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Véhicules routiers — Sécurité fonctionnelle — Utilisation d'éléments d'architecture logicielle préexistants

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Foreword

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This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 32, *Electrical and electronic components and general system aspects*.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document addresses the use of pre-existing software architectural elements not originally developed in accordance with the ISO 26262:2018 series in the context of development aiming to achieve functional safety according to the ISO 26262:2018 series. It describes criteria for the integration of a pre-existing software architectural element to achieve functional safety.

The criteria establish confidence in a pre-existing software architectural element that enables its use in safety-related embedded software developed in accordance with the ISO 26262:2018 series when:

— it meets the needs of a target software architectural design because it provides required safety-related functionalities and properties (including safety mechanisms);

— it meets the needs of a target software architectural design because of its static and dynamic design, its interfaces and its resources are used.

The evidence supporting confidence is kept up to date as part of the safety case and is subject to confirmation measures.

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Road vehicles — Functional safety — Use of pre-existing software architectural elements

1 Scope

This document describes a framework for functional safety to enable the use of pre-existing software architectural elements not originally developed in accordance with the ISO 26262:2018 series, but intended to be integrated into safety-related embedded software conformant with the ISO 26262:2018 series by:

— determining relevant criteria when using the pre-existing software architectural element as a safety-related element of safety-related embedded software;

— determining relevant criteria inherent to the pre-existing software architectural element, e.g. needs for external safety mechanisms to detect and control failures caused by the pre-existing software architectural element;

— providing suitable evidence and arguments for use of the pre-existing software architectural element that can include applicable procedures, techniques and safety measures;

— supporting the fulfilment of software safety requirements when using the pre-existing software architectural element as a safety-related element of safety-related embedded software;

— supporting the integration of the pre-existing software architectural element as a safety-related element of safety-related embedded software.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 26262-1:2018, *Road vehicles — Functional safety — Part 1: Vocabulary*

ISO 26262-2:2018, *Road vehicles — Functional safety — Part 2: Management of functional safety*

ISO 26262-6:2018, *Road vehicles — Functional safety — Part 6: Product development at the software level*

ISO 26262-8:2018, *Road vehicles — Functional safety — Part 8: Supporting processes*

ISO 26262-9:2018, *Road vehicles — Functional safety — Part 9: Automotive safety integrity level (ASIL)-oriented and safety-oriented analyses*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 26262-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

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