
Cestna vozila - Standardizirani dostop do informacij o popravilih in vzdrževanju avtomobilov (RMI) - 4. del: Preskus skladnosti (ISO/DIS 18541-4:2020)

Road vehicles - Standardized access to automotive repair and maintenance information (RMI) - Part 4: Conformance test (ISO/DIS 18541-4:2020)

Straßenfahrzeuge - Standardisierter Zugang zu Reparatur- und Wartungsinformationen (RMI) - Teil 4: Konformitätsprüfung (ISO/DIS 18541-4:2020)

Véhicules routiers - Normalisation de l'accès aux informations relatives à la réparation et à la maintenance pour l'automobile (RMI) - Partie 4: Tests de conformité (ISO/DIS 18541-4:2020)

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43.180	Diagnostična, vrževalna in preskusna oprema	Diagnostic, maintenance and test equipment

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Part 4: Conformance test

Véhicules routiers — Normalisation de l'accès aux informations relatives à la réparation et à la maintenance pour l'automobile (RMI) —

Partie 4: Tests de conformité

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CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 31, *data communication*.

This second edition cancels and replaces the first edition (ISO 18541-4:2015), which has been technically revised.

The main changes compared to the previous edition are as follows:

- Security related updates taken in synchronization with parts 1 – 3;
- Editorial updates.

A list of all parts in the ISO 18541 series can be found on the ISO website.

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.

Introduction

The set of standards ISO 18541 includes the requirements to be fulfilled by Repair and Maintenance Information (RMI) systems as applied by the

EUROPEAN COMMISSION - ENTERPRISE AND INDUSTRY DIRECTORATE-GENERAL, Consumer goods - Automotive industry EC mandate M/421^[1]

"MANDATE TO THE EUROPEAN STANDARDIZATION ORGANISATIONS FOR STANDARDIZATION IN THE FIELD OF VEHICLE OBD, REPAIR AND MAINTENANCE INFORMATION"

dated Brussels, 21 January 2008.

This mandate relates to the EC type-approval system for vehicles falling into the scopes of Directives 70/156/EEC (replaced by 2007/46/EC [8]), 2002/24/EC (replaced by (EU) 168/2013 [6]) and 2003/37/EC (replaced by (EU) 167/2013 [7]) and, in particular, to requirements for access to vehicle repair and maintenance information by independent operators.

The purpose of the EC Mandate M/421^[1] is to develop a standard or set of standards which specify the requirements to provide "standardized access to repair and maintenance information (RMI)" for independent operators.

The series of standards ISO 18451 only covers access to automotive repair and maintenance information for light passenger and commercial vehicles and heavy-duty vehicles based on Directive 70/156/EEC (replaced by 2007/46/EC [8]) and for two or three-wheel vehicles and quadricycles based on regulation (EU) 168/2013 [6].

The information included in the series of standards ISO 18541 derives from the legislative requirements on European level in the field of repair and maintenance information and related security requirements and can be referenced by legislation in other countries.

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Road vehicles — Standardized access to automotive repair and maintenance information (RMI) — Part 4: Conformance test

1 Scope

This document specifies a conformance test for a vehicle manufacturer assessment of self-conformance of the VM RMI system. The conformance test cases follow the use case definition of ISO 18541-1 and the requirements stated in ISO 18541-2 and ISO 18541-3.

The primary but not exclusive purpose of this document is to provide information to the VM RMI system provider to build and test the VM RMI system against the conformance test cases. This final step in the development process of the VM RMI system is an enabler for all providers that their VM RMI system meets a high degree of functional requirements expected by the end user.

Furthermore, this document defines in Annex A conformance test cases for the use cases and requirements versions that apply for granting access to security-related RMI following the SERMI scheme.

This document is applicable to light passenger and commercial vehicles as defined in regulation (EC) 715/2007 Article 2 [15].

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 18541-1:20xx, *Road vehicles — Standardized access to automotive repair and maintenance information (RMI) — Part 1: General information and use case definition*

ISO 18541-2:20xx, *Road vehicles — Standardized access to automotive repair and maintenance information (RMI) — Part 2: Technical requirements*

ISO 18541-3:20xx, *Road vehicles — Standardized access to automotive repair and maintenance information (RMI) — Part 3: Functional user interface requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 18541-1, ISO 18541-2, ISO 18541-3 and the following apply.

