



ISO/IEC AGREEMENT CONCERNING STANDARDIZATION OF ELECTROTECHNOLOGY FOR ROAD VEHICLES AND THE COOPERATION BETWEEN ISO/TC 22 “ROAD VEHICLES” AND IEC TECHNICAL COMMITTEES

0 Introduction

The allocation of work between IEC and ISO is based on the agreed principle that all questions relating to international standardization in the electrical and electronic engineering fields are reserved to IEC, the other fields being reserved to ISO, as stipulated in ISO/IEC Directives Part 1 Annex B. Accordingly, the emergence of electrically propelled vehicles is the basis for two industries, road vehicle industry and electrical energy providers, in the past separated, to converge. This presents the need for new assessment of the standardization efforts between ISO and IEC. The purpose of this agreement is to create a framework of cooperation between ISO/TC 22 and IEC TCs/SCs using the existing modes of cooperation cited in Annex B clause B.4.2.2 to define the responsibilities of ISO and IEC for the standardization of electrotechnology for road vehicles. This agreement shall be fully applicable for all current and future technologies that are relevant for road vehicles.

The agreement aims to ensure an effective and professional development of standards for road vehicles and to avoid duplication in standardization. It shall support efficient work processes, because the availability of experts from all partners and resources for standardization are limited.

It is essential that standards for road vehicles can be used by their respective vehicle industries and that they are applicable in all international markets. Therefore ISO/TC 22, which has the standards development responsibility for road vehicles, and IEC, which has standards development responsibility for the electrotechnical area, are important collaboration partners in the development of standards related to electrically propelled vehicles.

For the specific case of an externally chargeable vehicle, when in the road position (not being connected to a source of external electrical energy), standards shall be generally considered as being under the responsibility of ISO/TC 22. When connected to an external source of electrical energy, the standards that apply to electrical equipment used in similar circumstances are applicable (see annex A).

1 Scope of the agreement

International standardization of electrotechnology for road vehicles (i.e.: the related equipment including electrical and electronic systems and components) is the scope of this agreement.

In order to ensure the optimal use of expertise in both organizations, ISO and IEC, this agreement defines **the allocation of standardization work** between the related committees (ISO/TC 22 and IEC committees) using the existing modes of cooperation cited in ISO/IEC Directives, Part 1 clause B.4.2.2.

This agreement is valid for all types of road vehicles and their equipment such as:

- mopeds (item m)
- motorcycles (item n);
- motor vehicles (item p);
- trailers (item q);
- semi-trailers (item r);
- light trailers (item s);

combination vehicles (item t);
articulated vehicles (item u),

as defined in the relevant items of Article 1 of the convention on Road Traffic, Vienna in 1968 concluded under the auspices of the United Nations.

2. Standardization of electrotechnology for road vehicles

2.0 General

International standardization of electrotechnology for road vehicles concerns two fields of applications:

- On-board equipment and performance of road vehicles,
- Interface between externally chargeable vehicles and electricity supply infrastructure.

Annex A (informative) of this agreement lists ISO and IEC (TCs and SCs) standardization activities in the field of electrotechnology for road vehicles.

Annex B (informative) of this agreement lists current modes of cooperation.

2.1 Road vehicles – ISO/TC 22 Responsibility

ISO/TC 22 is responsible for all standardization issues concerning road vehicles and on-board systems.

These ISO/TC 22 standards shall normatively reference existing IEC standards for electrical and electronic components unless vehicle-specific conditions require otherwise. In such circumstances, ISO/TC 22 may request the relevant IEC committee to amend the IEC standard to make it suitable for application to vehicles or may develop its own standards, taking into account and referring to existing IEC standards as much as possible, and keeping the relevant IEC committee(s) informed.

2.2 Interface between externally chargeable road vehicles and electricity supply infrastructure

Standards related to all interfaces between externally chargeable road vehicles and the electricity supply infrastructure shall be developed according to the ISO/IEC Directives Part 1, Annex B, if existing IEC or ISO standards cannot be used or modified. In case of dispute, mode 5 shall be applied if this is requested by one of the partners.

2.3 Coordination and avoidance of duplication

The chairmen of the involved ISO and IEC committees and subcommittees (see Annex A) shall ensure by all means that duplication in the development of International Standards is avoided and that work is appropriately coordinated.

