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

GB/T 34590.1-2022

Road vehicles - Functional safety - Part 1: Vocabulary

道路车辆 功能安全 第1部分：术语

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Foreword

This document was issued on 30 December 2022 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 July 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

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 1 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 of GB/T 34590.1-2017 Road Vehicles - Functional Safety - Part 1.Vocabulary. In comparison with GB/T 34590.1-2017, apart from structural adjustments and editorial modifications, the main technical changes are as follows.

- The Scope is modified from "series production passenger cars" into "series production road vehicles, excluding mopeds", and the description of the Scope is modified (see Chapter 1; Chapter 1 of Version 2017);
- The definitions of 92 terms are modified. architecture, ASIL decomposition, assessment, audit, automotive safety integrity level (ASIL), availability, baseline, branch coverage, calibration data, cascading failure, common cause failure (CCF), component; configuration data, confirmation review, degradation, dependent failures, detected fault, development interface agreement (DIA), diagnostic coverage (DC), diagnostic test time interval, distributed development, diversity, dual-point failure, electrical and / or electronic system (E/E), element, embedded software, emergency operation, emergency operation time interval (EOTI), error, exposure, failure, failure mode, fault, fault model, fault reaction time interval (FRTI), fault tolerant time interval (FTTI), formal notation, formal verification, functional safety concept, functional safety requirement, hardware architectural metrics, hardware part, independence, independent failures, informal notation, inspection, intended functionality, item, latent fault, model-based development (MBD), modification, multiple-point failure, multi-point fault, new development, non-functional hazard, operating mode, operating time, operational situation, other technology, perceived fault, permanent fault, phase, proven in use argument, random hardware failure, reasonably foreseeable, redundancy, residual fault, review, safe state, safety activity, safety case, safety culture, safety goal, safety manager, safety measure, safety mechanism, safety-related function, safety-related special characteristic, safety validation, severity, single-point failure, single-point fault,

subphase, system, technical safety concept, testing, verification, verification review, walk-through, warning and degradation strategy, well-trusted, work product (see 3.1, 3.3, 3.4, 3.5, 3.6, 3.7, 3.10, 3.13, 3.15, 3.17, 3.18, 3.21, 3.22, 3.24, 3.28, 3.29, 3.31, 3.32, 3.33, 3.35, 3.36, 3.37, 3.38, 3.40, 3.41, 3.42, 3.43, 3.44, 3.46, 3.48.3.50, 3.51, 3.54, 3.58, 3.59, 3.61, 3.63, 3.64, 3.68, 3.69, 3.70, 3.71, 3.78, 3.79, 3.80, 3.82, 3.83, 3.84, 3.85, 3.90, 3.91, 3.96, 3.97, 3.99, 3.100, 3.102, 3.103, 3.104, 3.105, 3.108, 3.109, 3.110, 3.115, 3.118, 3.120, 3.122, 3.125, 3.127, 3.131, 3.133, 3.136, 3.137, 3.139, 3.140, 3.141, 3.142, 3.145, 3.147, 3.148, 3.154, 3.155, 3.156, 3.161, 3.163, 3.167, 3.169, 3.180, 3.181, 3.182, 3.183, 3.184, 3.185; 2.3, 2.7, 2.4, 2.5, 2.6, 2.8, 2.9, 2.10, 2.11, 2.13, 2.14, 2.15, 2.16, 2.18, 2.21, 2.22, 2.23, 2.24, 2.25, 2.26, 2.27, 2.28, 2.29, 2.31, 2.32, 2.33, 2.34, 2.35, 2.36, 2.37, 2.39, 2.40, 2.42, 2.43, 2.44, 2.45, 2.47, 2.48, 2.52, 2.53, 2.54, 2.55, 2.61, 2.62, 2.63, 2.67, 2.68, 2.69, 2.71, 2.74, 2.75, 2.76, 2.77, 2.79, 2.80, 2.81, 2.82, 2.83, 2.84, 2.87, 2.88, 2.89, 2.90, 2.92, 2.93, 2.94, 2.96, 2.98, 2.102, 2.104, 2.106, 2.107, 2.108, 2.109, 2.110, 2.111, 2.114, 2.115, 2.116, 2.120, 2.121, 2.122, 2.128, 2.129, 2.132, 2.134, 2.137, 2.138, 2.139, 2.140, 2.141, 2.142 of Version 2017);

