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Intelligent transport systems — Information interface framework
between automated driving ~~systems~~systems and ~~user~~users

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~~Information interface framework between automated driving
system and user — rev2.00~~

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CP 401 • Ch. de Blandonnet 8

CH-1214 Vernier, Geneva

Phone: + 41 22 749 01 11

~~Email~~E-mail: copyright@iso.org

Website: ~~www.iso.org~~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 ~~documents~~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 ~~TC204~~Technical Committee ISO/TC 204, *Intelligent transport systems*. 560

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~~www.iso.org/members.html~~.

Introduction

Automated driving systems (ADS), which are expected to become ~~more~~increasingly popular in the future, ~~will~~can need to convey situation-specific information to ~~/ or~~ from users ~~depending on the situation~~.

For example, when it becomes necessary to lower the level of driving automation or cancel it for ~~some~~a given reason, it is important to notify the user of ~~information~~this change and to prompt the user to monitor the surroundings or take a certain action ~~such as driving. Also. Additionally~~, when the system executes a certain function, ~~there~~it can be ~~a case when~~necessary for the ~~user's~~user to confirm the intention ~~needs to be confirmed.~~

~~Also, since~~ADS can receive supplementary information from users through nomadic devices (if these are paired to the ADS) in addition to onboard devices. As users of ADS level 3 or higher are allowed to use ~~some~~certain nomadic devices (such as ~~smartphones~~smartphones) to ~~do some~~perform secondary tasks while in the driver seat, ~~there is a potential~~a problem ~~when~~can potentially arise where the ADS needs to inform the user of a critical message through ~~such devices if needed. ADS can receive some supplemental information from users through a nomadic device in addition to the onboard devices if it is paired to the ADS currently being used.~~

~~In this report, we will organize these~~ Examples of information exchanged between the ADS and the user include:

- ADS prompting action by the user;
- ADS informing the user about the need for action in the near future;
- ADS informing the user about a change in operational status;
- user's nomadic device informing ADS about the user's current condition.

NOTE 1 The user is primarily the person sitting in the driver's seat, but also includes the passengers in a driverless vehicle.

This document provides a review of ideas and policies on this subject that have gained international consensus.

~~Specifically, the~~ Information to be provided to the user is stratified and aspects such as priority and content are described. Within each classification this document defines information ~~to be notified is stratified, and the priority, content, etc. are described.~~attributes.

~~Note that several~~A primary classification of notifications to users is based on two broad criteria, which lead to differences in the type of information provided to users:

- a) degree of safety criticality: the user needs to take action or provide a response, or user needs to be aware of a change, or user information is provided only for comfort or convenience;
- b) time criticality.

ISO/SAE PAS 22736 describes relevant terminology definitions as well as important concepts concerning ADS design.

NOTE 2 Several documents have been published ~~on the concerning an~~ ergonomic approach, ~~and some are presented in the bibliography [2], [3], [4], and [5].~~ to transport information and control systems. See References [2], [3], [4] and [5].

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Intelligent transport systems — Information interface framework between automated driving ~~system~~systems and ~~user~~users

1 Scope

This document describes the classification of notifications provided ~~in both directions between~~to and from ~~users and~~ ADS of level 3 or higher ~~system and users~~.

~~Primary classification of those notification to users is based on two broad criteria, which lead to differences of the type of information provided to users:~~

~~(1) Degree of safety criticality: user needs to take action or response, or user needs to be aware, or user information is provided only for comfort or convenience~~

~~(2) Time criticality~~

~~The information exchanged between the ADS and the user would include examples such as:~~

- ~~— ADS requests a prompt action by the user~~
- ~~— ADS informs the user about the need for action in the near future~~
- ~~— ADS informs the user about a change in operational status~~
- ~~— User's mobile device informs ADS about user's current condition~~

~~The user is primarily the person sitting in the driver's seat, but also include the passengers in a driverless vehicle.~~

This document does not include ~~the recommendation of recommendations on~~ how ~~the~~to provide information ~~should be provided, but that could be contained in other documents.~~

This document also includes information on transmission between nomadic devices and ADS, considering that the user is concentrating on a device such as a smartphone, and the smartphone is able to monitor the user's condition.

~~Within each classification this document defines information attributes.~~

32 Normative references

There are no normative references in this document.

None

63 Terms and definitions

None

No terms and definitions are listed in this document.

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>

— IEC Electropedia: available at <https://www.electropedia.org/>

7.4 Abbreviated terms

7.1 Abbreviated terms defined in ISO/SAE 22736

ADS automated ~~Driving System~~driving system

DDT dynamic driving task

ODD operational design domain

FRU ~~Fallback~~fallback ready user

MRM ~~Minimal~~minimal risk manoeuvre

MRC ~~Minimal~~minimal risk condition

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