International Organization for Standardization
Organisation internationale de normalisation
Международная организация по стандартизации

STRATEGIC BUSINESS PLAN – ISO/TC 269

Executive summary

The railway is the most popular public transportation system, which realizes safe, high levels of passenger and freight services and operations and energy efficiency when compared to other modes of transport.

ISO/TC 269 was created in 2012 on the basis of a German/French initiative to provide common international platform which will help to maintain and to further develop railway systems effectively with the scope as follows:
Standardization of all systems, products and services specifically related to the railway sector, including design, manufacture, construction, operation and maintenance of parts and equipment, methods and technology, interfaces between infrastructure and vehicles and the environment, excluding those electrotechnical and electronic products and services for railways which are within the scope of IEC/TC 9 “Electrical Equipment and Systems for Railways”.

The principal market utilising ISO/TC 269 standards are all stakeholders in the railway sector. With expanding international participation and cooperation in all phases of the railway life cycle, it is important for the railway sector, governments, users, public interest groups, etc. to adopt international standards to facilitate the growth and stability of this global market.
The customer base for railway systems, products and services is international. The railway systems need to be made available, operated and maintained by the international customer base. Safety, reliability and technical compatibility and interoperability are fundamental to railway products. This requires that a systematic approach is considered with respect to all aspects of railway products. This also means that products may be the subject of specific mandatory requirements.

Some of the expected qualitative benefits of international standardization include:

- improvement of product quality and processes;
- reduction in the variety of standards to be managed;
- common terminology to allow for communication of complex design requirements;
- common system definitions and test methods;
- facilitation certification;
- coordination between other standardization bodies.

The main objectives of ISO/TC 269 Committee “Railway Applications” are:

- to develop and maintain internationally accepted standards;
- to produce standards cost effectively
- to produce standards which meet the needs of the sector;
- to attract active participation from interested parties;
- to take into account regional/national standards and specific regulations in order to ensure alignment as well as global relevance;
- to address the impact of emerging technology that may lead to potential standardization work for the railway market.

1 Introduction

1.1 ISO technical committees and business planning

The extension of formal business planning to ISO Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends and to allow ISO/TCs to prioritize among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development.

1.2 International standardization and the role of ISO

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: ISO (International Organization for Standardization) is responsible for all sectors excluding Electrotechnical, which is the responsibility of IEC (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of ITU (International Telecommunication Union).

ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 164 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the International Standard.

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its Technical Committees are also able to offer the ISO Technical Specification (ISO/TS), the ISO Public Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO products represent lower levels of consensus and have therefore not the same status as an International Standard.

ISO offers also the International Workshop Agreement (IWA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national members. An important distinction is that the IWA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

2 Business Environment of the ISO/TC 269

2.1 Description of the Business Environment

The business environment of the industry sector, products, materials, disciplines or practices related to the scope of this ISO/TC 269 is impacted by the economic, technical, regulatory, legal and social dynamics. It may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards.

The market covered by the scope of this committee is getting more global and includes the entire spectrum of feasibility, design, construction/manufacture, test and commissioning, placing into service, operation, maintenance, modification, decommissioning and disposal of systems, their sub-systems and components for general railway application.

The worldwide market for railway products (including sub-systems and components) is growing constantly, covering the needs of enabling interoperability, removing technical barriers and addressing relevant social, health, safety and environmental concerns. Many of the market drivers are stimulating this trend growth of international transport of passengers and goods, increase of urbanisation generating transport demand, renewal/upgrading of existing transport systems, building of new lines, and the need to reduce externalities (pollution, road congestion, etc.). This demand is driven by the technical development of efficient, interoperable and environmentally friendly railway solutions while the need to maintain a high level of safety remains a key priority.

Interoperability (crossing of borders, opening of markets) can be hindered by different technical regulations and standards. Those can impede the competitiveness with other transport means and modes due to diverse and partly contradicting requirements to be fulfilled by the railway sector, increasing the costs of railway products throughout the life cycle.

A major concern for the sector is that standards should not inhibit development and application of new technology for the benefit of the railway sector. The aim should be to establish standards based on performance, functional and interface description and not technical solutions and/or specific design which may impede the introduction of innovative solutions.

There is a trend to describe interfaces on a more general basis like standardization activities for e.g. Ecodesign, Smart Grid and Smart Cities.

This committee should collaborate with regional/national bodies to foster the development of a set of international standards by:

- focussing its means preferably on general worldwide items;
- adapting regional/national standards when globally relevant;
- creating original international standards complementary to regional/national ones when globally relevant.

