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Road vehicles — Standardized access to automotive repair and maintenance information (RMI) —

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

Reference number
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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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Foreword

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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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

ISO 18541-4 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 301, *Road vehicles,* in collaboration with ISO Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 31, *Data communication,* in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 18541 consists of the following parts, under the general title *Road vehicles — Standardized access to automotive repair and maintenance information (RMI)*:

— *Part 1: General information and use case definition*

— *Part 2: Technical requirements*

— *Part 3: Functional user interface requirements*

— *Part 4: Conformance test*

Introduction

This International Standard 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 2007/46/EC[4], 2002/24/EC[2] and 2003/37/EC[3] and, in particular, to requirements for access to vehicle repair and maintenance information by independent operators.

This part of ISO 18541 only covers the access to automotive repair and maintenance information for light passenger, commercial vehicles[1)] and heavy duty vehicles[2)] based on Directive 2007/46/EC[4].

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 information included in this part of 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.

1) REGULATION (EC) No 715/2007 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 June 2007 on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information[5] and COMMISSION REGULATION (EC) No 692/2008 of 18 July 2008 implementing and amending Regulation (EC) No 715/2007 of the European Parliament and of the Council on type-approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information[6] and amending COMMISSION REGULATION (EU) No 566/2011 of 8 June 2011[7] amending Regulation (EC) No 715/2007 of the European Parliament[5] and of the Council and Commission Regulation (EC) No 692/2008[6] as regards access to vehicle repair and maintenance information.

2) REGULATION (EC) No 595/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 June 2009 on type approval of motor vehicles with respect to emissions from heavy duty vehicles (Euro VI) and on access to vehicle repair and maintenance information[5], COMMISSION REGULATION (EU) No 582/2011 of 25 May 2011 implementing and amending Regulation (EC) No 595/2009 of the European Parliament and of the Council with respect to emissions from heavy duty vehicles (Euro VI), and COMMISSION REGULATION (EU) No 64/2012 of 23 January 2012[7] amending Regulation (EU) No 582/2011 2011 implementing and amending Regulation (EC) No 595/2009 of the European Parliament and of the Council with respect to emissions from heavy duty vehicles (Euro VI).

Road vehicles — Standardized access to automotive repair and maintenance information (RMI) —

Part 4:
Conformance test

1 Scope

This part of ISO 18541 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 part of ISO 18541 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.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 18541-1:2014, *Road vehicles — Standardized access to automotive repair and maintenance information (RMI) — Part 1: General information and use case definition*

ISO 18541-2:2014, *Road vehicles — Standardized access to automotive repair and maintenance information (RMI) — Part 2: Technical requirements*

ISO 18541-3:2014, *Road vehicles — Standardized access to automotive repair and maintenance information (RMI) — Part 3: Functional user interface requirements*

3 Terms, definitions and abbreviated terms

3.1 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.

3.1.1
conformance
to determine whether a product or system meets some specified standard that has been developed for efficiency or interoperability

3.1.2
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

3.2 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

4 Conformance test basic principles and clustering

4.1 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.

4.2 Conformance test clustering

4.2.1 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.

4.2.2 Main conformance test case clusters

Table 1 defines the main conformance test case clusters.

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, [RMI-CT_UC1.3] Test to maintain IO status, [RMI-CT_UC1.4] Test to maintain user status, [RMI-CT_UC1.5] Test to de-register 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.

Table 1 *(continued)*

# — Main title of cluster	Brief description	Test case reference
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.

Table 1 *(continued)*

# — Main title of cluster	Brief description	Test case reference
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 — maintenance information, as stated in ISO 18541-1.	[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, [RMI-CT_UC5.3] Test retrieval of technical service bulletin, [RMI-CT_UC5.4] Test retrieval of recall information, [RMI-CT_UC5.5] Test retrieval of maintenance schedule, [RMI-CT_UC5.6.1] Test retrieval of spare parts (identification), [RMI-CT_UC5.6.2] Test retrieval of spare parts (access), [RMI-CT_UC5.7.1] Test retrieval of accessory information factory fitted (included in general RMI), [RMI-CT_UC5.7.2] Test retrieval of accessory information partnered with a VM part number, [RMI-CT_UC5.7.3] Test retrieval of fitting information for accessories with no VM part number, [RMI-CT_UC5.8] Test retrieval of labour times, [RMI-CT_UC5.9] Test retrieval of converted vehicle information, [RMI-CT_UC5.10] Test retrieval of special tool information.
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.	[RMI-CT_UC6.1] Test DTC resolution, [RMI-CT_UC6.2] Test VM symptom resolution, [RMI-CT_UC6.3] Test integrated diagnostics.
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.	[RMI-CT_UC7.1] Test updating and replacing modules information, [RMI-CT_UC7.2] Test tuning kit.

Table 1 *(continued)*

# — Main title of cluster	Brief description	Test case reference
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.
13 – Test request for contact information	This cluster describes the test cases that check the behaviour of the VM RMI system to support the request contact information in order to receive information about — electronic tool, — diagnostics, — VCI, — training material, — etc., as stated in ISO 18541-1.	[RMI-CT_UC10.1] Test for retrieval of electronic tool information (diagnostic, reprogramming, VCI), [RMI-CT_UC10.2] Test for retrieval of test equipment and diagnostic tool manufacturers information, [RMI-CT_UC10.3] Test for retrieval of training material (delegate information), [RMI-CT_UC10.4] Test for retrieval of redistributor contact information, [RMI-CT_UC10.5] Test for retrieval of republisher information, [RMI-CT_UC10.6] Test for retrieval of inspection and testing services information, [RMI-CT_UC10.7] Test for retrieval of alternative fuels retrofit system information, [RMI-CT_UC10.8] Test for retrieval of engine and components remanufacturing information, [RMI-CT_UC10.9] Test for retrieval of component and parts manufacturer information, [RMI-CT_UC10.10] Test for retrieval of validation of independently developed non-proprietary VCI information.
14 – Test courses and training information	This cluster describes the test cases that check the behaviour of the VM RMI system to get information regarding training course availability (online or Web-based training) as stated in ISO 18541-1.	[RMI-CT_UC11] Test for courses and training information.

Table 1 *(continued)*

# — Main title of cluster	Brief description	Test case reference
15 – Test data administration requirements	This cluster describes the test cases that check the behaviour of the VM RMI system whether the managing of data is according to ISO 18541-2.	[RMI-CT_TREQ-1] Test general access-related data administration, [RMI-CT_TREQ-2] Test administration of IO data by the VM, [RMI-CT_TREQ-3] Test administration of IO employee data by the VM, [RMI-CT_TREQ-4] Test administration of payment data by VM, [RMI-CT_TREQ-5] Test administration of access event data by VM, [RMI-CT_TREQ-6] Test administration of access event data to security-related RMI by VM.
16 – Test VM software installation on the IO client	This cluster describes the test cases that check the behaviour of the VM RMI system to check that the VM software installed on the "off-the-shelf" PC behaves according to the requirement as specified in ISO 18541-2.	[RMI-CT_TREQ-20] Test for requirements for installing VM-specific software on the IO client, [RMI-CT_TREQ-21] Test for requirements for updating of installed VM data and applications on the IO client, [RMI-CT_TREQ-22] Test for requirements for the operation of VM-specific software on the IO client, [RMI-CT_TREQ-23] Test for requirements for the uninstalling of VM-specific software on the IO client, [RMI-CT_TREQ-24] Test for requirements for restoring in case of an abnormal termination of the VM specific software on the IO client.
17 – Test VM RMI operations	This cluster describes the test cases that check the behaviour of the VM RMI system to check that the VM RMI system is operational except for scheduled maintenance downtime and whether the VM offers support for the usage of the VM RMI system as stated in ISO 18541-2.	[RMI-CT_TREQ-25] Test for VM RMI system availability time, [RMI-CT_TREQ-26] Test for support for the usage of the VM RMI system.
18 – Test trust centre (certificate management)	This cluster describes the test cases that check the behaviour of the VM RMI system to check that the client has installed the software driver to support the digital certificate and that the infrastructure processes the certificate content as stated in ISO 18541-2.	[RMI-CT_TREQ-10] Test for trust centre (certificate management).

