

Activities of RISC on International Standardization in the Railway Field



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Introduction

The Railway International Standards Center (RISC) of the Railway Technical Research Institute (RTRI) was established and commenced its activities on April 1, 2010. RISC is a membership organization which is mainly composed of the railway operators, railway-related industries and JIS drafting committees in Japan. The purpose of the work in RISC is to develop a safer, more eco-friendly and more technologically advanced railway systems for both Japan and the world in the future. In the activities of RISC, the management and deliberation related to international standards of the railway technologies are included. In addition, RISC also gathers and provides information, which is closely related to international standardization, to the members of RISC, and promotes the development of human resources engaged in the standardization. In this article, the summary of the activities of RISC related to standardization are shown.

Advisory Group	Ad-Hoc Groups	Working Group	Project Teams		Maintenance Teams	
CAG	AHG 19 Studying and reporting on ACEE Guides	WG 40 Urban Guided Transport Management and Command/Control Systems	PT 62848-3 D.C. surge arresters and voltage limiting devices - Part 3: Application Guide	PT 63453 Validation of simulation of the dynamic interaction between pantograph and overhead contact line	MT 60349 Rotating electrical machines for rail and road vehicles	MT 62128 Revision of IEC 62128 series
SLG IEC-UIC	AHG 20 Study ACSEC Guide 120 in view of implications on the work of TC 9	WG 43 Train communication network	PT 62973-2 Batteries for auxiliary power supply systems - Part 2: NiCd batteries	PT 63477 Coordination requirements and energy-saving performance evaluation for EFS in DC Traction Power Systems	MT 61373 Shock and vibration tests	MT 62973-1 Batteries for auxiliary power systems - Part 1: General requirements
- SG Trainet	AHG 28 Safe transmission protocol	WG 46 Onboard multimedia systems for railways	PT 62973-3 Batteries for auxiliary power supply systems - Part 3: Lead acid batteries	PT 63488 Technical criteria for the coordinations in neutral-section passing system for train	MT 60310 Traction transformers and inductors on board rolling stock	MT 62888 Energy measurement on board trains
- SG Multimedia	AHG 30 IEC/TC 9 Standards map	WG 48 On board driving information system	PT 62973-4 Batteries for auxiliary power supply systems - Part 4: Secondary sealed nickel - metal hydride batteries	PT 63495 Interoperability and safety of dynamic wireless power transfer (WPT) for railways	MT 62278 RAMS	MT 62427 Compatibility between rolling stock and train detection systems
- SG Fixed Installations	AHG 31 Sustainable electrified transportation	WG 50 Electronic power converter	PT 62973-5 Batteries for auxiliary power supply systems - Part 5: Lithium-ion batteries	PT 63498 System Energy Efficiency	MT 60913 Electric traction overhead contact lines	MT 62486 Technical criteria for the interaction between pantograph and overhead line
- SG Prognostics Health Management	AHG 32 Lightning protection for traction power supply system of rail transit	JWG 51 Fuel cell systems for railway applications	PT 63341-2 Fuel cell systems for propulsion - Part 2: Hydrogen storage system	PT 591 Specification and verification of energy consumption	MT 62425 Safety related electronic systems for signaling	
	AHG 33 SCADA for railways		PT 63438 Protection principles for AC and DC electric traction power supply systems	PT 641 Requirements for the validation of simulation tools used for the design of traction power supply		
	AHG 34 Gaseous hydrogen filling stations		PT 63452 Cybersecurity	PT 63536 Signalling and control systems for non UGTMS Urban Rail systems		

Structure of IEC/TC 9 (Nov/2023)

