and upcoming EU legislation in the area of energy and to strengthen the discussion on ongoing and upcoming TSIs/Standards, enhancing collaboration with the main European Standardisation Organisations and their working groups focused on energy and transport;
- Coordination of technical activities within UNIFE: to inform and support UNIFE members on EU funding opportunities for energy-related R&D projects;
- Coordination of UNIFE communication and networking activities: to maintain open channels with the Shift2Rail Joint Undertaking, especially around the activities carried out within the frame of the Shift2Rail Cross Cutting Activities.

For further information, please contact andrea.demadonna@unife.org.

Life Cycle Assessment Working Group (TG)

Throughout 2016, the Life Cycle Assessment working group conducted discussions on how to improve the eco-performance of the rail sector and optimise production and tendering costs, taking into consideration both increasing customer demands and legislative and standardisation requirements, especially at EU level.

In the past, this working group had developed Product Category Rules (PCR) for railway rolling stock following the growing customer demand for information on the environmental performance of railway vehicles. The PCR is a standardised method

to apply environmental life cycle assessments in a transparent and reliable way, and communicate results in a credible fashion, based on the rules laid out by the International Environmental Product Declaration® system. The PCR document was updated in 2012 to take into account new developments such as the Railway Industry Substance List.

Based on the recent launch of Product/Organisation Environment Footprint pilot projects by the European Commission, this working group is also closely following the developments of some key projects and their potential impact on the existing EU regulatory and standardisation framework. The group is carrying out broader research work on the main existing carbon footprint standards (ISO 14040/44, PAS 2050, ISO 14067, ISO 14064, GHG-Protocol and EN 16258) to determine their scope and use. Carbon footprint standards are increasingly used and could have an impact on customers' requirements.

Furthermore, the Life Cycle Assessment working group is discussing the possible standardising of existing Life Cycle Assessment related methodologies

such as the Recyclability and Recoverability Calculation Method for Railway Rolling Stock finalised by the group in 2013. The document aims to define a common approach for the calculation of recyclability and recoverability rates within the railway industry. Furthermore, it presents a common rail industry method to make recyclability and recoverability figures comparable and transparent.

Finally, this working group has also focused on possible ways forward, especially in communicating on the environmental performance of railway products to the general public and to decision makers.

For further information, please contact stefanos.gogos@unife.org.

Rolling Stock Working Group (MG)

Throughout 2016, the main activity of UNIFE's Rolling Stock Mirror Group has been to track the activities of the European Union Agency for Railways' LOC&PAS working party, currently undertaking the limited revision of the



Following the entry into force of the technical pillar of the 4th EU Railway Package on 15 June 2016, the European Union Agency for Railways replaces and succeeds the European Railway Agency



LOC&PAS TSI (Regulation (EU) 1302/2014). Following the limited revision work carried out in 2015, which resulted in two recommendations sent by ERA to the Commission for the closure of open points in the TSI and clause on 'unique authorisation', the ERA working party has continued to work on addressing the remaining open points as well as the TSI application guide. UNIFE experts have attended all ERA working party meetings, providing input to the TSI and application guide text. This has resulted in a third and final recommendation for the Commission, progressing the closure of the open points on ballast pick-up, eddy current track brakes and interface and data transferred energy measurement systems, as well as improvements of the TSI text considering the latest EN Standards and the introduction of an additional optional clause on vehicles for general operation. The TSI application guide work will be concluded in early 2017.

For further information, please contact nicholas.shrimpton@unife.org.

Safety Assurance Working Group (MG)

The Safety Assurance working group has supported the tasks performed by the ERA, as requested by the Safety Directive, as well as supported the SRG and other working groups with expertise on the application of Common Safety Method (CSM) Regulation (EU) 402/2013. In 2016, UNIFE continued to support the Agency in the development of the application guides for the CSM Design Targets for technical systems as defined in Regulation (EU) 2015/1136 and the CSM Assessment Body referred to in Regulation (EU) 402/2013.

Additionally, the working group participated in the workshops and provided the industry positions in consultations of the ERA's Common Occurrence Reporting (COR) project, evaluating the options for an incidents and accidents reporting tool at an EU level. UNIFE members are also evaluating the new 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, the use of which is currently voluntary.

Finally, UNIFE experts participated in the revision of the EN50126 standard, which is expected to be published in 2017.

For further information, please contact nicholas.shrimpton@unife.org.

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

In 2016, UNIFE members contributed to several interoperability areas including the TSI related to freight and passenger subsystems. A revision of the TAP TSI was launched in 2016, while one of the TAF TSI, is envisaged for 2017. The TAP/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 ERA's working groups. To amplify our involvement, the UNIFE TAP/ TAF TSI working group has been recently revived to more closely follow the developments and the ERA working groups listed below:

- TAP and TAF TSI Change Control Management Working Parties
- TAP and TAF TSI Change Control Management Board
- TAF TSI Implementation Co-operation Group

Throughout the past year, UNIFE involvement focused mainly on the processes of change management and monitoring the implementation of the TAF TSI. At the level of change management, individual change requests related to technical annexes of each TSI are negotiated. Change management is gaining more and 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, the active involvement of UNIFE members is also required in the executive bodies of TAF and TAP TSI, which are the TAF and TAP CCM boards.

To keep the activity of the railway sector in these ERA working groups efficient, UNIFE members are also involved in the work of the Joint Sector Group, which provides a unified and complex point of view for the whole sector on the necessary changes in TAF and TAP TSI. Moreover, UNIFE is represented in the TAP/TAF Steering Committee.

For further information, please contact stefanos.gogos@unife.org.

Train Control Management System (TCMS) Working Group (TG)

The TCMS working group has worked on common solutions for the train communication network, the so-called 'brain of the train'. The working group follows the developments of the IEC/EN 61375-2-6 and contributed to IEC TC9 WG43.

The TCMS working group was also involved in the TCNOpen (Train Communication Network Open Source Special Interest Group), an open source initiative of the partner railway industries with the goal of building key parts of new or upcoming railway standards, commonly known under the name TCN. TCNOpen, the Open Source scheme, is being jointly developed by participating companies so as to achieve cheaper, quicker and better quality results.

For further information, please contact eulalia.peris@unife.org.

Vehicle Authorisation Working Group (MG)

Following the disbanding of the Cross Acceptance unit in the Agency at the beginning of 2016, UNIFE decided to rename and slightly modify the objective of the former Cross Acceptance and Authorisation Mirror Group. The UNIFE Vehicle Authorisation Mirror Group was therefore created to follow, in particular, the development of the Implementing Act on Vehicle Authorisation to be put on the market in the framework of the Fourth Railway Package Technical Pillar. This group has been particularly active in 2016, attending several workshops organised by the Agency and providing input and feedback on the various topics linked to the vehicle authorisation process. 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 in June 2019.

For further information, please contact alice.polo@unife.org.

Wagon Working Group (MG)

The Wagon working group follows and supports the efforts carried out by the Agency to revise the existing Wagon Technical Specification for Interoperability (TSI). The work started in October 2014 with a kick-off meeting and several subsequent meetings have been held so far. The Agency is expected to finalise the revision proposal by the end of 2016 and to submit it to the Commission. The UNIFE Wagon working group has actively participated in the revision process by providing common positions and attending the Agency Wagon TSI limited revision working group meetings.

For further information, please contact andrea.demadonna@unife.org.





Other activities

UNIFE and EFRTC

In 2016, UNIFE continued its cooperation with EFRTC, the European Federation of Railway Track-works Contractors. UNIFE participated in EFRTC's annual general meeting, which took place in Madrid in October 2016, giving an overview of the current European transport policies relevant to contractors. UNIFE also attended EFRTC committee meetings and assisted in the production of the annual newsletter. EFRTC participated in several UNIRAILINFRA committee meetings, which enabled a useful exchange between the supply sector and contractors.

For further information, please contact nicolas.furio@unife.org.

UNIFE Digitalisation Platform Activities



In February 2016, UNIFE launched its digitalisation platform to respond to the challenges and changes in the transport network brought on by the rapid evolution of digital technologies. As Transport Commissioner Violeta Bulc stressed in her speech at the InnoTrans Opening Event on 22 September 2016: "Digitalisation, intelligent transport systems and better use of Big Data are the heart of the future rail system". In this respect, UNIFE fully subscribes to Commissioner Bulc's argument that digital technologies "are central to the development of a smarter, more efficient, multi-modal transport

network"¹. The UNIFE digitalisation platform, which gathers together around 30 UNIFE members representing the whole value chain, serves as a dynamic forum for industry engagement on this key topic for the future of the railway sector.



The first objective of the platform was to work on the rail supply industry objective's in relation to digitalisation. On 21 September, during InnoTrans 2016, UNIFE released its 'Position Paper on Digitalisation of Railways'. This provided an excellent opportunity to discuss the main points put forward by the industry and to raise the visibility of the platform.

While the UNIFE position paper outlines the existing contribution of the industry to the digitalisation, it also sets out a vision for further developments, in particular related to research and innovation (e.g. Shift2Rail programme). For the coming years, the Digitalisation Platform has identified the following priorities:

- Improving access to and use of data;
- Enhancing the security of the rail system;
- Improving end-user experience;
- Improving the use of the existing infrastructure, with two main objectives:
 - ERTMS deployment as one of the key priorities for the rail supply industry;
 - Predictive maintenance.

The position paper also underlines that a cooperative approach is essential to achieve the digitalisation of railways. Therefore, UNIFE calls for a permanent dialogue with the rail sector stakeholders and decision-makers, including the other sector associations (e.g. EIM, CER, UIC, UITP, etc.) and the European Institutions. In the short-term, UNIFE would like to work on two particular topics:

- Cyber-security threats;
- Access to data for greater efficiency.



It is equally important to emphasize that adequate funding and financing mechanisms should be reinforced to provide the necessary boost for the digital transformation of railways, be it through CEF grants for the deployment of ERTMS or other EU funding and financing instruments, including European Structural and Investment Funds, the European Fund for Strategic Investments (EFSI) and European Investment Bank's lending facilities.

For further information, please contact alice.polo@unife.org.

Cyber-security activities

Securing network and information systems in the EU is essential to keeping the online economy running and ensure prosperity, as repeatedly declared by the European Commission.

UNIFE is fully aligned with the EU vision and took a number of initiatives 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 EU nowadays. On top of that, the UNIFE cyber-security sub-group offers UNIFE members a platform to discuss and identify opportunities of cooperation on cyber-security issues in the European rail sector, strengthening the position of the European industry vis-à-vis the other competitors and stakeholders. Currently, the UNIFE Cyber-Security Sub-Group is composed by the following members: AnsaldoSTS, Bombardier Transportation, CAF, Keymile, MerMec, Siemens, Thales, AZD, Alstom, Oltis and Diginext.

Moreover, UNIFE is currently discussing synergies with the newly created European Cyber Security Organisation (ECSO), an industry-led contractual counterpart to the European Commission for the implementation of the Cyber Security Contractual Public-Private Partnership (cPPP).

Finally, UNIFE participates in R&D opportunities linked to cyber-security such as the recent CIP-01 Call on Critical Infrastructures (RAILCARE proposal), given the high interest of its members in this key topic, which will become more and more crucial in an ever more digitalised European Union.

For further information, please contact andrea.demadonna@unife.org.

¹ Speech by European Commissioner for Transport Violeta Bulc at the InnoTrans Opening Event, 22 September 2016. Available here: https://ec.europa.eu/commission/2014-2019/bulc/announcements/speech-innotrans-opening-event_en

Research & Development

A construction worker in an orange safety suit with reflective white stripes is standing on a construction site, looking down at a tablet computer. In the background, another worker in a similar suit is visible. The scene is overlaid with a translucent 3D point cloud of a building structure, with blue and green lines indicating the scan process. The text "Scan Process COMPLETE" is displayed in a stylized font within a rounded rectangle at the bottom.

Scan Process
COMPLETE



RESEARCH AND DEVELOPMENT ACTIVITIES

06

- A. Horizon2020
- B. STRIA – The Strategic Transport Research and Innovation Agenda
- C. Knowledge4Innovation (K4I)– Signature of Pact for Innovation (INPACT)
- D. The European Rail Research Advisory Council (ERRAC)
- E. Finalised European research projects
- F. Ongoing European research projects coordinated by UNIFE
- G. Ongoing European research projects with UNIFE involvement
- H. Transport Research Arena (TRA)
- I. World Conference on Railway Research (WCRR)



A Horizon2020

Shift2Rail



Following 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 and innovation projects under S2R will seek to achieve the 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, 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 in the European rail system to work together to drive 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, 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, MerMec S.p.A., Network Rail, Siemens Atkiengesellschaft, Smart DeMain consortium, SmartRaCon consortium, SNCF, Railenium Swi'Tracken consortium, Patentes Talgo S.L.U., Thales, Trafikverket, Virtual Vehicle Austria consortium+.

