**International Standardisation**

the European Rail Associations' vision

# Contents

# 1. Introduction

In its recent Communication on a Sustainable and Smart Mobility Strategy[1], the European Commission recognises the need for a rail transport sector capable of tackling the climate emergency and seizing the opportunities of modern, sustainable, innovative, and resilient railways. The strategy grants a prominent role for railways in the transition towards zero-emission mobility and in the achievement of climate neutrality by 2050. For the European Railway Sector, standardisation will be one of the key tools to create bridges with other mobility sectors for **an efficient, sustainable, and interconnected multimodal European transport system**.

Standardisation is key in enabling the technological developments subject to current and future European research and innovation programmes and the implementation of advancing global trends in digitalisation, automation, and material science.  The application of which shall further increase the levels of safety, security, and passenger comfort in rail transport, while reducing cost and improving the overall quality and competitiveness of the railway sector.

However, in order to achieve these goals and to maintain the EU's global leadership and competitiveness in transport equipment manufacturing and services, robust and well-functioning standardisation systems are essential. The European Commission has identified the need for European industry to become greener, more circular, and more digital while remaining competitive on the global stage. To obtain this, the European Commission's New Industrial Strategy for Europe[2] recognises the need and strategic importance of strengthening Europe's ability forge global high-quality standards which bear the hallmark of Europe's values and principles.

With this in mind, this paper aims to set the vision of the European railway associations on European and international standardisation, as a key enabler for the European rail sector's potential.

This paper aims to set the vision regarding the European and international standardisation systems. Recommendations have been identified to strengthen the use of these standardisation systems as a key enabler for the European rail sector's potential. and continued competitiveness on the global stage.

# 2. The recognised standardisation organisations and their work on railway standards

The three European Standardisation Organisations (ESOs), the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC) and the European Telecommunications Standards Institute (ETSI) are umbrella organisations that bring together all EU

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[1] European Commission, *Sustainable and Smart Mobility Strategy – putting European transport on track for the future* (*COM/2020/789)*

[2] European Commission, *A New Industrial Strategy for Europe (COM(2020) 102 final)*

National Standardisation Bodies (NSBs)[3] for the development of European Standards (EN Standards). At the international level, the EU recognises the International Organization for Standardisation (ISO), the International Electrotechnical Commission (IEC) and the World Telecommunications Union (ITU) as standardisation bodies in accordance with the WTO regulation.

The Sector Forum Rail (SFR) of CEN, CENELEC and ETSI is a platform which facilitates the exchange between the different rail sector stakeholders and ESOs for coordinating and identifying the standardisation needs to the NSBs and the relevant Technical Committees (TCs) chairs.

Europe has long led the work on international technical standards in the railway sector. However, in recent years this position of leadership has been under increasing pressure as other non-EU countries have noticeably expanded their efforts and resources to influence the content of work items at the international standardisation bodies as the strategic importance of standardisation is recognised[4].

In the railway sector, more European than international standards are in place. European standards often provide more requirements because it is easier to reach consensus among European stakeholders who have a similar railway culture and experiences based on the region's long history as the global technical leader in rail. Europe has the world's most advanced railway network, benefitting from highly developed knowledge in manufacturing, testing, validation, operation and maintenance of High-Speed Trains, regional trains, and metros. We acknowledge that European rail standardisation follows the most advanced approach to innovation and support European standardisation's focus on formulating requirements and pass-fail criteria instead of specifying solutions or product descriptions.

European Standards play an important role also for the legal framework governing the rail sector in the EU: besides EU harmonised standards that provide presumption of conformity to the EU law, several standards in the rail sector are directly referenced by EU relevant implementing acts making them -or certain provisions- legally binding.

In particular, we recognise the value of the interaction between European railways standards with the "Technical Specifications for Interoperability" (TSIs) made by the European Union Agency for Railways (ERA). The TSI usually contain references to several European standards, with technical and operational specifications that allow each rail subsystem to meet the essential requirements and ensure the interoperability of the EU's railway system.

