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Road vehicles — Diagnostic communication over K-Line (DoK-Line) —

Part 2: Data link layer

Véhicules routiers — Communication de diagnostic sur la ligne K (DoK-Line) —

Partie 2: Couche de liaison de données



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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 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 third edition cancels and replaces the second edition (ISO 14230-2:2013), which has been technically revised.

A list of parts in the ISO 14230 series can be found on the ISO website.

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Introduction

This document has been established in order to define common requirements for vehicle diagnostic systems implemented on K-Line (UART based) communication link, as specified in ISO 14230-1.

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. When mapped on this model, the services specified by ISO 14230 are broken into the following:

- Diagnostic services (layer 7), specified in ISO 14229-1, ISO 14229-6;
- Presentation layer (layer 6):
 - vehicle manufacturer specific;
 - legislated WWH-OBD: ISO 27145-2, SAE 1930-DA, SAE J1979-DA, SAE J2012-DA, SAE J1939:2011, Appendix C (SPN), SAE J1939-73:2010, Appendix A (FMI);
- Session layer services (layer 5):
 - legislated OBD: specified in ISO 14229-2;
 - legislated WWH-OBD: specified in ISO 14229-2;
- Transport layer services (layer 4), specified in ISO 14230-2;
- Network layer services (layer 3), specified in ISO 14230-2;
- Data link layer (layer 2), specified in ISO 14230-4, ISO 14230-2;
- Physical layer (layer 1), specified in ISO 14230-1;

in accordance with [Table 1](#).

Table 1 — Enhanced and legislated OBD diagnostic specifications applicable to the OSI layers

OSI seven layer ^a	Enhanced diagnostics	Legislated OBD (On-Board Diagnostics)	Legislated WWH-OBD (On-Board Diagnostics)
Application (layer 7)	ISO 14229-1, ISO 14229-6	ISO 15031-5	ISO 14229-1, ISO 27145-3
Presentation (layer 6)	vehicle manufacturer specific	ISO 15031-2, ISO 15031-5, ISO 15031-6, SAE J1930-DA, SAE J1979-DA, SAE J2012-DA	ISO 27145-2, SAE 1930-DA, SAE J1979-DA, SAE J2012-DA, SAE J1939:2011, Appendix C (SPN), SAE J1939-73:2010, Appendix A (FMI)
Session (layer 5)	ISO 14229-2		
Transport (layer 4)	ISO 14230-2	ISO 15765-2	ISO 15765-4, ISO 15765-2
Network (layer 3)		ISO 15765-4	
Data link (layer 2)			
Physical (layer 1)	ISO 14230-1	ISO 11898-1, ISO 11898-2	ISO 11898-1, ISO 11898-2

^a Seven layers according to ISO/IEC 7498-1 and ISO/IEC 10731.

The application layer services covered by ISO 14229-6 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.

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ISO 14229-6 is also compatible with most diagnostic services defined in national standards or vehicle manufacturer's specifications.