
**Intelligent transport systems —
Motorway chauffeur systems (MCS) —
Part 1:
Framework and general requirements**

*Systèmes de transport intelligents — Systèmes de conduite
automatisée sur voie à chaussée séparée (MCS) —*

Partie 1: Cadre et exigences générales





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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 204, *Intelligent transport systems*.

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

An automated driving system (ADS) needs to be designed with the capability to cope with various conditions, such as the driving environment, behaviour of other vehicles in the surroundings, traffic regulations, etc.

In addition, an ADS designed to operate on motorways can encounter various situations such as merging into the main lane of traffic, adjusting the speed according to congested or freely flowing traffic, overtaking other vehicles, or changing lanes when approaching an exit/lane closure.

For Level 3 automated driving, the ADS issues a request to the fallback-ready user (FRU) to take over driving tasks when it cannot respond to certain conditions/situations.

The ISO 23792 series identifies the performance requirements for an ADS based on its capability to respond to certain conditions and situations. The requirements are derived in order to reliably transfer the control between the human driver and ADS, and for safe operation by the ADS.

The ISO 23792 series focuses on the system functionalities, under the assumption that the FRU is available and responsive to system requests to take over driving tasks.

Intelligent transport systems — Motorway chauffeur systems (MCS) —

Part 1: Framework and general requirements

1 Scope

Motorway chauffeur systems (MCS) perform Level 3 automated driving^[1] on limited access motorways with the presence of a fallback-ready user (FRU). MCS can be implemented in various forms capable of responding to different driving scenarios. This document describes a framework of MCS including system characteristics, system states/transition conditions and system functions.

MCS are equipped with a basic set of functionalities to perform in-lane operation and can also be equipped with additional functionalities such as lane changing.

This document specifies requirements of the basic set of functionalities and test procedures to verify these requirements. The requirements include vehicle operation to perform the entire dynamic driving task (DDT)^[1] within the current lane of travel, to issue a request to intervene (RTI)^[1] before disengaging, and to extend operation and temporarily continue to perform the DDT after issuing an RTI.

This document describes one specific form of system engagement. Other forms are possible. These other system engagement forms, especially those provided in combination with other driving automation system features, are not within the scope of this document.

Requirements and test procedures for the additional functionalities are provided in other parts of the ISO 23792 series.

Means related to setting a destination and selecting a route to reach the destination are not within the scope of this document. This document applies to MCS installed in light vehicles.^[2]

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 15622:2018, *Intelligent transport systems — Adaptive cruise control systems — Performance requirements and test procedures*

ISO/SAE PAS 22736, *Taxonomy and definitions for terms related to driving automation systems for on-road motor vehicles*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/SAE PAS 22736 and the following apply.

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

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