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Road vehicles — Safety and cybersecurity for automated driving systems — Design, verification and validation

Véhicules routiers — Sécurité et cybersécurité pour les systèmes de conduite automatisée — Conception, vérification et validation



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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).

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This document was prepared by Technical Committee ISO/TC 22, *Road Vehicles*.

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

Automated driving is one of the key modern technologies. In addition to offering broader access to mobility, it may also help to reduce the number of road traffic related accidents and crashes. When doing so, the safe operation of automated driving vehicles is one of the most important factors. Designed to supplement existing standards and publications on various aspects of safety, this document presents a more technical overview of the recommendations, guidance and methods to achieve a positive risk balance and to avoid unreasonable risk and cybersecurity related threats, emphasizing the importance of safety by design. This document closes the loop to provide a discussion with recommendations and methods on the verification and validation of automated driving systems.

Set forth are a proposed framework and guidelines focused on the safety and cybersecurity during the development, verification, validation, production and operation of automated driving systems for all stakeholders in the automotive and mobility world – from technology start-ups through to established OEMs and the tiered suppliers of key technologies.