The following points depict the particularities of the railway sector, for which a global standards framework could be beneficial:

- high technological level;
- high safety level;
- technological complexity (fully integrated system – numerous interfaces);
- high and increasing development costs;
- heavy upfront investments and exceptionally long life cycles;
- high interdependencies with other transport modes (intermodality);

- differences in preconditions and needs according to each region.

Examples of other relevant international, regional or national standardization organizations:

- International Electrotechnical Commission (IEC);
- International Telecommunication Union (ITU);
- European Committee for Standardization (CEN);
- European Committee for Electrotechnical Standardization (CENELEC);
- European Telecommunications Standards Institute (ETSI);
- National Standardization Bodies (NSBs).

2.2 Quantitative Indicators of the Business Environment

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC 269:

- High Speed Traffic Passenger.kilometers (billions), e.g., 750.7;
- Passenger.kilometers (millions), e.g., Europe 355,307, Other Europe 8,051, Africa 7,964, America 21,071, Asia Oceania 2,209,067, etc.;
- Passengers carried (millions), e.g., Europe 5,991, Africa 725, America 903, Asia Oceania 18,336, etc.;
- Tonne.kilometers (millions), e.g., Europe 3,026,339,Africa 16,894, America 2,163,461, Asia Oceania 3,476,771, etc.;
- Tonnes carried (millions), e.g. ,Europe 2,574, Africa 270, America 1,349, Asia Oceania 4,517, etc.;
- Length of lines (kilometers), e.g., Europe 345,309, Africa 57,968, America 170,153, Asia Oceania 282,296, etc.;
- Average staff strength (thousands), e.g., Europe 2,074, Africa 86, America 194, Asia Oceania 3,297, etc.;
- Train kilometers (millions), e.g., Europe 4,068, Africa 22, America 660, Asia Oceania 3,838, etc.;
- Gross train tonne. Kilometers (millions), e.g., Europe 5,565,887, Africa 11,136, America 2,233, Asia Oceania 5,419,741, etc.;
- Current annual total rail supply market volume (EUR bn,p.a.), e.g., the annual total rail supply market in the years 2017-2019 had a volume of EUR 177.2 bn p.a.;
- Current annual market volume by segment (EUR bn,p.a.), e.g., in the years 2017-2019, services 65.0, rolling stock 61.9, infrastructure 32.6, rail control 16.8;
- Annual market growth, e.g., the rail supply market has grown by 3.6% per year from the 2015-2017 period to the 2017-2019 period.

Reference:
[1] Railway Statistics - Synopsis, International Union of Railways, 2022.
[2] World Rail Market Study forecast 2020 to 2025, UNIFE, 2020.

3 Benefits expected from the work of the ISO/TC 269

The railway system is the safe and environmental friendly transportation mode for passengers and freight. Its technologies have been developed and refined to fulfil local and regional/national demands, and lead to the development of railway systems worldwide.

Further benefit can be achieved by incorporating global knowledge in the development of international standards to provide a common understanding for the global railway sector.

These standards can provide knowledge to adopt the most suitable and efficient approach in the new development or the refinement of existing railway systems or parts of them.

Potential impact on economic benefits has been evaluated through various ISO studies which noted that the economic benefits of using standards for engineering, manufacturing and procurement could be significant.

In addition to the overall benefits, international standardization in the domain of railway applications brings a considerable economic benefit to the whole sector due to:

- common terminology to allow for communication of complicated design requirements;
- common system definitions;
- common view of the calculation and acceptance methods;
- common view of the interfaces between subsystems;
- common approach to testing and commissioning;
- improvement of product quality;
- facilitation of product and (sub-) system certification;
- improvement of quality of operation and services;
- coordination of standards development activities.

4 Representation and participation in the ISO/TC 269

4.1 Membership

Countries/ISO member bodies that are P and O members of the ISO committee.

Expertise designated by ISO/TC 269 member bodies may be provided by e.g.:

- manufactures;
- operators;
- infrastructure managers;
- authorities;
- research institutes;
- public and private users;
- worker representative associations.

4.2 Analysis of the participation

As of 2023, five continents are represented in ISO/TC 269 and its subcommittees: Africa, Asia, Europe, North America and South America and there are more than 20 countries actively participating in ISO/TC 269. The full list of P-members of ISO/TC 269 is available under: Participation. Further interested parties are represented as O-members in ISO/TC 269 from different regions in order to ensure the global relevance.