5 Test case structure

5.1 Conformance test case — General structure

5.1.1 Overview

Each test case is structured by six titles. In the following, details and examples for each of these titles (ordered list) are given.

5.1.2 Test case reference number and title [RMI-CT_...] [title]

A reference to the corresponding test case requirement is specified through unique abbreviation, number and title as follows:

a) [RMI-CT_UCx.y] of ISO 18541-1;

b) [RMI-CT_TREQ-m] of ISO 18541-2;

c) [RMI-CT_FREQ-n] of ISO 18541-3.

where

— "x", "y" are numeric numbers as assigned in ISO 18541-1, and

— "m", "n" are numeric numbers which are used in ascending numeric order.

5.1.3 Test purpose

The test purpose gives a short description of the test case and a reference to the corresponding requirement specified in ISO 18541-1 to ISO 18541-3.

NOTE The test case approach depends on the definition of the referenced requirement in ISO 18541-1 to ISO 18541-3.

5.1.4 Configuration

The configuration subclause addresses the configuration of the VM RMI system.

5.1.5 Preamble (setup state)

The preamble defines preconditions which are used for preparation and initialization of the VM RMI system with a view to performing the specific test. For example, a precondition could be the successful establishment of an Internet connection.

5.1.6 Test execution

Test execution of a single test case is organized in steps. These steps are described in Table 2 as shown in the example below.

Table 2 — Test execution example

Step #	Description
1	Description of 1st test step.
2	Description of 2nd test step.
N	Description of Nth test step.

5.1.7 Postamble

The "Postamble" defines post conditions which are used to return the VM RMI system back to a definite state. For example, a post condition could be "go back to standardized navigation".

5.2 Result criteria

The test result criteria are composed of three different results as listed in Table 3.

Table 3 — Test result criteria

Result	Definition
Pass	The test purpose was achieved by passing all steps in the test execution as expected.
Deficiency	The test purpose was achieved with opportunities for improvement identified and documented in detail.
Fail	The test purpose was not achieved. Reason(s) shall be documented in detail.
Not applicable	The test case is not applicable because the use case or requirement is not supported by the VM RMI system.

All test cases comply with the test result criteria specified in Table 3, except those test cases which require specific test results.

6 CT cluster 1 — Test technical infrastructure

6.1 [RMI-CT_TREQ-13, 14, 15, 16, 18, Annex A] Test client configuration

6.1.1 Overview

This is a conformance test for checking the client configuration requirements specified in ISO 18541-2.

6.1.2 Test purpose

The purpose of the conformance test is to verify that the used client and the installed software are according to requirements as specified in ISO 18541-2.

6.1.3 Configuration

No additional configuration required.

6.1.4 Preamble (setup state)

Setup conditions: None.

6.1.5 Test execution

Table 4 defines the test execution.

Table 4 — [RMI-CT_TREQ-13, 14, 15, 16, 18, Annex A] Test client configuration test execution

Step #	Description
1	Check if the client PC and the installed software are according to the technical requirements TREQ-13 Type of device in ISO 18541-2.
2	Check if the client PC and the installed software are according to the technical requirements TREQ-14 Hardware features in ISO 18541-2.
3	Check if the client PC and the installed software are according to the technical requirements TREQ-15 Operating systems in ISO 18541-2.
4	Check if the client PC and the installed software are according to the technical requirements TREQ-16 Web browser in ISO 18541-2.
5	Check if the client PC and the installed software are according to the technical requirements TREQ-18 Internet connection (VM recommendations i.e., bandwidth, type of network) in ISO 18541-2.
6	Check if the client PC and the installed software are according to the actual version of ISO 18541-2, ANNEX A.

6.1.6 Postamble

No post conditions.

6.2 [RMI-CT_TREQ-17] Test presentation formats for information packages

6.2.1 Overview

This is a conformance test for checking the presentation formats for information packages specified in ISO 18541-2.

6.2.2 Test purpose

The purpose of the conformance test is to verify that information packages are presented using the open text and open graphic formats or can be printed using standard software plug-ins as specified in ISO 18541-2 and available via the download area as specified in ISO 18541-3.

6.2.3 Configuration

No additional configuration required.

6.2.4 Preamble (setup state)

Existence of download area as defined in FREQ-4 of ISO 18541-3.

6.2.5 Test execution

Table 5 defines the test execution.

Table 5 — [RMI-CT_TREQ-17] Test presentation formats for information packages test execution

Step #	Description
1	Check the existence of download area as stated in FREQ-4.
2	In case no download area is present, go to step #4.
3	Download and install, if needed, all applications/plug-ins available via download area.
4	Perform all tests present in cluster 8 to verify that all information packages are properly displayed without any additional applications/plug-ins.

6.2.6 Postamble

No post conditions.

7 CT cluster 2 — Test client's external interfaces

7.1 [RMI-CT_TREQ-9] Test vehicle communication interface (VCI)

7.1.1 Overview

This is a conformance test for checking the VCI requirements specified in ISO 18541-2.

7.1.2 Test purpose

This conformance test is used to verify that the VM RMI system client communicates to the vehicle via a VCI compliant to TREQ-9 VCI in ISO 18541-2.

7.1.3 Configuration

The communication device for testing is validated by VM according to VM RMI web site statement.

Any necessary driver for communication device as required by the VM RMI technical requirements according to both VM and VCI manufacturer installation instructions is installed [e.g. TREQ-9 Vehicle communication interface (VCI)].

7.1.4 Preamble (setup state)

Setup conditions are as follows:

— all test cases passed of CT cluster 1 — Test technical infrastructure;

— if required by the VM, a battery charger with minimum requirements according to VM specification is connected to the vehicle;

— VCI is connected to PC and OBD plug of the vehicle;

— navigate to VM RMI home page;

— according to VM RMI system registration, login and payment might be required.

7.1.5 Test execution

Table 6 defines the test execution.

Table 6 — [RMI-CT_TREQ-9] Test vehicle communication interface (VCI) test execution

Step #	Description
1	Start one conformance test among RMI_CT_UC 6.3, RMI_CT_UC 7.1, RMI_CT_UC 7.2.
2	Check if VM RMI application indicates VCI detection.
3	Proceed with the same conformance test up to the first step where confirmation of communication between vehicle and VM RMI system is possible (e.g. reading of data from ECU, activation of actuators via ECU).
4	Abort conformance test under execution before writing on ECU has started.
5	In case the VCI is not detected, verify and check if all necessary configuration and preamble steps are properly fulfilled (this can require technical support). Repeat step #1 to step #4.

7.1.6 Postamble

No post conditions.

7.2 [RMI-CT_TREQ-11] Test parts ordering for security-related features

7.2.1 Overview

This is a conformance test for checking the interface to parts ordering system for security-related parts if and only if such an interface is supported by the VM RMI system as specified in ISO 18541-2.

7.2.2 Test purpose

This conformance test is used to verify the proper functioning of the interface to the online ordering system. The test case is only applicable if the online ordering of security-related parts is supported by the VM RMI system.

7.2.3 Configuration

VM RMI system supports an online ordering feature for security-related parts.

7.2.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid digital certificate and authorization for access to security-related RMI according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— according to VM RMI system registration, login and payment might be required.

7.2.5 Test execution

Table 7 defines the test execution.

Table 7 — [RMI-CT_TREQ-11] Test parts ordering for security-related features test execution

Step #	Description
1	Check if VM RMI system supports the online interface for ordering security-related parts. If not, the conformance test [RMI-CT_TREQ-11] is not applicable.
2	Follow the instruction given by the VM RMI system to order security-related parts online.
3	Check if the interface is functioning.

