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GB/T 47351-2026

Intelligent and connected vehicles - Technical requirements and test methods for vehicle control operating systems

智能网联汽车 车控操作系统技术要求及试验方法

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the Ministry of Industry and Information Technology of the People's Republic of China. This document is under the jurisdiction of the National Automotive Standardization Technical Committee (SAC/TC114). This document was drafted by: China Automotive

Technology & Research Center (Beijing) Co., Ltd., Shenzhen Yinwang Intelligent Technology Co., Ltd., and China Automotive Technology Research Institute. Center Co., Ltd., Beijing Saimu Technology Co., Ltd., Shanghai Motor Vehicle Inspection and Certification Technology Research Center Co., Ltd., Zebra Network Technology Technology Co., Ltd., Zero Beam Technology Co., Ltd., ZTE Corporation, Beijing Horizon Information Technology Co., Ltd., Qualcomm Wireless Telecommunications Technology (China) Co., Ltd., Tsinghua University, Chongqing Changan Automobile Co., Ltd., China Software Testing Center (Ministry of Industry and Information Technology) Software and Integrated Circuit Promotion Center), FAW Jiefang Automobile Co., Ltd., Great Wall Motor Co., Ltd., Beijing Baidu Netcom Technology Co., Ltd. Company, Volkswagen (China) Investment Co., Ltd., Beijing CHJ Automotive Technology Co., Ltd., Beiqi Foton Motor Co., Ltd., Electronics Technology Technical University, Anhui Jianghuai Automobile Group Co., Ltd., Mercedes-Benz (China) Investment Co., Ltd., China Automotive Technology and Research Center (Beijing) Intelligent Connected Vehicle Technology Co., Ltd. Automotive Research Institute Co., Ltd., Dongfeng Commercial Vehicle Co., Ltd., Pan Asia Technical Automotive Center Co., Ltd., SAIC-GM-Wuling Automobile Co., Ltd. The company, SAIC Motor Corporation Limited Technology Center, Guangzhou Automobile Group Corporation Limited, and Neusoft Reach Automotive Technology (Shenyang) Co., Ltd. Limited Liability Company, Beijing Zhixing Technology Co., Ltd., China FAW Group Corporation, BYD Auto Industry Co., Ltd., Dongfeng Motor Car Group Co., Ltd., and NIO Auto Technology (Anhui) Co., Ltd. The main drafters of this document are. Cong Wei, Zhou Zheng, Wu Hanbing, Huang Xiaoyun, Ju Xiaonan, Ma Xuehan, Hu Zhigang, Shen Wenting, Liu Dong, and Cheng Zhifeng. Wang Jiangsheng, Xu Qing, Li Yuqiang, Wang Wei, Liu Shizhen, Zhou Siru, Ju Weinan, Chen Qian, Zhang Chikun, Tao Gedan, Xie Pengfu, Qian Guoping, Luo Lei, Ding Zhao Lü Ming, Zhang Wenjie, Liu Zhikun, Li Yang, Cui Changjun, Lin Zhigui, Bai Zhimin, Huang Shaojie, Li Xiaoping, Qi Shuai, Zhang Dezhao, Zhang Xiaoqian, Han Bing, Zhou Long Wang Kai. Technical Requirements for Intelligent Connected Vehicle Control Operating Systems and test methods

1 Scope

GB/T 47351-2026 is the Chinese national standard covering the operating system that runs the vehicle's control functions - the real-time and functional safety requirements, the partitioning and freedom from interference, the certification evidence and the tests that verify timing under load. This is the safety-critical counterpart of the infotainment-side GB/T 47341-2026 published in the same period. At 25,000 words, first edition, in force since 1 July 2026. It was issued on 31 March 2026 and has been in force since 1 July 2026, as a first edition. The document is under the responsibility of the Ministry of Industry and Information Technology. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English

translation.

This document specifies the general requirements, common technical requirements, information security requirements, and functional safety requirements for the vehicle control operating system of intelligent connected vehicles. Summation test method. This document applies to Category M and N vehicles equipped with a vehicle control operating system; other vehicle types should refer to this document for implementation.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 17548-2008 Specifications for Test Methods and Requirements for Implementation of Test Methods for POSIX Standard Compliance in Information Technology guide

GB/T 34590.6 Functional safety of road vehicles - Part

3 Terms and Definitions

The terms and definitions defined in GB/T 40429-2021 and GB/T 44373-2024, as well as the following terms and definitions, apply to this document.

3.1 A hardware and software integrated platform supporting the realization of functions such as driving automation in intelligent connected vehicles, including hardware such as chips, modules, and interfaces. System software (3.5) and functional software (3.6).

3.2 Running on the in-vehicle intelligent computing platform (3.1) hardware and automotive electronic control unit hardware, it supports the autonomous driving of intelligent connected vehicles. A software suite for implementing automation functions and ensuring safe and reliable operation, used to manage computing resources and schedule tasks, consisting of the Type II vehicle control operating system (3.3) and The Type I vehicle control operating system (3.4) consists of...

3.3 The vehicle control operating system (3.2) is a collection of software that supports the safe and reliable operation of intelligent connected vehicles, including system software (3.5) and functional software. Item (3.6).

6 Product development. Software aspects

GB/T 40429-2021 Classification of Driving Automation for Motor Vehicles

GB/T 44373-2024 Terms and Definitions for Intelligent Connected Vehicles

GB 44495-2024 Technical Requirements for Information Security of Complete Vehicles

GB 44496-2024 General Technical Requirements for Automotive Software Upgrades

GB/T 46194-2025 Road Vehicle Information Security Engineering GM/T 0005-2021 Randomness Testing Standard