



IEC/TC OR SC:	SECRETARIAT:	DATE:
IEC/TC 9	FRANCE	2019-11

Please ensure this form is annexed to the Report to the Standardization Management Board if it has been prepared during a meeting, or sent to the Central Office promptly after its contents have been agreed by the committee.

A. STATE TITLE AND SCOPE OF TC

Are there any new or emerging trends in technology that will impact the scope and work activities of the TC? Please describe briefly.

Do you need to update your scope to reflect new and emerging technologies? If yes, will these changes impact another TC's scope or work activities?

If yes, describe how these will impact another TC(s) and list the TC(s) it would impact

No change

Background

Electrical equipment and systems for railways

TC9 was established on the 24th April 1924 with the former title "Electric traction equipment".

Now it has the task to prepare international standards for the railway field which includes rolling stock, fixed installations and management systems (including communication, signalling and processing systems) for railway operation, their interfaces and their ecological environment.

These standards cover railway networks, metropolitan transport networks (including metros, tramways, trolleybuses and fully automated transport systems) and magnetic levitated transport systems.

These standards relate to systems, components and software and they will deal with electrical, electronic and mechanical aspects, the latter being limited to items depending on electrical factors.

These standards deal with electromechanical and electronic aspects of power components as well as with electronic hardware and software components.

These tasks are undertaken in close liaison with CENELEC/TC9X taking into account the needs expressed by users (as International Union of Public Transport (UITP)).

A major feature of the railway field is its specificity: even if some work items are similar to those covered in other industrial fields the relevant answers have to take into account the strain of coherence of the railway system as well as the interface specification need.

TC9 includes now 28 P-members : Austria, Belgium, Canada, China, Czech Republic, Denmark, Egypt, Finland, France, Germany, Iran, Italy, Japan, Korea (Democratic People's Republic of), Korea (Republic of), Luxemburg, Netherlands, Norway, Portugal, Romania, Russian Federation, Serbia, Singapore, South Africa, Spain, Sweden, Switzerland, United Kingdom, and 14 O-members: Belarus, Brazil, Bulgaria, Croatia, Greece, Hungary, India, Indonesia, New Zealand, Poland, Slovakia, Slovenia, Thailand and Ukraine.

To improve the efficiency of standards development, TC 9 standards aim at global common performance in principle according to the ISO/IEC Directives, Part 2, 5.2 "Performance principle"

(Ed. 7.0).

The following topics have been currently identified and they are limited to electrical equipment and systems relevant to TC9 scope.

Environmental aspects

- EMF
- EMC
- Acoustics
- Stray currents

Safety aspects

- Electrical safety
- Protection against fire
- Safety hazards in long tunnels
- Passenger safety (including passenger alarm systems, and communication between the operator and passengers)
- Event recorder (e.g. "Black box" or automatic system surveillance)

NOTE: all the safety aspects covered above are to be developed respecting safety regulations that may exist elsewhere.

Security aspects

- Confidentiality
- Integrity
- Availability
- Non-repudiation

NOTE: all the security aspects covered above are relevant to "cyber security". Non electrotechnical aspects of security such as societal security are excluded, except where they directly interact with electrotechnical security.

Functional aspects

- Demonstrating of functioning of one or several systems or subsystems
- Methods for demonstrating features of systems or subsystems
- Methods and acceptance criteria for testing of subsystems or systems.

Reliability, Availability, Maintainability (RAM) aspects

- RAM requirements
- RAM assurance during lifecycle
- Specific hazards related to rolling stock
- Methods for assessing
- Reliability testing
- Durability testing

All these topics are considered in the framework of the growing importance of urban transport and of the need to avoid to re-invent costly new solutions for each new metro system all over the world.

B. MANAGEMENT STRUCTURE OF THE TC

Describe the management structure of the TC (use of an organizational chart is acceptable) (should be integrated by CO automatically) and, if relevant (for example an unusual structure is used), provide the rationale as to why this structure is used.

Note: Check if the information on the IEC website is complete.

When was the last time the TC reviewed its management structure? Describe any changes made. When does the TC intend to review its current management structure? In the future, will the TC change the current structure, for example due to new and emerging technologies, product withdrawal, change in regulations etc. Please describe.

Make sure the overview includes:

- any joint working groups with other committees,
- any special groups like advisory groups, editing groups, etc.