NOTE [RMI-CT_TREQ-11] is applicable only if the VM RMI system supports the online ordering of security-related parts.

7.2.6 Postamble

No post conditions.

7.3 [RMI-CT_TREQ-12] Test partnered accessory provider systems

7.3.1 Overview

This is a conformance test for checking the interface to a partnered accessory provider system if and only if such an interface is supported by the VM RMI system as specified in ISO 18541-2.

7.3.2 Test purpose

This conformance test is used to verify the proper functioning of the interface or link to the partnered accessory provider system. The test case is only applicable if an interface or a link to a partnered accessory provider system is supported by the VM RMI system.

7.3.3 Configuration

VM RMI system supports an interface or a link to a partnered accessory provider system.

7.3.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— according to VM RMI system registration, login and payment might be required.

7.3.5 Test execution

Table 8 defines the test execution.

Table 8 — [RMI-CT_TREQ-12] Test partnered accessory provider systems test execution

Step #	Description
1	Access UC 5.7.2 Accessory information partnered with a VM part number following instructions according to FREQ-5.
2	Check if VM RMI system supports an interface or a link to a partnered accessory provider system. If not, the conformance test [RMI-CT_TREQ-12] is not applicable.
3	Check if the interface or link is functioning.

NOTE [RMI-CT_TREQ-12] is applicable only if the VM RMI system supports the interface or link to a partnered accessory provider system.

7.3.6 Postamble

No post conditions.

8 CT cluster 3 — Test user authentication, authorization and administration

8.1 [RMI-CT_UC1.1] Test to register IO for use of the VM RMI system

8.1.1 Overview

This is a conformance test for use case 1.1 specified in ISO 18541-1.

8.1.2 Test purpose

This conformance test is used to verify that the VM RMI system allows registration of new IOs as specified in the test steps.

8.1.3 Configuration

No additional configuration required.

8.1.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid registration data;

— optional: access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

8.1.5 Test execution

Table 9 defines the test execution.

Table 9 — [RMI-CT_UC1.1] Test to register IO for use of the VM RMI system test execution

Step #	Description
1	Tester (in the role of the IO legal representative) selects UC 1.1 and follows the instructions provided, according to FREQ-5, verifying that all following steps are possible.
2	Tester (in the role of the IO legal representative) accepts Terms and Conditions.
3	Tester (in the role of the IO legal representative) accepts agreement on registration fee, if applicable.
4	Optional: Further input may be requested in recognition of local legislation.
5	The registration application will be processed.
6	The tester is notified about further steps in the registration process.
7	The tester is notified about — contract agreement between IO and VM, — success of registration of tester (in the role of the IO legal representative), — acceptance or rejection of the IO approval to access security-related RMI, — access level of the tester (in the role of the IO legal representative), granted if the presented digital certificate and the authorization are valid, and — reason for rejection, if applicable.
8	In case registration is accepted, agreement on User ID and Password.

8.1.6 Postamble

No post conditions.

8.2 [RMI-CT_UC1.2_A] Test to register IO employee for use of the VM RMI system — Scenario A

8.2.1 Overview

This is a conformance test for use case 1.2 specified in ISO 18541-1.

8.2.2 Test purpose

This conformance test is used to verify that the VM RMI system allows registration of new IO employees for use of the VM RMI system as defined by the IO legal representative and specified in the test steps.

8.2.3 Configuration

No additional configuration required.

8.2.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid registration data;

— optional: access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

8.2.5 Test execution

Table 10 defines the test execution for scenario A: Tester's role is an IO legal representative.

Table 10 — [RMI-CT_UC1.2_A] Test to register IO employee for use of the VM RMI system — Scenario A test execution

Step #	Description
1	Tester (in the role of the IO legal representative) selects UC 1.2_A and follows the instructions provided, according to FREQ-5, verifying that all following steps are possible.
2	The system requests the tester (in the role of the IO legal representative) to confirm the validity of the IO data.
3	The VM RMI system asks the tester to choose a User ID and either assigns an initial password to the user or allows them to enter one that satisfies the VM's password security requirements.
4	Agreement on User ID and password (the User ID shall be unique in the VM system).
5	The tester is notified about the successful registration of the IO employee.

8.3 [RMI-CT_UC1.2_B] Test to register IO employee for use of the VM RMI system — Scenario B

8.3.1 Overview

This is a conformance test for use case 1.2 specified in ISO 18541-1.

8.3.2 Test purpose

This conformance test is used to verify that the VM RMI system allows registration of new IO employees for use of the VM RMI system on his request as specified in the test steps.

8.3.3 Configuration

No additional configuration required.

8.3.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid registered user data of the IO legal representative;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

8.3.5 Test execution

Table 11 defines the test execution for scenario B.

Table 11 — [RMI-CT_UC1.2_B] Test to register IO employee for use of the VM RMI system — Scenario B test execution

Step #	Description
1	Tester (in the role of the IO employee) selects UC 1.2_B and follows the instructions provided, according to FREQ-5, verifying that all following steps are possible.
2	The tester enters the requested identification data for the IO: company name, etc.
3	The VM RMI system either assigns an initial password to the tester or allows the user to enter one that satisfies the VM's password security requirements.
4	Agreement on User ID and Password (the User ID shall be unique in the VM system).
5	The VM RMI system sends a request to the tester (in the role of the IO legal representative) asking to agree on the registration of the IO employee.
6	The VM RMI system processes the decision from the tester (in the role of the IO legal representative). NOTE This may need some time due to the response time by the IO legal representative.
7	The tester is notified about the successful or rejected registration.

8.3.6 Postamble

No post conditions.

8.4 [RMI-CT_UC1.3] Test to maintain IO status

8.4.1 Overview

This is a conformance test for use case 1.3 specified in ISO 18541-1.

8.4.2 Test purpose

This conformance test is used to verify that the VM RMI system allows modifications of modifiable user data and keeps user data up to date of already registered users performed by the IO legal representative as specified in the test steps.

8.4.3 Configuration

No additional configuration required.

8.4.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

8.4.5 Test execution

Table 12 defines the test execution.

Table 12 — [RMI-CT_UC1.3] Test to maintain IO status test execution

Step #	Description
1	Tester (in the role of the IO legal representative) selects UC 1.3 and follows the instructions provided, according to FREQ-5, verifying that all following steps are possible.
2	Tester (in the role of the IO legal representative) changes (updates) IO data and confirms. The data will be processed.
3	— Case #1: The tester is notified if the change of data was successful. — Case #2: The tester is notified that a new validation of the IO company is required and further steps are necessary. — Case #3: The tester is notified that a new registration according to use case 1.1 is required.

8.4.6 Postamble

No post conditions.

8.5 [RMI-CT_UC1.4] Test to maintain user status

8.5.1 Overview

This is a conformance test for use case 1.4 specified in ISO 18541-1.

8.5.2 Test purpose

This conformance test is used to verify that the VM RMI system allows modification of modifiable user data of already registered users performed by the IO employee as specified in the test steps.

8.5.3 Configuration

No additional configuration required.

8.5.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

8.5.5 Test execution

Table 13 defines the test execution.

Table 13 — [RMI-CT_UC1.4] Test to maintain user status test execution

Step #	Description
1	Tester (in the role of the IO employee) selects UC 1.4 and follows instructions provided, according to FREQ-5, verifying that all following steps are possible.
2	Tester (in the role of the IO employee) changes (updates) password, preferred language and e-mail address.
3	Notify the tester if change of data was successful.

8.5.6 Postamble

No post conditions.

8.6 [RMI-CT_UC1.5] Test to de-register an IO employee

8.6.1 Overview

This is a conformance test for use case 1.5 specified in ISO 18541-1.

8.6.2 Test purpose

This conformance test is used to verify that the VM RMI system allows withdrawing access rights of a registered user by the IO legal representative as specified in the test steps.