-- 51 terms and definitions are added. ASIL capability, base failure rate (BFR), base vehicle, body builder (BB), body builder equipment, bus, common mode failure (CMF), complete vehicle, coupling factors, dependent failure initiator (DFI), diagnostic points, emergency operation tolerance time interval (EOTTI), expert rider, failure mode coverage (FMC), fault detection time interval (FDTI), fault handling time interval (FHTI), fault injection, fault tolerance, hardware elementary subpart, hardware subpart, management system, maximum time to repair time interval, modified condition / decision coverage (MC / DC), motorcycle, motorcycle safety integrity level (MSIL), multi-core, observation points, physics of failure (PoF), power take-off (PTO), processing element (PE), programmable logic device (PLD), quality management (QM), random hardware fault, rebuilding, remanufacturing, safety anomaly, safety element out of context (SEooC), safety-related incident, semi-trailer, series production road vehicle, supply agreement, target environment, tractor, trailer, transducer, goods

vehicle, T&B vehicle configuration, variance in T&B vehicle operation, vehicle function, vehicle operating state, special vehicle (see 3.2, 3.8, 3.9, 3.11, 3.12, 3.14, 3.19, 3.20, 3.26, 3.30, 3.34, 3.45, 3.47, 3.52, 3.55, 3.56, 3.57, 3.60, 3.72, 3.73, 3.87, 3.89, 3.92, 3.93, 3.94, 3.95, 3.101, 3.111, 3.112, 3.113, 3.114, 3.117, 3.119, 3.121, 3.124, 3.134, 3.138, 3.146, 3.151, 3.152, 3.162, 3.166, 3.170, 3.171, 3.172, 3.174, 3.175, 3.177, 3.178, 3.179, 3.186);

-- 6 terms and definitions are deleted. allocation, anomaly, homogeneous redundancy, initial ASIL, item development, special-purpose vehicle (see 2.1, 2.2, 2.60, 2.66, 2.70, 2.126 of Version 2017);

-- 7 abbreviations are modified ACC, ASIC, E / E, FIT, FPGA, HAZOP, SOP (see Chapter 4; Chapter 3 of Version 2017);

-- 59 abbreviations are added. ADC, ALU, BB, BFR, CCP, CMOS, DA, DFA, DFI, DMA, DMOS, DSP, ECC, EDC, EEC, EOTI, EOTTI, EVR, FDTI, FET, FHTI, FMC, FRTI, FTTI, GPU, HS/LS, ISA, LDO, LFM, LS, LSB, MBD, MCU, MSIL, OEM, OV, PAL, PE, PLL, PoF, PPAP, RF, RTL, SEB, SEE, SEGR, SEooC, SET, SEU, SG, SMPS, SoC, SPFM, SPI, T&B, TCL, TD, TI, UV (see Chapter 4);

-- 6 abbreviations are deleted. d.c., DSC, EDC, SIL, SRS, V&V (see Chapter 3 of Version 2017).

This document has been modified using ISO 26262-1:2018 Road Vehicles - Functional Safety

- Part 1.Vocabulary.

The technical differences between this document and ISO 26262-1:2018, and the causes for

these differences are as follows.

-- The terms and definitions of bus, passenger car, semi-trailer and trailer are modified (see 3.14, 3.107, 3.151 and 3.171), so as to maintain the consistency with the definitions in GB/T 3730.1-2022;

-- The term and definition of truck in ISO 26262-1:2018 is deleted, so as to maintain the consistency with the types of vehicles specified in GB/T 3730.1-2022;