Road vehicles — Diagnostic communication over Controller Area Network (DoCAN) —

Part 2:
Transport protocol and network layer services

Véhicules routiers — Communication de diagnostic sur gestionnaire de réseau de communication (DoCAN) —

Partie 2: Protocole de transport et services de la couche réseau
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The committee responsible for this document is ISO/TC 22, Road vehicles, Subcommittee SC 31, Data communication.

This third edition cancels and replaces the second edition (ISO 15765-2:2011), which has been technically revised.

ISO 15765 consists of the following parts, under the general title Road vehicles — Diagnostic communication over Controller Area Network (DoCAN)\(^1\):

— Part 1: General information and use case definition
— Part 2: Transport protocol and network layer services
— Part 4: Requirements for emissions-related systems

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\(^1\) ISO 15765-3 Implementation of unified diagnostic services (UDS on CAN) has been withdrawn and replaced by ISO 14229-3 Road vehicles — Unified diagnostic services (UDS) — Part 3: Unified diagnostic services on CAN implementation (UDSonCAN)
Introduction

This part of ISO 15765 has been established in order to define common requirements for vehicle diagnostic systems implemented on a controller area network (CAN) communication link, as specified in ISO 11898-1. Although primarily intended for diagnostic systems, it also meets requirements from other CAN-based systems needing a network layer protocol.

To achieve this, it is based on 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 as shown in Table 1.

Table 1 — Enhanced and legislated on-board diagnostics specifications applicable to the OSI layers

<table>
<thead>
<tr>
<th>OSI 7 layers a</th>
<th>Vehicle-manufacturer-enhanced diagnostics</th>
<th>Legislated OBD (on-board diagnostics)</th>
<th>Legislated WWH-OBD (on-board diagnostics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application (layer 7)</td>
<td>ISO 14229-1, ISO 14229-3</td>
<td>ISO 15031-5</td>
<td>ISO 27145-3, ISO 14229-1</td>
</tr>
<tr>
<td>Session (layer 5)</td>
<td>ISO 14229-2</td>
<td>ISO 14229-2</td>
<td></td>
</tr>
<tr>
<td>Data link (layer 2)</td>
<td>ISO 11898-1</td>
<td>ISO 11898-1</td>
<td>ISO 11898-1</td>
</tr>
<tr>
<td>Physical (layer 1)</td>
<td>ISO 11898-1, ISO 11898-2, ISO 11898-3, or vehicle manufacturer specific</td>
<td>ISO 11898-1, ISO 11898-2</td>
<td>ISO 11898-1, ISO 11898-2</td>
</tr>
</tbody>
</table>

a 7 layers according to ISO/IEC 7498-1 and ISO/IEC 10731

The application layer services covered by ISO 14229-3 have been defined in compliance with diagnostic services established in ISO 14229-1 and ISO 15031-5 but are not limited to use only with them. ISO 14229-3 is also compatible with most diagnostic services defined in national standards or vehicle manufacturer's specifications.

For other application areas, ISO 15765 can be used with any CAN physical layer.