For more information on Shift2Rail, please visit www.shift2rail.org

Shift2Rail's new Executive Director



Carlo Borghini, Executive Director, Shift2Rail JU

On 16 February 2016, the S2R JU announced the nomination of Carlo Borghini as its new Executive Director. Borghini has extensive experience in running large scale research programmes as well as European Agencies. He was the Corporate Services Director at the European Defence Agency where he was responsible for



the overall management of financial and human resources, as well as administrative issues. From 2008 to 2014, he held the position of Deputy Executive Director for the SESAR Joint Undertaking (Single European Skies Advanced Research - SJU) in Brussels.

Main activities of the Shift2Rail Joint Undertaking in 2016

Shift2Rail awarded first grants following the Shift2Rail 2015/2016 first calls for proposals

Since the publication in December 2015 of its first S2R 2015/2016 calls for proposals, 27 grants have been awarded for a total value of €167 million, co-financed by S2R up to €88 million.

The 27 S2R JU members, other than the European Union, presented project proposals to the 13 call topics reserved to them, for a total value of €142 million co-financed by S2R by up to €63 million. The S2R JU members have also started to work on additional activities.

The S2R open calls contained 15 topics, for which 43 proposals were received with a request of co-financing totalling €78 million. Taking into consideration budget availabilities, 14 proposals were selected for funding for a total amount of €25 million.

Shift2Rail 2015/2016 projects fully operational

The S2R 2015/2016 projects all started in 2016 and cover most areas of S2R's programme, notably:

- Rolling stock development of concepts towards the next generation of traction systems, new concepts and architectures for train control and monitoring, and advanced brakes;
- Rail signalling technological and operational advancement for on-board automation systems, high-capacity radio communications systems, safe train separation systems, cyber security systems, innovative testing processes, etc;
- Infrastructure whole system-approach progress enhancing, innovating switch & crossings and track systems, extending the life of bridges and tunnel assets, and managing assets in a more holistic, intelligent and consistent way;
- Passenger centric IT solutions for interoperable framework developments, 'one-stop shop' sale and use of tickets, and travel disruption assistance applications across multiple modes;
- Research activities targeting freight, including automation, noise and LCC. New developments in freight locomotives, driver advisory systems and intelligent freight wagons;
- Cross-cutting activities: identification of socio-economic factors that can contribute to an attractive railway system, the development of tools and approaches to enable impact evaluations of new technologies. Transversal evaluation and methodologies around energy, noise and vibration. Integrated approaches to deal with the safety of the railway system and planning that take into account interdependencies in the railway system.

Launch of the Shift2Rail 2017 calls for proposals, Annual Work Plan 2017 and general UNIFE support

The S2R JU published the 2017 calls for proposals and its Annual Work Plan 2017 on 10th November 2016. These calls will follow Horizon 2020 rules and must comply with all the specific rules mentioned in the calls. This new round of calls is for both S2R members (Calls for Members) and non-JU members (Open Calls). The former are reserved for the 27 S2R JU members including both Founding Members and Associated Members, while the latter are addressed to any non-member and cover all S2R Innovation Programmes and cross-cutting activities. The topics included in the open calls are linked to most of the Innovation Programme areas described in the S2R Master Plan, the S2R Multi-Annual Action Plan and the S2R 2017 Annual Work Plan.





S2R 2017 calls for proposals:

- Indicative budget: €60,8 million S2R co-funding
- Estimated project value, including in kind contributions by other S2R members and their affiliated entities: €112,4 million

UNIFE proactively engaged its members to ensure their successful participation in the 2017 Open Calls for proposals. For this purpose, UNIFE organized a workshop where the topics were analysed and discussed with the UNIFE members who are not S2R JU members, in order to identify opportunities to get involved.

Shift2Rail user requirements/implementation and deployment working group

The S2R JU launched the S2R user requirements/implementation and deployment working group, organising the two first meetings in 2016. UNIFE attended both meetings with other stakeholders' associations. The role of this working group is to assist the S2R JU in ensuring the market uptake of the technical solutions developed through S2R activities and facilitating exchanges of information on initiatives, projects and partnerships dealing with the thematic areas of each of the Innovation Programmes/cross-cutting activities.

For more information on Shift2Rail, please visit www.shift2rail.org.

Shift2Rail lighthouse projects mid-term event: Roll2Rail, IT2Rail and In2Rail

A combined mid-term event of the S2R lighthouse projects (Roll2Rail, IT2Rail and In2Rail) took place on 17 November 2016 in Brussels. This event was organised by UNIFE, as the coordinator of the Roll2Rail and IT2Rail projects and the dissemination leader of the In2Rail project. The S2R lighthouse projects feed into the Innovation Programmes of the S2R JU.



Shift2Rail lighthouse projects mid-term event: (from left to right) Andy Doherty (Chairman, ERRAC), Philippe Citroën (UNIFE), Josef Doppelbauer (Executive Director, European Union Agency for Railways - ERA), Carlo Borghini (Executive Director, Shift2Rail JU), Clara de la Torre (Director Directorate H -Transport, DG Research & Innovation, EC), Matthew Baldwin (Deputy Director General, DG Move, EC), David Briginshaw (Editor-in-Chief, International Railway Journal)

The mid-term event brought together 230 participants from the rail industry sector (representing railway undertakings, infrastructure managers, industry, SMEs, research institutions and academia from Western, Central, and Eastern EU Member states) and high level representatives from the European Commission (Matthew Baldwin – DG Move Deputy Director General and Clara de la Torre DG Research & Innovation – Director Directorate H -Transport), the European Union Agency for Railways - ERA (Josef Doppelbauer – Executive Director) and the Shift2Rail Joint Undertaking (Carlo Borghini – Executive Director). It demonstrated the high expectations for Shift2Rail and the strong commitment of the rail sector to research and innovation.

Following this collective ceremony, each of these three projects held their individual mid-term workshops.



UNIFE involved in the Shift2Rail 2015/2016 projects

Following the S2R JU's publication of the first calls for proposals for non-JU Members (open calls) in December 2015, UNIFE organised a workshop for its members in January 2016 providing information on Horizon 2020 and S2R. Following an assessment of UNIFE members interests, UNIFE elected to coordinate the preparation of three proposals and join another two proposals as a partner.

Based on experience developed within the ongoing S2R lighthouse project IT2Rail (coordinated by UNIFE), UNIFE organised the preparation of two proposals linked to S2R Innovation Programme 4 and IT2Rail: a GoF4R proposal dealing with the "Interoperability Framework governance" and a ST4RT proposal dealing with the "Interoperability Framework Converters". UNIFE also coordinated a proposal linked to the S2R Innovation Programme 5: DYNAFREIGHT, which deals with "innovative technical solutions for improved train dynamics and operation of longer freight trains". These proposals involve UNIFE members and key stakeholders from railway undertakings and academia; assembling the expertise needed to carry out such research projects.

UNIFE also contributed to two other proposals: one addressing "intelligent freight wagon with predictive maintenance" (INNOWAG proposal), and a second aimed at defining the "long-term needs of different actors in the railway sector" (THRIVE proposal). For these proposals, UNIFE represented the European rail industry and will be involved in future project dissemination and communication activities.

All of these proposals were submitted to the S2R JU on 17 March, and on 17 June the S2R JU announced that they selected four of the five proposals listed above.

The selected proposals coordinated by UNIFE are GoF4R, ST4RT and DYNAFREIGHT. The INNOWAG proposal, in which UNIFE is involved as work package leader of dissemination and communication was also selected.

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 Members-states: UNIFE, Lucchini RS, KTH, Politecnico di Milano, Technische Universität Berlin, Huddersfield University, ADIF, Laird Controls Europe and FIT Consulting.

The final vision of DYNAFREIGHT is fully in line with the objectives of the EU White Paper on Transport. DYNAFREIGHT will contribute to this vision of EU rail freight transport by focusing on the next generation freight bogie locomotives and preparing the path for regular long freight trains operations of up to 1,500m by providing the first steps for the development of S2R Technology Demonstrator 5.5 "New Freight Propulsion Concepts" within S2R Innovation Programme 5.



DYNAFREIGHT Consortium

DYNAFREIGHT will contribute to the next railway freight propulsion concepts by addressing 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 operation and maintenance costs (reduce wheel and rail wear, smarter maintenance, etc.).

The DYNAFREIGHT kick-off meeting took place on 23 November in Brussels. It was the first occasion for the 10 partners to meet and discuss the work plan for the next 20 months. Members of the corresponding Call for Members Project led by Bombardier, "Future Freight Locomotive for Europe" (FFL4E), also participated in discussions on how to foster cooperation during the project's lifetime.

For more information on DYNAFREIGHT, please visit www.dynafreight-rail.eu or contact andrea.demadonna@unife.org.

GoF4R & ST4RT



Both GoF4R and ST4RT are two S2R Open Call projects coordinated by UNIFE, which are related to the 4th Innovation Programme of S2R. They both started on 1 November 2016, though one project is a Coordination and Support Action (GoF4R) and the other is a Research and Innovation Action (ST4RT). GoF4R (Governance of the Interoperability Framework for Rail and Intermodal Mobility) is a two-year project which includes the following 16 partners from eight different EU Member states: UNIFE, CEFRIEL, CNC, D'Appolonia, EPF, Masaryk University, OLTIS Group, Politecnico di Milano, RSSB, Teleste, Trenitalia, UIC, University of Zilina, Universidad Politécnica de Madrid and University of Sheffield.

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.

The project also aims to design 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.



ST4RT (Semantic Transformations for Rail Transportation) is a 2-year project which includes the following eight partners from five

different EU Member states: UNIFE, CEFRIEL, CNC, D'Appolonia, Hit Rail, OLTIS Group, Politecnico di Milano, Trenitalia and UIC.

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.

Due to their close links with S2R Innovation Programme 4, these two projects had a combined kick-off meeting on 29 November in Brussels. It was the first occasion for all the partners involved in both



GOF4R and ST4RT kick-off meeting

projects, to meet and discuss about their respective workplans and collaboration between them.

For more information on GOF4R and ST4RT, please visit: www.gof4r.eu / www.st4rt.eu or contact stefanos.gogos@unife.org.

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 by addressing specific challenges in the three essential areas, identified by the call, through three subsequent work streams, namely:

- Work Stream 1 (WS1): Cargo condition monitoring;
- Work Stream 2 (WS2): Wagon design; and
- Work Stream 3 (WS3): Predictive maintenance.

Moreover, 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 aim of the proposed project is to develop intelligent cargo monitoring and predictive maintenance solutions integrated into this novel concept of lightweight 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. UNIFE members in INNOWAG are Lucchini RS and Uzina de Vagoane Aiud.

For more information on INNOWAG, please visit: www.newrail.org/innowag or contact andrea.demadonna@unife.org.



INNOWAG Consortium





Horizon 2020 Mobility for Growth – 2nd call

In 2016, the European Commission launched an updated version of the Horizon 2020 – 2016-2017 work programme entitled “Smart, green and integrated transport”: Mobility for Growth 2nd call. It contains a list of research topics that are addressed in the calls for proposals across the year. The main difference with the Horizon 2020 work programme (2014-2015) – 1st call on Mobility for Growth – and the 7th Framework Programme is the absence of pure rail research topics.

Nevertheless, there are some opportunities within Horizon 2020 for rail research within some cross-modal topics (e.g. intelligent transport system, infrastructure, logistics, etc.). UNIFE has informed its members about these and contacted stakeholders from other sectors to assess the opportunities for members to join consortia interested in working on those research topics.

For more information on the Horizon 2020 – 2016-2017 work programme “Smart, green and integrated transport” – Mobility for Growth 2nd call, please visit: http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-transport_en.pdf or contact nicolas.furio@unife.org.

Follow-up of European GNSS Agency activities

Every year, satellite-based technologies become increasingly important for the various next generation train control solutions, including train positioning, telecommunications and precise time synchronization. The European GNSS Agency, situated in Prague, plays 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. Most importantly, the GNSS Agency has released in 2016 “E-GNSS in rail roadmap”, summarizing the activities

of different stakeholders working together towards the satellite-based train positioning for ERTMS. This high-level document contains the Agency's strategy for supporting the research and innovation activities that should occur in the rail sector through 2020. From the shorter-term perspective, the European GNSS Agency published a call within the H2020 program (Applications in Satellite Navigation – Galileo – 2017) containing a specific topic for railways.

Following a request by the Agency, UNIFE attended several workshops and events, to discuss using satellite positioning for modern signalling.

For more information on the European GNSS Agency activities, please contact peter.gurnik@unife.org.



Carlo des Dorides, GSA Executive Director, during UNIFE coordinated STARS Kick-Off event

B STRIA – The Strategic Transport Research and Innovation Agenda

On 23 June, the European Commission (DG Move and DG Research) organized a workshop to identify options to achieve low-carbon transport and mobility. The aim of the workshop was to contribute to the Strategic Transport Research and Innovation Agenda (STRIA).

STRIA focuses on the development and deployment of low-carbon transport technology solutions encompassing at the same time digitalization, safety, security and other relevant aspects.