Directive 2016/797 allows to reference in the TSI other normative documents in the absence of European standards and pending their development. Close coordination is undertaken within the sector and with the recognised Standardisation Bodies to avoid any overlap or duplication.

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[3] National Members are the National Standardisation Bodies (NSBs) of the 27 European Union countries, United Kingdom, the Republic of North Macedonia, Serbia and Turkey plus three countries of the European Free Trade Association (Iceland, Norway and Switzerland). There is one member per country.

[4] Report of the expert group on competitiveness of the European rail supply industry: https://ec.europa.eu/docsroom/documents/37829

## 3. The rail sector vision

### 3.1 Stronger European standardisation bodies to better influence international standardisation

The European Commission acknowledges that "the single market depends on robust, well-functioning systems for standardisation and certification. These help to increase the size of markets and provide legal certainty" and in order for the European mobility industries to "maintain their global technological leadership the sector's entire value chain must help shape new international standards for safe, sustainable, accessible, secure and resilient mobility." [5]

Chairing an international standardisation Working Group (WG) gives the leading country, through its convenor, considerable influence on the direction of the technical discussion on the content of the standard. It furthermore provides the opportunity to decide when and where to organise the different meetings of the related WGs which impacts the costs of participating for the experts that need to travel. While some countries substantially fund their standardisation experts this is not the case for European countries where participation depends on the expert's employer's assessment of the benefit of such a participation.

However, the Covid-19 pandemic has shown that many such meetings can now be held by video conferencing instead, which means that all global delegates should be able to attend without major travel and accommodation costs if the necessary infrastructure is in place. Therefore, the goal of increasing participation of the EU rail experts to the international standardisation TCs and WGs, along with rapid uptake of digital standardisation processes and tools, e.g. videoconferencing, will be crucial.

Considering the particularly complex standardisation landscape of the rail sector and increasing competition at the international level, the ESOs and the European Commission should continue to strive for increasingly performant standardisation by taking initiatives to accelerate and optimise the standards making processes in Europe, which in turn will strengthen Europe's ability globally. With its 2030 strategy CEN and CENELEC have taken an important step in the direction of more digital standardisation, committing to "digitalize our standards development processes, as well as the deliverables they produce."[6] We encourage the ESOs to further streamline their rules, optimising the digital processes/tools, introducing digital meetings and new digital drafting methods, to reduce costs of participation for companies and increase the involvement of European experts. The NSBs should also encourage and facilitate the participation of EU innovative companies (often SMEs and start-ups) active in the railway sector in CEN, CENELEC and ETSI TCs and WGs.

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[5] Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions — "*A New Industrial Strategy for Europe*" (COM(2020) 102 final), P.6

[6] CEN and CENELEC, *STRATEGY 2O3O*, February 2021

Because of digitalisation of products and processes, standardisation in the railway sector can no longer be dissociated from standardisation in other transport areas/sectors. Standardised digital rail system architectures and requirements are becoming the drivers for rail standard users Infrastructure Managers and Railway Undertakings. ESOs should elaborate an efficient standing mechanism to avoid silos by facilitating real technical cross-fertilisation among TCs and among the 3 ESOs, as well as with relevant fora and consortia in the different digital and telecom areas that could be relevant for the European rail sector and for other transport modes to ensure a cost-optimised standard making process.

The SFR is also an important forum for exchanges between the EU railway stakeholders with NSBs and the relevant TC chairs (e.g.: CEN/TC256 and CENELEC/TC9X and others). Its role should be strengthened by, for instance, creating a new practice of stakeholder exchanges ahead of key ISO and IEC meetings, whenever specific new work items or issues that are crucial for the EU railway sector are at stake.

