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Third edition
2019-05

Road vehicles — Interchange of digital information on electrical connections between towing and towed vehicles —

Part 1: Physical and data-link layers

Véhicules routiers — Échange d'informations numériques sur les connexions électriques entre véhicules tracteurs et véhicules tractés —

Partie 1: Couche physique et couche de liaison de données



Reference number
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 31, *Data communication*.

This third edition cancels and replaces the second edition (ISO 11992-1:2003) which has been technically revised.

The main changes compared to the previous edition are as follows:

- wording improvements and clarifications;
- introduction of requirement statements; and
- addition of informative [Annex A](#), *Implementation examples of the bus failure management*.

A list of all parts in the ISO 11992 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

The ISO 11992 series specifies the interchange of digital information between road vehicles with a maximum authorised total mass greater than 3 500 kg. The series also specifies digital information interchange for towed vehicles, including communication between towed vehicles in terms of parameters and requirements of the lower OSI layers (physical and data link layer) of the electrical connection used to connect the electrical and electronic systems.

This document specifies the data link and physical layer requirements of the CAN communication bus between towing and towed vehicles.

This document has been structured according to the Open Systems Interconnection (OSI) Basic Reference Model, in accordance with ISO/IEC 7498-1 and ISO/IEC 10731, which structures communication systems into seven layers. When mapped on this model, the application protocol and data link layer framework requirements specified/referenced in a ISO 11992 series standard are structured according to [Figure 1](#).

[Figure 1](#) illustrates the following communication frameworks:

- normal vehicle communication framework;
- vehicle diagnostic communication framework;
- vehicle-specific use case framework; and
- vehicle lower-layers framework.

The normal vehicle communication framework is composed of ISO 11992-2 and ISO 11992-3.

The vehicle diagnostic communication framework is composed of ISO 14229-1[3], ISO 14229-2[12], ISO 14229-3[13] and ISO 11992-4[3].

The vehicle-specific use case framework is composed of ISO 11992-4, ISO 22901-1 or vehicle manufacturer-specific diagnostic data definition.

The vehicle lower-layers framework is composed of ISO 15765-2[14], ISO 11898-1, 1, ISO 7638-1[6] and ISO 12098[10].