It was conceived as one of the core elements of the Energy Union Integrated Research, Innovation and Competitiveness Strategy (EURICS) and will be a major contributor toward the achievement of the Energy Union goals. Transport is one of the sectors with the greatest potential to contribute to these goals in the domains of decarbonisation, greater efficiency and competitiveness. In order to realise this, several technical, financial and socio-economic hurdles must be overcome.

STRIA is built on seven thematic areas which have been selected on the basis of their potential impact on the transformation of the EU transport system:

- Electromobility;
- Alternative fuels;
- Vehicle design and manufacturing;
- Connected and automated transport;
- Transport infrastructure;
- Network traffic management systems;
- Smart transport and mobility services.

For each thematic area, the European Commission has prepared a roadmap with the aim of outlining the steps needed to support and speed up the research, innovation and deployment process of innovative technologies.

For more information on the STRIA, please contact nicolas.furio@unife.org.

Knowledge4Innovation (K4I) – Signature of Pact for Innovation (INPACT)

On 21 October 2016, UNIFE signed the Pact for Innovation (INPACT), the objective of which is to create a space for close collaboration between key stakeholders and the European Institutions. The focus of INPACT is on implementation of actions within identified priorities, where concrete timely changes can be achieved best at EU level. Initially 14 priorities have been identified under the following headings:

1. A coherent set of EU policies for innovation;
2. Re-focusing and aligning EU budgets and investments towards innovation;
3. Improving citizens and investor confidence in Europe;
4. Paving the way for the next generation (of scientists, researchers, inventors and innovators).

INPACT is coordinated by Knowledge4Innovation (K4I) and was initially signed in 2015 by the K4I Forum Chairman and MEP Lambert van Nistelrooij, the K4I Vice-Chairman, ITRE Chairman and MEP Jerzy Buzek and the K4I leadership. It was then handed over to Research and Innovation Commissioner Carlos Moedas during the Opening Ceremony of the 7th European Innovation Summit on 7 December 2015.

The INPACT priorities are currently translated into actions and 'tagged' with indicators for each of the dimensions of the Pact. UNIFE as an INPACT signatory will be involved in this process and will contribute to it by promoting rail research. It is also an occasion for UNIFE to discuss with MEPs following research initiatives and research stakeholders from various stakeholders. It will be also an opportunity to follow closely the EU discussion on research budget and the definition of the next Research Framework Programme (FP9).

For more information on INPACT, please contact nicolas.furio@unife.org.



MEP Jerzy Buzek, K4I Vice-Chairman and Chairman ITRE Committee, EU Parliament



D The European Rail Research Advisory Council



Following the election of the new leadership in 2015 – Andy Doherty from Network Rail as ERRAC (European Rail Research Advisory Council) Chairman and

Nicolas Castres Saint-Martin from Alstom as ERRAC Vice-Chair – the main challenges for ERRAC in 2016, were to restructure, taking into consideration the Shift2Rail Joint Undertaking, to ensure a good level of cooperation between ERRAC stakeholders, and to enhance cooperation with other transport modes, as promoting cross-modal research is the main priority of the European Commission within Horizon 2020.

During the ERRAC Plenary event that took place on 7 April in Brussels, it was announced that ERRAC is entering in a new phase requiring an evolution of the European Technology Platform (ETP) in order to continue its supporting role to the rail community. A review of its role was necessary because of the changing rail innovation landscape and the establishment of the Shift2Rail Joint Undertaking.

This event brought together the railway community involved in European research, the European Commission (DG MOVE and DG Research & Innovation) and the Shift2Rail Joint Undertaking. It was also the opportunity to:

- Listen to regular reporting on European Commission and Shift2Rail activities and raise ERRAC's concerns regarding the place of rail research within Horizon 2020;
- Present the new ERRAC roadmaps to stakeholders, based on the Strategic Rail Research and Innovation Agenda;
- Discuss the reinforcement of relations between ERRAC and the other European technology platforms (e.g. ERRAC, ACARE, ALICE, WATERBORNE TP) with members.

Moreover, in 2016, regular ERRAC Strategy and Steering Committee meetings took place during which their future mission and activities were discussed. These committees, which also monitor the current activities of ERRAC, were informed about the progress of the two European Coordination and Support Action projects: FOSTER RAIL and SETRIS.

The next steps for ERRAC will be to implement the new structure and to support and advise the European Commission in the preparation of the next Framework Programme for European Research (after Horizon 2020).



EU Transport Commissioner Violeta Bulc meeting the European Technology Platform (ETP)

This year, our distinguished colleague and ERRAC Vice-Chairman Professor Manuel Pereira passed away. Manuel was always an excellent ambassador for the ERRAC community. His kindness, wisdom and support were greatly appreciated, and will be deeply missed. Our thoughts and deepest condolences remain with his family and friends.

For more information on ERRAC, please visit www.errac.org or contact nicolas.furio@unife.org.



E Finalised European research projects

Foster Rail



FOSTER RAIL (Future Of Surface Transport Research Rail) is a three-year FP7

European research project that began in May 2013 with a budget of around €1.8 million and ended in 2016. This Coordination and Support Action project was aimed at supporting the rail European Technology Platform (ERRAC – The European Rail Research Advisory Council) activities. The project assisted ERRAC in defining research needs for their strategies and programmes in order to realise the objectives of the Europe-2020 strategy and further the vision of the White Paper 2011 for a competitive and resource-efficient future transport system. UNIFE supported UIC in the coordination of the project and was the leader of several Work Packages. UNIFE members involved in the project were: Alstom, Ansaldo STS and MerMec.

As a first major step, the FOSTER RAIL project published the Strategic Rail Research Innovation Agenda (SRRIA) at the end of 2014. The SRRIA's purpose is to guide and inspire future rail research and innovation over the coming decades and to reaffirm Europe's need to offer a well-balanced, business-led and strong programme of research and innovation for the railway system.

In 2016, the FOSTER RAIL project partners worked on and finalised the new ERRAC technology Roadmaps based on the research priorities established in the SRRIA. Ten Roadmaps have been developed: 1- Customer Experience 2- Strategic and Economics 3- Safety 4- Capacity, Performance and Competitiveness 5- Energy and Environment 6- Control, Command, Communication and Signalling 7 -Infrastructure 8 – Rolling Stock 9 - IT and other enabling technologies 10 –Training and Education. These Roadmaps describe the rail research priorities taking into consideration past research and the Shift2Rail Master Plan. UNIFE, with the support of its members, led three Roadmaps

(6, 8 and 9) and was involved in all other Roadmap activities. The FOSTER RAIL project partners also worked on and finalized an analysis on the comparison between the new ERRAC Technology Roadmaps and the Shift2Rail Multi Annual Action Plan.

The FOSTER RAIL final conference took place in Brussels on 7 April 2016. It was the opportunity to present the ten new ERRAC Roadmaps and the analysis on the comparison between the new ERRAC Technology Roadmaps and the Shift2Rail Multi Annual Action Plan.

Moreover, over the past three years, FOSTER RAIL developed initiatives for closer cooperation between ERRAC and the other transport related ETPs in order to investigate opportunities for the modes of transport to connect more effectively and collaborate better on transport innovation.

For more information on FOSTER RAIL, please visit www.errac.org or contact: nicolas.furio@unife.org.

MERLIN



MERLIN (Sustainable and intelligent Management of Energy for smarter RailWay

systems in Europe: an Integrated optimisation approach) was a three-year FP7 European research project with a budget of around €7.1 million that is coordinated by UNIFE. The UNIFE members involved in the project were: Alstom, AnsaldoBreda, Ansaldo STS, CAF, MerMec, Oltis Group, and Siemens.

MERLIN's main purpose was to investigate and demonstrate the viability of an integrated management system to achieve a more sustainable and optimised energy usage in European electric mainline railway systems. The main concrete result of the project was the definition of the architecture for an intelligent Railway Energy Management System (REM-S) for both operational and strategic applications.





MERLIN Final Conference

MERLIN offered a concrete attempt towards increasing sustainability by reducing energy consumption in railways via a number of effective tools and real-life demos, in support of the agreement reached in Paris during COP21. Moreover, MERLIN not only delivered standalone results, but also solutions which will be integrated Shift2Rail.

Almost 100 participants from across Europe attended the MERLIN Final Conference in December 2015 in Madrid. Jointly organised by UNIFE, UIC and FFE the event was the opportunity for the project partners to present the final results and discuss the exploitation potential of the main outcomes with external participants.

For more information on MERLIN, please visit www.merlin-rail.eu or contact andrea.demadonna@unife.org.

REFRESCO

REFRESCO

REFRESCO (Towards a Regulatory Framework for the use of Structural new materials in railway passenger and freight Carbodyshells) was a thirty-month project, with a total budget of approximately €4.7 million, supported by the European Commission

under the Seventh Framework Programme. It started in September 2013 and was officially completed at the end of February 2016.

REFRESCO was a successful and inspiring project which brought together many of the main European railway system integrators and equipment suppliers, one of the largest European railway undertakings, universities and research centres as well as one of the largest certification companies in Europe. The UNIFE members involved in the project were: Alstom, Bombardier, CAF, DuPont, Siemens and Talgo.

The partners worked on setting the framework for the implementation of new structural materials for rolling stock. Such materials have a high potential to reduce the weight of rolling stock compared to the metals currently used.

The REFRESCO final conference, jointly organised by UNIFE and Talgo, was held at the Solvay Library in Brussels on 21 January 2016. The event gathered 50 participants mainly coming from the European rail community and the aeronautical sector as well as a representative from the European Railway Agency (ERA) and the European Commission (EC). The workshop covered topics such as strength, crash and fire resistance, noise and vibration performance, electromagnetic compatibility (EMC) and maintainability of the composite materials. The project partners discussed best practices, how maintenance could be done and how to deal with damage. The event was an opportunity to carry out a final transfer of the REFRESCO findings and showcase the outputs of the eight different Work Packages.

The conclusions and results of all the technical work packages were consolidated into a technical recommendation for standardisation which is publicly available at the REFRESCO project website.

For more information on REFRESCO, please visit www.refresco-project.eu or contact eulalia.peris@unife.org.



F Ongoing European research projects coordinated by UNIFE

ROLL2RAIL



The Roll2Rail ("New Dependable Rolling Stock for a more Sustainable, Intelligent and Comfortable Rail Transport in

Europe") project aims to develop key technologies that will overcome hurdles to innovation in rolling stock development and forms part of a longer-term strategy towards revolutionising the rolling stock of today. The project envisions paving the way towards a 15% increase in the capacity of the railway system, a 50% increase in the operational reliability and punctuality of the vehicles, a 30% improvement in energy efficiency of the system, and a 40% reduction in vehicle and track cycle costs while at the same time improving passenger comfort. It is planned that Roll2Rail will transition into Innovation Programme 1 of Shift2Rail, meaning that at the end of the project the outcomes will be incorporated into real vehicles or relevant environments. The project expects innovations in eight different areas, including traction and power electronics, train communications, car bodyshell, running gear technologies, brakes, train interiors, noise and vibration and energy performance.

With a budget of €16 million, the project involves 31 partners covering a wide range of expertise in different areas. The UNIFE members involved in this project are: Alstom, Bombardier, CAF, Faiveley, Talgo, Knorr-Bremse, Siemens, UniControls and Thales.

Roll2Rail has reached its final stage, and is now entering its final year. So far, two field measurement campaigns were completed. One investigated different measurement methodologies to separate wheel and track noise. The other aimed at characterising the properties of wireless data transmission between carriages and trains as part of ongoing research towards advancing towards virtual coupling technologies. Technological developments focused on the development of silicon carbide technology for



Roll2Rail Mid-term conference

train traction systems and the simulation of carbody prototypes made of lightweight materials. Moreover, a universal cost model for quantifying the whole life cycle cost of running gear is being developed. Some of the work also concentrated on standardisation and regulation activities to achieve a favourable regulatory framework.

The Roll2Rail Mid-term conference took place on 17 November 2016 in Brussels. It was the occasion for partners to present the first results and illustrate the upcoming challenges for the successful finalisation of the project

For more information on Roll2Rail, please visit www.roll2rail.eu or contact eulalia.peris@unife.org.

IT2RAIL



The IT2Rail (Information Technologies for Shift2Rail) project is a 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 (IPs). Like



IP4, this project aims to provide a new seamless travel 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 is providing full interoperability whilst limiting impacts on existing systems, without prerequisites for centralised standardisation.



IT2Rail Mid-term conference

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.

The use case will be defined as a specific instance of the open concepts, and will benefit from a completely scalable architecture fully developed in IP4. This approach addresses all of the key challenges of the work program, supporting a complete door-to-door intermodal travel offer and proposes a seamless integration of the very diverse existing and future

services for planning, one-stop-shop ticketing, and real-time re-accommodation. Moreover, thanks to an Interoperability Framework which insulates travel applications from the standards fragmentation in multimodal transport, IT2Rail liberates business model innovations in the market-place, guaranteeing the economic self-sustainability of these e-services in the long-term.