8.6.3 Configuration

No additional configuration required.

8.6.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid registered user data of the IO legal representative and the IO employee;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

8.6.5 Test execution

Table 14 defines the test execution.

Table 14 — [RMI-CT_UC1.5] Test to de-register an IO employee test execution

Step #	Description
1	Tester (in the role of the IO legal representative) selects UC 1.5 and follows the instructions provided, according to FREQ-5, verifying that all following steps are possible.
2	Tester (in the role of the IO legal representative) selects User ID for whom access rights have to be withdrawn.
3	Tester (in the role of the IO legal representative) selects access rights to be withdrawn, then confirms. Withdrawal of user rights will be processed.
4	VM RMI system confirms successful action.
5	Tester (in the role of the IO legal representative) is notified of the result of the deactivation of the IO employee account(s).

8.6.6 Postamble

No post conditions.

8.7 [RMI-CT_UC1.6] Test login to VM RMI system

8.7.1 Overview

This is a conformance test for use case 1.6 specified in ISO 18541-1.

8.7.2 Test purpose

This conformance test is used to verify that the VM RMI system allows login of registered users as specified in the test steps.

8.7.3 Configuration

No additional configuration required.

8.7.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid registered user data;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

8.7.5 Test execution

Table 15 defines the test execution.

Table 15 — [RMI-CT_UC1.6] Test login to VM RMI system test execution

Step #	Description
1	Tester selects UC 1.6 and follows the instructions provided, according to FREQ-5, verifying that all following steps are possible.
2	Tester is given access to the VM RMI system.

8.7.6 Postamble

No post conditions.

8.8 [RMI-CT_UC1.7] Test for granting access to security-related RMI

8.8.1 Overview

This is a conformance test for use case 1.7 specified in ISO 18541-1.

8.8.2 Test purpose

This conformance test is used to verify that the VM RMI system allows the access to security-related RMI.

8.8.3 Configuration

No additional configuration required.

8.8.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid registered user data;

— valid digital certificate according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

8.8.5 Test execution

Table 16 defines the test execution granting access to security-related RMI for an IO legal representative.

Table 16 — [RMI-CT_UC1.7] Test for granting access to security-related RMI for an IO legal representative test execution

Step #	Description
1	Tester (in the role of an IO legal representative/IO employee) selects UC 1.7 and follows the instructions provided, according to FREQ5, verifying that all following steps are possible.
2	Tester presents the digital certificate according to the SERMI scheme. NOTE Hardware certificate has to be the one associated with the User ID and Passwords used in step #1.
3	The VM RMI system checks the approval of the IO for which the IO legal representative/IO employee is registered.
4	The VM RMI system checks the validity of the certificate and authorization via request to the trust centre that issued the certificate.
5	Access level for security-related RMI is granted according to the presented digital certificate.
6	The VM RMI system communicates the granted access level to the tester (both at IO employee and IO legal representative level if different).

8.8.6 Postamble

No post conditions.

9 CT cluster 4 — Test functional user interface implementation

9.1 [RMI-CT_FREQ-1] Test for RMI access mode

9.1.1 Overview

This is a conformance test for functional user interface requirement FREQ-1 specified in ISO 18541-3.

9.1.2 Test purpose

This conformance test is used to verify that the VM RMI system implements the requirements for the ISO 18541-3 RMI access mode.

9.1.3 Configuration

No additional configuration required.

9.1.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible.

9.1.5 Test execution

Table 17 defines the test execution.

Table 17 — [RMI-CT_FREQ-1] Test for RMI access mode test execution

Step #	Description
1	A button or link called “Standardized Navigation” shall be present.

9.1.6 Postamble

No post conditions.

9.2 [RMI-CT_FREQ-2] Test for registration and login support

9.2.1 Overview

This is a conformance test for functional user interface requirement FREQ-2 specified in ISO 18541-3.

9.2.2 Test purpose

This conformance test is used to verify that the VM RMI system implements the requirements for the registration and login support.

9.2.3 Configuration

No additional configuration required.

9.2.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid registration data for login support;

— VM RMI system is not under maintenance;

— VM RMI home page is visible.

9.2.5 Test execution

Table 18 defines the test execution.

Table 18 — [RMI-CT_FREQ-2] Test for registration and login support test execution

Step #	Description
1	The VM RMI system provides support for registrations and login issues. Examples: contact area, Frequently Asked Questions, support area or online help.

9.2.6 Postamble

No post conditions.

9.2.7 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.

9.3 [RMI-CT_FREQ-3] Test for implemented use cases map

9.3.1 Overview

This is a conformance test for functional user interface requirement FREQ-3 specified in ISO 18541-3.

9.3.2 Test purpose

This conformance test is used to verify that the VM RMI system implements the requirements for the implemented use cases.

9.3.3 Configuration

No additional configuration required.

9.3.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible.

9.3.5 Test execution

Table 19 defines the test execution.

Table 19 — [RMI-CT_FREQ-3] Test for implemented use cases map test execution

Step #	Description
1	Access to “standardised navigation”.
2	The implemented “use cases map” with all relevant use cases shall be displayed.
3	All implemented use cases shall have active links or context related navigation instructions.

9.3.6 Postamble

No post conditions.

9.4 [RMI-CT_FREQ-4] Test for download area

9.4.1 Overview

This is a conformance test for functional user interface requirement FREQ-4 specified in ISO 18541-3.

9.4.2 Test purpose

This conformance test is used to verify that the VM RMI system implements the requirements for the download area.

9.4.3 Configuration

No additional configuration required.

9.4.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

9.4.5 Test execution

Table 20 defines the test execution.

Table 20 — [RMI-CT_FREQ-4] Test for download area test execution

Step #	Description
1	In case a specific use case requires the download of applications to the IO client for the usage of the RMI system, a visual widget shall be in a visible position in the use cases map.
2	By selecting the widget, user shall be guided through the different steps required for downloading and installing the application.

NOTE FREQ-4 is mandatory only if manual download and installation of applications to the IO client are required for the particular VM system, thus, [RMI-CT_FREQ-4] Test for download area could be not applicable for a specific VM RMI system.

9.4.6 Postamble

No post conditions.

9.5 [RMI-CT_FREQ-5] Test for navigational pathway

9.5.1 Overview

This is a conformance test for functional user interface requirement FREQ-5 specified in ISO 18541-3.

9.5.2 Test purpose

This conformance test is used to verify that the VM RMI system implements the requirements for the standardized VM RMI navigation support.

9.5.3 Configuration

No additional configuration required.

9.5.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

9.5.5 Test execution

Table 21 defines the test execution.

Table 21 — [RMI-CT_FREQ-5] Test for navigational pathway test execution

Step #	Description
1	At a minimum, the VM RMI system shall provide a use case sensitive help. A use case sensitive help will provide the order in which prerequisite use cases shall be chosen in order to reach the target use case.
2	An example of a more sophisticated solution would be an interactive use cases map that will guide a user through the prerequisite use cases that shall be chosen in order to reach the target use case.
3	By following the provided navigational path, user shall be able to access selected use case.

9.5.6 Postamble

No post conditions.

10 CT cluster 5 — Test payment for RMI

10.1 [RMI-CT_UC2] Test payment for RMI

10.1.1 Overview

This is a conformance test for use case 2 specified in ISO 18541-1.

10.1.2 Test purpose

This conformance test is used to verify proper handling of payments and that the VM RMI systems

a) provides the possibility

   1) to select subscription,

   2) to select payment arrangements, and

   3) payment-relevant data (card data, account id, etc.),

b) activates (enables) the selected subscription, and

c) produces a receipt.

10.1.3 Configuration

No additional configuration required.

10.1.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data;

— subscriptions for security-related RMI may require a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

10.1.5 Test execution

Table 22 defines the test execution.

