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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 47025-2026

**Intelligent and connected vehicles - Simulation test methods
and requirements for automated driving functions**

智能网联汽车 自动驾驶功能仿真试验方法及要求

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1 Scope

GB/T 47025-2026 is the Chinese national standard covering proving an automated driving function in simulation - the scenario library and its coverage, the fidelity required of the vehicle, sensor and environment models, the validation of the simulator itself against real driving, and what may and may not be signed off without a physical test. At 81,500 words it is one of the largest standards of the whole 2026 batch, and it addresses the central practical problem of the field: an automated driving system cannot be validated by driving alone, because the distances required are impossible. First edition, in force since 28 January 2026. It was issued on 28 January 2026 and has been in force since 28 January 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 describes simulation test methods for the automated driving functions of intelligent and connected vehicles; specifies the test requirements and general pass criteria. This document applies to Category M and N vehicles, which are equipped with automated driving functions, as well as to automated driving systems.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this document. For dated references, only the edition cited applies; for undated

references, the latest edition of the referenced document (including any amendments) applies.

GB/T 3730.2 Road vehicles - Masses - Vocabulary and codes

GB 5768 (all parts) Road traffic signs and markings

GB 14886 Specifications for road traffic signal setting and installation

GB 14887 Road traffic signal lamps

GB/T 40429 Taxonomy of driving automation for vehicles

GB/T 41798 Intelligent and connected vehicles - Track testing methods and requirements for automated driving functions

GB/T 44373 Intelligent connected vehicle - Terms and definitions

GB/T 45312 Design and operation conditions of autonomous driving system for intelligent connected vehicles

GB/T 46896 Road vehicles - Autonomous driving system test scenario - Terminology

3 Terms and definitions

The terms and definitions defined in GB/T 40429, GB/T 41798, GB/T 44373, GB/T 45312, GB/T 46896, as well as the following terms and definitions, apply to this document.

3.1 Simulation test A method of conducting tests on an automated driving system or a vehicle equipped with automated driving functions, using a simulation test toolchain within a simulated scenario.

3.2 Simulation test toolchain A collective term for a combination of one or more sets of simulation test tools and models, which are used to conduct simulation tests.

3.2.1 Simulation test tool Software and/or hardware equipment, which is used for the simulation testing of automated driving systems.

3.2.2 Model A description or representation of a system, entity, phenomenon, or process.

3.3 Simulation model A model in which input variables change over time within a simulation environment. Example. Traffic environment model, weather environment model, etc.

3.4 Concrete test scenario A test scenario formally described using specific parameter values.

3.5 Simulation test credibility The degree to which the results of a simulation test can be trusted.

3.6 Correlation A measure used to quantitatively express the degree of correlation between a model and the object being modeled.

3.7 Stable following A state in which the speed difference between the preceding and following vehicles remains within ± 2 km/h, for a duration of at least 3 seconds. [Source: GB/T 41798-2022, 3.11, modified]

4.1 General requirements

4.1.1 The test object of this document shall include, at a minimum, the automated driving system.

4.1.2 No changes shall be made to the automated driving system or the simulation test toolchain during the execution of simulation tests.

4.1.3 The credibility of the simulation test shall be evaluated in accordance with Appendix A.

4.1.4 In addition to the test items selected from Table 1, further test items shall be generated based on the design operating conditions of the automated driving system, to ensure test coverage. These test items shall include, at a minimum, test scenarios, test procedures, requirements for recorded test information, pass criteria; concrete test scenarios shall be constructed in accordance with 5.3; simulation tests shall be executed in accordance with 5.4.

4.1.5 Commercial test vehicles shall be tested in both the curb mass state and the maximum permissible gross mass state; mass descriptions shall comply with GB/T 3730.2; the condition of the test vehicle shall not be altered once testing has commenced. For semi-trailer tractors, tests shall be conducted in both the curb mass state of the vehicle combination and the maximum permissible mass state of the vehicle combination.

4.2 Requirements for simulation test toolchain

4.2.1 The confidence level of the simulation test toolchain shall comply with the requirements specified in A.2 ~ A.5 of Appendix A.

4.2.2 The simulation test toolchain shall support, at a minimum, the simulation test items selected in accordance with 5.2.

4.2.3 The simulation test toolchain shall be capable of executing concrete test scenarios (including but not limited to road networks, target objects, etc.). Target object dimensions are specified in Appendix B.

4.2.4 The simulation test toolchain shall be capable of interfacing with the model, algorithm, or hardware of the automated driving system under test.

4.2.5 The simulation test toolchain should be capable of processing raw sensor signal-level data or interfacing with sensor hardware (e.g., cameras, radar, etc.).

4.2.6 The simulation test toolchain shall be capable of executing vehicle dynamics models

or interfacing with vehicle actuation systems.

4.2.7 The simulation test toolchain shall support the evaluation of simulation test results and ensure their traceability; it shall at least support the recording and preservation of the test data required in 4.3.

4.3 Requirements for test record information During simulation testing, in addition to recording the test information for each test item specified in Appendixes C ~ I, the following information shall also be recorded.

- a) Simulation test-in-the-loop testing method;
- b) Configuration and version information of the simulation test toolchain;
- c) Configuration and version information of the automated driving system under test;
- d) Information regarding the test vehicle's lighting and human-machine interaction (HMI), or relevant request information required by the automated driving system;
- e) Information on the relative distance between the outer edge of the test vehicle's wheels and the outer edge of the lane markings;
- f) Information on the minimum distance between the test vehicle's outer profile and road infrastructure (e.g., road traffic signs, tunnels, etc.), or other information used to determine whether a collision has occurred.

5 Test methods

5.1 Test process requirements As shown in Figure 1, simulation testing shall be conducted according to at least the following process.

- a) Determine the test items and test plan in accordance with 5.2;
- b) Determine the simulation test toolchain, based on the test items and test plan determined in step a);
- c) Conduct a credibility assessment of the simulation test toolchain, in accordance with Appendix A, based on the toolchain determined in step b);
- d) Construct concrete test scenarios in accordance with Appendixes C ~ I, using the simulation test toolchain assessed in step c);
- e) Execute the simulation test;
- f) Obtain the simulation test results. Figure 1 -- Simulation test flowchart

5.2 Requirements for test item selection

5.2.1 Determine whether the driving area involves expressways, urban express roads, or urban roads, based on the road types within the design operating conditions of the test