INTERNATIONAL STANDARD

**ISO 21806-15**

First edition

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

## Part 15: Lean application layer conformance test plan

*Véhicules routiers — Système de transport axé sur les médias — Partie 15: Plan d'essais de conformité de la couche d'application allégée*

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# Foreword

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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 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, MOST[1)] 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.

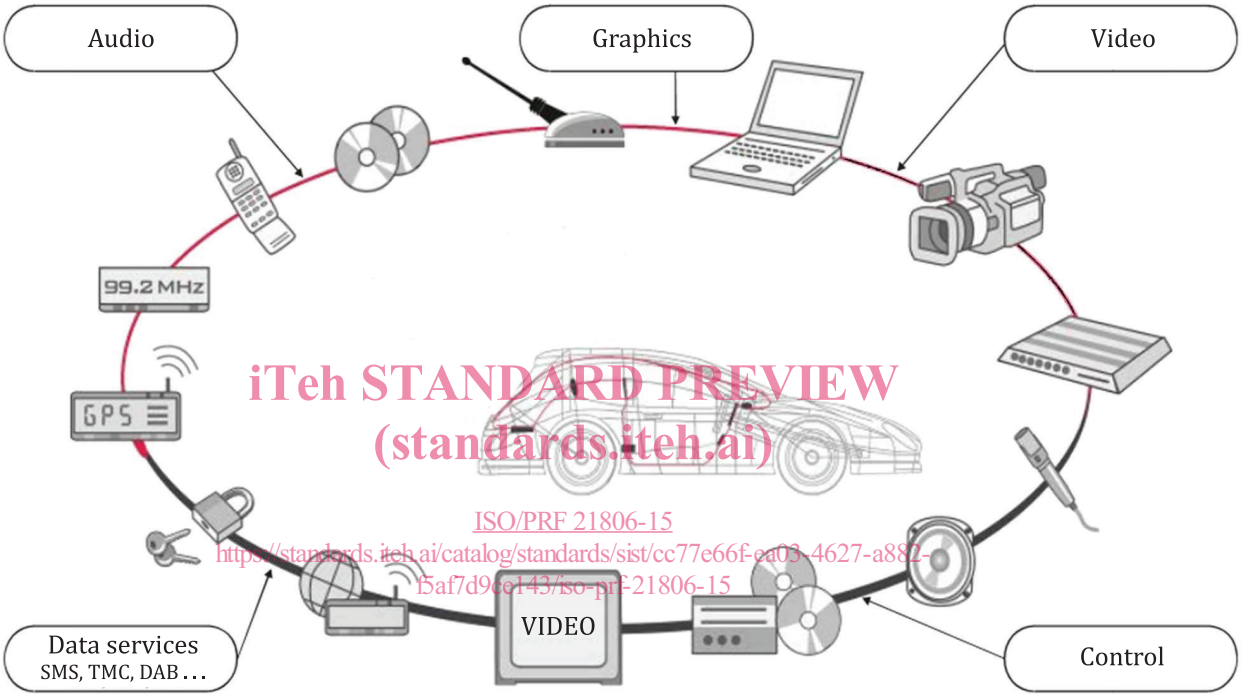


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**Figure 1 — MOST network example**

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[2].

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.

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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[1] 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.