Organizational chart

See document 9/2524A/INF

Management Strategy

In order to anticipate the needs and therefore to investigate the operating mid-term strategy to be proposed for adoption by TC9, a *Chairman Advisory Group (CAG)* has been set up. It is in charge of dealing with the following:

- to identify priorities in the technical activities;
- to identify technologies to be standardised;
- to identify subjects needed but not yet covered by current standardisation;
- to identify and evaluate any existing Public Available Specifications (PAS) and/or de-facto standards and/or standardisation trend;
- to review market needs of the particular sector taking into account the needs of users including consumers where appropriate;
- to provide guidance to TC9 in defining its Strategic Business Plan, particularly in light of the above;
- to review and establish priorities of work at the systems level in order to help TC9 in this development;
- to assess effectiveness of the programme of work in meeting the needs of the sector;
- to advise TC9 on possible overlaps, conflicts and gaps and recommend corrective action;
- to review all potential new work items;
- to act in the framework of IEC policy on Global Relevance;
- to identify the items impacted by:
 - European Interoperability Directives, TSIs
 - regulations in Asia,
 - regulations in America,
 - any other ...

All of the above aims at establishing and periodically reviewing and updating the TC9 mid-term strategy, part of which is mainly driven by CENELEC TC9X activities.

This *Chairman Advisory Group (CAG)* is chaired by IEC/TC9 chairman, the secretariat being that of TC9. The Officers of CENELEC/TC9X are invited as guests. The members are high rank representative of operators and supply industry within every region of the world. This group works along the terms of reference which have been adopted by TC9.

Type	Label	Description	Scope	Creation Date
Advisory Groups	AG CAG	Chairman Advisory Group	See above	2005-11-17

IEC/TC 9 - UIC collaboration

A cooperation agreement was signed on 11th June 2014 in Geneva between UIC (International Union of Railways) and IEC.

The collaboration between IEC/TC 9 and UIC is a liaison of type A. The description of the process for the cooperation can be found in the informative document 9/2130/INF.

To manage the cooperation on the different topics, four new Advisory Groups have been created to follow and work on common topics with UIC: the Strategic Liaison Group (SLG) and three subgroups dedicated to specific topics.

The groups make recommendations and the SLG meets with UIC twice per year.

Type	Label	Description	Scope	Creation Date
Advisory Groups	AG SLG	IEC UIC SLG (Strategic Liaison Group)		2014-11
Advisory Groups	AG SLG SG Multimedia	IEC UIC SLG Subgroup Multimedia	Multimedia systems on Rolling Stock	2016-02
Advisory Groups	AG SLG SG OCL	IEC UIC SLG Subgroup Overhead Contact Lines	Overhead contact lines for power supply	2015-09
Advisory Groups	AG SLG SG Trainet	IEC UIC SLG Subgroup Trainet		2014-11

At the last Plenary meeting (Tokyo, November 2018), TC 9 agreed with the proposal of TC 1 to include the topic of Terms and Definitions within the scope of work of TC 9 – UIC cooperation.

Note: TC 9 decided to remove the limitation of scope on the application area of the SLG Trainet subgroup in order to provide inputs based on the needs of the related working groups in TC 9.

Revision Strategy

IEC/TC 9 revises regularly its standards in Maintenance Teams.

Maintenance Team(s) created since the last plenary meeting:

- MT 60349

Maintenance Team(s) disbanded since the last plenary meeting:

- MT 60050

- MT 62236

- MT 62505-3

List of active Maintenance Teams:

Type	Label	Description	Scope	Creation Date
Maintenance Teams	MT 62590	Railway applications - Fixed installations - Electronic power converters for substations	Revision of IEC 62590, Railway applications - Fixed installations - Electronic power converters for substations	2017-02-23

Maintenance Teams	MT 62597	Measurement procedures of magnetic field levels generated by electronic and electrical apparatus in the railway environment with respect to human exposure	To revise IEC 62597 TS, Measurement procedures of magnetic field levels generated by electronic and electrical apparatus in the railway environment with respect to human exposure	2016-12-12
Maintenance Teams	MT 61991	Railway Applications - Rolling stock - Protective provisions against electrical hazards	- To maintain IEC 61991 Ed.1	2015-11-05
Maintenance Teams	MT 60077	Railway applications – Electric equipment for rolling stock	To revise IEC 60077 series	2014-01-07
Maintenance Teams	MT 62505	Railway applications – Fixed installations – Particular requirements for alternating current switchgear – Part 1: Circuit-breakers with nominal voltage above 1 kV; Part 2: Disconnectors, earthing switches and switches with nominal voltage above 1 kV; Part 3: Measurement, control and protection devices for specific use in a.c. tractions systems	- Maintenance of the IEC 62505 series considering the equivalent new EN 50152 editions	2013-05-24
Maintenance Teams	MT 62486	Railway applications – Current collection systems – Technical criteria for the interaction between pantograph and overhead line (to achieve free access)		2012-11-13