Annex A

(informative)

ISO and IEC committees responsible for and involved in standardization of electrotechnology for road vehicles¹⁾

Within ISO/TC 22, the following SCs cover standardization of electrotechnology for road vehicles:

- ISO/TC 22/WG 05 – Car radios
- ISO/TC 22/SC 01 – Ignition equipment
- ISO/TC 22/SC 03 – Electrical and electronic equipment
- ISO/TC 22/SC 08 – Lighting and signalling
- ISO/TC 22/SC 21 – Electrically propelled road vehicles

Within IEC, the following committees and subcommittees cover standardization of equipment and issues also used and related to road vehicles:

- IEC/TC 8 – Systems aspects for electrical energy supply
- IEC/TC 13 – Electrical energy measurement, tariff- and load control
- IEC/TC 20 – Electric cables
- IEC/TC 21 – Secondary cells and batteries
- IEC/SC 21A - Secondary cells and batteries containing alkaline or other non-acid electrolytes
- IEC/SC 22G – Adjustable speed electric drive systems incorporating semiconductor power converters
- IEC/SC 23E – Circuit-breakers and similar equipment for household use
- IEC/SC 23F – Connecting devices
- IEC/SC 23H – Industrial plugs and socket-Outlets
- IEC/SC 32B – Low voltage fuses
- IEC/SC 32C – Miniature fuses
- IEC/TC 34 – Lamps and related equipment
- IEC/SC 37A – Low-voltage Surge Protective Devices – Surge protection of electronic components will be a very important consideration for plug in vehicles.
- IEC/SC 37B – Specific Components for Surge Arresters and Surge Protective Devices,
- IEC/TC 46 – Cables, wires and waveguides for telecommunication equipment

¹⁾ This list presents the situation in 2010, further information can be obtained from the ISO and IEC websites

- IEC/SC 46A – Coaxial cable
- IEC/SC 46F – RF and microwave passive components
- IEC/SC 47A – Integrated circuits
- IEC/SC 48B – Connectors
- IEC/TC 57 – Power systems management and associated information exchange
- IEC/TC 64 – Electrical installations and protection against electric shock
- IEC/SC 65A – Systems aspects
- IEC/TC 69 – Electric road vehicles and electric industrial trucks
- IEC/TC 70 - Degrees of protection provided by enclosures
- IEC/TC 77 – Electromagnetic compatibility
- IEC/SC 77A – Electromagnetic compatibility - Low frequency phenomena
- IEC/TC 79 – Alarm systems
- IEC/TC 86 and SCs – Fibre optics
- IEC/TC 91 – Electronic Assembly Technology – Since the EVL and the RoHS directives by the EU all electronics must meet the restrictions of those requirements. In addition, TC 91 is responsible for the electronic assembly standards which includes the materials and soldering requirements as well as their test methods for quality and reliability,
- IEC/TC 100 – Audio, video and multimedia systems and equipment
- IEC/TC 101 – Electrostatics
- IEC/TC 104 – Environmental conditions, classification and methods of test
- IEC/TC 105 – Fuel cells
- IEC/TC 106 – Methods for the assessment of electric, magnetic and electromagnetic fields associated with human exposure
- IEC/TC 111 – Environmental Standardization for Electrical and Electronic Products and Systems.
- IEC/CISPR – Electromagnetic compatibility – Emissions, International special committee on radio interference
- IEC/CIS/D – Electromagnetic disturbances related to electric/electronic equipment on vehicles and internal combustion engine powered devices
- IEC/CIS/I – Electromagnetic compatibility of information technology equipment, multimedia equipment and receivers

Annex B

On-going projects with Mode of Cooperation²⁾

Electrotechnology/Project	IEC TC/SC	ISO TC/SC	Mode of cooperation
Starter batteries	<u>TC 21</u> ^a	TC 22	2
Secondary lithium cells <ul style="list-style-type: none"> • IEC 62660-1 Ed. 1.0 • IEC 62660-2 Ed. 1.0 	<u>TC 21/SC 21A/TC 69</u> ^a	TC 22/ SC 21	2
Lithium batteries – battery pack and system level <ul style="list-style-type: none"> • ISO 12405-1 Ed. 1.0 • ISO 12405-2 Ed. 1.0 	TC 21/SC 21A/TC 69	<u>TC 22/SC 21</u> ^a	2
EV Charging System <ul style="list-style-type: none"> • IEC 61851 series 	<u>TC 69</u> ^a	TC 22/SC 21	Under consideration
Vehicle to grid communication interface (JWG V2G CI) <ul style="list-style-type: none"> • ISO 15118 	TC 69	<u>TC 22/SC 3</u> ^a	5
Plugs and Socket-outlets <ul style="list-style-type: none"> • IEC 62196 series 	<u>SC 23H</u> ^a	<u>TC 22/SC 3</u>	Under consideration
Lamps, lamp holders and caps	<u>SC 34A/SC 34B</u> ^a	TC 22/SC 8	2
Radio interferences (>= 9 KHz) caused by road vehicle electrical systems	<u>CISPR D</u> ^a	TC 22/SC3	Under consideration
EMC emissions on low frequency (<9 kHz) disturbances and basic EMC immunity standards for the whole frequency range	<u>SC 77A</u> ^a	TC 22/SC3	Under consideration
EMC immunity for EV charging systems	<u>TC 69</u> ^a	TC 22/SC3	5
EMC immunity for vehicle and its equipment	TC 77	<u>TC 22/SC3</u> ^a	Under consideration
^a Organization in bold/underlined has the administrative lead			

²⁾ This table presents the situation in 2010, further information can be obtained from the ISO and IEC websites