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PEOPLE'S REPUBLIC OF CHINA**

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**Road vehicles - Functional safety - Part 4: Product development
at the system level**

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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 4 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 34590.4-2017 Road Vehicles - Functional Safety - Part 4.Product development at the system level. In comparison with GB/T 34590.4-2017, apart from structural adjustments and editorial modifications, the main technical changes

are as follows.

- MODIFY the Scope, from "series production passenger cars" into "series production road vehicles, excluding mopeds" (see Clause 1; Clause 1 of Version 2017);
- ADD the adaptation for motorcycles (see 4.5);

- ADD the adaptation for trucks, buses, trailers and semi-trailers (see 4.6);
- MODIFY the content of Clause 5, from "Product development at the starting system level" into "General topics for the product development at the system level" (see Clause 5; Clause 5 of Version 2017);
- MODIFY the objectives of Clause 5 (see 5.1; 5.1 of Version 2017);
- DELETE the content of "Inputs of this clause", "Requirements and suggestions", "Work products" in Clause 5 (see 5.3, 5.4, 5.5 of Version 2017);
- MODIFY the content of Clauses 6 and 7 of Version 2017, refining the development objectives of the technical safety concept phase (see 6.1; 6.1, 7.1 of Version 2017);
- MODIFY the description of the general principles of the technical safety concept (see 6.2; 6.2 of Version 2017);
- MODIFY the requirements for the specification of the technical safety requirements (see 6.4.1; 6.4.1 of Version 2017);
- MODIFY the requirements for the specification of the safety mechanism (see 6.4.2;

6.4.2 of Version 2017);

- DELETE the content corresponding to ASIL decomposition (see 6.4.3 of Version 2017);
- ADD the objectives of safety analyses on the system architectural design (see 6.4.4.1);
- DELETE the relevant content and tables of the attributes of the modular system design (see 7.4.3.7 of Version 2017);
- MODIFY the requirements for production, service, operation and decommissioning (see 6.4.8; 7.4.7 of Version 2017);
- DELETE the relevant content and tables of the verification of the system design (see

7.4.8 of Version 2017);

- ADD the relevant content and requirements of the system phase verification (see 6.4.9.2);
- MODIFY the objectives of the system and item integration and testing (see 7.1; 8.1 of Version 2017);
- DELETE the description of "the effectiveness of diagnostics or failure coverage of safety

mechanisms" in the integration and testing strategy (see 7.4.1.1);

-- MODIFY the content of "the effectiveness of diagnostics or failure coverage of safety mechanisms" at the system level and the vehicle level (see Table 10, Table 14; Table 11, Table 16 of Version 2017);

-- MODIFY the objectives of safety validation (see 8.1; 9.1 of Version 2017);

-- ADD the safety validation environment (see 8.4.1);

-- MODIFY the description of the validated plan, into the "specification of safety validation" (see 8.4.2; 9.4.2 of Version 2017);

-- DELETE the validation of random hardware failure measurement at the item level (see

9.4.3.3 of Version 2017);

-- DELETE the relevant content of functional safety assessment and production release (see Clause 10 and Clause 11 of Version 2017).

This document has been modified using ISO 26262-4:2018 Road Vehicles - Functional Safety

- Part 4. Product development at the system level.

The technical differences between this document and ISO 26262-4:2018, and the causes for

these differences are as follows.

-- MODIFY the description of T&B vehicles, from "trucks, buses, trailers and semi-trailers" into "goods vehicles, buses, special vehicles and trailers" (see 4.6; 4.6 of ISO 26262-4:2018), so as to maintain the consistency with the vehicle types specified GB/T 3730.1-

1 Types.

This document also makes the following editorial modifications.

-- MODIFY the introduction and expression of the international standard.

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.