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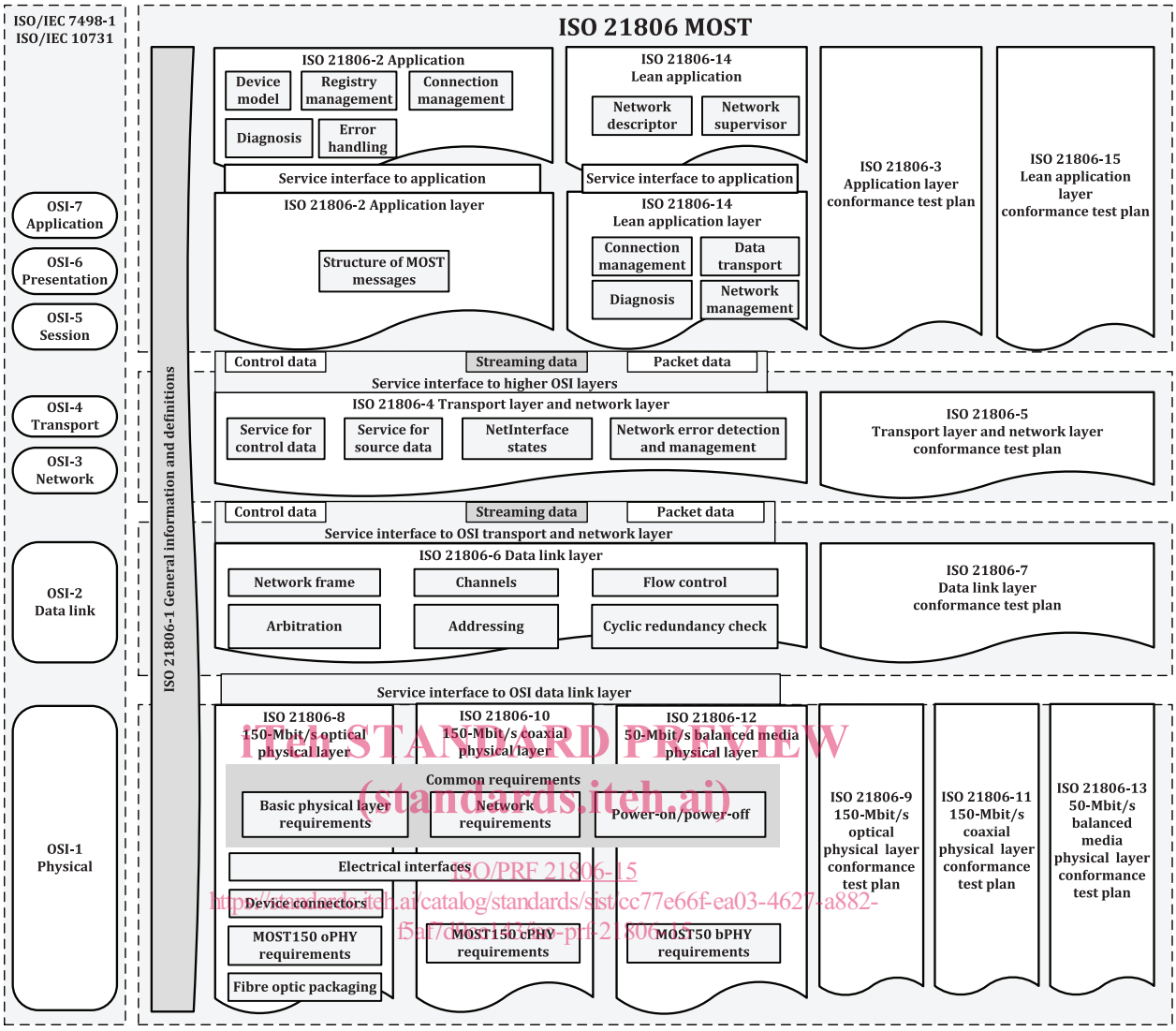


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**Figure 2 — The ISO 21806 series reference according to the OSI model**

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

# Part 15: Lean application layer conformance test plan

## 1 Scope

This document specifies the conformance test plan (CTP) for the lean application layer for MOST, a synchronous time-division-multiplexing network, as specified in ISO 21806-14.

This document specifies conformance test cases (CTCs) for root nodes and remote nodes in the following categories:

— network startup;

— network shutdown;

— network events;

— node discovery;

— connection management.

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Interoperability testing is not in the scope of this document.

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## 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*

ISO 21806-4, *Road vehicles — Media Oriented Systems Transport (MOST) — Part 4: Transport layer and network layer*

ISO 21806-14:2021, *Road vehicles — Media Oriented Systems Transport (MOST) — Part 14: Lean application layer*

ISO/IEC 9646-1, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21806-1, ISO 21806-4, ISO 21806-14, ISO/IEC 9646-1 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/

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# 4 Symbols and abbreviated terms

## 4.1 Symbols

--- empty table cell or feature undefined

## 4.2 Abbreviated terms

CTC conformance test case

CTP conformance test plan

IUT implementation under test

LT lower tester

NCE network change event

OSI Open Systems Interconnection

UT upper tester

# 5 Conventions

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This document is based on OSI service conventions as specified in ISO/IEC 10731[3] and ISO/IEC 9646-1 for conformance test system set-up.

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# 6 Conformance test plan (CTP) overview

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## 6.1 Test set-up

All CTCs are based on the same test set-up with an upper tester (UT) and a lower tester (LT). The LT contains the lower tester pre-IUT (LT pre-IUT) and the lower tester post-IUT (LT post-IUT).

Figure 3 shows the test set-up.

