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Road Vehicles—Safety of The Intended Functionality
道路车辆 预期功能安全

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Road Vehicles—Safety of The Intended Functionality

1 SCOPE

This document provides a general argument framework and guidance on measures to ensure the safety of the intended functionality (SOTIF), which is the absence of unreasonable risk due to a hazard caused by functional insufficiencies, including:

- a) the insufficiencies of specification of the intended functionality at the vehicle level;
- b) the insufficiencies of specification or performance insufficiencies in the implementation of electric and/or electronic (E/E) elements in the system.

This document provides guidance on the applicable design, verification and validation measures, as well as activities during the operation phase, that are needed to achieve and maintain the SOTIF.

This document is applicable to intended functionalities where proper situational awareness is essential to safety and where such situational awareness is derived from complex sensors and processing algorithms, especially functionalities of emergency intervention systems and systems having levels of driving automation from L1 to L5.

This document is applicable to intended functionalities that include one or more E/E systems installed in series production road vehicles, excluding mopeds.

Reasonably foreseeable misuse is in the scope of this document. In addition, operation or assistance of a vehicle by a remote user or communication with a back office that can affect vehicle decision making is also in scope of this document when it can lead to safety hazards.

This document does not apply to:

- faults covered by GB/T 34590 (all parts);
- cybersecurity threats;
- hazards directly caused by the system technology (e.g., eye damage from the beam of a lidar);
- hazards related to electric shock, fire, smoke, heat, radiation, toxicity, flammability, reactivity, release of energy and similar hazards, unless directly caused by the intended functionality of E/E systems;
- deliberate actions that clearly violate the system's intended use (which are considered feature abuse).

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 34590 (all parts)	Road vehicles - Functional safety
GB/T 34590.1-2022	Road vehicles - Functional safety - Part 1: Vocabulary

3 TERMS AND DEFINITIONS

For the purpose of this document, the terms and definitions given in GB/T 34590.1-2022 and the following apply.

3.1 acceptance criterion

criterion representing the absence of an unreasonable level of risk (3.23)

Note 1: The acceptance criterion can be of qualitative as well as quantitative nature, e.g., physical parameters that define when a specific behavior is considered as hazardous behavior, maximum



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