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

- ISO Online browsing platform: available at <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

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3.1

conformance

to determine whether a product or system meets some specified standard that has been developed for efficiency or interoperability

3.2

self-conformance

conformance test performed by the owner of the product or system, that is required to meet some specified standard that has been developed for efficiency or interoperability

4 Symbols and abbreviated terms

AR	authorized repairer
CT	conformance test
FREQ	functional user interface requirement
IO	independent operator
RMI	repair and maintenance information
TREQ	technical requirement
UC	use case
VCI	vehicle communication interface
VM	vehicle manufacturer

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5 Conformance test basic principles and clustering

5.1 Basic principles for conformance test case definition

Basic principles have been established as a guideline to define the RMI conformance test cases.

- BP1: The primary objective of the conformance test is to support a "VM assessment of self-conformance" of the VM RMI system. The conformance test is not limited to usage by VMs. Some test cases may not be performed by third parties due to the nature of the test cases.
- BP2: The person performing the conformance test shall be qualified i.e. test experience, knowledge about vehicle coverage in VM RMI system, familiarity and understanding of the relevant ISO 18541 documents, and shall have a keen understanding of the business application of the VM RMI system.
- BP3: The conformance test addresses the access behaviour to automotive RMI and not the VM RMI system implementation.
- BP4: The conformance test is a positive test in order to test the proper functioning of the VM RMI system i.e., correct input data provides correct output data.
- BP5: The person performing the conformance test shall verify that the purpose of the use case is achieved following the descriptions of the VM regarding the implementation of the use case and the steps to enter the input and to obtain the output according to FREQ 5 in ISO 18541-3.
- BP6: The name of the test case should be the same as the name of the use case (see ISO 18541-1) or requirement (see ISO 18541-2 and ISO 18541-3).

- BP7: Each test case should have a preamble (setup state).
- BP8: Classification for each test case is included in order to support the classification criteria specified for use cases and requirements.
- BP9: A test case is only applicable if the use case or requirement is supported by the VM RMI system.
- BP10: Some test cases can require payment or a valid subscription before processing the next step.

CAUTION — The person performing the conformance test is responsible for entering valid data and correctly executing necessary actions in order to maintain integrity of the VM RMI system and the vehicle.

5.2 Conformance test clustering

5.2.1 General

4.2.2 provides an overview of all conformance test clusters and the associated test cases for mandatory and optional use cases and requirements. Test cases for optional use cases and requirements will only be possible if the VM RMI system has implemented them. Each test case is assigned to one conformance test cluster. The clusters cover technical areas, where the assigned test case(s) apply.

Each test case is identified by the mnemonic "[RMI-CT_UCx.y], [RMI-CT_TREQ-m], [RMI-CT_FREQ-n]" combined with an alpha-numeric number. The name of the test case is descriptive.

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5.2.2 Main conformance test case clusters

Table 1 defines the main conformance test case clusters.

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Table 1 — Main conformance test case clusters

# — Main title of cluster	Brief description	Test case reference
1 – Test technical infrastructure	This cluster describes the test cases that check the behaviour of the VM RMI system to support the technical requirements, i.e., client hardware and software installation and configuration is correct, as stated in ISO 18541-2.	[RMI-CT_TREQ-13, 14, 15, 16, 18, Annex A] Test client configuration, [RMI-CT_TREQ-17] Test presentation formats for information packages.
2 – Test client's external interfaces	This cluster describes the test cases that check the behaviour of the VM RMI system to support the technical requirements, i.e., client communication to the vehicle, as stated in ISO 18541-2.	[RMI-CT_TREQ-9] Test vehicle communication interface (VCI), [RMI-CT_TREQ-11] Test parts ordering for security-related features, [RMI-CT_TREQ-12] Test partnered accessory provider systems.
3 – Test user authentication, authorization and administration	This cluster describes the test cases that check the behaviour of the VM RMI system to obtain a license to use, keep user data and access level up-to-date, protect RMI against misuse and how to access the VM RMI system as stated in ISO 18541-1.	[RMI-CT_UC1.1] Test to register IO for use of the VM RMI system, [RMI-CT_UC1.2_A] Test to register IO employee for use of the VM RMI system – Scenario A, [RMI-CT_UC1.2_B] Test to register IO employee for use of the VM RMI system – Scenario B,

