INTERNATIONAL STANDARD

ISO 11898-2

Second edition
2016-12-15

Road vehicles — Controller area network (CAN) —

Part 2: High-speed medium access unit

Véhicules routiers — Gestionnaire de réseau de communication (CAN) —

Partie 2: Unité d'accès au support à haute vitesse

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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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 22, *Road vehicles*, Subcommittee SC 31, *Data communication*.

This second edition cancels and replaces the first edition (ISO 11898-2:2003), which has been technically revised, with the following changes:

— max output current on CANH/CANL has been defined (Table 4);

— optional TXD timeout has been defined (Table 7);

— receiver input resistance range has been changed (Table 10);

— Bit timing parameters for CAN FD for up to 2 Mbps have been defined (Table 13);

— Bit timing parameters for CAN FD for up to 5 Mbps have been defined (Table 14);

— content of ISO 11898-5 and ISO 11898-6 has been integrated to ensure there is one single ISO Standard for all HS-PMA implementations;

— selective wake-up (formerly ISO 11898-6) CAN FD tolerance has been defined;

— wake-filter timings (formerly in ISO 11898-5) have been changed (Table 20)

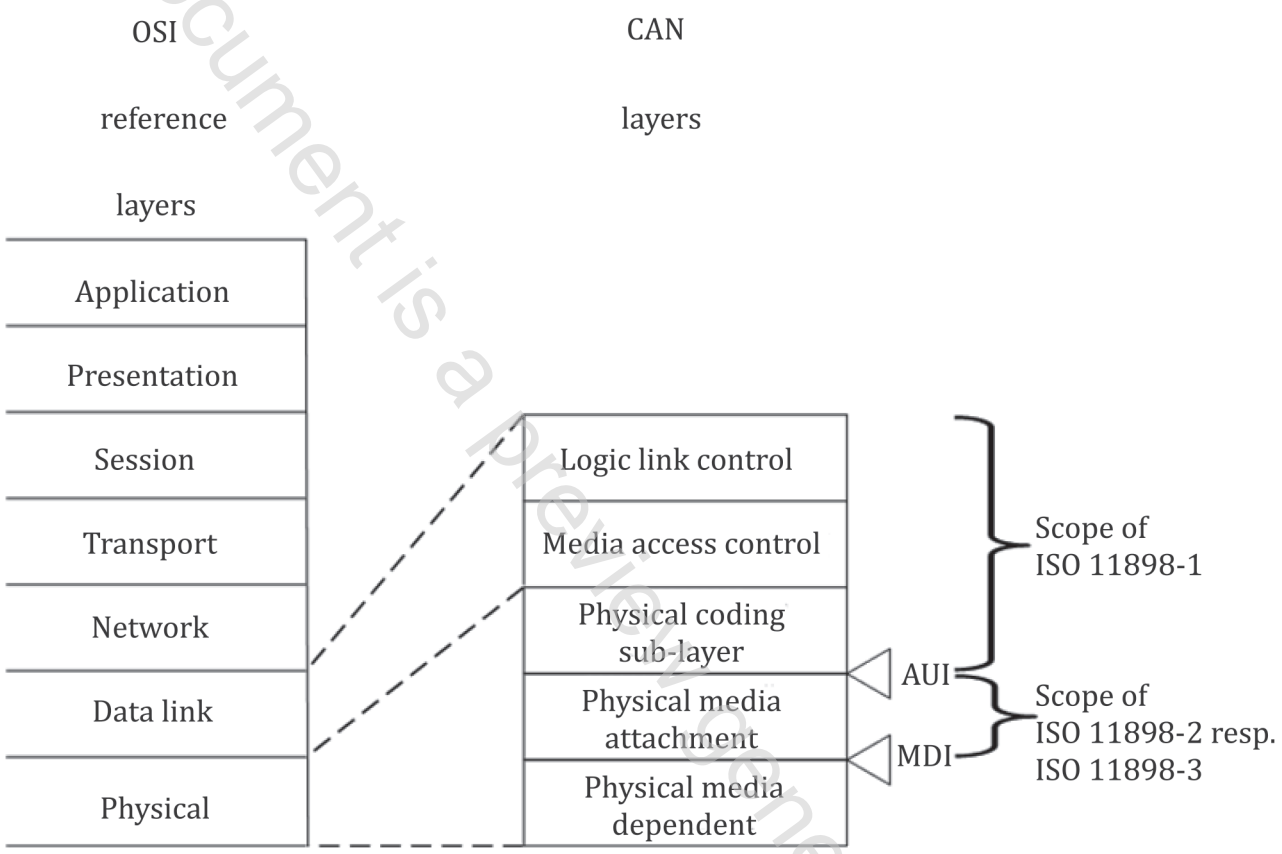
— requirements and assumptions about the PMD sublayer have been shifted to Annex A, to clearly focus on the HS-PMA implementation.

A list of all parts in the ISO 11898 series can be found on the ISO website.

Introduction

ISO 11898 was first published as one document in 1993. It covered the CAN data link layer as well as the high-speed physical layer. In the reviewed and restructured ISO 11898 series, ISO 11898-1 and ISO 11898-4 defined the CAN protocol and time-triggered CAN (TTCAN) while ISO 11898-2 defines the high-speed physical layer, and ISO 11898-3 defined the low-speed fault tolerant physical layer.

Figure 1 shows the relation of the Open System Interconnection (OSI) layers and its sublayers to ISO 11898-1, this document as well as ISO 11898-3.



Key

AUI attachment unit interface

MDI media dependant interface

OSI open system interconnection

Figure 1 — Overview of ISO 11898 specification series

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning the selective wake-up function given in 5.9.4.

ISO takes no position concerning the evidence, validity and scope of this patent right.

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Road vehicles — Controller area network (CAN) —

Part 2:
High-speed medium access unit

1 Scope

This document specifies the high-speed physical media attachment (HS-PMA) of the controller area network (CAN), a serial communication protocol that supports distributed real-time control and multiplexing for use within road vehicles. This includes HS-PMAs without and with low-power mode capability as well as with selective wake-up functionality. The physical media dependant sublayer is not in the scope of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 11898-1:2015, *Road vehicles — Controller area network (CAN) — Part 1: Data link layer and physical signalling*

ISO 16845-2, *Road vehicles — Controller area network (CAN) conformance test plan — Part 2: High-speed medium access unit with selective wake-up functionality*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 11898-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

NOTE See Figure A.1 for a visualization of the definitions.

3.1
attachment unit interface
AUI
interface between the PCS that is specified in ISO 11898-1 and the PMA that is specified in this document

3.2
ground
GND
electrical signal ground

3.3
legacy implementation
HS-PMA implementation that has been released prior to the publication of this document