New items and Merging Strategy with CENELEC

- New items:

IEC/TC 9 develops its new standards in Project Teams or in Working Groups.

- Merging Strategy with CENELEC:

In order to implement the Frankfurt Agreement in a strategic way, IEC and CENELEC have agreed upon a Merging Strategy between IEC TC9 and CENELEC TC 9X

This merging strategy is organised as a general principle document, referred to as 9/1831/DC and approved without comments in 9/1859/INF, and an implementation document (the most recent being 9/2486/INF). These documents are regularly updated by the Officers of IEC/TC9 and Cenelec/TC9X.

Project Team(s) created since the last plenary meeting:

- PT 62590-3-1
- PT 63190
- PT 62973-4

Project Team(s) disbanded since the last plenary meeting:

- PT 62995
- PT 62928
- PT 62973-1

List of active Project Teams:

Type	Label	Description	Scope	Creation Date
Project Teams	PT 62846	Railway applications - Current collection systems - Requirements for and validations of measurementss of the dynamic interaction between pantograph and overhead contact line		2012-10-23
Project Teams	PT 62973-4	Railway applications - Rolling stock - Batteries for auxiliary power supply systems - Part 4: Secondary sealed nickel-metal hydride batteries	- To develop a standard on secondary sealed nickel-metal hydride batteries for railway applications and auxiliary power supply systems	2018-04-03
Project Teams	PT 63190	Railway applications – Fixed installations – Electric traction – Copper and copper alloy messenger wires for overhead contact line systems	To develop a standart on Railway applications – Fixed installations – Electric traction – Copper and copper alloy messenger wires for overhead contact line systems	2018-03-22
Project Teams	PT 62973-2	Railway applications - Batteries for auxiliary power supply systems - Part 2: Nickel Cadmium (NiCd) batteries	- To prepare the future standard IEC 62973-2	2016-11-03
Project Teams	PT 63076	Railway applications – Rolling stock – Electric equipment in trolley buses – Safety requirements and current collection systems		2016-08-11
Project Teams	PT 62912-2	Railway applications - Direct current signalling monostable relays of spring type	- To prepare the draft of IEC 62912-2, Railway applications - Direct current signalling monostable relays of spring type	2016-05-27
Project Teams	PT 62848-2	Railway applications - Fixed installations - D.C. surge arresters and voltage limiting devices - Part 2: Voltage limiting devices	- To develop IEC 62848-2	2015-04-10
Project Teams	PT 62924	Railway applications - Fixed installations - Stationary energy storage	To prepare the draft of IEC 62924 Ed 1, Railway applications – Fixed	2014-03-12

		system for DC traction system	installations – Stationary energy storage system for DC traction systems	
Project Teams	PT 62888	Railway applications – Energy measurement on board trains		2013-08-08

Working Group(s) created since the last plenary meeting:

- WG 50 "Electronic power converters"

Working Group(s) disbanded since the last plenary meeting:

- None

List of active Working Groups:

Type	Label	Description	Scope	Creation Date
Working Groups	WG 40	Railway applications- Urban Guided Transport Management and Command/Control Systems	To develop standards on Urban Guided Transport Management and Command/Control Systems	2001-07-06
Working Groups	WG 43	Railway applications - Train communication network (TCN)	To develop IEC 61375 series for TCN	2005-11-17
Working Groups	WG 46	Onboard multimedia systems for railways	To develop standards for onboard multimedia systems for railways	2008-11-07
Working Groups	WG 48	ODDRS – On board Driving Date Recording System	To develop standards for ODDRS – On board Driving Date Recording System	2009-04-03
Working Groups	WG 50*	Railway applications – Fixed installations – Electronic power converter	To develop standards for electronic power converters	2019-02-15

**Pending decision*

NWIP preparation

The preparation of the NWIs and the preliminary studies are made in specific ad-Hoc Groups.

