
**Road vehicles — Media Oriented
Systems Transport (MOST) —**

**Part 8:
150-Mbit/s optical physical layer**

Véhicules routiers — Système de transport axé sur les médias —

Partie 8: Couche optique physique à 150-Mbit/s



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Published in Switzerland

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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 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*.

A list of all parts in the ISO 21806 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.

Introduction

The Media Oriented Systems Transport (MOST) communication technology was initially developed at the end of the 1990s in order to support complex audio applications in cars. The MOST Cooperation was founded in 1998 with the goal to develop and enable the technology for the automotive industry. Today, MOST¹⁾ enables the transport of high quality of service (QoS) audio and video together with packet data and real-time control to support modern automotive multimedia and similar applications. MOST is a function-oriented communication technology to network a variety of multimedia devices comprising one or more MOST nodes.

Figure 1 shows a MOST network example.

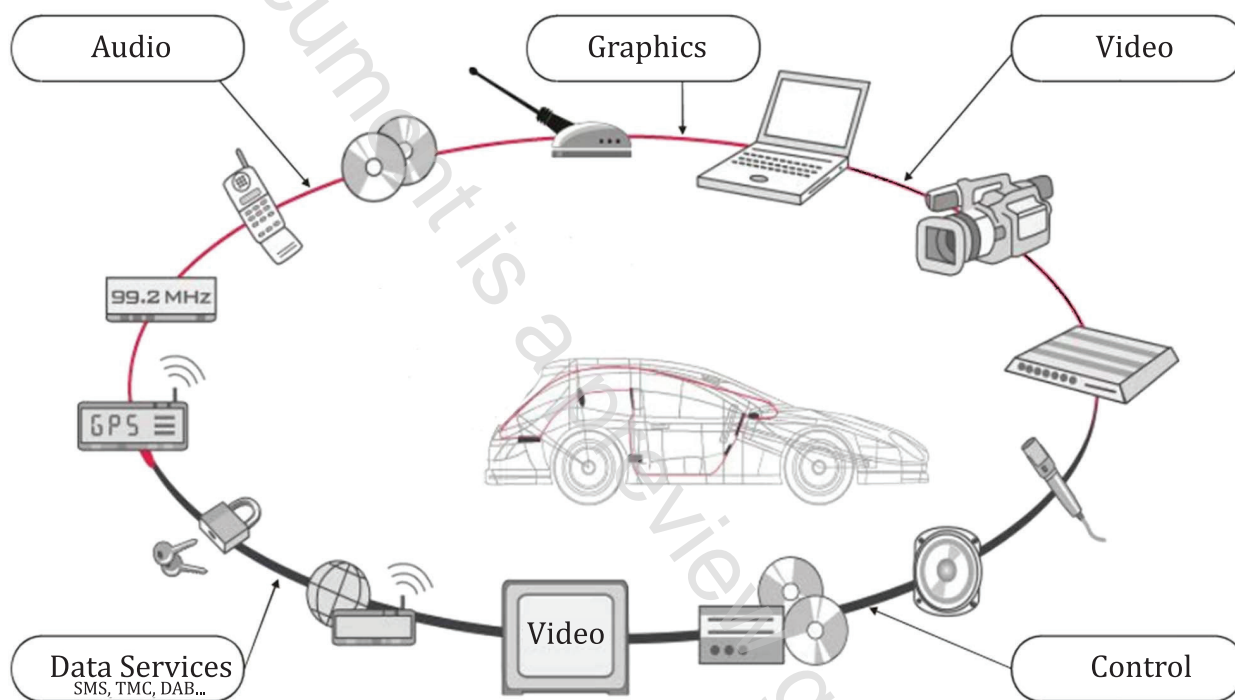


Figure 1 — MOST network example

The MOST communication technology provides:

- synchronous and isochronous streaming,
- small overhead for administrative communication control,
- a functional and hierarchical system model,
- API standardization through a function block (FBlock) framework,
- free partitioning of functionality to real devices,
- service discovery and notification, and
- flexibly scalable automotive-ready Ethernet communication according to ISO/IEC/IEEE 8802-3^[4].

MOST is a synchronous time-division-multiplexing (TDM) network that transports different data types on separate channels at low latency. MOST supports different bit rates and physical layers. The network clock is provided with a continuous data signal.

1) MOST® is the registered trademark of Microchip Technology Inc. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO.

Within the synchronous base data signal, the content of multiple streaming connections and control data is transported. For streaming data connections, bandwidth is reserved to avoid interruptions, collisions, or delays in the transport of the data stream.

MOST specifies mechanisms for sending anisochronous, packet-based data in addition to control data and streaming data. The transmission of packet-based data is separated from the transmission of control data and streaming data. None of them interfere with each other.

A MOST network consists of devices that are connected to one common control channel and packet channel.

In summary, MOST is a network that has mechanisms to transport the various signals and data streams that occur in multimedia and infotainment systems.

The ISO standards maintenance portal (<https://standards.iso.org/iso/>) provides references to MOST specifications implemented in today's road vehicles because easy access via hyperlinks to these specifications is necessary. It references documents that are normative or informative for the MOST versions 4V0, 3V1, 3V0, and 2V5.

The ISO 21806 series has been established in order to specify requirements and recommendations for implementing the MOST communication technology into multimedia devices and to provide conformance test plans for implementing related test tools and test procedures.

To achieve this, the ISO 21806 series is based on the open systems interconnection (OSI) basic reference model in accordance with ISO/IEC 7498-1^[2] and ISO/IEC 10731^[3], which structures communication systems into seven layers as shown in [Figure 2](#). Stream transmission applications use a direct stream data interface (transparent) to the data link layer.