IT2Rail is structured in a way 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 has now passed its halfway point, has delivered a full set of components for the C-REL and is now working on the new iteration of these components, having entered the A-REL which is planned for delivery in March 2017. The F-REL will be delivered in September 2017.

The IT2Rail Mid-term conference took place on 17 November 2016 in Brussels. It was the occasion for partners to present the first results and illustrate the upcoming challenges for the successful finalisation of the project.

With a budget of €12 million, the project involves 27 partners covering a wide range of expertise in different areas. The UNIFE members involved in this project are: Hacon, Indra, Oltis and Thales.

For more information on IT2Rail, please visit www.it2rail.eu or contact stefanos.gogos@unife.org.

IN2RAIL



The In2Rail ("Innovative Intelligent Rail") project is to set the foundations for a resilient, consistent, cost-efficient, and high capacity European

network by delivering important building blocks that unlock the innovation potential 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.

The expected outcomes of In2Rail will be achieved by the adoption of a whole system approach linking infrastructure re-design with asset maintenance, traffic and energy management.

Smart Infrastructure

- Intelligent reliable infrastructure: integrated asset monitoring, self-diagnostic and adjusting assets, efficient design and new materials, exploring mechatronic solutions, etc;
- Better system resilience and reduced need for maintenance through innovative infrastructure design, novel working methods and smarter use of data leading to reduced LCC and greatly improved availability;
- Overall reduction in carbon emissions, noise & vibration, and improved levels of sustainability.

Intelligent Mobility Management (I2M)

- Standardised approach to information management and dispatching system enabling an integrated Traffic Management System (TMS);
- Information and Communication Technology (ICT) environment supporting all transport operational systems with standardised interfaces and with a plug and play framework for TMS applications;
- Advanced asset information system with the ability to 'nowcast' and forecast network asset statuses with the associated uncertainties from heterogeneous data sources.

Energy Management

- Design of a future AC Rail Power Supply System with minimised energy losses and optimised loads;
- Implementation of an efficient energy management system allowing understanding of energy flows within a railway system, a reduction of the energy consumption and cost, optimised asset management and enabling better use of the railway capacity.



In2Rail Mid-term conference

The In2Rail Mid-term conference took place on 17 November 2016 in Brussels. It was the occasion for partners to present the first results and illustrate the upcoming challenges for the successful finalisation of the project

With a budget of €18 million, the project involves 54 partners covering a wide range of expertise in different areas. The UNIFE members involved in this project are: Alstom, Ansaldo STS, AZD, Bombardier, CAF, EFRTC, Hacon, Indra, MerMec, Siemens, Strukton Rail, Thales, Vossloh and Tata Steel.

For more information on In2Rail, please visit www.in2rail.eu or contact andrea.demadonna@unife.org.

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 UNIFE members participating in the project are: Alstom, Ansaldo STS, AŽD, Bombardier, CAF, Siemens and Thales.

The main objective of the 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).



NGTC Network of End User meeting, July 2016 (GSA, Prague)

In 2016, the Consortium gradually finalised most of the technical activities and released several key project technical documents:

- NGTC had already released a first revision of the consolidated NGTC Functional Requirement Specifications (NGTC FRS) in 2015, which is a key project document listing the current and future functionalities for the next generation of signalling systems. In 2016, based on further inputs and internal analyses, the NGTC team worked on the final document release;
- The System group defined the architecture of both mainline and urban systems, focusing on the common Automatic Train Operation (ATO) element and defined a comprehensive NGTC System Requirements Specifications (SRS) document;
- New ERTMS functionalities were detailed, including the specification of the new message structures for communications between on-board and trackside units;
- Common Moving Block Principles applicable for all kind of railways were finalised and validated using simulation scenarios;
- The project conducted an in depth analysis of selected IP-based telecommunication technologies applicable to urban and mainline domains;

- Satellite positioning for ERTMS, using a virtual balise concept was significantly advanced with a focus on safety aspects. The work was finalised with the significant support from GSA, ESSP and ESA.

For more information on NGTC, please visit www.ngtc.eu or contact peter.gurnik@unife.org.

STARS



The STARS (Satellite Technology for Advanced Railway Signalling) is a two-year European research R&D project under Horizon 2020 with a budget of almost €4,5 million, that started in February 2016.

The project consortium coordinated by UNIFE is composed of 17 partners, including the major railway signalling manufacturers (Alstom, AnsaldoSTS, AŽD, Bombardier, Siemens, Thales), organisations with expertise in space technologies, aviation and radio communication systems development (e.g. Thales Alenia Space) and research centres (e.g. CAF I+D).



STARS presentation during InnoTrans 2016



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 performances assessment in that environment.

The key objectives of the project are:

- To develop a universal approach to predict the achievable GNSS performance in a railway environment, especially for safety critical applications within ERTMS and to determine the necessary evolution of ETCS to include GNSS services;
- To quantify the economic benefits through cost reduction, which will increase market appeal of ERTMS.

As a result of this project, it will be possible to predict GNSS performance in the railway environment in terms of accuracy, availability and safety. This will be possible for specific locations or sections along railway lines, and will be based on the use a receiver that is compliant with minimum performance. The resulting application will allow for interoperability between the equipment of different suppliers, which is one of the key elements that has led to significant applications of ERTMS in Europe and beyond. In 2016, the project has successfully specified all the aspects necessary for the measurement campaign and has finalised the installation of all the necessary equipment in three different locations around Europe: 1. Switzerland (campaign managed by Siemens), 2. Czech Republic (campaign managed by AZD), 3. Italy (campaign managed by Ansaldo STS).

For more information on STARS, please visit www.stars-rail.eu or contact peter.gurnik@unife.org.

Ongoing European research projects with UNIFE involvement

Capacity4Rail



Capacity4Rail (New Concept for Railway infrastructure and operation: adaptable, resilient and high capacity) is 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 is dissemination and exploitation. UNIFE members involved in the project are: Ansaldo STS, EFRTC, Knorr-Bremse, Oltis Group, Voestalpine VAE, Vossloh Cogifer and Vossloh Fastening Systems.

Capacity4Rail aims to pave 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 contributes to the development 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.

This year, Capacity4Rail held its second dissemination workshop on 3 November in Brussels. Attended by around 40 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 progress and developments made so far in 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 eulalia.peris@unife.org.

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, which 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 a 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.

Lastly, SETRIS provided input to support and strengthen the future Transport Research Arena (TRA) Conference that took place in Warsaw in April 2016.

For more information on SETRIS, please visit www.newrail.org/setris 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 and the Conference of European Directors for Roads (CEDR).

The 6th European Transport Research Arena Conference (TRA 2016) took place in Warsaw from 18 to 21 April. TRA 2016 aimed to contribute to innovation



EU Transport Commissioner Violeta Bulc



in sustainable mobility for Europe, by bringing together stakeholders from throughout the transport system. This high-level research event was attended by the European Transport Commissioner Violeta Bulc who underlined the importance of research and innovation in realising cleaner transport and more resource efficiency in Europe.

Philippe Citroën intervened as a speaker in the Plenary session "Creating One Europe – The Role of Transport" and reminded the audience of the crucial role of rail in the implementation of a sustainable and interoperable transport system in Europe. He also underlined that innovation is vital to confronting international competition, making a reference to Shift2Rail and the European Parliament's Resolution for the Competitiveness of the European Rail Supply Industry.

A common declaration of the European Technology Platforms (including ERRAC) highlighted that transport is a key pillar of European competitiveness and job creation. It needs to address the present and future societal challenges in the areas of energy, emissions and congestion while meeting users' expectations for the affordable and safe mobility of people and goods. In order to achieve efficiency and sustainability, the transport sector must rely on smart, clean and safe means of transport, infrastructure and services, as well as on research-based programmes that would help transport users to adjust their behaviour according to evolving technologies and environments. Meeting these challenges requires a renewed commitment to join efforts and resources to bring research results to deployment, with an integrated and holistic end-to-end approach across the sector and stakeholders. It was made clear that the rail sector has an important role to play in addressing these challenges.

While UNIFE had a stand to represent the rail industry and promote the European rail research projects it is coordinating, the TRA exhibition was unfortunately dominated by the automotive industry.

The next edition of TRA be held in Vienna in 2018. For more information on TRA, please visit www.traconference.eu or contact nicolas.furio@unife.org.

I World Conference on Railway Research (WCRR)



The 11th edition of the World Conference on Railway Research was held in Milan from 29 May-2 June 2016. The numbers of this edition were impressive, with over 1000 participants from more than 30 nations around the world, and more than 300 speakers, papers, e-posters and proofs of concept. As one of the organisers of the event, UNIFE actively participated both through R&D and communication activities. Presentations of two of the Shift2Rail Lighthouse projects (IT2Rail and Roll2Rail) coordinated by UNIFE were given during dedicated sessions as well as a presentation of the NGTC project. UNIFE was also present with a stand where the staff engaged in disseminating information on the main ongoing R&D projects as well as providing useful information on current public affairs activities.

Philippe Citroën participated in the first day and met high-level representatives of some of the main UNIFE members present in Milan and had the opportunity to welcome Trenitalia CEO, Ms. Barbara Morgante, and the CTO, Mr. Marco Caposciutti, to the UNIFE stand and discuss synergies between the Italian Railway Undertaking and the European rail supply industry.

UNIFE members played an active role in making this year's WCRR a success both via sponsorship and the organisation of side events with high-level representatives from the European rail sector, political figures and new industrial actors such as Hyperloop.

For more information on WCRR2016, please visit <http://www.wcrr2016.org> or contact andrea.demadonna@unife.org.



Signalling and ERTMS





SIGNALLING AND ERTMS

07

- A. ERTMS - Political highlights
- B. ERTMS - Technical highlights
- C. ERTMS Deployment statistics – 2016
- D. Promotion of ERTMS & communications activities





In line with 2015, this year was another important time for ERTMS. The new set of specifications, Baseline 3 Release 2, was approved by the Member States at the beginning of the year and became law in July. This was a positive development,

achieved thanks, particularly, to the technical team of UNISIG. In September 2016, a new Memorandum of Understanding for ERTMS was signed at the InnoTrans Trade Fair, by all the European Sector, underscoring once again the fact that ERTMS is one of the key pillars of the European Single Railway Area and a priority for all.

A ERTMS - Political highlights

European Rail Sector commits to the 4th ERTMS MoU at InnoTrans 2016

The European Commission, the European Union Agency for Railways and representatives of the European Railway sector, this year signed the new Memorandum of Understanding (MoU) on cooperation around the deployment of the European Rail Traffic Management System (ERTMS).

In the presence of Commissioner for Mobility and Transport, Violeta Bulc, the rail sector committed to an agreement constituting the basis for the long-term commitment of all stakeholders - the rail supply industry, infrastructure managers, railway

undertakings and EU institutions. This MoU contains several provisions designed to deepen cooperation between parties to further promote the swift and coordinated deployment of ERTMS in Europe.

The focus is on the stability of the specifications (further to the Second Release of Baseline 3 in July 2016), compliance with the Control Command Signalling Technical Specification for Interoperability (CCS TSI), a reduction of national rules and the preparation, in coordination with Shift2Rail, of the evolution of the ERTMS system.



Signature of the ERTMS MoU between the European Commission, the European Union Agency for Railways and representatives of the European Railway sector during InnoTrans



B ERTMS - Technical highlights

Member States approve recast of the CCS TSI: introduction of the Second release of Baseline 3

In February 2016, Members State representatives in the Railway Interoperability and Safety Committee (RISC) gave their unanimous support for the recast of the Control Command and Signalling (CCS) TSI.



Josef Doppelbauer (Executive Director, European Union Agency for Railways - ERA) and Karel Vinck (European ERTMS Coordinator)

This follows the successful and timely delivery of the latest update of the ETCS specifications, in December 2015 ("Baseline 3 Release 2") by ERA, UNISIG and the ERTMS Users Group (EUG).

This new set of specifications includes error corrections "compatible" with the last legal issue of the specifications. This key principle safeguards "Backward Compatibility"¹, which ensures that vehicles equipped with Baseline 3 can run on Baseline 2 trackside equipment. It also introduces GPRS (General Packet Radio Service), an evolution on the telecommunication side of ERTMS, for performance increase and on-line key management capabilities for improved cyber-security. This new set of specifications also introduces Baseline 1 of the GSM-R specifications.

The Commission adopted, on 27 May 2016, the new Control Command and Signalling TSI (CCS TSI) which entered into force on 05 July 2016. This closed a process launched in the Summer 2014.

UNIFE will be actively participating in the ad-hoc working groups that will be set up in the coming months to represent the interests of the manufacturers. This will include discussions on the development and future integration into the specifications of new functions such as Automatic Train Operation (ATO), ETCS Level 3 or Satellite Positioning.

Other UNISIG updates:

In the context of the approval of the new CCS TSI, the Agency, with the support of the key European stakeholders and Representative Bodies, is working on the **implementation of the ERTMS longer-term strategy**, which has set out goals for managing the evolution of the system until the next legal release (planned circa 2022).



