



IEC/TC OR SC:	SECRETARIAT:	DATE:
69	BE	2017-03

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A STATE TITLE AND SCOPE OF TC

TC69 "Electric road vehicles and electric industrial trucks"

Scope: To prepare international standards for road vehicles, totally or partly electrically propelled from self-contained power sources, and for electric industrial trucks.

B Management Structure of the TC

The current organization of TC 69 can be summarized as follows. Activities on vehicle performance, vehicle safety and hybrid vehicles have been transferred to ISO TC22 SC37.

- WG4: Power supplies and chargers

Work on IEC 61851-1 Edition 3 and IEC 61851-21-1 has been completed and WG4 has been disbanded. A new MT will be in charge of the maintenance of IEC 61851-1 only.

- WG7: Electric vehicle wireless power transfer (WPT) systems

Work on inductive charging standards has been started by the IEC 61980 joint project team.

The document ISO/IEC 19363 will cover vehicle-related aspects and is being dealt with in the same way as ISO/IEC 17409.

- WG8: Management of Electric Vehicles charging and discharging infrastructures

IEC 63110 series will comprise three different standards: Part 1 on basic definitions, use cases and architectures, Part 2 on technical protocol specifications and requirements, Part 3 on requirements for conformance tests.

- WG9: Electric vehicle charging roaming service

It is intended to develop IEC 63119 series on Information exchange for Electric Vehicle charging roaming service. Part 1 deals with General.

- WG10: Light Electric Vehicles conductive power supply systems

Work on standards for Light Electric Vehicles has been started by the IEC 61851-3 joint project team.

The supply systems described in the IEC 61851-3 series are primarily related for the use by EVs of category L referred to as Light EV.

- MT 5: Maintenance of IEC 61851-23 and IEC 61851-24

The parts IEC 61851-23 and IEC 61851-24 pertaining to d.c. charging have been developed in WG4 and are

now maintained in MT5.

- MT 62576: Electrically propelled vehicles, energy storage, electric double-layer capacitors and hybrid capacitors

The maintenance of IEC 62576 is ongoing.

- PT 61851-21-2: EMC requirements for off board electric vehicle charging systems

The development of IEC 61851-21-2 is well advanced.

- PT 61851-23-1: Electric vehicle conductive charging system - Part 23-1: DC Charging with an automatic connection system

The development of IEC 61851-23-1 is ongoing.

- PT 61851-23-2: Electric vehicle conductive charging system - Part 23-2: DC charging system for small energy capacity

The development of IEC 61851-23-2 is ongoing.

- PT 62831: User identification in Electric Vehicle Service Equipment using a smart card

A standard is under consideration.

- PT 62840: Electric vehicle battery exchange infrastructure safety requirements

IEC TS 62840-1 on General and Guidance as well as IEC 62840-2 on safety requirements have been developed. Other topics will be addressed.

- JWG1: Vehicle to Grid Communication Interface (V2G CI)

Mode 5 cooperation with ISO TC 22 SC3 is used for development and maintenance of ISO 15118 series of standards on the so-called High Level Communication between EV and EV Supply Equipment.

The document ISO/IEC 18246 will cover safety requirements for propelled mopeds and motorcycles and is being dealt with by ISO TC 22 SC38 in the same way as ISO/IEC 17409 was by ISO TC 22 SC37.

Future work programme will monitor the effectiveness of existing TC 69 standards related to electrically propelled road vehicles. The suitability of the basic standard requirements (for battery-electric vehicles)- to other electrically propelled vehicles such as neighbourhood electric vehicles, industrial electric vehicles, electric trucks and buses, hybrid vehicles (including plug-in hybrids) and fuel cell vehicles needs to be carefully monitored for future consideration.

C BUSINESS ENVIRONMENT

TC 69 "Electric Road Vehicles and Industrial Trucks" was established in 1969 for preparing international standards for road vehicles, totally or partially electrically powered from self-contained power sources, including charging infrastructures for these vehicles, and for electric industrial trucks.. TC69 was formed at a time when advancements in technology made electric automobiles a practical alternative to traditional ICE vehicles that were under regulatory pressure with respect to environmental and petroleum supply concerns. Initial work was conducted by five working groups in the areas of vehicle performance measurement, motors and motor controllers, on-board electrical energy storage, power supply and chargers (infrastructure), and hybrids. Several standards and technical reports were issued during the 1980s.

During the 1990s, automotive industry involvement in TC 69 has contributed to the development of charging system architecture standards consistent with their needs and national demonstration programmes in anticipation of commercialization. This activity has resulted in cooperative standards development with other IEC TC/SCs and some ISO TCs. Informal coordination has also been established with SAE, CENELEC, CEN

and JEVA.