## 3.2 European Standards and the international level playing field

During the last decade, the evolution of European trade and competition rules have come under increasing pressure by non-EU countries and their companies. Since 2018, the EU and the ESOs have conducted various sector inquiries about the content and scope of its trade agreements with third countries[7]. The European policy makers and industry now recognise the need to update the EU regulatory system to better serve EU's outward ambition to maintain global leadership in strategic areas, but also to protect EU's inward ambition to fuel European know-how. In this context it is important to address the need for a genuine European industry and standardisation policy to protect, foster and export EU knowledge on the global scene.

CEN and CENELEC have long-standing agreements with their respective international counterparts, ISO and IEC, setting out rules for cooperation. It is currently possible for an existing EN-standard to be migrated to an international one, or vice versa.  In many cases CEN and CENELEC offer the development of standards at international level within ISO and IEC and then strive for adoption of identical ISO or IEC-EN-Standards with a parallel approval process. The idea being that the harmonisation of standards provides for a unified and more accessible interface for European companies. The so-called 'Technical Barriers to Trade' are therefore easier to identify.

Within this trend, standardisation in the rail sector remains key to ensure the interoperability of rail components, such as ERTMS, and will be the enabler of ATO and new digital communications solutions based on 5G.

Consequently, CEN and CENELEC should assess with a more holistic and strategic approach the implications for the EU industry when deciding about whether to offer ISO and IEC a new rail standardisation item. The risk is indeed that the deliverable could possibly result in a ISO/IEC standard

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7    see e.g.:   https://www.eurobiz.com.cn/chinas-standardisation-reform-and-its-impact-on-european-companies-with-business-in-china/

with specifications that do not fully represent the EU's technological advantage, or do not meet the expectations of the EU rail standard users.

In essence, an assessment done by CEN and CENELEC is needed based on:

- the expected quality of specifications of a future EU standard against the international one
- the possible EU industry competitive advantage at stake and
- a risk/benefit analysis of the market export opportunities of EU companies in third countries following EU or international standardisation.

The increase of the digitalisation activities towards the railway data governance may also impact the work of the European Union Agency for Railways (ERA) in the near future and its relationship with the ESOs. Hence, the interoperability aspects and management of data will demand closer coordination between all EU rail sector players, the ESOs, EC and ERA and, consequently, an overall alignment of the standardisation activities.

### 3.3 Need for more consistency of EU National Standardisation Bodies' behaviour

International Standardisation organisations operate on the "national delegation" principle, which gives the NSB of each country one vote in the standards decision-making process. This implies that national delegates of European NSBs tend to give priority to their national position and often do not speak with a unified voice in the international TCs and WGs, if they do attend them.

This creates the risk that, in many cases, New Work Item Proposals (NWIPs) at ISO and IEC level are not thoroughly analysed by the European delegates and there is no appreciation of their implications for the European rail sector as a whole. This also concerns NWIPs and the resulting standards in non-rail standardisation committees that impact the rail sector.

To ensure the needs of the wider EU rail sector are recognised and captured within EN-standards and ISO or IEC-standards in the future, it is of paramount importance to improve the coordination among the NSBs and the rail sector, for example by organising ad-hoc preparatory meetings at the European level ahead of international meetings on the initiative of the SFR.

## 4. Recommendations

In the light of the above considerations, the European rail associations believes that:

**European rail standardisation needs to be as effective and cost efficient as possible:**

To successfully support the changes of rail business following the global trends, European rail standardisation needs to react and incorporate digital, cross sectoral challenges in its standard making process. An efficient and effective European standardisation should be based on improved digital tools, more involvement of experts from all rail stakeholders (notably SMEs and start-ups) and seek for a more efficient coordination among the European stakeholders regarding standardisation at international level.

**European rail standardisation needs to be seen as a strategic asset in the international arena**:

The strategic importance of international standardisation and its contribution to the competitiveness of European industries on the global stage has been widely acknowledged. At a time when the presence and

leadership of European experts is at stake and facing increased international competition, the EU policy makers should strive to ensure that the EU rail (and beyond) regulatory and standardisation systems are tailored to better serve EU's outward ambition to maintain global leadership in strategic areas, but also to protect EU's inward ambition to fuel European know-how.