Ad-Hoc Group(s) created since the last plenary meeting:

- AHG 24
- AHG 25

Ad-Hoc Group(s) disbanded since the last plenary meeting:

- AHG 14
- AHG 15
- AHG 16
- AHG 21

List of active ad-Hoc Groups:

Type	Label	Description	Scope	Creation Date
ad-Hoc	AHG 17	Transducers for rolling	To prepare a NWIP on	2016-12-12

Groups		stock	transducers	
ad-Hoc Groups	AHG 18	Proposal for the revision of IEC 61373	- Preparing a proposal for the revision of IEC 61373:2010	2016-12-20
ad-Hoc Groups	AHG 19	Studying and reporting on ACEE Guides	1. To study ACEE guides; 2. To report to IEC TC 9 comments on ACEE guides for being forwarded to IEC ACEE.	2017-08-04
ad-Hoc Groups	AHG 20	Study ACSEC Guide 120 in view of implications on the work of TC 9	Study ACSEC Guide 120 in view of implications on the work of TC 9	2018-02-01
ad-Hoc Groups	AHG 21	Electronic power quality compensators for single phase AC traction systems	Prepare a NWIP on "Electronic power quality compensators for single phase AC traction systems" in coordination with MT 62590	2018-02-01
ad-Hoc Groups	AHG 22	Railway applications - Batteries for auxiliary power supply systems - Lead acid batteries	To prepare a working draft and to review the Chinese NWIP on Lead acid batteries (future IEC 62973-3).	2018-02-15
ad-Hoc Groups	AHG 23	Protection against corrosion by stray current from direct current	To prepare to prepare a NWIP related to a standard on the topic of "Protection against corrosion by stray current from direct current".	2018-02-15
ad-Hoc Groups	AHG 24	Durability	- To draft a new Technical Report on the subject of durability in the field of Electrical equipment and systems for railways	2018-10-05
ad-Hoc Groups	AHG 25	Railway applications – Rolling stock – Batteries for auxiliary power supply systems – Part 5: Lithium Ion batteries	- Elaborate a part 5 for IEC 62973, Railway applications – Rolling stock – Batteries for auxiliary power supply systems – Part 5: Lithium Ion batteries	2019-01-15

C. BUSINESS ENVIRONMENT

Provide the rationale for the market relevance of the future standards being produced in the TC.

If readily available, provide an indication of global or regional sales of products or services related to the TC/SC work and state the source of the data.

Specify if standards will be significantly effective for assessing regulatory compliance.

In the recent years, the railway sector has been subject to changes which have greatly influenced the design of railway systems and these changes concern operating characteristics as well as the technology involved.

One consequence of the recent evolutions made is that after a period when the users were the leaders of the standardisation works, the manufacturers are now the more deeply involved and they act on a world wide area.

The task of IEC/TC9 is influenced by regional activities such as those resulting from the adoption of EC Directives by the European Union. Therefore IEC should see where there is a need of an attractive action for worldwide standardization by:

- adapting regional standards when possible;
- creating original International Standards when there is a specific need different from regional ones;
- focusing its means preferably on general worldwide items.

The goal is that in a near future IEC/TC9 will be responsible of a full coherent set of standards, including those based on regional standards.

D. MARKET DEMAND

Provide a list of likely customers of the standards (suppliers, specifiers, testing bodies, regulators, installers, other TC/SC's etc.). Do not specify company names, only categories of customers.

International standardisation in the railway field has for a long time been focused to guidance and general considerations.

In any case the demand is driven by the technical development of modern transportation and the movement towards computer based management, control and communication systems while the need to maintain a high level of safety remains a high level priority. These can be a source of difficulty insofar as implementation of solutions is quick, their different characteristics not necessarily compatible and a product standard cannot be restricted to any single accurate product.

The railway market is asking more and more for digitalization of railway services, consequently the data security is a key issue of the new railway digital applications.

It is important that standards do not inhibit development and/or application of new technology for the benefit of the railway industry as a whole (i.e. users, operators, designers, etc.). Therefore, as a minimum, standards should allow use of newer technology without being infringed so that the way to follow for drafting standards appears to be a performance/interface design and not a technology descriptive one.

