



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

GB/T 34590.9-2022

**Road vehicles - Functional safety - Part 9: Automotive safety
integrity level(ASIL)-oriented and safety-oriented analyses**

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Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020

Directives for Standardization - Part 1.Rules for the Structure and Drafting of
Standardizing Documents.

This document is Part 9 of GB/T 34590 Road Vehicles - Functional Safety. GB/T 34590
has issued the following parts.

- Part 1.Vocabulary;
- Part 2.Management of Functional Safety;
- Part 3.Concept Phase;
- Part 4.Product Development at the System Level;
- Part 5.Product Development at the Hardware Level;
- Part 6.Product Development at the Software Level;
- Part 7.Production, Operation, Service and Decommissioning;
- Part 8.Supporting Processes;
- Part 9.Automotive Safety Integrity Level (ASIL)-oriented and Safety-oriented
Analyses;
- Part 10.Guideline;
- Part 11.Guidelines on Applications to Semiconductors;
- Part 12.Adaptation for Motorcycles.

This document serves as a replacement for GB/T 34590.9-2017 Road Vehicles -
Functional Safety - Part 9.Automotive Safety Integrity Level (ASIL)-oriented and
Safety-oriented Analyses. In comparison with GB/T 34590.9-2017, apart from
structural adjustments and editorial modifications, the main technical changes are as
follows.

- The scope of application of the standard is revised from "mass-produced passenger cars" to "mass-produced road vehicles other than mopeds" (see Chapter 1; see Chapter 1 of the 2017 edition);
- The adaptation requirements for motorcycles are added (see 4.5);
- The adaptation requirements for goods vehicles, buses, special vehicles, and trailers are added (see 4.6);
- The objectives of requirements decomposition on ASIL tailoring are changed (see 5.1; see 5.1 of the 2017 edition);
- The general rules of the requirements decomposition on ASIL tailoring are changed (see 5.2; see 5.2 of the 2017 edition);
- The contents that the initial safety requirements shall be decomposed into redundant safety requirements are changed (see 5.4.3; see 5.4.3 of the 2017 edition);
- The contents that each decomposed safety requirement shall comply with the initial safety requirement by itself are changed (see 5.4.4; see 5.4.4 of the 2017 edition);
- The content "If the violation of an initial safety requirement cannot be prevented by switching off the element, then adequate availability of the sufficiently independent elements implementing the decomposed safety requirements shall be shown" is deleted (see 5.4.8 of the 2017 edition);
- The general rules of the criteria for the coexistence of elements are changed (see 6.2; see 6.2 of the 2017 edition);
- The content "the safety requirements shall be assigned to sub-elements of elements before the application of this chapter" is deleted (see 6.4.2 of the 2017 edition);
- The contents "If sub-elements implementing requirements with different ASILs coexist in the same element" are changed (see 6.4.4; see 6.4.5 of the 2017 edition);

-- The objectives of dependent failure analysis are changed (see 7.1; see 7.1 of the

2017 edition);

-- The general rules of dependent failure analysis are changed (see 7.2; see 7.2 of the 2017 edition);

-- The prerequisites for dependent failure analysis are changed (see 7.3.1; see 7.3.1 of the 2017 edition);

-- The "repair error" is changed to "service failure" [see 7.4.4 e); see 7.4.4 e) of the

2017 edition];

-- The content "ageing and wear" is added [see 7.4.4 i)];

-- The requirement for the level of detail and rigor of dependent failure analysis is added (see 7.4.8);

-- The verification basis requirements for dependent failure analysis are added (see 7.4.9);

-- The dependent failure analysis verification report is added (see 7.5.2);

-- The objectives of safety analysis are changed (see 8.1; see 8.1 of the 2017 edition);

-- The requirements and recommendations for safety analysis are changed (see 8.4.1; see 8.4.1 of the 2017 edition);

-- The safety analysis verification report is added (see 8.5.2).

This document is modified in relation to ISO 26262-9:2018 Road Vehicles - Functional safety - Part 9: Automotive Safety Integrity Level (ASIL)-oriented and Safety-oriented Analyses.

The technical differences between this document and ISO 26262-9:2018, and the causes for these differences are as follows.

-- The description of T&B vehicles is changed from "trucks, buses, trailers, and semi-trailers" to "goods vehicles, buses, special vehicles, and trailers" (see 4.6; see 4.6 of ISO 26262-9:2018), so that the vehicle types are consistent with that specified in GB/T 3730.1-2022 Terms and Definitions of Motor Vehicles,