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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 34590.3-2022

Road vehicles - Functional safety - Part 3: Concept phase

道路车辆 功能安全 第3部分：概念阶段

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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.

1 Scope

GB/T 34590.3-2022 is the part of the road vehicle functional safety series that covers the concept phase - the work done before anyone designs hardware or writes a line of code, while what the system is and what it must never do are still being written down. Clause 5 requires the item definition: the boundary of the system under consideration, its function, its interfaces with the driver and with other systems, and the assumptions made about how it will be used. Clause 6 covers hazard analysis and risk assessment, where operational situations and malfunctioning behaviour are combined into hazardous events, classified, and assigned an ASIL from which the safety goals follow. Clause 7 derives the functional safety concept: the safety measures and mechanisms that meet those goals, allocated to architectural elements and stated as functional safety requirements. Clause 4 explains how the tables are read and how requirements and recommendations vary with ASIL, with adaptations for motorcycles and for goods vehicles, buses, special vehicles and trailers. Each clause names its inputs and its work products, so an assessor can trace a safety requirement back to the hazard that justifies it. Where this phase is skipped, a programme verifies diligently against goals nobody ever agreed. Written for vehicle and component makers, safety assessors and certification bodies.

This document specifies the requirements for the concept phase for automotive applications, including the following.

2 Normative references

The following documents contain the provisions which, through normative reference in this document, constitute the essential provisions of this document. For the dated referenced documents, only the versions with the indicated dates are applicable to this document; for the undated referenced documents, only the latest version (including all the amendments) is applicable to this document.

GB/T 34590.1 Road Vehicles - Functional Safety - Part 1.Vocabulary (GB/T 34590.1-2022, ISO 26262-1.2018, MOD)

3 Terms and definitions

The terms and definitions defined in GB/T 34590.1-2022 apply to this document.

4 Requirements

Tables are normative or informative depending on their context. The different methods listed in a table contribute to the level of confidence in achieving compliance with the corresponding requirement.

For items or elements of motorcycles for which requirements of GB/T 34590.12-2022 are applicable, the requirements of GB/T 34590.12-2022 supersede the corresponding requirements in this document and GB/T 34590.2-2022.

5 Item definition

The following information can be considered.

Any information that already exists concerning the item, e.g. a product idea, a project sketch, relevant patents, the results of pre-trials, the documentation from predecessor items, relevant information on other items.

6 Hazard analysis and risk assessment

Hazard analysis, risk assessment and ASIL determination are used to determine the safety goals for the item. For this, the item is evaluated with regard to its potential hazardous events. Safety goals and their assigned ASIL are determined by a systematic evaluation of hazardous events.

7 Functional safety concept

To comply with the safety goals, the functional safety concept contains safety measures, including the safety mechanisms, to be implemented in the item's architectural elements and specified in the functional safety requirements.

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Appendix B.

Please be noted that certain content of this document may involve patents. The institution issuing this document does not undertake the responsibility of identifying these patents.

This document was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This document shall be under the jurisdiction of the National Technical Committee of Auto Standardization (SAC/TC114).

The drafting organizations of this document. China Automotive Technology and Research Center Co., Ltd., Guangzhou Automobile Group Co., Ltd., FAW Jiefang Automobile Co., Ltd., United Automotive Electronic Systems Co., Ltd., SAIC Volkswagen Automotive Co., Ltd., SAIC Maxus Automobile Co., Ltd., JTEKT Research and Development Center (Wuxi) Co., Ltd., Huawei Technologies Co., Ltd., Great Wall Motor Co., Ltd., Neusoft Reach Automotive Technology (Shenyang) Co., Ltd., Pan Asia Technical Automotive Center Co., Ltd., Nexteer Automotive (Suzhou) Co., Ltd., Bosch Automotive Products (Suzhou) Co., Ltd., Weilai Automobile (Anhui) Co., Ltd., China FAW Group Co., Ltd., Shenzhen DJI Technology Co., Ltd., Shanghai G-Pulse Electronics Technology Co., Ltd., Beijing Borgward Automotive Co., Ltd., Contemporary Amperex Technology Co., Ltd., BYD Auto Industry Co., Ltd., Daimler Greater China Co., Ltd., Midea Group (Shanghai) Co., Ltd., Huating (Hefei) Power Technology Co., Ltd., WATTPACK Technology Co., Ltd., Zhuzhou CRRC Times Electric Co., Ltd., Beijing Electric VEHICLE Co., Ltd., Yutong Bus Co., Ltd., Schaeffler (China) Co., Ltd., Dongfeng Motor Group Co., Ltd., Technology Center of Shanghai Automotive Group Co., Ltd., SAIC-GM-Wuling Automobile Co., Ltd., ECARX (Hubei) Technology Co., Ltd., Suzhou Inovance Automotive Co., Ltd., AIWAYS Automobile (Shanghai) Co., Ltd., Beijing Jingwei Hirain Technologies Co., Inc., Hefei JEE Power Systems Co., Ltd., CRRC Electric Vehicle Co., Ltd., Youmu Information Technology (Shanghai) Co., Ltd., BAIC Motor Co., Ltd., Volkswagen