E. TRENDS IN TECHNOLOGY AND IN THE MARKET

If any, indicate the current or expected trends in the technology or in the market covered by the products of your TC/SC.

Trends in technology

Increasing performance in traction systems has become possible through techniques based on power electronics on board allowing the use of traction motors having higher power-to-weight ratio.

In the meantime high speed processors were developed for:

- power control (electronics converters or inverters),
- operating control (new operating procedures, automation of some functions, monitoring, diagnostic and maintenance procedures, data transmission for operation and overhaul).

Both power control and operating control have relevant functionalities that are implemented with equipment where software is playing a more and more important role.

Traction systems involve three "paths":

- intelligence path,
- electric power path,
- mechanical power path,

the whole including all apparatus, components and connections of those paths inside/between vehicles, taking the following into account:

- presence of high frequencies, even inside power equipment, requires EMC specifications inside and outside;
- speed increasing causes stray frequencies for mechanical quantities and consequently mechanoacoustic compatibility problems, either inside or outside of vehicles;
- operation on the same network of various traction systems (i.e. dc and ac supply) demands further attention to galvanic compatibility concerns between them and with environment;
- interchangeability of locomotives and rolling stocks requires to maintain compatibility for modern control systems;
- automatic people movers require specific provisions as fully automatic systems...

Market trends

The expansion of urban and suburban transport systems as well as automatic people movers together with the increasing speed of inter-city trains should be emphasised.

This evolution has nevertheless not deeply changed some specific conditions applying to the use of electrical equipment on railways, namely electric propulsion by motors, particular environmental conditions on board vehicles, an exceptional life cycle (up to 40 years) and high reliability.

The increase of trade exchange and the development of new technology lead to an ever growing need of technical compatibility between systems and sub-systems.

F. SYSTEM APPROACH ASPECTS (REFERENCE - AC/33/2013)

Does your TC/SC have a need for a systems approach?

If so:

- Will the Systems work be in a single TC or in multiple TCs?
- Will a Systems Evaluation Group (SEG), Systems Committee (SyC), or Systems Resource Group be required?
- Is your TC/SC work of relevance to ISO?
- Is or are there fora or consortia working in parallel to IEC? Is there a chance to integrate this work in your TC/SC?

This should not only be restricted to the customer/supplier relationships with other TC/SCs indicating types of co-operation (e.g. liaisons, joint working groups) but be of a more generic nature.

If there is no need for a systems approach as outlined in AC/33/2013, is it intended a TC would not be requested to report on general systems approach considerations such as customer/supplier relationships, liaisons, joint WGs, etc. as referenced in the system approach matrix illustrated in slide 14 of the presentation attached to AC/37/2006?

The traditional approach (i.e. product by product) should be supplemented by an approach making better allowance for the functional aspects of systems and subsystems. This approach is justified by the increasing complexity of interaction between equipment and by the application of quality control procedures (ISO 9001) during the design and testing phases

The whole railway field is technically a very important system because it involves a lot of various technologies having to work efficiently together inside equipment or railway subsystems in order to operate properly and in a safe way. This aspect explains two main characteristics of TC9 activity:

- TC9 is developing standards which can be of various kinds: system, component or principles;
- There is no particular TC in IEC with which a standardization system approach can be permanently identified but a lot of liaisons which are set up regarding the current concerns at one moment.

In order to meet that fundamental goal, International railway standardization shall consider in a coherent way the application of standards which could be fully specific, partly specific or not specific to the railway field.

On the other hand TC9 is fully integrated into the whole International IEC process which involves a lot of TCs of various kinds: horizontal, technology specialized, concept or safety or environment oriented.

It is the reason why TC9 has been adopting the following policy for a long time:

- Once the need for a standard is identified, it is first investigated whether existing standards prepared by other TCs can apply, fully or partly,
- If they exist and they can fully meet the goal, nothing more is to be done by TC9,
- If they exist but there is a need for specific changes or additions for the railways, drafting a railway standard can be undertaken within TC9 provided that this standard will refer to the existing more general ones and will specify only what the latter do not contain; In the case that a railway standard includes specific requirements which are derived from a general standard, and that this general standard is revised then the railway standard shall be revised if necessary
- If they do not exist, TC9 of course undertakes the full task, with possible liaisons as appropriate; in this context TC9 has set up liaisons with the following committees, inside IEC as well as with external organizations:

