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Foreword

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This document was jointly prepared by Technical Committee ISO/TC 22, *Road Vehicles*, Subcommittee SC 32, *Electrical and electronic components and general system aspects,* and SAE Committee SAE TEVEES18A, *Vehicle Cybersecurity Systems Engineering Committee*.

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. Alternatively, to provide feedback on this document, please visit http://standards.sae.org/PRODCODE.

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Introduction

This document elaborates on verification and validation (V&V) of the cybersecurity of items and components of road vehicles in accordance with ISO/SAE 21434 [1]. It provides considerations on:

— V&V strategy;

— methods that can be applied;

— distribution of activities between customer and supplier;

— logical sequence of activities.

The objectives are different between V&V; however, both can use identical or similar methods.

The choice of methods and the extent of the rigour with which they are applied are part of a project- and organization-specific strategy. This document focuses on strategy and does not prescribe methods.

V&V are part of development of an item or component and involve multiple activities, including repeating (e.g. iteration or feedback loop) or complementing activities.

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Road vehicles — Cybersecurity verification and validation

1 Scope

This document provides considerations on the planning and execution of verification and validation (V&V) of the cybersecurity of items and components of road vehicles, in the context of ISO/SAE 21434 [1].

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/SAE 21434, *Road vehicles — Cybersecurity engineering*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/SAE 21434 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/

3.2 Abbreviated terms

CAN	controller area network
CS	cybersecurity
CVSS	common vulnerability scoring system
CWE	common weakness enumeration
E/E	electric / electronic
ECU	electronic control unit
PIN	personal identification number
TARA	threat analysis and risk assessment
V&V	verification and validation

4 Verification and validation (V&V) in the context of cybersecurity

4.1 General

This clause provides an overview of V&V in the context of cybersecurity, elaborating on ISO/SAE 21434 [1].

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