EU Transport Commissioner Violeta Bulc at the ERTMS workstation, at the UNIFE stand during InnoTrans

For instance, a coordination working group has been set up for following up on the different initiatives addressing the evolution of the telecommunication system for ERTMS (to enable the commercial

¹Backward compatibility ensures that vehicles equipped with Baseline 3 can run on Baseline 2 trackside equipment. This concept is at the heart of the ETCS Baseline 3 specifications. UNIFE considers that safeguarding investments and managing the evolution of the specifications will help to speed up the deployment of ERTMS.



deployment of other technologies, in view of replacing GSM-R, which is expected to be obsolete by 2030). UNISIG has been involved since the beginning of the process and will continue to work to ensure requirements linked to the reliability and performance of the new system are fulfilled from the ETCS side.

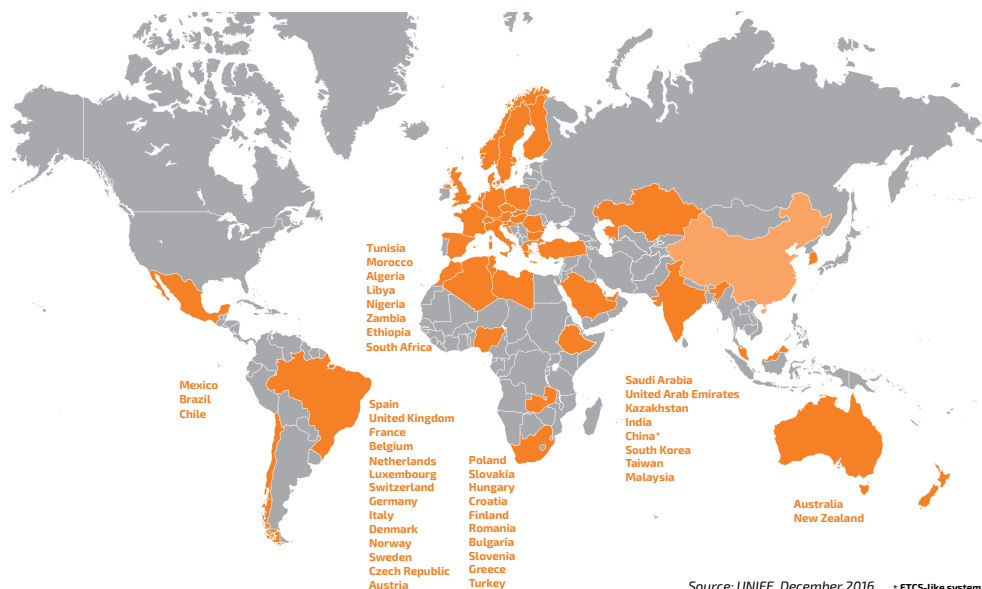
Other similar coordination group are expected to be set up in the coming months for the other "game changers" identified in the longer-term strategy: **Automatic Train Operations (ATO), ETCS Level 3 and Satellite positioning**. The aforementioned "game changers" are also part of the Innovation Programme 2 of Shift2Rail. Discussions are currently on-going to put in place a coordination effort, which will contribute to the successful market take-up of the innovations developed in Shift2Rail. Monitoring impacts that any new developments may have on the ERTMS system architecture is an important matter. Preserving past investments and bringing backwards compatibility, while keeping ERTMS ahead of the competition, is the priority of UNISIG.

Testing, Certification and Authorisation remains a top issue for the smooth deployment of ERTMS. In addition to the current activities linked to the implementation of the technical pillar of the Fourth Railway Package, UNISIG created a Certification and Authorisation Working group in 2016, tasked with following activities such as the NSA Rail Freight Corridor 1 group or the implementation of the 4th Railway Package's technical pillar (vehicle authorisation). This group will be responsible for mirroring the newly launched activity of the ERTMS Stakeholders' Platform on "validation and test".

This new working group will also be responsible for defining a common European testing and verification process, providing holistic coverage from component/products to sub-system and system level. This process, commonly agreed on within the Sector, will be the basis for a reliable and efficient authorisation process. The work kicked off in October 2016 and will continue in 2017.

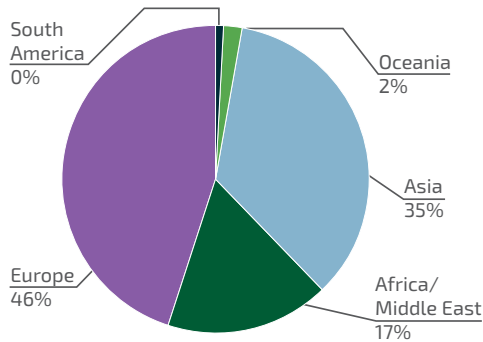
ERTMS deployment statistics – 2016

Global ERTMS deployment by country

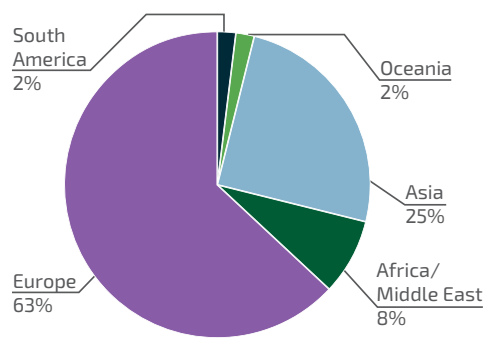




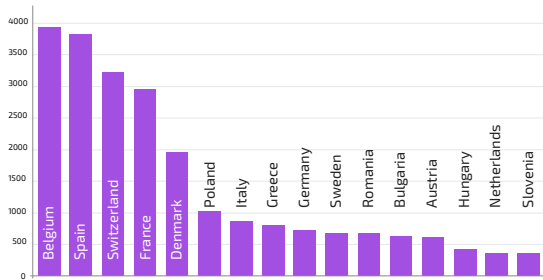
Contracted route (km) in the World
(ETCS L1 &/or L2)



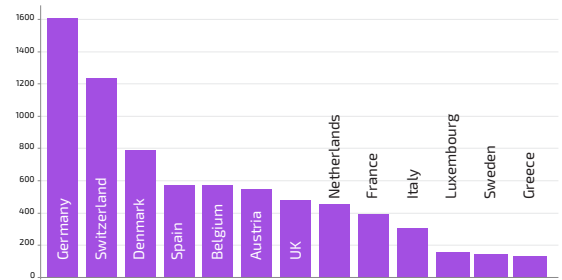
Contracted vehicles in the World
(ETCS L1 &/or L2)



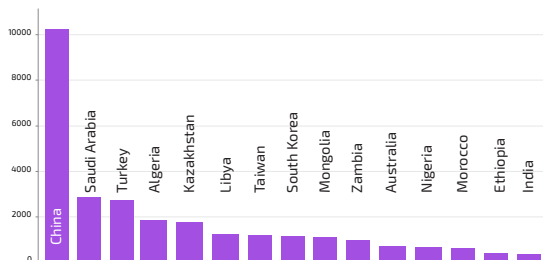
Contracted route (km) in Europe, including
Switzerland (ETCS L1 &/or L2)



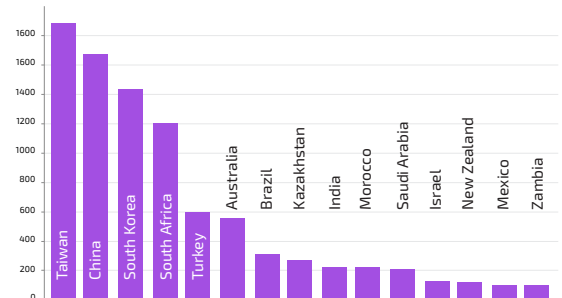
Contracted vehicles in Europe, including
Switzerland (ETCS L1 &/or L2)



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



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





D Promotion of ERTMS & communications activities

UNIFE attends the 12th UIC ERTMS World Conference in Brussels

"Stability" and "discipline" were the watchwords of the 12th UIC ERTMS World Conference which was held in the Belgian capital on 1-2 March 2016.



Josef Doppelbauer (Executive Director, European Union Agency for Railways - ERA) during the 12th UIC ERTMS World Conference in Brussels

The opening ceremony gathered, Luc Lallemand (CEO, Infrabel), Josef Doppelbauer (Executive Director, ERA), Jean-Pierre Loubinoux (Director General, UIC), Libor Lochman (Executive Director, CER) and Philippe Citroën (Director General, UNIFE), all of whom underlined the need to stabilise the ERTMS specifications to speed up the deployment of the system in Europe, and worldwide. Also present, was Ms. Jacqueline Galant, the then-Belgian Mobility Minister, who confirmed the country's commitment to a complete the deployment of ERTMS by 2022 across the entire country's network.

Over 700 participants actively participated in the different technical sessions, on topics ranging from safety and security issues, GSM-R, to the planned evolution of the system.

ERTMS Technical visit of the BetuweRoute with MEP Cramer and MEP van de Camp

On 26 May, UNIFE participated in a technical visit organised by ProRail for MEP Michael Cramer, Chair of the European Parliament's TRAN Committee and MEP Wim van de Camp, Member of the TRAN Committee and EPP Coordinator. The visit was an occasion to get a snapshot at the past and foreseen deployment of ERTMS in the Netherlands. Held at Kijfhoek, the participants also had the opportunity to visit the control centre of the BetuweRoute, the Dutch part of Corridor A, already equipped with ETCS Level 2.

UNIFE participates in the 2016 TEN-T Days

UNIFE actively participated in the 2016 TEN-T Days, held on 20-22 June in Rotterdam.

This high-level transport conference was the perfect occasion to meet and exchange on the latest news related to the Trans-European Network for Transport (TEN-T) including its financing programme for transport infrastructure, Connecting European Facility (CEF).



EU Transport Commissioner Violeta Bulc at 2016 TEN-T Days

The 2016 TEN-T Days Conference and Exhibition was hosted by the European Commission, in close cooperation with the Dutch Presidency of the European Union. This major event gathered Ministers, Members of the European Parliament



and key stakeholders to discuss the development of TEN-T, with a special focus on the Core Network Corridors and ERTMS, including their implementation and financing.

The financing of transport infrastructure projects was high at the agenda, including major exchanges and discussions on the use of EFSI. Private investors joined the Commission and the EIB to discuss potential projects where grants could be combined with private financing.

ERTMS also held a prominent place during this event: during a session moderated by Karel Vinck (European ERTMS Coordinator), the Commission officially unveiled the results of a study (launched in 2015) demonstrating that the business case for ERTMS is positive for all nine Core Network Corridors.

UNIFE had a stand in the exhibition area, thus reaching the almost 3000 people who attended the event. Bombardier Transportation also exhibited their ERTMS simulator at the UNIFE stand.

InnoTrans Dialog Forum on the evolution of ERTMS

In the framework of InnoTrans 2016, UNIFE organised a Dialog Forum event on ERTMS. The session, moderated by Chris Jackson, Editor-in-Chief at Railway Gazette, gathered over 100 participants and focused on the planned evolution of ERTMS.

The fourth MoU is paving the way to a more synchronised implementation of ERTMS, explained Michel Van Liefferinge, UNISIG General Manager, in his opening statement. The session was the occasion to address the current and future developments linked to ERTMS: Jan Plomer, Deputy Director for Rolling Stock at Czech Railways explained the development of Automatic Train Operations (ATO) in the Czech Republic; Nazzareno Filippini, Head of Research and Development at Ferrovie Dello Stato Italiane, addressed the plans regarding the deployment of ETCS Level 3 on the Italian network.