TC/SC	Title	Main goal
TC 8	Systems aspects for electrical energy supply	To ensure coordination about energy supply
SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes	To ensure coordination about batteries
SC 32 B	Low-voltage fuses	To ensure coordination about fuses
TC 36	Insulators	To ensure coordination about insulators
TC 40	Capacitors and resistors for electronic equipment	To ensure coordination about capacitors for power storage
SC48B	Connectors	To ensure coordination about electric connectors
TC 56	Dependability	To ensure coordination about dependability on rolling stock equipment
TC 69	Electric road vehicles and electric industrial trucks	To ensure coordination for the development of double-layer capacitors for energy storage
TC 79	Alarm and electronic security systems	To deal with the interfaces between IEC 62580 series of TC9 and 62676 series of TC 79
TC 99	System engineering and erection of electrical power installations in systems with nominal voltages above 1 kV a.c. and 1,5 kV d.c., particularly concerning safety aspects	To make sure there is no overlap, particularly in the scope of IEC 61936-1
TC 100	Audio, video and multimedia systems and equipment	To ensure coordination for the development of multimedia application on-board rolling stock
TC 106	Methods for the assessment of electric, magnetic and electromagnetic fields associated with human exposure	To ensure coordination in the development of standards dealing with EMF
TC 109	Insulation co-ordination for low-voltage equipment	To ensure coordination in the development of standards dealing with insulation coordination
ACSEC	Advisory Committee on Information security and data privacy	To ensure coordination on the security topic and to evaluate the impact on TC 9 publications
ACEE	Advisory Committee on Energy Efficiency	To ensure coordination on the energy efficiency topic and to evaluate the impact on TC 9 publications
ACEC	Advisory Committee on Electromagnetic Compatibility	To ensure coordination on the electromagnetic compatibility topic and to evaluate the impact on TC 9 publications

SyC Smart Energy	Smart Energy	To ensure coordination on the smart energy topic and to evaluate the impact on TC 9 publications
CISPR B	Interference relating to industrial, scientific and medical radio-frequency apparatus, to other (heavy) industrial equipment, to overhead power lines, to high voltage equipment and to electric traction	To ensure coordination on EMC aspects
JTC1 SC29	Coding of Moving Pictures and Audio	To ensure coordination in the development of multimedia protocol for on-board multimedia applications
IEEE P1901	Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications	To ensure coordination in the development of communication protocols for train communication networks
ISO/TC268/SC1	Smart community infrastructures	To ensure coordination in the development of Smart transportation
ISO/TC 269	Railway Applications	To ensure coordination in the development of international standards related to railway applications between electrical and non-electrical activities
UIC	International Union of Railways	To ensure coordination with UIC programme of work and to receive information on the operational aspects.
UITP	International Association of Public Transport	To ensure coordination in the development of international standards related to urban transport

G. CONFORMITY ASSESSMENT

With reference to clause 6.7 of Part 2 of the ISO/IEC directives, are all your publications in line with the requirements related to conformity assessment aspects?

Will the TC/SC publications be used for IEC Conformity Assessment Systems (IECEE, IECEx, IECQ, IECRE)?

Will any of your standards include test specifications, reproducible test requirements, and test methods?

Are there likely to be special conformity assessment requirements generated by any standards projects? If yes, list which projects.

All TC9 publications are in line with the requirements related to conformity assessment aspects, but they are not used for IEC Conformity Assessment Systems.

Some of TC9 standards include test specifications, reproducible test requirements, and test methods. Attention is paid in excluding, from such standards, any general requirements for conformity assessment schemes and systems but to refer to documents prepared by ISO/CASCO in liaison with the IEC Conformity Assessment Board (IEC/CAB).

The following projects include specific conformity assessment requirements:

