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Intelligent and Connected Vehicles—Technical Requirements and Test Methods of Vehicle-Control Operating System

智能网联汽车 车控操作系统技术要求及试验方法

(English Translation)

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FOREWORD

This document is drafted in accordance with the rules given in GB/T 1.1-2020 "*Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents*".

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1 SCOPE

This document specifies the general requirements, generic technical requirements, information security requirements, functional safety requirements, and test methods with respect to the vehicle-control operating system (VCOS) for intelligent and connected vehicles (ICV).

This document is applicable to Categories M and N vehicles equipped with a VCOS, while this document may be used as a reference for other vehicle categories.

2 NORMATIVE REFERENCES

The following normative documents contain provisions which, through normative reference in this text, constitute essential provision of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendment) applies.

GB/T 17548-2008	Information technology - Requirements and Guidelines for Test Methods Specification and Test Method implementation for Measuring Conformance to POSIX Standards
GB/T 34590.6	Road vehicles—Functional safety—Part 6: Product development at the software level
GB/T 40429-2021	Taxonomy of driving automation for vehicles
GB/T 44373-2024	Intelligent and connected vehicle—Terms and definitions
GB 44495-2024	Technical requirements for vehicle cybersecurity
GB 44496-2024	General technical requirements for software update of vehicles
GB/T 46194-2025	Road vehicles—Cybersecurity engineering
GM/T 0005-2021	Randomness Testing Specification

3 TERMS AND DEFINITIONS

For the purposes of this document, the terms and definitions given in GB/T 40429-2021 and GB/T 44373-2024 as well as the following apply.

3.1 onboard intelligent computing base platform

a hardware-software integrated platform that supports the implementation of features such as driving automation for ICVs, including hardware such as chips, modules and interfaces, as well as system software (3.5) and functional software (3.6)

3.2 vehicle-control operating system (VCOS)

a collection of software that runs on the hardware of the onboard intelligent computing base platform (3.1) and automotive electronic control unit (ECU) hardware, supporting the implementation of driving automation features and safe & reliable operation of ICVs, and intended to manage computing resources and schedule tasks, and consists of safety vehicle-control operating system (3.3) and intelligent driving operating system (3.4)

3.3 safety vehicle-control operating system (SVCOS)

a collection of software within the VCOS (3.2) that supports the safe & reliable operation of ICVs, including system software (3.5) and functional software (3.6)

3.4 intelligent driving operating system (IDOS)

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