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Road vehicles — Unified diagnostic services (UDS) —

Part 8: UDS on Clock eXtension Peripheral Interface (UDSonCXPI)

Véhicules routiers — Services de diagnostic unifiés (SDU) —

Partie 8: Partie 8: SDU sur l'interface périphérique d'extension d'horloge (UDSonCXPI)

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Foreword

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

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

This document has been created in order to enable the implementation of unified diagnostic services, as specified in ISO 14229-1, on the clock extension peripheral interface (CXPI) networks (UDSonCXPI).

To achieve this, it is based on the Open Systems Interconnection (OSI) Basic Reference Model specified in ISO/IEC 7498-1 and ISO/IEC 10731, which structures communication systems into seven layers.

Figure 1 illustrates the document references from ISO 14229-1, ISO 14229-2 and ISO 20794 (all parts). This document uses only a subset of the diagnostic services defined in ISO 14229-1 (see Table 2).

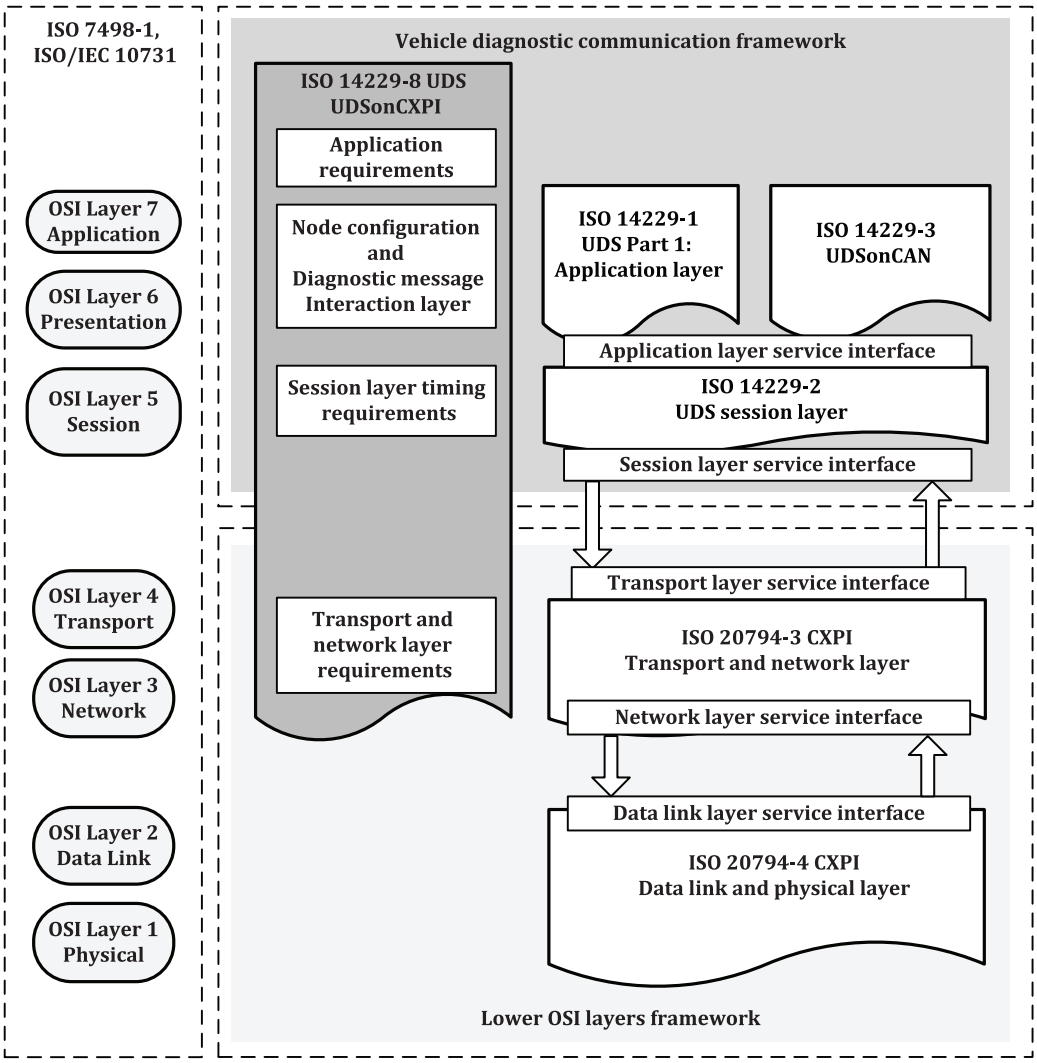


Figure 1 — UDSonCXPI documents reference according to OSI model

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Road vehicles — Unified diagnostic services (UDS) —

Part 8:
UDS on Clock eXtension Peripheral Interface (UDSonCXPI)

1 Scope

This document specifies the implementation of a common set of unified diagnostic services (UDS) on clock extension peripheral interface networks in road vehicles. The UDSonCXPI diagnostics defines methods to implement diagnostic data transfer between a client and the CXPI slave nodes via the CXPI master node.

This document specifies support of three different diagnostic classes for CXPI slave nodes.

This document references ISO 14229-1 and ISO 14229-2 and specifies implementation requirements of the UDSonCXPI communication protocol for mainly HMI (Human Machine Interface), but not limited to, electric/electronic systems of road vehicles. UDSonCXPI defines how to implement the diagnostic data transfer between a client and CXPI slave nodes via CXPI master node.

NOTE UDSonCXPI does not specify any requirement for the in-vehicle CXPI bus architecture.

This document refers to information contained in ISO 14229-1, ISO 14229-2 and ISO 20794 (all parts).

This document does not include any redundant information of the above-mentioned documents.

It focuses on

— additional requirements specific to the implementation of UDSonCXPI network, and

— specific restrictions in the implementation of UDSonCXPI 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 7498-1, *Information technology — Open Systems Interconnection — Basic Reference Model: The Basic Model*

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*

ISO 14229-3, *Road vehicles — Unified diagnostic services (UDS) — Part 3: Unified diagnostic services on CAN implementation (UDSonCAN)*

ISO 20794 (all parts), *Road vehicles — Clock extension peripheral interface (CXPI)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 14229-1, ISO 14229-2, ISO 20794 (all parts), ISO/IEC 7498-1 apply.

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

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

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

4 Abbreviated terms

AE	address extension
APP	application
C	conditional
Cvt	convention
GW	gateway
M	mandatory
ID	identifier
N/A	not applicable
NAD	node address for slave nodes
P2	server response time
SA	source address
SF	single frame
TA	target address
U	user optional

5 Conventions

This document is based on the conventions discussed in the OSI Service Conventions (ISO/IEC 10731:1994) as they apply for diagnostic services.

6 SIP – Service interface parameters

6.1 SIP – General

The following subclauses specify the service interface parameters and data types, which are used by the application and application layer services.

6.2 SIP — Data type definitions

This requirement specifies the data type definitions of the UDSonCXPI service interface parameters.

REQ	**0.1 SIP – Data type definitions**
The data types shall be in accordance to:	

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