ISO/TC 269 has Liaisons with different international bodies and their participations and contributions are always welcome.

Especially ISO/TC 269 has a close cooperation with CEN/TC 256 “Railway Applications” through the Vienna Agreement and with IEC/TC 9 “Electrical equipment and systems for railways”.

5 Objectives of the ISO/TC 269 and strategies for their achievement

5.1 Defined objectives of the ISO/TC 269

The main objectives of the committee are:

- To develop international standards for all railway related systems and its subsystems, products and services.
- To draft those standards by adapting, when relevant, existing regional/national standards in order to minimize the workload.
- To ensure during drafting that the future standards are compatible with regional/national regulation by defining a cooperation framework between the relevant regional or national standardization organizations and ISO.
- To assure that these standards are cost effective, cover the users' and market needs and that they support the technical projects of the sector and do not impede the introduction of new technical solutions.
- To promote through functional and/or performance oriented standards the development and/or application of new technologies for the benefit of the railway sector.

In its business, legal, regulatory, technological, environmental and social environment ISO/TC 269 is more specifically committed to:

- to lead to cost savings;
- to remove technical barriers to trade and open markets in various regions of the world;
- to address relevant railway operating safety concerns;
- to address relevant social, health and safety and environmental concerns;
- to support the endorsement and harmonization of national and regional standards;
- to support the implementation of other international standards;
- to be cited as normative references in other international standards;
- to enable interoperability among technical systems;
- to enable interoperability between railway products (including sub-systems and components) and the compatibility of design and operating information associated with such products.

5.2 Identified strategies to achieve the ISO/TC's defined objectives

To achieve the objectives ISO/TC 269 is implementing the following strategies:

- identify market needs (e.g. elimination of trade barriers, facilitation of certification/acceptance) and understand where those needs are already met by other standardization bodies, including regional/national ones;
- identify what standards exist elsewhere and could be adapted to develop international standards;
- identify specific regional/national regulations that should be taken into account for the development of the international standards in order to avoid inconsistency or incompatibility;
- encourage collaborative work with other TCs where relevant.

As part of the above-mentioned strategies ISO/TC 269 has established the following guidelines:

- ISO/TC 269 - CEN/TC 256 Migration Strategy;
- ISO/TC 269 Guideline for submission of new work item proposals.

ISO/TC 269 - CEN/TC 256 Migration Strategy is an agreement between the two committees to coordinate their cooperation. The main idea is to propose well-established European standards (ENs) as a basis for future ISO deliverables. Those deliverables may be adopted as EN ISOs in return.

ISO/TC 269 Guideline describes the procedure for the introduction of new work item proposals (NP) within ISO/TC 269 and its SCs. This procedure allows efficient management and monitoring of all NPs in order to assure their relevance, feasibility, consistency and viability.

The following arrangements allow ISO/TC 269 and its SCs to implement these strategies in an effective way:

- Chair´s Advisory Group (CAG) to recommend on strategic and operational aspects in order to anticipate the needs and to investigate the effective and practical medium-term strategy;
- ISO/TC 269, its SCs and working groups to properly allocate topics and the relevant expertise;
- Cooperation with national, regional or international organizations to coordinate procedures for the development, preparation, publication and maintenance of deliverables.

6 Factors affecting completion and implementation of the ISO/TC 269 work programme

The experience and evidence gained at regional/national level is that the topics to be dealt with at ISO are of high complexity and of a diverse nature, such that a single group of experts will not be able to address the whole scope of ISO/TC 269 activities.

Thus, the structure of the ISO/TC 269 is organized in such a way that the expertise which is needed to achieve the objectives is properly focused. In particular, subcommittees ensure the management of the corresponding expertise in order that the committee can concentrate on system integration and cross-functional subjects of the railway sector.

The trend to describe interfaces on a more general basis involving other sectors is also a challenge for ISO/TC 269.

7 Structure, current projects and publications of the ISO/TC 269

Information on ISO online

The link below is to the TC's page on ISO's website: **ISO/TC 269 on ISO Online**

Click on the tabs and links on this page to find the following information:

- About (Secretariat, Committee Manager, Chair, Date of creation, Scope, etc.)
- Contact details
- Structure (Subcommittees and working groups)
- Liaisons
- Meetings
- Tools
- Work programme (published standards and standards under development)

Reference information

Glossary of terms and abbreviations used in ISO/TC Business Plans

General information on the principles of ISO's technical work