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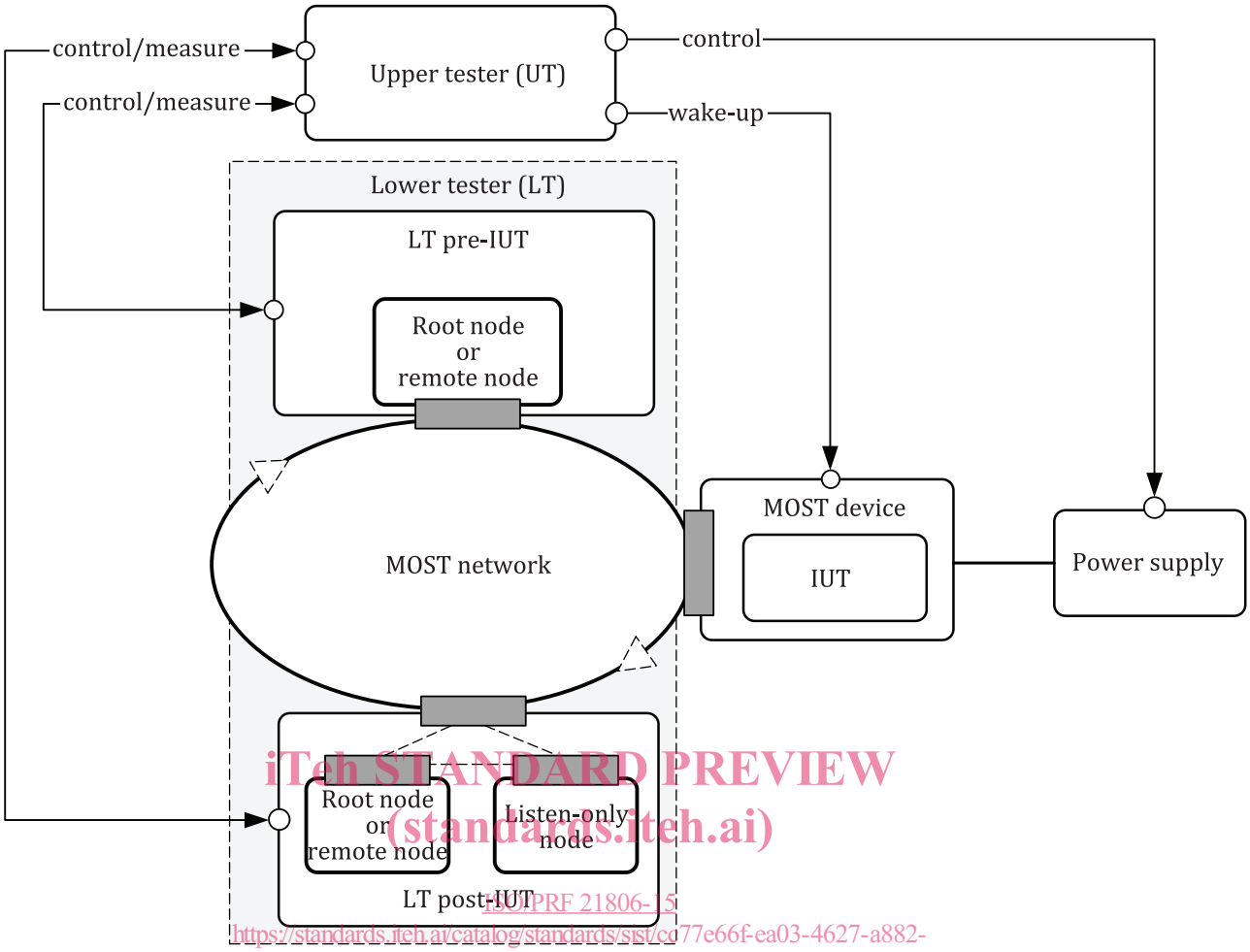


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**Figure 3 — Test set-up**

The UT can configure the LT pre-IUT as root node or remote node. The UT can configure the LT post-IUT as root node or remote node or disconnect the corresponding interface. The LT post-IUT contains a listen-only node to monitor the network status, communication and streaming. The root node operates as TimingMaster. A remote node operates as TimingSlave.

The UT is able to provide the remote nodes in the LT pre-IUT and the LT post-IUT with a signature.

Every CTC contains a description of the experimental set-up that specifies the roles of the LT pre-IUT and the LT post-IUT.

During testing of the MOST device that implements the IUT, avoid over-temperature by following the manufacturer recommendations regarding cooling.

### 6.2 Conformance test plan organization

The CTCs are independent of one another. Each CTC checks the behaviour of the IUT for requirements stated in ISO 21806-14.

## 7 Conformance test plan (CTP) general information

### 7.1 Timer naming

For conformance testing of the IUT, the UT and LT need minimum and maximum timers. The names of the timers used by this document are based on ISO 21806-14. To obtain the timer name, for minimum