Project Reference	Title	Document Reference	§ containing conformity assessment requirements
IEC 60310 Ed. 4.0	Railway applications - Traction transformers and inductors on board rolling stock	IS	13.2.11.1, 13.2.11.3, 13.2.11.4
IEC 61133 Ed. 3.0	Railway applications - Rolling stock - Testing of rolling stock on completion of construction and before entry into service	IS	4.3
IEC 61375-2-2	Electronic railway equipment - Train communication network (TCN) - Part 2-2: Wire Train Bus conformance testing	IS	Entire publication
IEC 61375-3-2	Electronic railway equipment - Train communication network (TCN) - Part 3-2: MVB (Multifunction Vehicle Bus) conformance testing	IS	Entire publication
IEC 62625-2	Electronic railway equipment - On board driving data recording system - Part 2: Conformity testing	IS	Entire publication
IEC 62888-1 Ed. 1.0	Railway applications - Energy measurement on board trains - Part 1: General	IS	1
IEC 62888-2 Ed. 1.0	Railway applications - Energy measurement on board trains - Part 2: Energy measuring	IS	1, 5.1.2.1, 5.3.1
IEC 62888-3 Ed. 1.0	Railway applications - Energy measurement on board trains - Part 3: Data handling	IS	1, 5 and its subclauses
IEC 62888-4 Ed. 1.0	Railway applications - Energy measurement on board trains - Part 4: Communication	IS	1, 3.18, 4.2.2, 5 and its subclauses, C.2.5, C.3.2
IEC 62888-5 Ed. 1.0	Railway applications - Energy measurement on board trains – Part 5: Conformance test	IS	5 and its subclauses

H. 3-5 YEAR PROJECTED STRATEGIC OBJECTIVES, ACTIONS, TARGET DATES

STRATEGIC OBJECTIVES 3-5 YEARS	ACTIONS TO SUPPORT THE STRATEGIC OBJECTIVES	TARGET DATE(S) TO COMPLETE THE ACTIONS
<u>Merging Strategy with CENELEC</u>	The documents will be updated from time to time by the Officers of IEC/TC9 and	Continuous action without target date.

<p>In order to implement the Frankfurt Agreement in a strategic way, IEC and CENELEC have agreed upon a Merging Strategy between IEC TC9 and CENELEC TC 9X</p> <p>This merging strategy is organised as a general principle document, referred to as 9/1981/DC, and an implementation document.</p>	<p>CENELEC/TC9X (9/2300/DC).</p>	
<p><u>Merging Strategy with CENELEC</u></p> <p>TC 9 decided to endorse the following EN standard offered by CENELEC/TC9X.</p>	<p>IEC 62995 results from the endorsement by IEC/TC 9 of EN 50343:2014 “<i>Railway applications – Rolling Stock – Rules for installation of cabling</i>”.</p>	<p>The standard was published in 2018</p>
<p><u>Merging Strategy with CENELEC</u></p> <p>TC 9 decided to endorse the following EN standard offered by CENELEC/TC9X.</p>	<p>IEC 62848-2 results from the endorsement by IEC/TC 9 of EN 50526-2:2014“<i>Fixed installations - D.C. surge arresters and voltage limiting devices - Part 2: Voltage limiting devices</i>”.</p> <p>PT 62848-2 works on this endorsement.</p>	<p>FDIS text waited for January 2019.</p>
<p><u>Merging Strategy with CENELEC</u></p> <p>TC 9 decided to endorse the following EN standard offered by CENELEC/TC9X.</p>	<p>IEC 62888 results from the endorsement by IEC/TC 9 of EN 50463:2012“<i>Railway applications - Energy measurement on board trains</i>”.</p> <p>PT 62888 waits for the offer of TC 9X of the 2017 edition of EN 50463 Parts 1 to 5.</p>	<p>• IEC 62888-1, -2,-3,-4, -5 and -6 were published in 2018.</p>
<p><u>Cooperation agreement between IEC and UIC</u></p>	<p>TC 9 Officers will prepare a draft of process of UIC-IEC cooperation and justification for cooperation (see IEC/TC9 resolution 55/04).</p> <p>TC 9 requests UIC to share its work program twice per year (in March and in September) for circulation inside TC 9 (see IEC/TC9 resolution 55/07).</p>	<p>9/2130A/INF description of the process for the cooperation between UIC and IEC TC 9 was circulated in February 2016</p> <p>Continuous action without target date.</p> <p>In 2018, UIC did not provide its work program.</p>
<p><u>IEC 61375 series</u></p> <p>TC 9 decided to work on “<i>Train</i>”</p>	<p><u>Published standards</u></p> <p>• IEC 61375-1, -2-1, -2-2, -2-3, -2-5, -3-1, -3-2, -3-4, IEC/TS</p>	<p>• IEC 61375-2-6 was published in 2018</p>