Michel Van Liefferinge (General Manager, UNISIG) during InnoTrans Dialog Forum

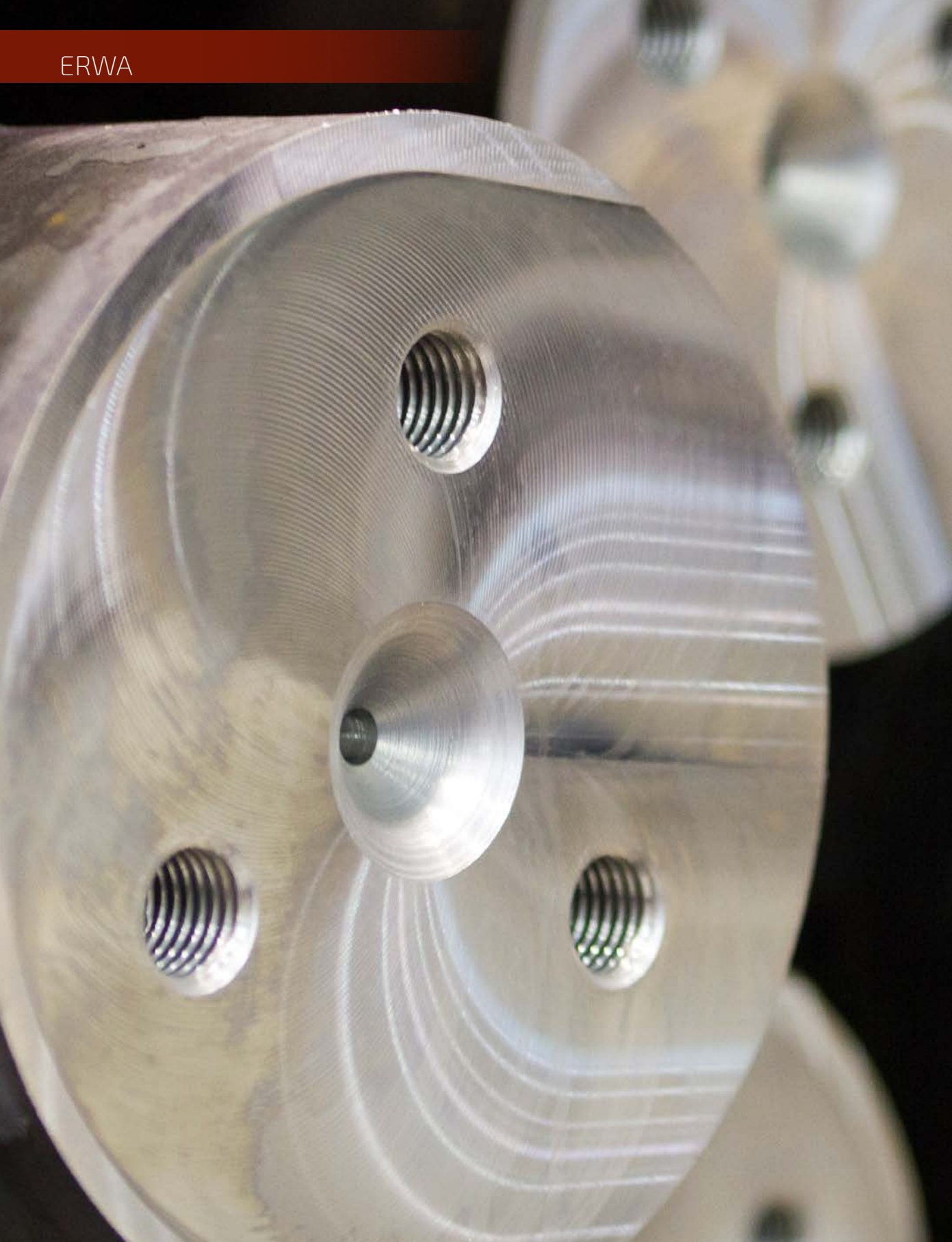
Michael Mikulandra, Head of the Next Generation Team at Kapsch AG and Fiammetta Diani, Deputy Director of the Market Development Department of the European agency for the Global Navigation Satellite System (GSA), provided details about current developments in the next generation of telecommunication system for ERTMS (the successor of GSM-R) and the application of Satellite positioning in railways.



For more information
on ERTMS, please visit
www.ertms.net.



ERWA



The background of the entire page is a close-up, slightly blurred photograph of several railway wheels. The wheels are light-colored, possibly steel or aluminum, and show the characteristic tread and flange. They are arranged in a way that creates a sense of depth and repetition.

ERWA

08

Railway Wheels
and Wheelsets Committee



ERWA - UNIFE Railway Wheels Committee



ERWA, the UNIFE Railway Wheels Committee, currently comprises 10 companies, all of which produce railway wheels and wheelsets in nine different European countries with deliveries to five continents.

At present, these 10 companies are organised into five European groups, each of which is vertically integrated from forge to finished products: GHH-BONATRANS Group, CAF MiiRA, MG Valdunes, BVV, and the 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 the general management of ERWA.

Activities in 2016

In 2016, activities coordinated by the ERWA Steering Committee included:

- Active participation in the European Parliament's Resolution on the Competitiveness of European Rail Supply Industry
- Inputs into Standards and Regulation
- Close links with EU Agency for Railways and standardisation bodies like CEN/CENELEC
- Contributions to EuroSpec on wheels
- Preparation of the EURAXLES Technical Report to CEN/SC2/TC256
- ERWA public relations activities and publications
- Market trends evaluation and ERWA statistics
- Contributions to the successful organisation of the 18th International Wheelset Congress (IWC), which took place in Chengdu on 7-10 November

ERWA General Assembly

The ERWA General Assembly, held on 23-24 May 2016 in Oxford, was hosted by Lucchini Unipart Rail. During this two-day event, the yearly activities were presented and the mandate of Mr Karlheinz Springer of BVV as ERWA chairman was renewed for another year. Furthermore, Mr Marcel Ujfalusi from GHH-BONATRANS Group and Mr Steven Cervello from Lucchini RS were elected as new chairmen of the Development and Technical Committees, respectively.



ERWA General Assembly

18th International Wheelset Congress

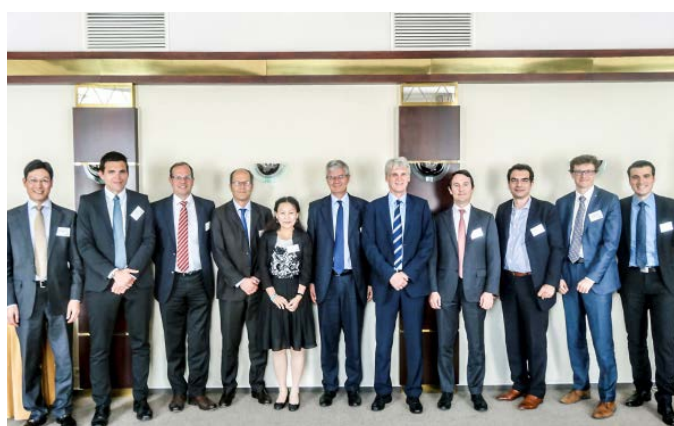
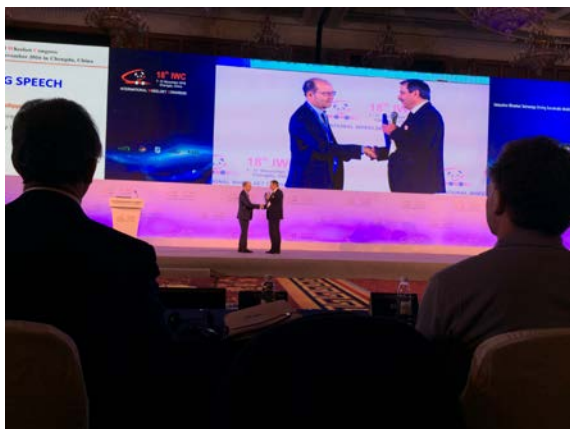


18TH INTERNATIONAL WHEELSET CONGRESS

UNIFE and ERWA, as owners of the IWC brand name, worked very closely with the organisers of the 18th edition of this prestigious congress (Southwest Jiaotong University and China Academy for Railway Sciences), which took place on 7-10 November 2016 in Chengdu, China. Through three days of plenary sessions, encompassing five keynote speeches, 12

parallel sessions and two panel discussions, followed by two days of technical visits and cultural events, this edition of the IWC brought together 40 exhibitors and over 500 participants, who enjoyed 48 poster presentations and 62 oral presentations. The 19th IWC will be organised by Lucchini RS and will take place in Venice in 2019.

For further information, please contact stefanos.gogos@unife.org



IRIS



- A. IRIS achievements and strategic development
- B. Support by stakeholders
- C. Technical evolution



2016 – from ten years of IRIS implementation to a new approach for the future



The upcoming evolution of the IRIS Certification™ is based on a strategy defined in 2014:

- **Improvement** by standardisation: due to close relationship with other sectors
- **Investment** in our future: by moving requirements to an international standard
- **Collaboration**: through increased buy-in and recognition of customers,

2015 was the preparation phase, during which we worked to increase customer' recognition through the signature of Memorandum of Understandings (MoUs) with several operators, initiated work on the evolution of the requirements, and prepared for the transition to ISO, by improving the rules for 2016. The release and implementation of the new IRIS Certification™ will take place in 2017.

A IRIS achievements and strategic development

The outputs of the strategic decisions taken in 2014-2015, aimed at increasing the acceptance of IRIS, by improving the requirements as well as the auditing system, were the backbone of IRIS Group activities throughout the year.

The IRIS Certification™ (currently version Rev. 02.1) has awarded almost 1500 certificates to date. The IRIS Management Centre (IMC) and representatives of several members, helped by operators' delegates,

have progressively established a new system based on two principles:

1. A set of requirements approved by the ISO community will be published under the reference ISO/TS 22163 and managed at an official international level.
2. Clear and strong rules, to sustain necessary product quality improvements, updated by rail sector specialists.



IRIS requirements will become an ISO/TS

Since February 2016, UNIFE has held an "A" Liaison at the ISO/TC 269. This Technical Committee deals with all the rail related standardisation work within ISO. The "A" Liaison grants UNIFE the ability to propose documents for standardisation, attend the working group meetings and actively participate in the ballots (votes) related to the committee's proposals.

Concurrent with this new relationship, an Ad-Hoc group (AG 15) was created to analyse the need for a business management system standard in the rail sector. More than 30 specialists registered to attend this group. Four meetings were organised under the rapporteurship of France, to prepare for the positive decision of the ISO/TC 269 plenary and then to elaborate on future steps.

The ISO/TC 269 Plenary, held in Porto last June, validated the issuance of an ISO Technical Specification (TS) for 2017, which was based on UNIFE's proposal: IRIS Version 2016. This document merges the ISO 9001:2015 requirements with rail sector specific requirements, representing the best level of the current state of the art.

Following the ISO/TC 269 process a formal ballot on this document is ongoing within the ISO/TC members. The aim is a formal acceptance of the ISO Technical specifications, but also identifies areas for future improvements at a global level.

Rules for certification

Since March 2016, a group of around 20 experts from the sector, have worked together to develop the best way to assess these new requirements. The objective is to ensure a transparent evaluation of the business management system, that makes evident the quality performance. The group proposed evolutions to the current rules, which were validated in November by the IRIS Steering Committee and endorsed by the IRIS Advisory Board.

B Support by stakeholders

IRIS Memorandum of Understandings (MoUs)

In 2016, we continued to promote the mutually beneficial cooperation between operators and UNIFE on IRIS Certification™. Cooperation focused on increasing the exchange of knowledge and experience in a bilateral context on product quality. The activities outlined in this MoU endeavour to create a favourable context for the development of the rail sector worldwide, based on quality performance.

Four additional MoUs were signed by UNIFE with SBB/CFF/FFS (Swiss Railways) in April 2016, NS-Nedtrain (Dutch Railways), SNCF (French Railways) in June 2016 and FMB (Metro Barcelona) in July 2016. All of these operators are actively contributing to the evolution of IRIS, and their expertise is much appreciated. At this point, we are in contact with other potential interested parties which could enhance the acceptance of our scheme.

Board meetings

This year, the IRIS Steering Committee welcomed Schaeffler as a new member, who brings perspective from another industry's quality systems and corporate views.



IRIS Advisory Board in Sankt Petersburg





Three Steering Committee meetings were organised in February, July (Sankt Petersburg) and November, all linked to important decisions and validations of various aspects of the evolution of the scheme. Meanwhile, the IRIS Advisory Board met to enhance operators' positions. The proper management of all working groups, bottlenecks, time constraints and lobbying allowed for work to stay on schedule. We are confident that the publication will happen according to schedule in May 2017.

Working groups

The work stream for the IRIS Certification™ evolution involved 40 experts worldwide in 2016, mandated either by UNIFE members or operators.



IRIS Working group

ISO/TC 269 – Ad-Hoc group: 33% of the nominated experts are also involved in the IRIS Certification™. Our expertise is highly appreciated in the development of future rail requirements.

Assessment methodology group: Seven meetings were held to reach the goal of enhancing the enablers evaluation with other structuring parts.

Guidelines: Two new guidelines were published in 2016: RAMS/LCC and Configuration management. These documents will support our members in understanding and implementing the related processes in line with the new requirements.

IRIS Management Centre: the preparation and consolidation of all work by the working groups were ensured by the IMC. All external relations with e.g. ISO, IAQG (Aerospace Sector), FIEV/IATF (Automotive Sector) could guide the evolutions on hand with precise and valuable benchmarks.

Highlight on InnoTrans 2016

The IRIS Certification™ was present for the fifth time at InnoTrans, where numerous worldwide rail experts gathered, many of whom stopped by the UNIFE stand to receive more information.



From left to right: Philippe Citroën (Director General, UNIFE), Valentin Gapanovich (Senior Vice-President, RZD), Mark Manley, (Chairman, IRIS Steering Committee; Vice President Quality Bombardier Transportation) and Bernard Kaufmann (General Manager, IRIS)



Several presentations on IRIS were given at the stand, which focused on:

- An analysis of the first 10 years of quality developments in the rail sector;
- The first communication of the transition phase towards the new certificate;
- Discussions on two new assessment elements: performance and customer perception.

UNIFE received many encouraging messages to continue investing in improvements within the rail industry.