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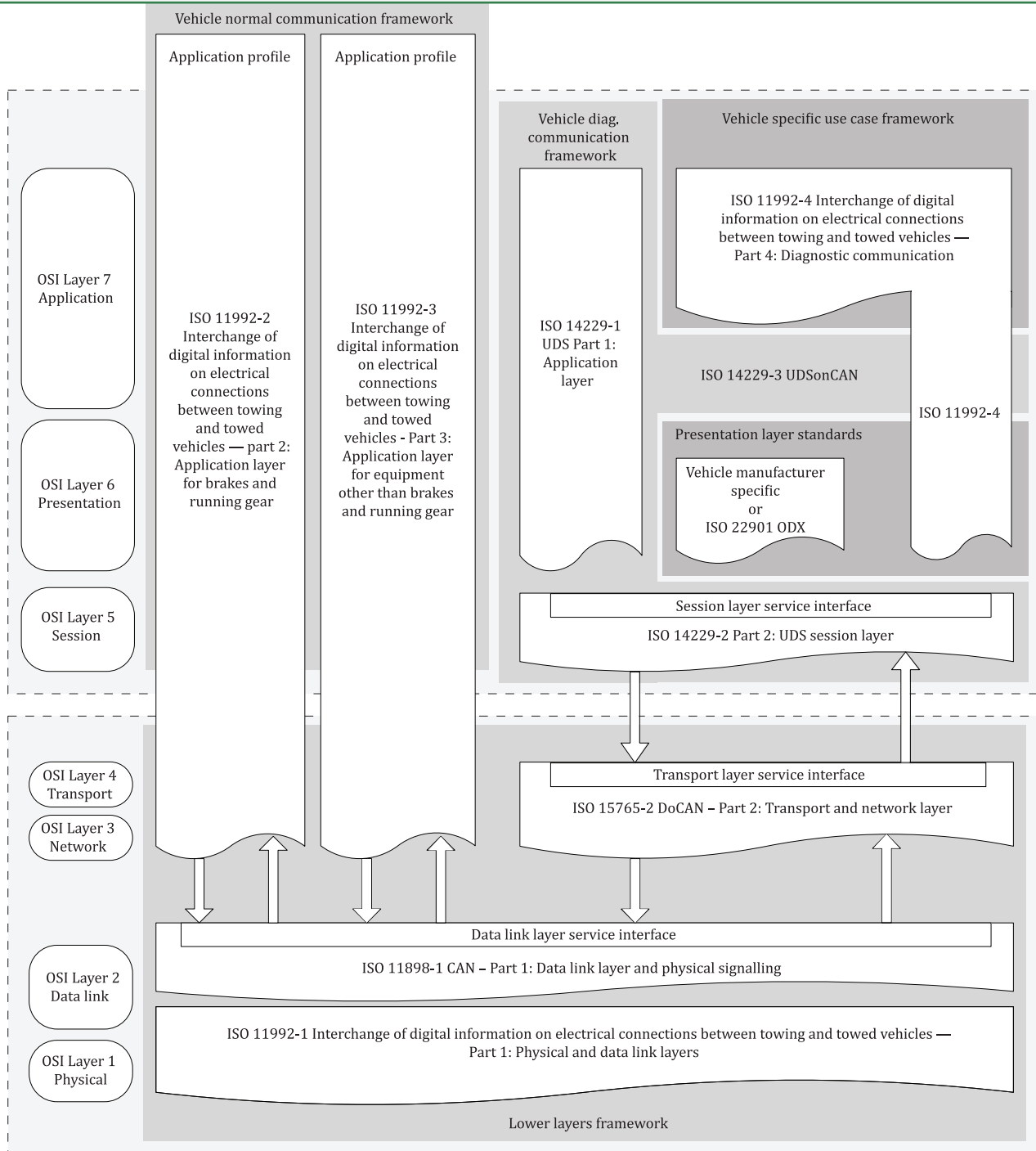


Figure 1 — Towing and towed vehicles framework documents reference according to the OSI model

Figure 2 shows the implementation example of the lower-layers block diagram.

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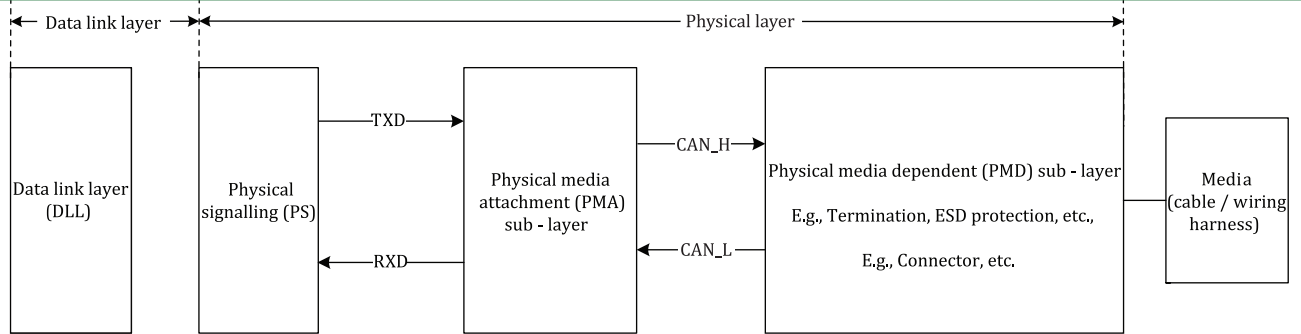


Figure 2 — Implementation example of lower-layers block diagram

The above requirements structure has been chosen to provide the following developers with relevant requirements:

- transceiver developers;
- device (e.g., electronic control unit) developers; and
- towing and towed vehicle network developers.

All requirements are numbered and headlined uniquely, so that each implementer can reference them.