<p><i>communication network (TCN)</i>” and delegated WG 43 to produce the standards.</p>	<p>61375-2-4 and IEC/TR 61375-2-7.</p> <p><u>Under preparation</u></p> <p>WG 43 works on the last draft under preparation:</p> <ul style="list-style-type: none"> • IEC 61375-2-8 	<p>IEC/FDIS 61375-2-8 is foreseen for October 2020.</p>
<p><u>IEC 62580 series</u></p> <p>TC 9 decided to work on “<i>On-board multimedia systems for railway</i>” and delegated WG 46 to produce the standards.</p>	<p><u>Published standards</u></p> <ul style="list-style-type: none"> • IEC 62580-1 • IEC/TS 62580-2 <p><u>Under preparation</u></p> <p>none</p> <p><u>Future Projects</u></p> <ul style="list-style-type: none"> • IEC 62580-3 • IEC 62580-4 • IEC 62580-5 	
<p>Note: The progress on the actions should be reported in the RSMB.</p>		

Annex: Ecological environment

In terms of environment, the considerations (e.g.: noise emission of equipment) to be incorporated into railway product standards can be performance requirements only provided that such products standard are developed as performance and interface specifications and not as technologically descriptive.

In that respect amendments to existing product standards should be envisaged to take into consideration also the disposal, recyclability, reusability and toxicity concerns where necessary.

In addition specific environmental railway generic standard should be developed for application and reference in various product standards:

- EMC specifications are developed to cover the emission of the railway system towards the external world;
- Other environmental aspects such as stray currents are investigated;
- Acoustics should be envisaged as a possible matter of standardisation as well.

For environment matters that will be dealt with by TC 9, it was decided to monitor directly TC 111 activities without an official liaison. Direct contact is established for the standards that are of concern to TC 111 (Energy efficiency, energy measurements, etc.).

TC9 is exploring further possibilities for standardization projects to pursue energy management in view of assisting and promoting the energy efficiency in trains and associated infrastructure.

Particularly TC9 promotes or currently works on new work items in the following areas:

- on-board energy measuring for supporting energy calculation and saving;
- energy saving, e.g. assisting driver for optimal driving and energy management by Train Control and Monitoring System (TCMS);
- recovery of braking energy, e.g. reversible electrical sub-station, hybrid traction and onboard or stationary energy storage.

In consideration of the merging strategy, TC9 will coordinate this topic with CENELEC TC9X.

Annex: Action plan

1 Continuous actions

The current work programme of TC9 is recorded in the IEC database.

In order to take into account the limited expertise resources, urgent European priority items such as provisions linked with interoperability Directives are dealt with at European level only for the time being and will be discussed at international level (preferably at CD or CDV stage when approved as new item) when completed by CENELEC whilst following the Frankfurt agreement as far as possible.

A close permanent relationship has to be maintained and improved between the entities at present involved in international and regional railway standardisation work, namely IEC/TC9, CENELEC/TC9X and UITP.

It will be necessary to harmonise as far as possible the horizontal standards of general interest and the railway standards prepared by TC9; as stated above, relevant formal liaisons should be set up where necessary, e.g. with CISPR for EMC-related standards.

TC9 has to hold meetings according to an appropriate frequency (i.e. once a year for the time being).

In order to ensure an efficient work management, common meetings of convenors and project leaders have to be held regularly between plenary meetings (i.e. once a year for the time being, roughly six months after a plenary meeting) ; during such meetings TC9/Officers, convenors and project leaders are empowered to agree upon recommendations to be submitted to TC9 for endorsement.

TC9 encourages the use of multimedia means in order to lower the costs and improve efficiency

Considering that ICT (Information and Communication technology) is pervasively spreading into railway applications, TC9 encourages the use of the IEC Guide 120: Security aspects – Guidelines for their inclusion in publications in order to assess what security topics should be covered in IEC TC9 publications and how the implementation of security aspects should take place.

In order to ensure a coherent monitoring of railway standardisation and to implement the merging strategy with CENELEC, common meetings of chairmen and secretaries of IEC/TC9 and CENELEC/TC9X have to be held regularly (i.e. once a year for the time being).

Annex: Useful links to IEC web site

- [TC home page - TC/SC Officers, Scope, Liaisons, WG/MT/PT structure](#)
- [Membership](#)
- [Publications issued](#)
- [Work Programme](#)
- [Maintenance programme](#)

Name or signature of the secretary
D. MIGLIANICO

Name or signature of the assistant secretary
I. LUCA