Outside of the presentations, IMC also released its 8th edition of the "Rail Quality Journal", with a special dossier on "IRIS goes ISO", which provided valuable technical information. Other publications about this transition phase were also released this year, to better inform all IRIS stakeholders about this significant evolution.

Technical evolutions of IRIS Certification™ assessment methodology and certification process

After more than six years of stability, and having taken into consideration customer and stakeholder feedback, the UNIFE 2017 Evolutions Working Group, made up of experts of the rail sector, worked on the assessment methodology rules of the IRIS Certification™, focusing on achieving customer satisfaction and visible improvements in product quality.

The assessment methodology includes three new approaches:

1. **Meeting stakeholder needs** through stakeholder analysis and customer feedback

→ Focus on customer-relevant key critical processes and performance parameters

2. **Strong evaluations** through
 - enabler assessments, and
 - performance / result evaluations→ Clear process focus

3. **Increased recognition and visibility of the results** through IRIS Certification™ performance levels
 - Proven customer-relevant quality performance necessary to obtain premium certificates

These elements will result in a more transparent assessment of the business management system, ensured through:

- Enabler evaluations through an assessment sheet
 - resulting in an IRIS certificate
- Performance evaluations
 - resulting in an IRIS Certification™ performance level statement

In addition to these changes, the IRIS Certification™ rules have been also been aligned and improved to ensure the realistic implementation of the requirements, based on a fair and transparent assessment methodology and certification process for all stakeholders.



For more information on IRIS,
please visit
www.iris-rail.org.

R200

nächster Halt:

Tullne

COMMUNICATIONS

10

A. Events

B. Interactive analysis



erbach-Pressbau



A Events

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 ceremony, which took place at the Musées Royaux d'Art et d'Histoire 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. The 2016 European Railway Award was presented on 16 February to Isabelle Durant, former Vice-President of the European Parliament from 2009 to 2014, and to Eric Fontanel, railway engineer.

Transport Commissioner, Violeta Bulc, congratulated the winners and highlighted the importance of investing in the development of the European rail system: "Our very first priority is to bring investments in the rail sector as without such investments rail won't be able to contribute to our decarbonisation and digitalisation objectives. The European Union must do its part by providing funds for infrastructure development and for R&D but also by establishing, with the 4th railway package, a regulatory environment more favourable to private investors, with clearer, more enforceable and more stable internal market rules."

Dutch Ministry of Infrastructure and Environment Secretary-General Lidewijde Ongerling, representing the Netherlands Presidency of the EU added: "The EU's railway sector faces many challenges in the coming years. But every challenge also creates new opportunities. We're fortunate to have experts from the technical and political arenas who know what's needed to take the EU railway sector to the next level. And it's fitting that CER and UNIFE are awarding prizes to individuals who have devoted much of their work to rail. A sector that drives the EU's economy, while at the same time making a substantial contribution to the greening of transport."

Representing the European Parliament, MEP Michael Cramer, Chairman of the Committee on Transport and Tourism, underlined the need for fair competition

between transport modes: "The European railway sector should use their influence to push decision makers to make modal competition more fair regarding access charges. It should be equal treatment between all modes—everyone pays or no one pays."

The Technical Award laureate, Eric Fontanel, is an accomplished railway engineer responsible for many rolling stock development projects throughout the world, including managing the Channel tunnel VHS (very high-speed train) consortium which produced the Eurostar operation. He has been an instrumental player in the development of European railway interoperability and the enhancement of rail research at the European level and has held various management positions in the railway manufacturing sector including technical director of Alstom Transport, and UNIFE General Manager. When accepting his award, Fontanel remarked: "I truly believe that what we built in 15 years with the European Association for Railway Interoperability and then afterwards the ERA, with the support of the whole sector and the collaboration of the European standardization bodies, is the strong foundation on which a reliable, environmentally friendly, safe and interoperable European railway system can be constructed. A rail system that Europe truly needs for its economic and societal development."

Isabelle Durant, who won the Political Award, was the Vice-Prime Minister of Belgium and Minister for Transport from 1999 to 2003, before becoming Vice President of the European Parliament from 2009 to 2014. When accepting her award Durant stated: "Putting rail back at the centre of our transport systems, in the hearts of the railway workers, in the minds of the travellers and in the priorities of the decision makers – this for me is the significance of this award, which I feel very honoured to receive."

Each award is accompanied by a donation of €10.000 to the charity of the laureate's choice. Isabelle Durant gave her prize money to Train World, and Eric Fontanel gave his to the Société Nationale de Sauvetage en Mer (SNSM).

The next edition will be held in Brussels on 7 February 2017. For more information please visit www.europeanrailwayaward.eu.





UNIFE General Assembly 2016

UNIFE held its 25th annual General Assembly in Amsterdam, from 22 to 24 June, gathering 200 participants. UNIFE members selected the location due to the Dutch Government's significant and continuous investment into its railway system, and the Presidency of the Council of the European Union they held in the first half of 2016.

The 2016 General Assembly programme included presentations and commentary from industry CEOs and high-level speakers from the European Commission, the European Parliament (EP), the European Investment Bank (EIB), the Dutch Ministry of Infrastructure and the Environment, Shift2Rail and the European Union Agency for Railways. The event began with a series of keynote speeches delivered by Jocelyn Fajardo, (Member of Cabinet of EU Transport Commissioner Bulc), Martina Werner (MEP and Rapporteur for the EP Resolution on the Competitiveness of the European Rail Supply Industry), Pim van Ballekom (Vice President, EIB), and Peter Hondebrink (Dutch Ministry of Infrastructure and the Environment).

Attendees listened to presentations on the Dutch rail system from the CEOs of Dutch Railway Undertakings, including Roger van Boxtel (Dutch Railways (NS)), Pier Eringa (ProRail), and Alexandra van Huffelen (GVB), followed by three moderated roundtables on some of the main topics facing the European rail supply industry: 'EU investment for rail' focused on EU funds, Connecting Europe Facility and EFSI; 'EU rail industry competitiveness and market leadership' discussed public procurement, trade, skills policy and R&I; and 'Rail and EU transport policy' concentrated on the implementation of the 4th Railway Package, transport decarbonisation, digitalisation, and ERTMS.

The question of how the EU Institutions and Member States can best support the global competitiveness of the European rail supply industry dominated many of the discussions throughout the day. In fact, this General Assembly occurred only two weeks after the European Parliament's adoption of a Resolution on the Competitiveness of the European Rail Supply Industry; which aims to bolster the industry with coordinated EU policy measures as it faces mounting industrial competition on European and global markets, especially from large Asian competitors.

Member of Parliament Martina Werner (S&D, Germany), a vocal supporter of European rail supply industry competitiveness in the EP's ITRE Committee, stated: "Chinese and other companies expand quickly and, at the same time, barriers for European companies grow or remain high to access important foreign markets like the US, China and Japan. Therefore, it was the right time for the Parliament to direct its demands and recommendations to the Commission and Member States. I expect the Commission to react quickly to our political demands. That includes a permanent high level rail supply industry dialogue with all relevant stakeholders to keep the challenges of the industry in the spotlight."

During his address, Jocelyn Fajardo, Member of Cabinet of EU Transport Commissioner Violeta Bulc, remarked: "The Commission transport policy aims at making rail transport more attractive for EU citizens and businesses and at defending the global leadership of our railway industry. However, to achieve these ambitious goals we need the strong commitment of the rail sector itself, with additional investments in innovation, environmental friendly and interoperable technologies."

UNIFE Chairman and President of Bombardier Transportation, Laurent Troger, addressed the opportunities and challenges of the European rail supply industry, commenting: "The European rail supply industry is very innovative, export-oriented, and ready to meet the world's growing mobility challenges. Nevertheless, in order to do so we must have fair access to global rail markets which is increasingly not the case. UNIFE and its members are encouraged by the recent adoption of the European Parliament Resolution on the Competitiveness of the European Rail Supply Industry, but we must make sure that its recommendations are translated without delay into concrete actions."

This General Assembly was also an opportunity to celebrate our significant growth in membership as UNIFE members ratified the admission of 11 new members: 21Net, Beckers Industrie, COMESVIL, Eaton, Iskratel, Kalthoff, MEN Holding, MIOS Elettronica, RELOC, Teleste; Uzina de Vagoane AIUD.

UNIFE members have now selected Barcelona as the location for the 2017 General Assembly, which will take place from 21 to 23 June 2017.





InnoTrans 2016

InnoTrans continues to be the quintessential event for the European rail industry to showcase its major innovations, make important commercial connections, and hear from decision makers and sector leadership about future plans. UNIFE once again had a stand and a full programme at InnoTrans.

The first day started with the signature of the new Memorandum of Understanding (MoU) between the European Commission, the European Union Agency for Railways and representatives of the European Railway sector on cooperation around the deployment of ERTMS. Just after the opening ceremony, UNIFE announced the release of the World Rail Market Study (WRMS), which was followed by a presentation of the major findings by Andreas Schwilling, Partner from Roland Berger Strategy Consultants (read more about WRMS findings in the World Rail Market Study section). Later on, Philippe Citroën welcomed Martina Werner (MEP) to the UNIFE stand to discuss the importance of the Parliament's Resolution for the Competitiveness of the European Rail Supply Industry. The day concluded with the signature of the MoU with the Brazilian Industry Association (ABIFER), and a discussion on the Technical Pillar of the Fourth Railway Package with Josef Doppelbauer (Executive Director, European Union Agency for Railways (ERA))

On the second day, the presentations at UNIFE's stand focused on sustainability, international affairs, Shift2Rail, digitalisation, and IRIS. To start things off, UNIFE participated in a morning conference on railway engineering with the NP-UIRE, the Russian Union of Industries of Railway Equipment (read about this in the International Affairs section). Following this, visitors listened to a Railsponsible session at the UNIFE stand on the continued efforts our industry must make to communicate the environmental value of rail transport, and to continue pushing for more ways to make rail products even more sustainable. This was followed by a session on UNIFE-APTA cooperation with Dick White (CEO, APTA) and Philippe Citroën (Director General, UNIFE), and the official release of the UNIFE Digitalisation Position Paper. For the Shift2Rail

session, Carlo Borghini (Executive Director, Shift2Rail) presented the main activities of the Shift2Rail Joint Undertaking in 2016 and next steps for 2017. The UNIFE stand closed the day's programme with two IRIS sessions on 'Achievements and Future with ISO' and 'The voice of customer' — with Valentin Gaponovich, Senior Vice President of RZD as special guest.

Day three kicked off with a major presentation organised by UNIFE in Palais am Funkturm in Messe Berlin. This Dialogue Forum entitled, "Managing the long-term technical evolution and continued deployment of ERTMS" attracted a large crowd and featured Jan Plomer (Deputy Director Rolling Stock, Czech Railways), Nazzareno Filippini (Head of Research & Development Unit, RFI), Michael Mikulandra (Head of Next Generation team, Kapsch), Michel Van Liefferinge (General Manager, UNISIG), Fiammetta Diani, Deputy Head of Market Development Department, European GNSS Agency. The audience listened to presentations by each panelist on their past successes and future strategies on the deployment ERTMS, followed by a robust discussion panel moderated by Michel van Liefferinge, which included questions from the audience. The day concluded with an IRIS session on 'Technical Evolution & Rules', and presentations by the European projects NGTC and STARS.

InnoTrans was once again a major success for UNIFE, and we would like to thank all of our members who came by to visit and participated in the programme across the week







Other events in 2016 (selection)



15/1 International Railway Summit, Vienna, Austria



25/5 Stimulating the Demand for Sustainable Rail Infrastructure event organized by UNIFE, Bruxelles, Belgium



18/4 Czech Minister of Transport Dan Ťok visiting the UNIFE stand during TRA, Warsaw, Poland



14/6 UNIFE meeting Latvian Transport Minister Uldis Augulis, Riga, Latvia



20/4 Philippe Citroën presenting UNIFE's position on public procurement and TTIP in the European Parliament



11/10 UNIFE at Railway Days, Bucharest, Romania



19/5 Marina Chrysoveloni, Deputy Greek Transport Minister and Philippe Citroën during International Transport Forum, Leipzig, Germany



3/11 Philippe Citroën representing UNIFE at the L'Office national des chemins de fer (ONCF) pre-COP22 event, Marrakech, Morocco



B Interactive analysis



www.unife.org

58,155

Visits

65.15%

New visits

160,915

Page views

00:02:21

Avg. visit duration



@UNIFE

367,300 impressions

25,978 profile visits

2,628 followers (+26%)

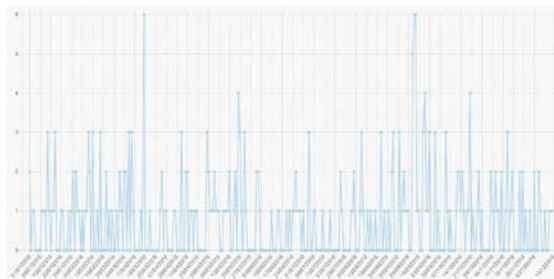
1,560 tweets



WIKIPEDIA
The Free Encyclopedia

UNIFE

608 Page Views



UNIFE Brussels

1,674

Members

About UNIFE video



Scan QR code for quick access to the About UNIFE video



UNIFE videos

1,376 Views



UNIFE

438 Views





A blurred person in a light blue shirt and dark pants is walking from left to right in the foreground. The background shows a warehouse or industrial setting with red metal structures, pipes, and a yellow safety railing.

