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Road vehicles — Unified diagnostic services (UDS) —

Part 5: Unified diagnostic services on Internet Protocol implementation (UDSonIP)

Véhicules routiers — Services de diagnostic unifiés (SDU) —
Partie 5: SDU sur l'implémentation du protocole internet (SDUsurIP)

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).

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 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 second edition cancels and replaces the first edition (ISO 14229-5:2013), which has been technically revised.

The main changes are as follows:

— restructuration of the document;

— introduction of requirement numbers, names and definitions;

— technical content improvements based on implementation feedback from the automotive industry.

A list of all parts in the ISO 14229 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 14229 series has been established in order to define common requirements for diagnostic systems, whatever the serial data link is.

To achieve this, the ISO 14229 series is based on the Open Systems Interconnection (OSI) Basic Reference Model in accordance with ISO/IEC 7498-1[1] and ISO/IEC 10731[2], which structures communication systems into seven layers. When mapped on this model, the services used by a diagnostic tester (client) and an electronic control unit (ECU, server) are structured into the following layers:

— application layer (layer 7) specified in ISO 14229-1 and ISO 14229-3 to ISO 14229-8;

— presentation layer (layer 6) specified in ISO 14229-1 and ISO 14229-3 to ISO 14229-8;

— session layer services (layer 5) specified in ISO 14229-2 and ISO 14229-3 to ISO 14229-8.

Figure 1 illustrates the UDSonIP document and related documents according to the OSI model.

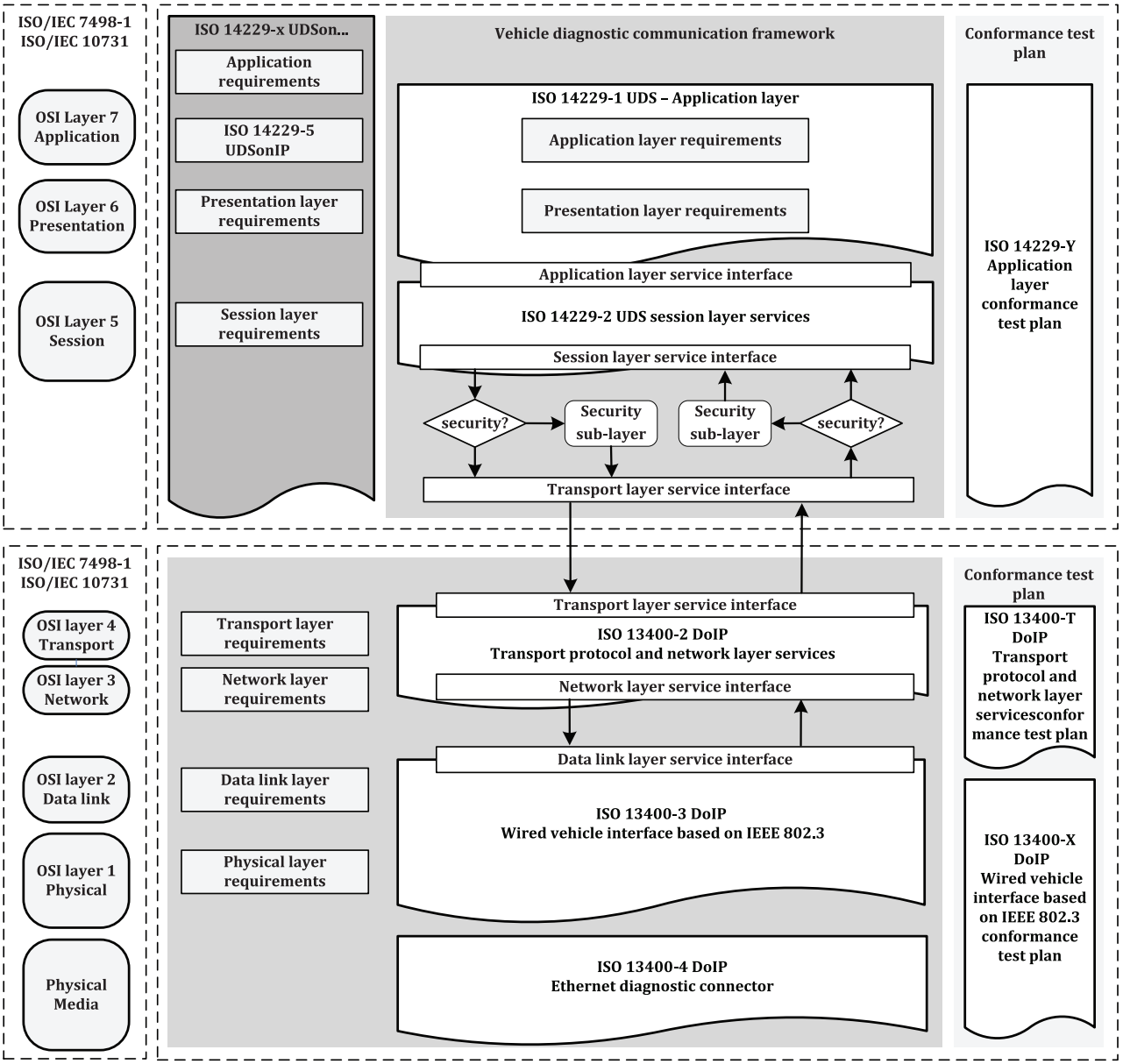


Figure 1 — UDSonIP document reference according to OSI model

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Road vehicles — Unified diagnostic services (UDS) —

Part 5: Unified diagnostic services on Internet Protocol implementation (UDSonIP)

1 Scope

This document specifies an application profile for the implementation of unified diagnostic services (UDS) Internet Protocol (IP) in road vehicles (UDSonIP).

UDSonIP references ISO 14229-1 and ISO 14229-2 and specifies implementation requirements of the diagnostic services to be used for diagnostic communication on Internet Protocol.

This document includes

— additional requirements specific to the implementation of UDS on the Ethernet network, and

— specific restrictions in the implementation of UDS on the Ethernet network.

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 13400-2, *Road vehicles — Diagnostic communication over Internet Protocol (DoIP) — Part 2: Transport protocol and network layer services*

ISO 13400-3, *Road vehicles — Diagnostic communication over Internet Protocol (DoIP) — Part 3: Wired vehicle interface based on IEEE 802.3*

ISO 14229-1, *Road vehicles — Unified diagnostic services (UDS) — Part 1: Application layer*

ISO 14229-2, *Road vehicles — Unified diagnostic services (UDS) — Part 2: Session layer services*

IETF RFC 793:1981, *Transmission Control Protocol — DARPA Internet Program — Protocol Specification*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 14229-1 and ISO 14229-2 apply.

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

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

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

4 Symbols and abbreviated terms

4.1 Symbols

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