In support of this vision, we propose the following key recommendations to the European standardisation organisations, European Commission and ERA.

## 4.1 The Railway Sector

**Europe can only speak with a strong voice internationally if European standards are built on a strong internal foundation.**

1. The European railway sector should seek to further increase cooperation in the existing sector fora in order to streamline the process of identification of European rail requirements and specifications that meet the actual rail market needs of operators, keepers and infrastructure managers. Stronger and more streamlined cooperation will also be instrumental for better coordination for a stronger European voice in the standardisation area globally.

2. To this end, the railway sector should avoid other European standardisation initiatives outside the recognised standardisation organisations. Where there is a risk of conflict or overlap on a particular topic the necessary close coordination between all the stakeholders, using the existing and acknowledged European platforms, will ensure that the railway sector is best served by the outcome.

## 4.2 The European Standardisation Organisations (CEN, CENELEC and ETSI) and national Standardisation Bodies

**CEN, CENELEC, ISO, and IEC business models are based on the "national delegation" principle. While maintaining this principle, CEN and CENELEC should identify and manage those rail business strategic issues that will require better alignment of the different European NSBs, so they speak each with their own voice but argue in a common direction at ISO and IEC level. Furthermore, new ways must be explored to achieve a more efficient involvement of European experts from EU industry.**

In particular:

1. CEN and CENELEC should further review and optimise their digital processes, tools and rules for both TCs, WGs and technical governing bodies. Improved digital meetings and new digital drafting methods will reduce the standardisation costs for EU companies, facilitate the increased participation of experts and accelerate the standard development and approval processes.

2. CEN and CENELEC should encourage ISO and IEC to also promote digital meetings and new digital drafting methods to reduce the standardisation development costs for companies all parties and facilitate their active participation in ISO/IEC TC and WGs.

3. NSBs should develop concrete actions to encourage and facilitate the participation of SMEs, start-ups and other innovative companies in the railway standardisation activities of TCs and WGs of CEN, CENELEC, ETSI, ISO and IEC.

4. The ESOs should encourage technical cross-fertilisation among different TCs and WGs, including between the different ESOs to avoid experts working in 'silos'. This is particularly relevant in the digitalisation domain, where non-rail specifications on digital tools, architectures and processes will also affect rail components, products, and processes. A more efficient ESO approach that ensures coherent links between standardisation of the digital aspects of rail with standardisation of relevant non-rail digital domains will eventually be beneficial for the positioning of the EU rail sector at international standardisation level.

5. CEN and CENELEC should make a strategic assessment with regard to the decision on whether or not to propose a standard to ISO/IEC. This can be achieved by developing with the sector a high-level risk/benefit assessment system, discussed at SFR. When an issue is identified SFR should be tasked with delivering a message to the respective TC concerning the standardisation item in question.

## 4.3 The European Commission and the European Union Agency for Railways

**To ensure that European standardisation plays a role at the international level the EU needs to help levelling the playing field by supporting European standardisation.**

6. The European Commission should continue striving for increasingly performant standardisation by taking initiatives to accelerate and optimise the EU standardisation making processes. Considering the complexity of the EU rail regulatory landscape, European standardisation processes - including the publication of harmonised EN standards in the Official Journal of the European Union - must be kept as lean, efficient, and as fast as possible.

7. As suggested in the report of the EC Expert Group on the competitiveness of the EU Rail Supply Industry, the Commission should provide support to CEN, CENELEC, and ETSI for the organisation of dedicated groups for monitoring, collaborating with and for mirroring standardisation activities at ISO/IEC.

8. The European Commission, the EU Railway Agency (ERA), and CEN and CENELEC are encouraged to continue promoting the adoption of European rail standards by third countries. ERA is also encouraged to continue cooperating closely with the ESOs and the sector to ensure that European standards relevant for EU legislation are timely delivered and included in these documents.

9. The European Commission should continue defending the EU standardisation system and its principles during international commercial negotiations with third countries.