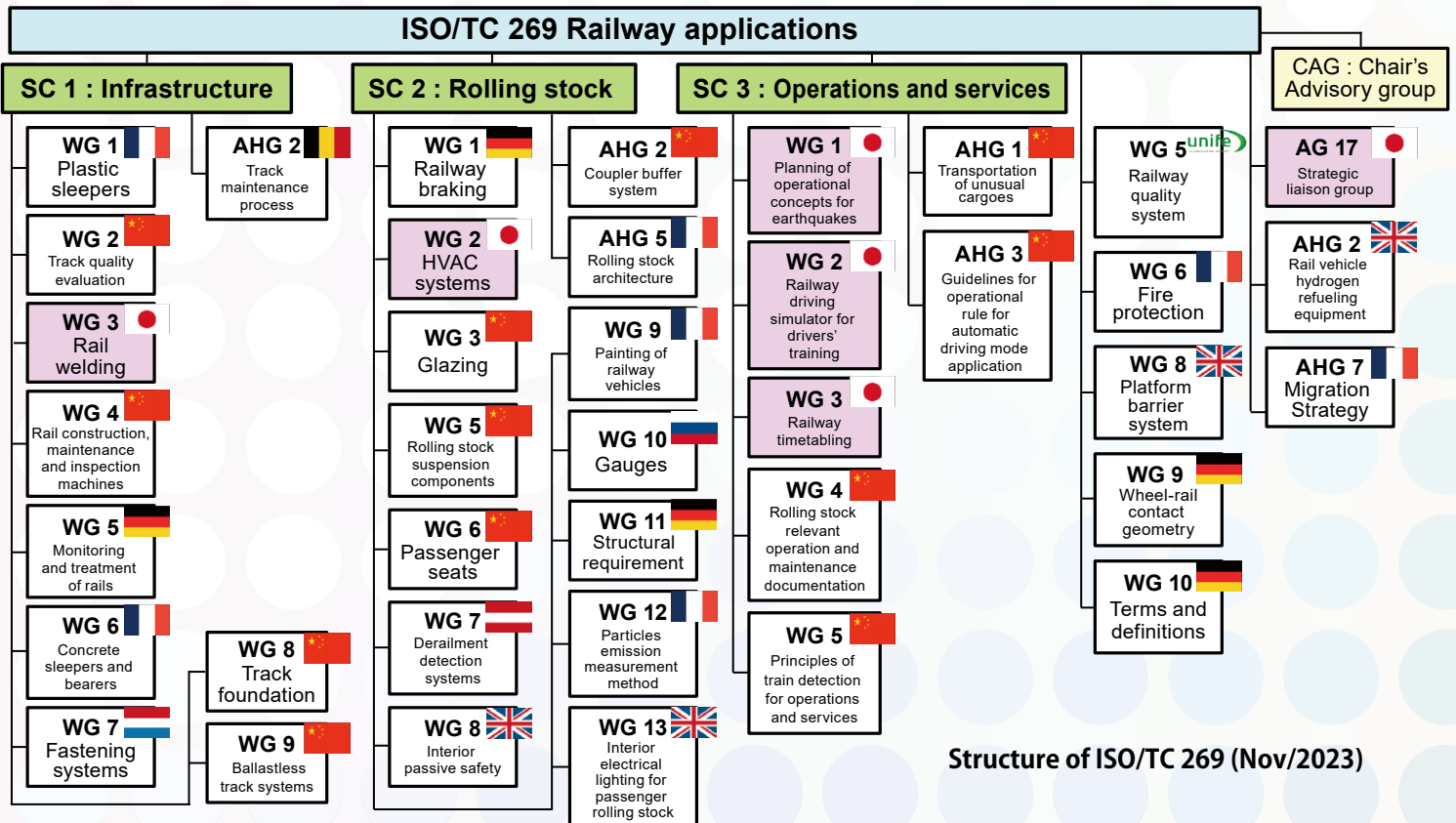
International Standardization Activities

Since 2010, RISC has taken on the role of the national secretariat of IEC's Technical Committee 9, which is dedicated to electrical equipment and systems for railways (IEC/TC 9). As for ISO, a new technical committee (ISO/TC 269: Railway applications) was established in April 2012, and in 2016, it was followed by three Sub Committees (SCs). In order to manage this movement appropriately, RISC has also acted as the national secretariat for ISO/TC 269 and its SCs, as well as ISO/TC 17/SC 15. RISC has been able to quickly understand the global trends relating to both IEC and ISO standards in the railway field and to keep up with the growing need for the standards worldwide.

Structure of IEC/TC 9 (Nov/2023) and Structure of ISO/TC 269 (Nov/2023) show the organizations in ISO/TC 269 and IEC/TC 9. It is found that more than eighty projects are ongoing in the two technical committees and that the scopes covered in the field are also wider. Changes in number of the international projects and the changes in number of the experts who have participated in these projects in Japan shows the changes in the number of the international projects that RISC has worked on since 2016. In Changes in

number of the international projects and the changes in number of the experts who have participated in these projects in Japan, the changes in the number of the experts who have participated in these projects in Japan are also shown. It can be observed that the number of the international standards has almost doubled in six years and the number of the international experts is also increasing accordingly.