Table 22 — [RMI-CT_UC2] Test payment for RMI test execution

Step #	Description
1	Select UC 2 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Select subscription (content and period).
3	Select payment arrangement.
4	Fill in requested payment relevant data (card data, account id, etc.).
5	Confirm. Data will be processed.
6	VM notifies user about further steps (e.g., invoicing).
7	VM grants access to VM RMI system according to subscription process.

10.1.6 Postamble

No post conditions.

11 CT cluster 6 —Test for vehicle identification

11.1 [RMI-CT_UC3.1] Test vehicle identification through use of VIN

11.1.1 Overview

This is a conformance test for use case 3.1 specified in ISO 18541-1.

11.1.2 Test purpose

This conformance test is used to verify that the VM RMI system provides vehicle identification via VIN input.

11.1.3 Configuration

No additional configuration required.

11.1.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

11.1.5 Test execution

Table 23 defines the test execution.

Table 23 — [RMI-CT_UC3.1] Test vehicle identification through use of VIN test execution

Step #	Description
1	Select UC 3.1 and follow the instruction provided according to FREQ-5.
2	Provide a valid VIN as required by the VM RMI system.
3	The VM RMI system will provide vehicle summary information for this specific VIN as defined in UC 3.1 - Use case output.
4	The VM RMI system will provide the vehicle type approval of the vehicle model.

11.1.6 Postamble

The retention of the vehicle identification can only be verified in the subsequent use cases where that specific vehicle identification is required.

11.2 [RMI-CT_UC3.2] Test vehicle identification via product features

11.2.1 Overview

This is a conformance test for use case 3.2 specified in ISO 18541-1. Conformance testing for classification C2 is outside the scope of this conformance test as conformance will be VM-specific.

11.2.2 Test purpose

This conformance test is used to verify that the VM RMI system provides vehicle identification via product features in cases where this functionality is provided to ARs.

11.2.3 Configuration

No additional configuration required.

11.2.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

11.2.5 Test execution

Table 24 defines the test execution.

Table 24 — [RMI-CT_UC3.2] Test vehicle identification via product features test execution

Step #	Description
1	Select UC 3.2 and follow the instruction provided according to FREQ-5.
2	Input or select allowed product feature option where offered by the VM RMI system.
3	Make information request using product feature(s) such as model, vehicle year, etc.
4	The VM RMI system will provide available vehicle information relevant to the submitted product features.

11.2.6 Postamble

The retention of the vehicle identification can only be verified in the subsequent use cases where that specific vehicle identification is required.

12 CT cluster 7 — Test selection methods for RMI

12.1 [RMI-CT_UC4.1] Test selection of information type

12.1.1 Overview

This is a conformance test for use case 4.1 specified in ISO 18541-1.

12.1.2 Test purpose

This conformance test is used to verify that the VM RMI system provides the relevant information types.

12.1.3 Configuration

No additional configuration required.

12.1.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible;

— either VIN is according to UC 3.1 or product features according to UC 3.2 are selected.

12.1.5 Test execution

Table 25 defines the test execution.

Table 25 — [RMI-CT_UC4.1] Test selection of information type test execution

Step #	Description
1	Select UC 4.1 and follow the instruction provided according to FREQ-5.
2	VM RMI system displays a list of information types.
3	Select at least one of the listed information types.

12.1.6 Postamble

The retention of the information type(s) selected can only be verified in the subsequent use case(s) where that specific information type(s) is required.

12.2 [RMI-CT_UC4.2] Test search by standardized terms

12.2.1 Overview

This is a conformance test for use case 4.2 specified in ISO 18541-1.

12.2.2 Test purpose

This conformance test is used to verify that the VM RMI system provides searching by terms from the Digital Annex according to ISO 18541.

12.2.3 Configuration

Latest implemented version of the RMI Terminology Digital Annex.

12.2.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible;

— either VIN according to UC 3.1 or product features according to UC 3.2 are selected.

12.2.5 Test execution

Table 26 defines the test execution.

Table 26 — [RMI-CT_UC4.2] Test search by standardized terms test execution

Step #	Description
1	Select UC 4.2 and follow the instruction provided according to FREQ-5.
2	Input a term from the digital annex.
3	Submit the search request.
4	The VM RMI system returns a list of document titles containing either the standardized term or the mapped term in the title or in the metadata of the document.

12.2.6 Postamble

No post conditions.

12.3 [RMI-CT_UC4.3] Test navigation using product structure

12.3.1 Overview

This is a conformance test for use case 4.3 specified in ISO 18541-1.

12.3.2 Test purpose

This conformance test is used to verify that the VM RMI system provides navigation capability via the product structure to enable the user to browse the information.

12.3.3 Configuration

No additional configuration required.

12.3.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible;

— either VIN according to UC 3.1 or product features according to UC 3.2 are selected.

12.3.5 Test execution

Table 27 defines the test execution.

Table 27 — [RMI-CT_UC4.3] Test navigation using product structure test execution

Step #	Description
1	Select UC 4.3 and follow the instruction provided according to FREQ-5.
2	Navigate within the product structure to the required level.
3	The VM RMI system provides a list of available information packages for the selected item.

12.3.6 Postamble

No post conditions.

12.4 [RMI-CT_UC4.4] Test selection by document identifier

12.4.1 Overview

This is a conformance test for use case 4.4 specified in ISO 18541-1.

12.4.2 Test purpose

This conformance test is used to verify that the VM RMI system provides searching by document identifier, if offered to VMs ARs.

12.4.3 Configuration

No additional configuration required.

12.4.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

12.4.5 Test execution

Table 28 defines the test execution.

Table 28 — [RMI-CT_UC4.4] Test selection by document identifier test execution

Step #	Description
1	Select UC 4.4 and follow the instruction provided according to FREQ-5.
2	Enter a valid document identifier.
3	The VM RMI system displays the document title relevant to the identifier.

12.4.6 Postamble

No post conditions.

13 CT cluster 8 — Test retrieval of information packages

13.1 [RMI-CT_UC5.1.1] Test retrieval of general workshop procedures

13.1.1 Overview

This is a conformance test for use case 5.1.1 specified in ISO 18541-1.

13.1.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to selected general workshop procedure.

13.1.3 Configuration

No additional configuration required.

13.1.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.1.5 Test execution

Table 29 defines the test execution.

Table 29 — [RMI-CT_UC5.1.1] Test retrieval of general workshop procedures test execution

Step #	Description
1	Select UC 5.1.1 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Select one document in the search result list.
3	The document corresponding to the pre-selected options shall open to be read.

13.1.6 Postamble

No post conditions.

13.2 [RMI-CT_UC5.1.2] Test retrieval of body repair procedures

13.2.1 Overview

This is a conformance test for use case 5.1.2 specified in ISO 18541-1.

13.2.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to the selected body repair procedure.

13.2.3 Configuration

No additional configuration required.

13.2.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.2.5 Test execution

Table 30 defines the test execution.

Table 30 — [RMI-CT_UC5.1.2] Test retrieval of body repair procedures test execution

Step #	Description
1	Select UC 5.1.2 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Select one document in the search result list.
3	The corresponding document shall open to be read.

NOTE UC 5.1.2 is optional, but mandatory if the repair information exists; thus; RMI-CT_UC5.1.2 could be not applicable for a specific VM RMI system.

13.2.6 Postamble

No post conditions.

13.3 [RMI-CT_UC5.1.3] Test retrieval of temporary repair procedures

13.3.1 Overview

This is a conformance test for use case 5.1.3 specified in ISO 18541-1.

13.3.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to selected temporary repair procedure.

13.3.3 Configuration

No additional configuration required.

13.3.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.3.5 Test execution

Table 31 defines the test execution.

Table 31 — [RMI-CT_UC5.1.3] Test retrieval of temporary repair procedures test execution

Step #	Description
1	Select UC 5.1.3 and follow the instruction provided, according to FREQ5, verifying that all following steps are possible.
2	Select one document in the search result list.
3	The corresponding document shall open to be read.