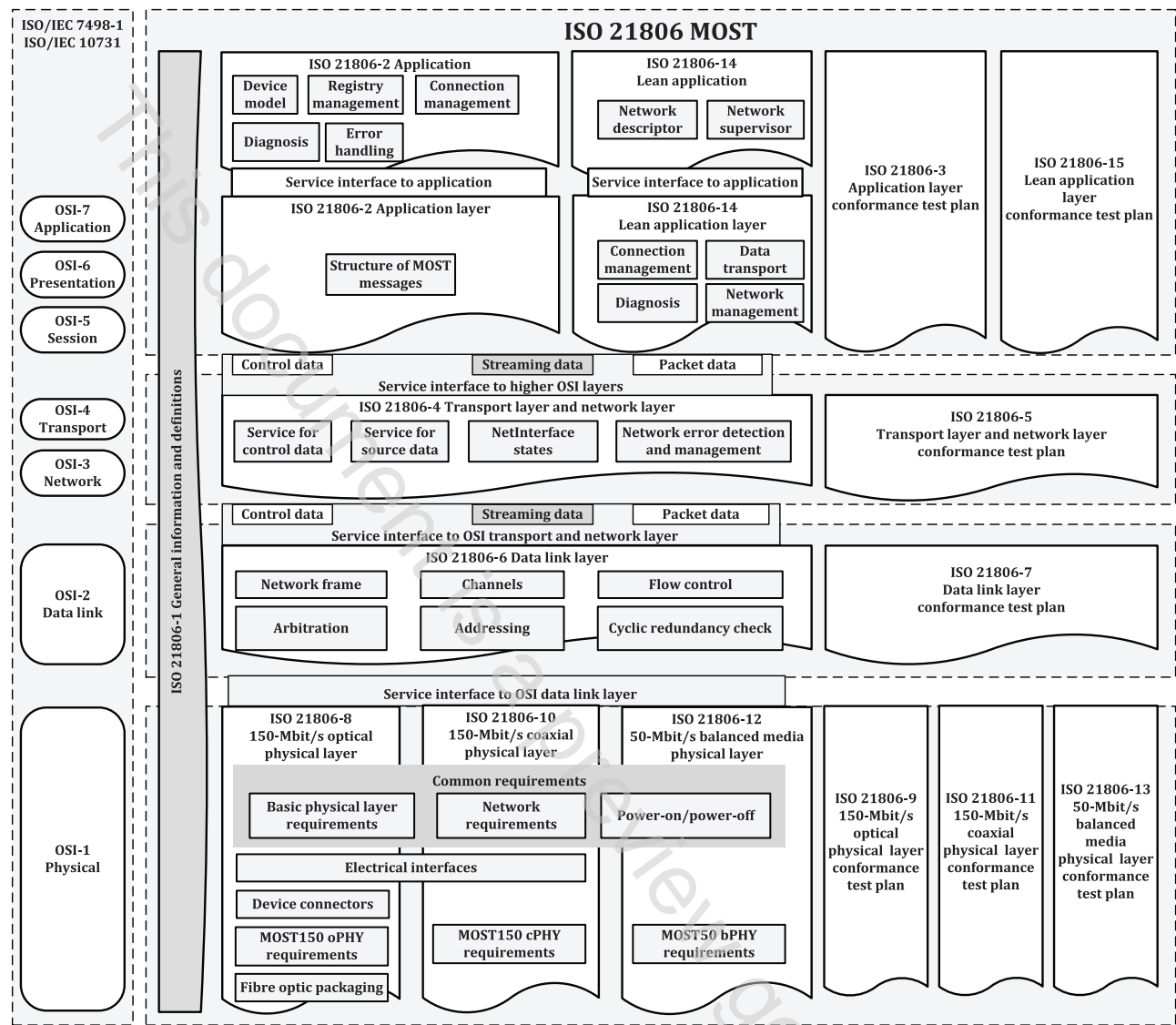


Figure 2 — The ISO 21806 series reference according to the OSI model

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Road vehicles — Media Oriented Systems Transport (MOST) —

Part 8: 150-Mbit/s optical physical layer

1 Scope

This document specifies the 150-Mbit/s optical physical layer for MOST (MOST150 oPHY), a synchronous time-division-multiplexing network.

This document specifies the applicable constraints and defines interfaces and parameters, suitable for the development of products based on MOST150 oPHY. Such products include fibre optical links and connectors, fibre optic receivers, fibre optic transmitters, electrical to optical converters, and optical to electrical converters.

This document also establishes basic measurement techniques and actual parameter values for MOST150 oPHY.

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 21806-1, *Road vehicles — Media Oriented Systems Transport (MOST) — Part 1: General information and definitions*

IEC 60825-2, *Safety of laser products — Part 2: Safety of optical fibre communication systems (OFCS)*

JEDEC MS-013E²⁾, *Standard — Very Thick Profile, Plastic Small Outline (SO) Family, 1,27 mm pitch, 7,50 mm (.300 inch) Body Width. B1R-PDSO/SOP/SOIC*

JEDEC No. JESD8C.01³⁾, *Interface Standard for Nominal 3 V/3,3 V Supply Digital Integrated Circuits*

TIA/EIA-644-A⁴⁾, *Electrical Characteristics of Low Voltage Differential Signaling (LVDS) Interface Circuits*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21806-1 and the following apply.

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/>

2) Available at <https://www.jedec.org/>.

3) Available at <https://www.jedec.org/>.

4) Available at <https://www.tiaonline.org/standards/>.