In recent years, some important international standards, such as fire protection of railway vehicles and crashworthiness requirements for rail vehicles, have been discussed. The scope of the standards of fire protection is to prevent and reduce the hazards associated with fires in the vehicles, and the standards for the protection have been developed on the migration strategy of EN standards. In EN standards, in order to ensure the safety of passengers and staff to the maximum extent possible, the design requirements for the vehicles are specified which take into account the time period for the passengers and staff to move to a safe place. However, in Japan, there are regulations which state that the performance of fire resistance materials shall be verified through combustion tests, which are determined depending on the parts of the vehicle. This suggests that there is a difference in approach

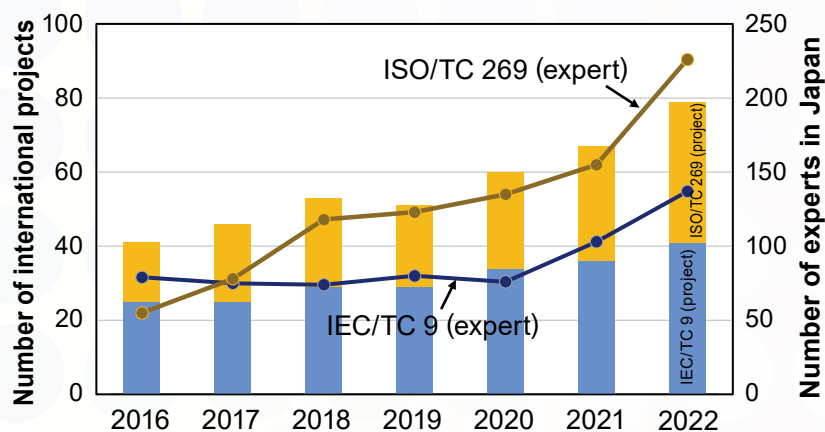


Structure of ISO/TC 269 (Nov/2023)

on fire protection between Europe and Japan. For the crashworthiness requirements for the vehicles, the standards have been also developed based on EN standards. In EN standards, the safety requirements are prescribed in the case of train collision accidents. However, in Japan, there are no national standards for train collision because the accidents can be prevented by the railway signaling system appropriately. This also indicates a difference in approach on crash safety between Europe and Japan. These points suggest that, in order that Japanese and European experts might reach a consensus on the technical issues through deliberations of the standards, it is important for both experts to explain railway technologies carefully and reasonably, ranging from basic to advanced research.

It is necessary that all the experts play a leading role by improving both presence and influence in the deliberations on international standardization in the railway field, such as by providing appropriate opinions, and by strategically ensuring that more advanced railway systems developed worldwide are reasonably included in the standards. This requires the development of not only human resources who actively participate in the deliberations related to international standards in the railway field, but also human resources who can play a leading role in deliberations in the future. Therefore, RISC has set out the program to develop human resources working on international standardization and has been putting it into practice for the staffs in RISC.

In addition, to enhance the presence of Japan in the international standardization activities, the 12th Plenary Meeting of ISO/TC269 and 8th Plenary Meetings of its SCs were held from June 6 to 9, 2023, in Tokyo, and RISC hosted the plenary meeting of the



Changes in number of the international projects and the changes in number of the experts who have participated in these projects in Japan

technical committee and its subcommittees (see *The 12th Plenary Meeting of ISO/TC269 from June 6 to 9, 2023, in Tokyo*). Whereas in recent years, they had been held in a web format due to the Corona disaster, these meetings were held in a hybrid format that also allows face-to-face participation for the first time in four years. At these plenary meetings, both the progress of the standards and the proposals on new standards were discussed energetically. Through the meetings, RISC showed that Japan plays an important role in international standardization in the countries which attended them.

Conclusion

Through these activities, RISC has been strategically working on the international standardization of railway systems, which has been developed worldwide. And RISC will continue to contribute to the sustainable future development of the railway worldwide.

The 12th Plenary Meeting of ISO/TC269 from June 6 to 9, 2023, in Tokyo