NOTE UC 5.1.3 is optional, but mandatory if provided by VM to VM AR; thus, RMI-CT_UC5.1.3 could be not applicable for a specific VM RMI system.

13.3.6 Postamble

No post conditions.

13.4 [RMI-CT_UC5.1.4] Test retrieval of preparation for PTI

13.4.1 Overview

This is a conformance test for use case 5.1.4 specified in ISO 18541-1.

13.4.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to selected information for preparation for PTI.

13.4.3 Configuration

No additional configuration required.

13.4.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.4.5 Test execution

Table 32 defines the test execution.

Table 32 — [RMI-CT_UC5.1.4] Test retrieval of preparation for PTI test execution

Step #	Description
1	Select UC 5.1.4 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The VM RMI system displays the requested PTI information or offers access to PTI services.
3	The corresponding document shall open to be read.

NOTE UC 5.1.4 is optional, but mandatory if provided by VM to VM AR; thus, RMI-CT_UC5.1.4 could be not applicable for a specific VM RMI system.

13.4.6 Postamble

No post conditions.

13.5 [RMI-CT_UC5.2] Test retrieval of wiring diagrams

13.5.1 Overview

This is a conformance test for use case 5.2 specified in ISO 18541-1.

13.5.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to selected wiring diagram.

13.5.3 Configuration

No additional configuration required.

13.5.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.5.5 Test execution

Table 33 defines the test execution.

Table 33 — [RMI-CT_UC5.2] Test retrieval of wiring diagrams test execution

Step #	Description
1	Select UC 5.2 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Select one document in the search result list.
3	The corresponding document shall open to be read.

13.5.6 Postamble

No post conditions.

13.6 [RMI-CT_UC5.3] Test retrieval of technical service bulletin

13.6.1 Overview

This is a conformance test for use case 5.3 specified in ISO 18541-1.

13.6.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to selected technical service bulletin.

13.6.3 Configuration

No additional configuration required.

13.6.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.6.5 Test execution

Table 34 defines the test execution.

Table 34 — [RMI-CT_UC5.3] Test retrieval of technical service bulletin test execution

Step #	Description
1	Select UC 5.3 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Select one document in the search result list.
3	The corresponding document shall open to be read.

NOTE UC 5.3 is optional, but mandatory if provided by VM to VM AR; thus, RMI-CT_UC5.3 could be not applicable for a specific VM RMI system.

13.6.6 Postamble

No post conditions.

13.7 [RMI-CT_UC5.4] Test retrieval of recall information

13.7.1 Overview

This is a conformance test for use case 5.4 specified in ISO 18541-1.

13.7.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to selected recall information.

13.7.3 Configuration

No additional configuration required.

13.7.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.7.5 Test execution

Table 35 defines the test execution.

Table 35 — [RMI-CT_UC5.4] Test retrieval of recall information test execution

Step #	Description
1	Select UC 5.4 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Information package will show the recall title and a message including brief information about the issue that is to be solved and the indication that the VM would provide a free of charge repair through their authorized network.

13.7.6 Postamble

No post conditions.

13.8 [RMI-CT_UC5.5] Test retrieval of maintenance schedule

13.8.1 Overview

This is a conformance test for use case 5.5 specified in ISO 18541-1.

13.8.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to maintenance schedule.

13.8.3 Configuration

No additional configuration required.

13.8.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.8.5 Test execution

Table 36 defines the test execution.

Table 36 — [RMI-CT_UC5.5] Test retrieval of maintenance schedule test execution

Step #	Description
1	Select UC 5.5 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The corresponding document shall open to be read.
3	If implemented, links to relevant procedures will lead to the maintenance procedures.

13.8.6 Postamble

No post conditions.

13.9 [RMI-CT_UC5.6.1] Test retrieval of spare parts (identification)

13.9.1 Overview

This is a conformance test for use case 5.6.1 specified in ISO 18541-1.

13.9.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to spare parts (identification).

13.9.3 Configuration

No additional configuration required.

13.9.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.9.5 Test execution

Table 37 defines the test execution.

Table 37 — [RMI-CT_UC5.6.1] Test retrieval of spare parts (identification) test execution

Step #	Description
1	Select UC 5.6.1 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Select one document in the search result list.
3	The corresponding document shall open to be read.
4	In case spare parts catalogue is not part of standard RMI in a specific VM RMI system, result shall be a link to spare parts catalogue.

13.9.6 Postamble

No post conditions.

13.10 [RMI-CT_UC5.6.2] Test retrieval of spare parts (access)

13.10.1 Overview

This is a conformance test for use case 5.6.2 specified in ISO 18541-1.

13.10.2 Test purpose

This conformance test is used to verify that the VM RMI system provides direct access to spare parts catalogue.

13.10.3 Configuration

No additional configuration required.

13.10.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.10.5 Test execution

Table 38 defines the test execution.

Table 38 — [RMI-CT_UC5.6.2] Test retrieval of spare parts (access) test execution

Step #	Description
1	Select UC 5.6.2 and follow the instruction provided, according to FREQ-5.
2	Spare parts catalogue homepage appears.

13.10.6 Postamble

No post conditions.

13.11 [RMI-CT_UC5.7.1] Test retrieval of accessory information factory fitted (included in general RMI)

13.11.1 Overview

This is a conformance test for use case 5.7.1 specified in ISO 18541-1.

13.11.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to accessory information factory fitted.

13.11.3 Configuration

No additional configuration required.

13.11.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.11.5 Test execution

Table 39 defines the test execution.

Table 39 — [RMI-CT_UC5.7.1] Test retrieval of accessory information factory fitted (included in general RMI) test execution

Step #	Description
1	Select UC 5.7.1 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Select one document in the search result list.
3	The corresponding document shall open to be read.

13.11.6 Postamble

No post conditions.

13.12 [RMI-CT_UC5.7.2] Test retrieval of accessory information partnered with a VM part number

13.12.1 Overview

This is a conformance test for use case 5.7.2 specified in ISO 18541-1.

13.12.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to accessory information partnered with a VM part number.

13.12.3 Configuration

No additional configuration required.

13.12.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.12.5 Test execution

Table 40 defines the test execution.

Table 40 — [RMI-CT_UC5.7.2] Test retrieval of accessory information partnered with a VM part number test execution

Step #	Description
1	Select UC 5.7.2 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Select one document in the search result list.
3	The corresponding document shall open to be read.
4	In case a specific partnered accessory information is not part of standard RMI in a specific VM RMI system, result shall be a link to the third party responsible for the accessory.

13.12.6 Postamble

No post conditions.

13.13 [RMI-CT_UC5.7.3] Test retrieval of fitting information for accessories with no VM part number

13.13.1 Overview

This is a conformance test for use case 5.7.3 specified in ISO 18541-1.

13.13.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to fitting information for accessories with no VM part number.

13.13.3 Configuration

No additional configuration required.

13.13.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.13.5 Test execution

Table 41 defines the test execution.

Table 41 — [RMI-CT_UC5.7.3] Test retrieval of fitting information for accessories with no VM part number test execution

Step #	Description
1	Select UC 5.7.3 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Select one document in the search result list.
3	The corresponding document shall open to be read.
4	A single document shall generally be accessible with each and any of the implemented search criteria.

NOTE UC 5.7.3 is optional, but mandatory if provided by VM to VM AR; thus, RMI-CT_UC5.7.3 could be not applicable for a specific VM RMI system.

13.13.6 Postamble

No post conditions.

13.14 [RMI-CT_UC5.8] Test retrieval of labour times

13.14.1 Overview

This is a conformance test for use case 5.8 specified in ISO 18541-1.

13.14.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to labour times.

13.14.3 Configuration

No additional configuration required.

13.14.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.14.5 Test execution

Table 42 defines the test execution.

Table 42 — [RMI-CT_UC5.8] Test retrieval of labour times test execution

Step #	Description
1	Select UC 5.8 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Select specific labour times.
3	Selected labour times are displayed.

