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Intelligent transport systems - Vehicle/roadway warning and control systems - Report on standardisation for vehicle automated driving systems (RoVAS)/Beyond driver assistance systems

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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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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

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Introduction

In recent years, rapid progresses of sensing and computational technologies have promoted research and development on automated driving systems. Some systems have already been commercialized and have begun to be installed in production vehicles. Standardization activities for automated driving systems have been advanced as well. Amid ongoing practical implementation of the systems, standardization for automated driving systems should be stimulated.

In the future, various automated driving systems will be increasingly introduced in the automotive industry. For appropriate usage of these systems by general users, it is important for us to make a distinction between a vehicle's functions and the driver's role to avoid confusion. Therefore, several International Standards should be established that can be shared widely. However, from current perspective, it seems to be not clear which items should be standardized. Nevertheless, since more advanced systems for automated driving systems will be introduced in the near future, standardization will widely consider and assess candidates for standardization to ensure covering not only the functions of an automated driving system itself, but also contributing or enabling issues for each system.

Therefore, this document outlines potential standardization areas and items and marshal them in a systematic manner to distinguish potential standardization for various automated vehicle systems. It is also intended to cover the need for standardization on the usage of automated driving systems in a heterogeneous traffic condition (where not all vehicles are automated). This document does neither determine the area of standardization body, where the work should be performed, nor the recommendation of specific standardization.

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This document should be helpful for those who consider and/or develop standards for automated driving systems. Use case of this document may be as follows; to share common perceptions of standardization, to clarify perspectives of standardization, to take standardization items, to estimate coverages and priorities of items, and to consider feature of technologies or products.

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1 Scope

This document provides the results of consideration on potential areas and items of standardization for automated driving systems. In this document, automated driving systems are defined as systems that control longitudinal and lateral motions of the vehicle at the same time.

Potential standardization areas and items are widely extracted and marshalled in a systematic manner to distinguish potential standardization for various automated vehicle systems. When, what, and by whom the standardization activities are actually done are discussed separately.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

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

4 Extracting potential areas for standardization

4.1 Principles

4.1.1 General

This clause presents basic concepts for items related to automated driving systems for standardization. Examples of basic architectures have been considered and potential areas for standardization, based on these examples have been derived. Aside from this, items based on actual standardization activities and other important issues have been extracted.

4.1.2 Issues based on architectures

4.1.2.1 General

It is effective to extract areas for standardization based on architecture. This section suggests an example of notional architecture based on automated driving systems. This is not a proposal for a standard, but intended for use when for considering potential standardization items systematically.

It might be suggested that areas for standardization are standards for each entity and interface between entities. Functional transitions are especially important in the architecture of automated driving systems.

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