INTERNATIONAL STANDARD

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Road vehicles — Automotive multimedia interface —

Part 7: Physical specification

Véhicules routiers — Interface multimédia pour l'automobile —

Partie 7: Spécifications physiques

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22902-7 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 3, *Electrical and electronic equipment*.

ISO 22902 consists of the following parts, under the general title *Road vehicles — Automotive multimedia interface*:

— *Part 1: General technical overview*

— *Part 2: Use cases*

— *Part 3: System requirements*

— *Part 4: Network protocol requirements for vehicle interface access*

— *Part 5: Common message set*

— *Part 6: Vehicle interface requirements*

— *Part 7: Physical specification*

Introduction

This part of ISO 22902 describes environmental conditions and tests to be applied to AMI-C compliant electrical and electronic equipment and some subcomponents directly mounted in or on the vehicle. It is not intended for direct application to all parts or assemblies that are part of that equipment. For example, it should not be directly applied to integrated circuits (ICs) and discrete components, printed circuit boards (PCBs), gages, displays, controls, etc. that are subassemblies of the equipment. Electrical, mechanical, climatic and chemical loads permitted for such parts and assemblies can be quite different than those described in this part of ISO 22902.

Road vehicles — Automotive multimedia interface —

Part 7: Physical specification

1 Scope

The scope of this part of ISO 22902 is limited to conditions and testing at the equipment level; it does not include all conditions and testing necessary for complete verification and validation of the vehicle system. Environmental and reliability testing at lower and higher levels are required to ensure that vehicle quality and reliability objectives are met.

It addresses the following requirements relating to the design and manufacture of automotive components and of devices intended to be used in vehicles:

— **Environment**. The conditions in and on a vehicle that a component or device must function within. These conditions include chemical, climatic, electromagnetic and mechanical factors and stress.

— **Power management**. The requirements for power supply and delivery from a vehicle to its components and the devices used in that vehicle.

— **Interconnectivity**. The requirements for delivering data within a vehicle. These requirements differ depending on the delivery method selected by the automaker or supplier.

— **Packaging**. The standards for locating, securing, protecting, and enclosing or covering components and devices.

— **Homologation**. An overview of the legal requirements that apply to AMI-C compliant vehicles.

— **Diagnostic functional requirements**. An overview of the sensing and analysis that AMI-C compliant components and devices shall support. This section also recommends characteristics of diagnostic tools.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11452-4, *Road vehicles — Component test methods for electrical disturbances from narrowband radiated electromagnetic energy — Part 4: Bulk current injection [BCI]*

ISO 16750-1, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 1: General*

ISO 16750-2, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 2: Electrical loads*

ISO 175, *Plastics — Methods of test for the determination of the effects of immersion in liquid chemicals*

ISO 1817, *Rubber, vulcanized — Determination of the effects of liquids*

ISO 6722, *Road vehicles — 60 V and 600 V single-core cables — Dimensions, test methods and requirements*

ISO 7637-1, *Road vehicles — Electrical disturbances by conduction and coupling — Part 1: Definitions and general considerations*

ISO 7637-2, *Road vehicles — Electrical disturbances by conduction and coupling — Part 2: Electrical transient conduction along supply lines only*

ISO 8092-2, *Road vehicles — Connections for on-board electrical wiring harnesses — Part 2: Definitions, test methods and general performance requirements*

ISO 16750-3, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 3: Mechanical loads*

ISO 16750-4, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 4: Climatic loads*

ISO 16750-5, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 5: Chemical loads*

IEC 60068-2-27, *Environmental testing. Part 2: Tests — Test Ea and guidance: Shock*

IEC 60068-2-28, *Environmental testing. Part 2: Tests — Guidance for damp heat tests*

IEC 60068-2-32, *Environmental testing. Part 2: Tests — Test Ed: Free fall*

IEC 60695-11-10, *Fire hazard testing — Part 11-10: Test flames — 50 W horizontal and vertical flame test*

IEC 60793-1-40, *Optical fibres — Part 1-40: Measurement methods and test procedures — Attenuation*

IEC 60794-1-2, *Optical fibre cables — Part 1-2: Generic specification — Basic optical cable test procedures*

IEC 61280-1-1, *Fibre optic communication subsystem basic test procedures — Part 1-1: Test procedures for general communication subsystems — Transmitter output optical power measurement for single-mode optical fibre cable*

IEC 61300-3-8, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 3-8: Examinations and measurements — Ambient light susceptibility*