13.14.6 Postamble

No post conditions.

13.15 [RMI-CT_UC5.9] Test retrieval of converted vehicle information

13.15.1 Overview

This is a conformance test for use case 5.9 specified in ISO 18541-1.

13.15.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to information for converted vehicles.

13.15.3 Configuration

No additional configuration required.

13.15.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.15.5 Test execution

Table 43 defines the test execution.

Table 43 — [RMI-CT_UC5.9] Test retrieval of converted vehicle information test execution

Step #	Description
1	Select UC 5.9 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The VM RMI system provides RMI on VM components of the converted vehicle and RMI on published or AR available interfaces.

NOTE UC 5.9 is optional, but mandatory if provided by VM to VM AR; thus, RMI-CT_UC5.9 could be not applicable for a specific VM RMI system.

13.15.6 Postamble

No post conditions.

13.16 [RMI-CT_UC5.10] Test retrieval of special tool information

13.16.1 Overview

This is a conformance test for use case 5.10 specified in ISO 18541-1.

13.16.2 Test purpose

This conformance test is used to verify that the VM RMI system provides access to the special tool information.

13.16.3 Configuration

No additional configuration required.

13.16.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

13.16.5 Test execution

Table 44 defines the test execution.

Table 44 — [RMI-CT_UC5.10] Test retrieval of special tool information test execution

Step #	Description
1	Select UC 5.10 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The VM RMI system shall give access to special tool information.

13.16.6 Postamble

No post conditions.

14 CT cluster 9 — Test vehicle diagnostics

14.1 [RMI-CT_UC6.1] Test DTC resolution

14.1.1 Overview

This is a conformance test for use case 6.1 specified in ISO 18541-1.

14.1.2 Test purpose

This conformance test is used to verify that the VM RMI system provides a description of the DTC if it is relevant to the vehicle and module and, if available, a list of potential causes or hints for further investigation.

14.1.3 Configuration

No additional configuration required.

14.1.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

14.1.5 Test execution

Table 45 defines the test execution.

Table 45 — [RMI-CT_UC6.1] Test DTC resolution test execution

Step #	Description
1	Select UC 6.1 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Enter or select the relevant DTC.
3	The VM RMI system returns a description of the DTC and, if available, a list of potential causes or hints for further investigation, to the same level and content as provided to AR.

14.1.6 Postamble

No post conditions.

14.2 [RMI-CT_UC6.2] Test VM symptom resolution

14.2.1 Overview

This is a conformance test for use case 6.2 specified in ISO 18541-1.

NOTE Depending on the diagnostic strategy chosen by the VM, isolated symptom resolution may not be supported. In such cases, symptom resolution is part of the integrated diagnostics.

14.2.2 Test purpose

This conformance test is used to verify that the VM RMI system delivers a list of potential causes or hints for further investigation when provided with a VM symptom as found by reading the published technical documentation.

14.2.3 Configuration

No additional configuration required.

14.2.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

14.2.5 Test execution

Table 46 defines the test execution.

Table 46 — [RMI-CT_UC6.2] Test VM symptom resolution test execution

Step #	Description
1	Select UC 6.2 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Input or select valid VM symptom as found by reading the published technical documentation.
3	The system returns a list of potential causes or hints for further investigation, to the same level and content as provided to AR.

14.2.6 Postamble

No post conditions.

14.3 [RMI-CT_UC6.3] Test integrated diagnostics

14.3.1 Overview

This is a conformance test for use case 6.3 specified in ISO 18541-1.

14.3.2 Test purpose

This conformance test is used to verify that the VM RMI system provides integrated diagnostics via standardized non-proprietary VCI functionality using a non-proprietary front end.

14.3.3 Configuration

Test if communication device for testing is validated by VM according to VM RMI web site statement.

Any necessary driver for communication device as required by the VM RMI technical requirements according to both VM and VCI manufacturer installation instructions is installed (e.g. TREQ-8 VCI manufacturer-specific device driver and VM-specific device driver).

14.3.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

14.3.5 Test execution

Table 47 defines the test execution.

Table 47 — [RMI-CT_UC6.3] Test integrated diagnostics test execution

Step #	Description
1	Select UC 6.3 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	When requested, link the vehicle to the VM RMI system via VM validated non-proprietary VCI functionality.
3	The VM RMI system checks the vehicle ECUs and displays diagnostic information. The VM RMI system checks the vehicle ECUs and displays precise diagnostics results and repair recommendation.

NOTE UC 6.3 is optional, but mandatory if provided by VM to VM AR; thus, the RMI-CT_UC6.3 could be not applicable for a specific VM RMI system.

14.3.6 Postamble

No post conditions.

15 CT cluster 10 — Test updating, replacing and tuning of modules (ECUs)

15.1 [RMI-CT_UC7.1] Test updating and replacing modules information

15.1.1 Overview

This is a conformance test for use case 7.1 specified in ISO 18541-1.

15.1.2 Test purpose

This conformance test is used to verify that the VM RMI system provides information about updating and replacing modules.

15.1.3 Configuration

Test if communication device for testing is validated by VM according to VM RMI web site statement.

Any necessary driver for communication device as required by the VM RMI technical requirements according to both VM and VCI manufacturer installation instructions is installed (e.g. TREQ-8 VCI manufacturer-specific device driver and VM-specific device driver).

15.1.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

15.1.5 Test execution

Table 48 defines the test execution.

Table 48 — [RMI-CT_UC7.1] Test updating and replacing modules information test execution

Step #	Description
1	Select UC 7.1 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The user requests the necessary action for updating or replacing modules. Security measures, i.e. approval/authorization to protect against vehicle theft or emission control and engine calibration tampering may be required.
3	The VM RMI system identifies the required software versions for the individual vehicle. Update the ECU software according to the valid configuration if the prerequisites for software update are fulfilled.

NOTE By performing this conformance test, a valid repair operation is executed on the actual vehicle.

15.1.6 Postamble

In case of installation of tuning kit, the original status of the vehicle has to be restored.

15.2 [RMI-CT_UC7.2] Test tuning kit

15.2.1 Overview

This is a conformance test for use case 7.2 specified in ISO 18541-1.

15.2.2 Test purpose

This conformance test is used to verify that the VM RMI system provides tuning kit information.

15.2.3 Configuration

In case the tuning has to be performed as a whole process, an appropriate vehicle has to be organized, the consent of the vehicle owner has to be available and necessary financial resources for the purchase of the tuning kit has to be allocated.

15.2.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

15.2.5 Test execution

Table 49 defines the test execution.

Table 49 — [RMI-CT_UC7.2] Test tuning kit test execution

Step #	Description
1	Select UC 7.2 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Tester purchases official VM tuning kit according to VM specific process.
3	Tester installs official VM tuning kit into the relevant vehicle in accordance with VM installation instruction.
4	Tester performs programming/coding according to use case 7.1 if software update of the module is required.

NOTE UC 7.2 is optional, but mandatory if provided by VM to VM AR; thus, the RMI-CT_UC7.2 could be not applicable for a specific VM RMI system. By performing this conformance test, a valid tuning kit installation is executed on the actual vehicle.

15.2.6 Postamble

In case of installation of tuning kit, the original status of the vehicle has to be restored.

16 CT cluster 11 — Test electronic maintenance history

16.1 [RMI-CT_UC8] Test electronic maintenance history

16.1.1 Overview

This is a conformance test for use case 8 specified in ISO 18541-1.

16.1.2 Test purpose

This conformance test is used to verify that the VM RMI system allows the user with a digital certificate to view and update and digitally sign an electronic maintenance history schedule in cases where it is the only record of maintenance available to the customer and to make a printout for the customer.

16.1.3 Configuration

No additional configuration required.

16.1.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— valid digital certificate for electronic signature;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

16.1.5 Test execution

Table 50 defines the test execution.