New developments for the 21st century, with the advent of hybrid and fuel cell vehicles, create new opportunities for the continuation of the work of TC 69, maintaining its published standards and preparing new documents in the areas where such is deemed useful. Standards and technical specifications are prepared on power transfer systems (conductive (AC or DC), or wireless) for charging or discharging of any types of electric vehicles. Communication standards for smart charging as well as specific EMC standards are developed too.

In urban traffic, due to their beneficial effect on environment, electrically propelled vehicles are an important factor for improvement of traffic and more particularly for a healthier living environment. Electrically propelled vehicles (this term encompasses battery-electric, hybrid and fuel cell vehicles) are a key element of the future personal and fleet transportation product offerings of vehicle manufacturers. Growing concern for the environment and for the security of energy supply will necessitate further development of electrically propelled vehicles, with new markets emerging in industrializing countries where energy supply issues are a strong incentive for this technology.

D MARKET DEMAND

In the near term, the direct customers of the TC 69 standardization work will be the automotive, electrical equipment and electric utility industries. The automotive industry and component suppliers will utilize TC 69 standards for vehicle hardware and system architecture for future models. The electrical equipment and utility industry will utilize TC 69 standards for developing EV charging equipment and planning growth. Furthermore, the availability of TC 69 standards will facilitate regulatory processes by governments and local authorities.

E TRENDS IN TECHNOLOGY AND IN THE MARKET

During the past decade auto manufacturers and national EV demonstration programmes have proven the feasibility of electric road vehicle technology. Limited progress in battery performance and limited commercial availability of advanced batteries initially had biased the offer in battery-electric vehicles towards smaller vehicles in specific applications like urban environments, where range and speed are consistent with technological capability. Recent interests in battery technology and the emergence of plug-in hybrid vehicles however have led to a new interest in the grid-recharged electric vehicle and its infrastructure.

The electric drive train technology with its on-board components is also used in hybrid vehicles which are now penetrating the market, as well as in fuel cell vehicles which are being developed for the future. Grid connecting infrastructures are also applicable to plug-in hybrids which offer interesting opportunities and which are presenting themselves as a key step towards electrification of transport. There is a strong demand for the development of standardized infrastructures for this application.

Additionally, TC 69 standardization work and general EV technology is applicable to electric industrial trucks and electrically propelled buses.

Electrically propelled vehicle technology, which encompasses battery-electric, hybrid and fuel cell vehicles, has the potential for improving environmental conditions particularly in congested urban areas through allowing the deployment of zero-emission vehicles, and for enhancing energy security, through diversification of primary energy sources, improved energy efficiency and more effective environmental control techniques

F SYSTEMS APPROACH ASPECTS (REFERENCE - AC/33/2013)

The growing interest for electric vehicles has been reflected in the participation to TC 69, with new countries opting for P-member status and the number of active experts growing considerably.

The ongoing liaison-cooperation with ISO TC22 SC31 and SC37 (previously SC3 and SC21 respectively) is essential for the realization of efficient vehicle-related standards and needs to continue. The same applies for the collaboration with IEC TC 21, IEC SC 23H, IEC SC 23E, IEC TC 61, IEC TC 64 and IEC SC 121B on relevant matters. Furthermore, work should be coordinated with IEC TC 77, CISPR/B, CISPR/D and ACEC where appropriate to ensure compliance with EMC standards. In view of the development of forthcoming standards for the management of electric vehicles charging and discharging infrastructures on one hand and impact of electrical energy storage systems on charging infrastructures on the other hand, the effectiveness of liaisons with TC 57 and TC 120 is advisable.

All the liaison modes between IEC TC 69 with ISO TC22 and its relevant SCs have been defined project by project.

Furthermore, a coordination between principal technical committees involved in electro-mobility (including TC 64, TC 21, SC 23E, SC 23H, SC 121B, ISO TC22 SC31 and SC37) has been sought. A corresponding Joint Working Group was established and it gave and still gives some recommendations on protection against electric shock.

As for the collaboration with IEC TC 105, most of the work relevant for TC 69 is treated within the liaison with ISO TC22 SC37 since this ISO committee is now dealing with all automotive fuel cell matters.

G CONFORMITY ASSESSMENT

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N/A

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

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Ongoing work will include the maintenance of existing publications according to the following scheme:

Publication n°.	Date of publication	Stability date	Responsibility (Maintenance Team)
61851-1	2010 – Ed. 3	2019	new MT
61851-21	2001 – Ed. 1	<i>Vehicle topics moved to ISO17409</i>	
61851-23	2014 – Ed. 1	2016	MT5
61851-24	2014 – Ed. 1	2018	MT5
61980-1	2015 – Ed. 1	2018	WG7
62576	2009	2017	MT62576
62840-1	2016 – Ed. 1	2019	PT 62840
62840-2	2016 – Ed. 1	2019	PT 62840