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		[RMI-CT_UC1.3] Test to maintain IO status, [RMI-CT_UC1.4] Test to maintain user status, [RMI-CT_UC1.5] Test to deletion of the registration of an IO employee, [RMI-CT_UC1.6] Test login to VM RMI system, [RMI-CT_UC1.7] Test for granting access to security-related RMI.
4 – Test functional user interface implementation	This cluster describes the test cases that check the behaviour of the VM RMI system to support the requirements of the functional user interface as stated in ISO 18541-3 .	[RMI-CT_FREQ-1] Test for RMI access mode, [RMI-CT_FREQ-2] Test for registration and login support, Result criteria: In case one of three expected functions (i.e. registration, login, password recovery) is not possible, FREQ-4 has failed. In case all functions are possible, but the correct process is not provided in the use cases map, FREQ-5 has failed. [RMI-CT_FREQ-3] Test for implemented use cases map, [RMI-CT_FREQ-4] Test for download area, [RMI-CT_FREQ-5] Test for navigational pathway.
5 – Test payment for RMI	This cluster describes the test cases that check the behaviour of the VM RMI system to support the handling of payments as stated in ISO 18541-1 .	[RMI-CT_UC2] Test payment for RMI.
6 – Test for vehicle identification	This cluster describes the test cases that test the behaviour of the VM RMI system to support the identification of a specific vehicle and type of vehicle as stated in ISO 18541-1 .	[RMI-CT_UC3.1] Test vehicle identification through use of VIN, [RMI-CT_UC3.2] Test vehicle identification via product features.
7 – Test selection methods for RMI	This cluster describes the test cases that check the behaviour of the VM RMI system to support the selection methods — by information types, — by standardized terms, — by product structure, and — by document identifier, as stated in ISO 18541-1 .	[RMI-CT_UC4.1] Test selection of information type, [RMI-CT_UC4.2] Test search by standardized terms, [RMI-CT_UC4.3] Test navigation using product structure, [RMI-CT_UC4.4] Test selection by document identifier.
8 – Test retrieval of information packages	This cluster describes the test cases that check the behaviour of the VM RMI system to support the retrieval of selected repair and maintenance information packages — workshop procedures (for body repair, temporary repair, periodic technical inspection), — wiring diagrams, — technical service bulletins, — recall information, and	[RMI-CT_UC5.1.1] Test retrieval of general workshop procedures, [RMI-CT_UC5.1.2] Test retrieval of body repair procedures, [RMI-CT_UC5.1.3] Test retrieval of temporary repair procedures, [RMI-CT_UC5.1.4] Test retrieval of preparation for PTI, [RMI-CT_UC5.2] Test retrieval of wiring diagrams,

	— maintenance information, as stated in ISO 18541-1.	<p>[RMI-CT_UC5.3] Test retrieval of technical service bulletin,</p> <p>[RMI-CT_UC5.4] Test retrieval of recall information,</p> <p>[RMI-CT_UC5.5] Test retrieval of maintenance schedule,</p> <p>[RMI-CT_UC5.6.1] Test retrieval of spare parts (identification),</p> <p>[RMI-CT_UC5.6.2] Test retrieval of spare parts (access),</p> <p>[RMI-CT_UC5.7.1] Test retrieval of accessory information factory fitted (included in general RMI),</p> <p>[RMI-CT_UC5.7.2] Test retrieval of accessory information partnered with a VM part number,</p> <p>[RMI-CT_UC5.7.3] Test retrieval of fitting information for accessories with no VM part number,</p> <p>[RMI-CT_UC5.8] Test retrieval of labour times,</p> <p>[RMI-CT_UC5.9] Test retrieval of converted vehicle information,</p> <p>[RMI-CT_UC5.10] Test retrieval of special tool information.</p>
9 – Test vehicle diagnostics	This cluster describes the test cases that check the behaviour of DTC resolution, symptom resolution or integrated diagnostics as stated in ISO 18541-1.	<p>[RMI-CT_UC6.1] Test DTC resolution,</p> <p>[RMI-CT_UC6.2] Test VM symptom resolution,</p> <p>[RMI-CT_UC6.3] Test integrated diagnostics.</p>
10 – Test updating, replacing and tuning of modules (ECUs)	This cluster describes the test cases that check the behaviour of the VM RMI system to support the legitimate update or replacement of vehicle modules/ECUs to return to an operational state after repair or tuning with a VM application as stated in ISO 18541-1 using a known VCI and approved by the VM which meet the standards required by legislation.	<p>[RMI-CT_UC7.1] Test updating and replacing modules information,</p> <p>[RMI-CT_UC7.2] Test tuning kit.</p>
11 – Test electronic maintenance history	This cluster describes the test cases that check the behaviour of the VM RMI system to get access and to update the history of VM prescribed maintenance actions for a specific vehicle as identified by the VIN as stated in ISO 18541-1.	[RMI-CT_UC8] Test electronic maintenance history.
12 – Test repair assistance, technical support	This cluster describes the test cases that check the behaviour of the VM RMI system to get advice from the VM if repair assistance or technical support is needed as stated in ISO 18541-1.	[RMI-CT_UC9] Test repair assistance technical support.