Table 50 — [RMI-CT_UC8] Test electronic maintenance history test execution

Step #	Description
1	Select UC 8 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Indicate customer consent where necessary.
3	View maintenance history.
4	Input maintenance data as required.
5	Submit the digitally signed maintenance history update according to ISO 20828 (X509.V3).
6	Print customer copy of maintenance history.

16.1.6 Postamble

No post conditions.

17 CT cluster 12 — Test repair assistance, technical support

17.1 [RMI-CT_UC9] Test repair assistance technical support

17.1.1 Overview

This is a conformance test for use case 9 specified in ISO 18541-1.

17.1.2 Test purpose

This conformance test is used to verify that the VM RMI system provides repair assistance and repair technical support for the purposes of repairing the vehicle.

17.1.3 Configuration

No additional configuration required.

17.1.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— access to security-related RMI requires a valid digital certificate and authorization according to ISO 18541-2;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

17.1.5 Test execution

Table 51 defines the test execution.

Table 51 — [RMI-CT_UC9] Test repair assistance technical support test execution

Step #	Description
1	Select UC 9 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	Follow the instructions and input data if required by the VM RMI system.
3	Verify that assistance and support is provided in accordance with the VM-specific support mechanism and timescales.

17.1.6 Postamble

No post conditions.

18 CT cluster 13 — Test request for contact information

18.1 [RMI-CT_UC10.1] Test for retrieval of electronic tool information (Diagnostic, Reprogramming, VCI)

18.1.1 Overview

This is a conformity test for use case 10.1 specified in ISO 18541-1.

18.1.2 Test purpose

This conformance test is used to verify that the VM RMI system provides contact information on how to obtain manufacturer's diagnostic tool, reprogramming tool and VCI.

18.1.3 Configuration

No additional configuration required.

18.1.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

18.1.5 Test execution

Table 52 defines the test execution.

Table 52 — [RMI-CT_UC10.1] Test for retrieval of electronic tool information (Diagnostic, Reprogramming, VCI) test execution

Step #	Description
1	Select UC 10.1 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The VM RMI system provides the relevant contact information for — description of manufacturer's diagnostic tool and VCI, and — available list of contacts/link to a supplier (country by country) where diagnostic tools and VCI can be purchased.

18.1.6 Postamble

No post conditions.

18.2 [RMI-CT_UC10.2] Test for retrieval of test equipment and diagnostic tool manufacturers information

18.2.1 Overview

This is a conformity test for use case 10.2 specified in ISO 18541-1.

18.2.2 Test purpose

This conformance test is used to verify that the VM RMI system provides contact information about OBD-related and vehicle repair and maintenance information to design and manufacture test equipment or diagnostic tools.

18.2.3 Configuration

No additional configuration required.

18.2.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

18.2.5 Test execution

Table 53 defines the test execution.

Table 53 — [RMI-CT_UC10.2] Test for retrieval of test equipment and diagnostic tool manufacturers information test execution

Step #	Description
1	Select UC 10.2 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The VM RMI system provides the relevant VM's contact information and process for test equipment and diagnostic tool manufacturers.

18.2.6 Postamble

No post conditions.

18.3 [RMI-CT_UC10.3] Test for retrieval of training material (delegate information)

18.3.1 Overview

This is a conformity test for use case 10.3 specified in ISO 18541-1.

18.3.2 Test purpose

This conformance test is used to verify that the VM RMI system provides contact information about training material (delegate information).

18.3.3 Configuration

No additional configuration required.

18.3.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

18.3.5 Test execution

Table 54 defines the test execution.

Table 54 — [RMI-CT_UC10.3] Test for retrieval of training material (delegate information) test execution

Step #	Description
1	Select UC 10.3 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The VM RMI system provides the relevant VM's contact information for training material.

18.3.6 Postamble

No post conditions.

18.4 [RMI-CT_UC10.4] Test for retrieval of redistributor contact information

18.4.1 Overview

This is a conformity test for use case 10.4 specified in ISO 18541-1.

18.4.2 Test purpose

This conformance test is used to verify that the VM RMI system provides contact information on how to obtain RMI for redistribution within their own closed network e.g. RAC, ADAC, garage networks.

18.4.3 Configuration

No additional configuration required.

18.4.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

18.4.5 Test execution

Table 55 defines the test execution.

Table 55 — [RMI-CT_UC10.4] Test for retrieval of redistributor contact information test execution

Step #	Description
1	Select UC 10.4 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The VM RMI system provides the relevant VM's contact information for contractual agreement to redistribute the desired information.

18.4.6 Postamble

No post conditions.

18.5 [RMI-CT_UC10.5] Test for retrieval of republisher information

18.5.1 Overview

This is a conformity test for use case 10.5 specified in ISO 18541-1.

18.5.2 Test purpose

This conformance test is used to verify that the VM RMI system provides contact information about how to obtain permission for re-publication and distribution of RMI to an external network.

18.5.3 Configuration

No additional configuration required.

18.5.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

18.5.5 Test execution

Table 56 defines the test execution.

Table 56 — [RMI-CT_UC10.5] Test for retrieval of republisher information test execution

Step #	Description
1	Select UC 10.5 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The VM RMI system provides the VM's contact information for contractual agreement to republish the desired information.

18.5.6 Postamble

No post conditions.

18.6 [RMI-CT_UC10.6] Test for retrieval of inspection and testing services information

18.6.1 Overview

This is a conformity test for use case 10.6 specified in ISO 18541-1.

18.6.2 Test purpose

This conformance test is used to verify that the VM RMI system provides contact information about how to find necessary OBD-related and repair and maintenance information to create inspection and testing services according to country-specific legislation.

18.6.3 Configuration

No additional configuration required.

18.6.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

18.6.5 Test execution

Table 57 defines the test execution.

Table 57 — [RMI-CT_UC10.6] Test for retrieval of inspection and testing services information test execution

Step #	Description
1	Select UC 10.6 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The VM RMI system provides the VM's contact information and process for operators offering inspection and testing services. This may be country-specific.

18.6.6 Postamble

No post conditions.

18.7 [RMI-CT_UC10.7] Test for retrieval of alternative fuels retrofit system information

18.7.1 Overview

This is a conformity test for use case 10.7 specified in ISO 18541-1.

18.7.2 Test purpose

This conformance test is used to verify that the VM RMI system provides contact information on how to obtain emissions-related OBD and repair and maintenance information to properly manufacture or design alternative fuels retrofit systems.

18.7.3 Configuration

No additional configuration required.

18.7.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— VM RMI system is not under maintenance;

— VM RMI home page is visible;

— standardized navigation map is visible.

18.7.5 Test execution

Table 58 defines the test execution.

Table 58 — [RMI-CT_UC10.7] Test for retrieval of alternative fuels retrofit system information test execution

Step #	Description
1	Select UC 10.7 and follow the instruction provided, according to FREQ-5, verifying that all following steps are possible.
2	The VM RMI system provides the relevant VM's contact information for emissions-related OBD and repair and maintenance information for building alternative fuels system.

NOTE [RMI-CT_UC10.7] Test for retrieval of alternative fuels retrofit system information is mandatory only if the VM allows such an alternative fuel system and if this information is not available in the VM RMI system.

18.7.6 Postamble

No post conditions.

18.8 [RMI-CT_UC10.8] Test for retrieval of engine and components remanufacturing information

18.8.1 Overview

This is a conformity test for use case 10.8 specified in ISO 18541-1.

18.8.2 Test purpose

This conformance test is used to verify that the VM RMI system provides contact information on how to obtain engine and component remanufacturing OBD-related and repair and maintenance information.

18.8.3 Configuration

No additional configuration required.

18.8.4 Preamble (setup state)

Setup conditions are as follows:

— valid and operational technical infrastructure according to ISO 18541-2;

— valid login data and subscription, if required by the VM RMI system;

— VM RMI system is not under maintenance;

