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Intelligent transport systems — Remote support for low speed automated driving systems (RS-LSADS) — Performance requirements, system requirements and performance test procedures

Systèmes de transport intelligents — Téléassistance pour les systèmes de conduite automatisée à basse vitesse (RS-LSADS) — Exigences de performance, exigences du système et procédures d'essai de performance

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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

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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 document 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 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.

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Introduction

For the sustainable operation of mobility services using automated driving systems (ADS), it can be necessary to provide additional support for the functioning of the ADS in order to enable mobility services to continue beyond the constraints of the operational design domain (ODD). Such additional support can include human remote support, i.e. actions by humans outside the vehicle. The low speed of low speed automated driving systems (LSADS) equipped vehicles simplifies the provision of remote support.

In this document, remote support is defined as a combination of remote assistance and remote driving.

Currently, individual development and demonstration projects for remote support of LSADS are implemented in several regions and countries, including UK, US, CA, DE, FR, AU, KR, and JP, amongst others. One example of such an implementation is given in Annex A.

This document indicates the technical requirements of remote support for LSADS (RS-LSADS) and is intended to provide a common basis for RS-LSADS development.

ISO/SAE PAS 22736 (SAE J3016) defines remote assistance and remote driving. In addition, in ISO 22737 external entity input is described. This document is intended to complement ISO 22737 by defining scenarios and requirements for remote assistance and remote driving.

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Intelligent transport systems — Remote support for low speed automated driving systems (RS-LSADS) — Performance requirements, system requirements and performance test procedures

1 Scope

This document describes remote support provided to LSADS operated at Level 4 automation on predefined routes by a remotely located human in order to facilitate safe trip continuation. "Remote support" refers to the provision of information, or temporary performance of the dynamic driving task (DDT), and remote monitoring required for these functions.

This document is applicable to RS-LSADS in vehicles that provide passenger transport or logistics services on predefined routes.

This document specifies:

— the terms and definitions related to RS-LSADS and the system architecture of RS-LSADS;

— functions of RS-LSADS, which are: remote monitoring, remote assistance and remote driving that is operated under very limited conditions, and conditions under which they need to be activated;

— the performance requirements, system requirements and performance test procedures of RS-LSADS;

— the data to be communicated between vehicles and the remote support facility (but not protocols or other aspects of communication system).

This document is applicable to remote support of operational and tactical functions during continuous operations, but does not apply to strategic functions or to RS-LSADS daily startup or shutdown.

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

ISO 22737, *Intelligent transport systems — Low-speed automated driving (LSAD) systems for predefined routes — Performance requirements, system requirements and performance test procedures*

ISO/SAE 21434, *Road vehicles — Cybersecurity engineering*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/SAE PAS 22736, ISO 22737 and the followings 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

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