UNIFE MEMBERS

11

- A. Full Members
- B. Associate Members



A UNIFE Members



21net
www.21net.com



ABB Sécheron
www.abb.com



ALSTOM
www.alstom.com



ALTPRO
www.altpro.com



Ansaldo STS
www.ansaldo-sts.com



Arcelor Mittal
www.arcelormittal.com



Ardanuy
www.ardanuy.com



Astra Vagoane Călători
www.astra-passengers.ro



AZD Praha
www.azd.cz



Beckers
www.beckers-group.com



Blue Engineering
www.blue-group.it



Bochumer Verein
Verkehrstechnik GmbH • seit 1842

Bochumer Verein
Verkehrstechnik
www.bochumer-verein.de



Bombardier Transportation
www.bombardier.com



BONATRANS

Bonatrans
www.bonatrans.cz



BRITISH
STEEL

British Steel
www.britishsteel.co.uk



CAF
www.caf.net



CEG Elettronica Industriale
www.cegetronica.com



CENTRALP
www.centralp.fr



ČKD Kutná Hora
www.ckdkh.cz



Comesvil
www.comesvil.com



CONSOLIS
www.consolis.com



Constellium
www.constellium.com



DIGINEXT
www.diginext.fr



DuPont Transportation
www2.dupont.com



Eaton
www.eaton.eu/Europe/Rail



ECM
www.ecmre.com



EKE Electronics
www.eke.com



Exa
www.exa.com



Faiveley Transport
www.faiveleytransport.com



FOGTEC
www.fogtec-international.com



France Signalisation
www.france-signalisation.fr



Frauscher
www.frauscher.com



GHH-RADSATZ

GHH-RADSATZ

www.ghh-radsatz.com



Greenbrier Europe

www.gbrx.com



Traffic • Software • Service

HaCon

www.hacon.de



HARTING

www.harting.com



HIRSCHMANN

Hirschmann

www.hirschmann.com



HOPPECKE

POWER FROM INNOVATION

Hoppecke

www.hoppecke.be



indra

Indra

www.indracompany.com

Ingeteam

Ingeteam

www.ingetteam.com

ISKRATEL

ISKRATEL

www.iskratel.com



Kalthoff

www.kalthoff-luftfilter.de



KEYMILE

because connectivity matters

Keymile

www.keymile.com



Kirow

www.kranunion.de



KNORR-BREMSE

Knorr-Bremse

www.knorr-bremse.com



KOLOWAG

www.kolowag.com

KONČAR

Končar - Electric Vehicles Inc.

KONČAR

www.koncar.com



kontron

Kontron

www.emea.kontron.com



Logiplus

www.logiplus.com



Lucchini RS

www.lucchinirs.it



Matisa
www.matisa.ch



Always reliable. Always ahead.

MEN
www.men.de



MERMEC
www.mermec.it



MIOS
www.mioselettronica.com



MIPRO
www.mipro.fi



OLTIS Group
www.oltisgroup.com



Pentair Schroff
www.pentairprotect.biz



PIXY
www.pixy.ch



Plasser & Theurer
www.plassertheurer.com



RELOC
www.relocsa.ro



SAFERAIL
www.saferail.fr



Saft
www.saftbatteries.com



Saira Europe
www.sairaeurope.com



Sapa
www.sapagroup.com



Schaeffler Group
www.schaeffler.com



Schaltbau
www.schaltbau-gmbh.com



Scheidt & Bachmann
www.scheidt-bachmann.de



Sécheron
www.secheron.com



Selectron

Selectron
www.selectron.ch

SIEMENS

Siemens
www.mobility.siemens.com



Sirti
www.sirti.it



Skoda Transportation
www.skoda.cz



Stabirail
www.stabirail.com



Strukton Rail
www.struktonrail.com



Talgo
www.talgo.com



TATRAVAGÓNKA
www.tatravagonka.com

TELESTE

TELESTE
www.teleste.com



Texelis
www.texelis.com

THALES

Thales
www.thalesgroup.com



Trimble
www.trimble-railway-assets.com

UniControls

UniControls
www.unicontrols.cz



UVAiud
www.uvaiud.ro



Valdunes
www.valdunes.com



VDS
www.vds-it.com

voestalpine
ONE STEP AHEAD.

Voestalpine
www.voestalpine.com

VOITH

VOITH
www.voith.com

vossloh

Vossloh
www.vossloh.com



VUKV
www.vukv.cz



B Associate Members



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



AGORIA, **Belgium**
www.agoria.be



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



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

BAHNINDUSTRIE.at
Verband der Bahnindustrie

Austrian Association of the
Railway Industry, **Austria**
www.bahnindustrie.at



European Federation of
Railways Trackworks
Contractors (EFRTC)
www.efrtc.org



Fédération des Industries
Ferroviaires (FIF), **France**
www.fif.asso.fr



Spanish Railway Association
(MAFEX), **Spain**
www.mafex.es



Association for Railway
Automation, Signalling,
Telecommunication and
Industry (RASTIA), **Bulgaria**
www.rastia.org



Railway Industry Association
(RIA), **United Kingdom**
www.riagb.org.uk



Association for rail transport
interoperability and
development (SIRTS), **Poland**
www.sirts.pl



Association for Rail Industry
Companies (SWEDTRAIN),
Sweden
www.swedtrain.org



Swissrail Industry Association,
Switzerland
www.swissrail.com



UNISIG



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



Zentralverband
Elektrotechnik- und
Elektronikindustrie (ZVEI),
Germany
www.zvei.org



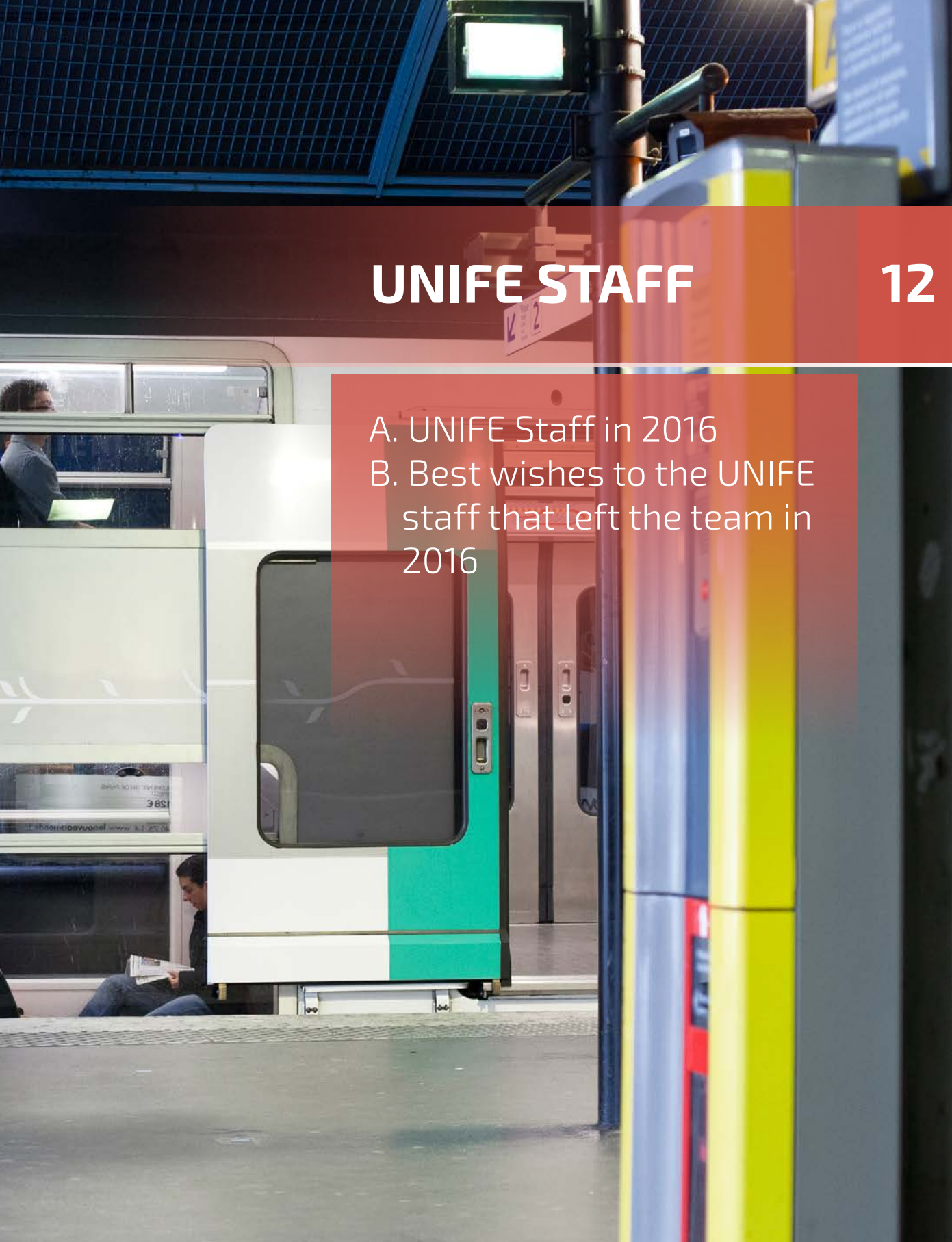
UNIFE Staff



UNIFE STAFF

12

- A. UNIFE Staff in 2016
- B. Best wishes to the UNIFE staff that left the team in 2016





A UNIFE Staff in 2016

Director General



Philippe Citroën
Director General

Philippe.CITROEN@unife.org

Finance, HR



Paulina Pineda
Chief Finance and HR Officer

Paulina.PINEDA@unife.org

Operations



Nuno Teixeira
Operations Manager

Nuno.TEIXEIRA@unife.org

Public Affairs



Jean-Philippe Peuziat
Head of Unit - Public Affairs

JeanPhilippe.PEUZIAT@unife.org



Leonardo Dongiovanni
Public Affairs Manager

Leonardo.DONGIOVANNI@unife.org



Arturs Alksnis
Public Affairs Manager

Arturs.ALKSNIS@unife.org



Jonathan Nguyen
Public Affairs Manager

Jonathan.NGUYEN@unife.org



Communications



Angela Pauly
Head of Unit - Communications

Angela.PAULY@unife.org



Andrei Ciufu
Communications Manager

Andrei.CIUFU@unife.org



Agathe Marie
Communications Manager

Agathe.MARIE@unife.org

Technical Affairs



Nicolas Furio
Head of Unit - Technical Affairs

Nicolas.FURIO@unife.org



Stefanos Gogos
Technical Affairs Manager

Stefanos.GOGOS@unife.org



Andrea Demadonna
Technical Affairs Manager

Andrea.DEMADONNA@unife.org



Peter Gurnik
Technical Affairs Manager

Peter.GURNIK@unife.org



Alice Polo
Senior Interoperability and
Safety Manager

Alice.POLO@unife.org



Nicholas Shrimpton
Technical Affairs Manager

Nicholas.SHRIMPTON@unife.org



Eulàlia Peris
Technical Affairs Manager

Eulalia.PERIS@unife.org

IRIS



Bernard Kaufmann*
IRIS General Manager

Bernard.KAUFMANN@unife.org
*acting as representative of BK RAIL



Angela de Heymer
IRIS Senior Manager

Angela.DEHEYMER@unife.org



Kujtesa Hajredini
IRIS Manager

Tesa.HAJREDINI@unife.org



Anish Bawa
IRIS Technical Coordinator

Anish.BAWA@unife.org



Tamás Bujdosó
IRIS Technical Advisor

Tamas.BUJDOSO@unife.org



UNISIG



Michel Van Liefferinge*

UNISIG General Manager

Michel.VANLIEFFERINGE@unife.org

**acting as representative
of MV4TECH SCRI*



Léa Paties

R&D/UNISIG Project Manager

Lea.PATIES@unife.org

B UNIFE wishes all the best to those who left the team in 2016



Marcos Mendez



Jan Steinkohl



John Harcus

Former Head of Unit - Communications

*"A very special thank you to John for his
immense contribution to furthering UNIFE's
communications work"*



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
CER	Community of European Railway and Infrastructure Companies
CETA	EU-Canada Comprehensive Economic and Trade Agreement
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
EFSI	European Fund for Strategic Investments
EIB	EIB – 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 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
OTM	On Track Machines
ORS	Operational Requirement Specification
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

UNIFE - THE EUROPEAN RAIL INDUSTRY
AVENUE LOUISE 221, BTE 11
B - 1050 BRUSSELS
Tel: +32 2 626 12 60 | Fax: +32 2 626 12 61
www.unife.org | general@unife.org



Scan QR code for quick
access to the pdf version of
the Annual Report

