

DIN EN ISO 18541-5:2019-03 (E)

Road vehicles - Standardized access to automotive repair and maintenance information (RMI) - Part 5: Heavy duty specific provision (ISO 18541-5:2018)

Contents		Page
European foreword		7
Foreword		8
Introduction		9
1	Scope	10
2	Normative references	10
3	Terms, definitions and abbreviated terms	11
4	Document overview and structure	13
5	General information	13
5.1	Overview	13
5.2	Multi stage and RMI	14
6	Basic principles, use case and requirement overview	15
6.1	Basic principles	15
6.2	Basic principles for use case definition	15
6.3	Basic principles for requirements definition	16
6.4	Basic principles for functional user interface requirements definition	16
6.5	Basic principles for conformance test case definition	16
6.6	Use case clusters	17
6.7	Requirements clusters	21
6.8	Functional user interface requirements clusters	25
6.9	Main conformance test case clusters	26
7	Use cases	29
7.1	UC 1 User authentication, authorization and administration	29
7.1.1	UC 1.1 Register IO for use of the VM RMI system	29
7.1.2	UC 1.2 Register IO employee for use of the VM RMI system	29
7.1.3	UC 1.3 Maintain IO status	30
7.1.4	UC 1.4 Maintain user status	30
7.1.5	UC 1.5 Request to de-register IO employee	30
7.1.6	UC 1.6 Login to VM RMI system	30
7.1.7	UC 1.7 Grant access to security-related RMI	30
7.2	UC 2 Payment for RMI	30
7.3	UC 3 Vehicle identification	30
7.3.1	UC 3.1 Vehicle identification through use of the VIN	30
7.3.2	UC 3.2 Vehicle type identification via product features	30
7.3.3	UC 3.3 Vehicle identification through product identifier	30
7.3.4	UC 3.4 Unequivocal engine identification	31
7.3.5	UC 3.5 Engine type identification via engine features	31
7.4	UC 4 Provide selection methods for RMI	33
7.4.1	UC 4.1 Select information type	33
7.4.2	UC 4.2 Search by standardized terms	34
7.4.3	UC 4.3 Navigate using product structure	34
7.4.4	UC 4.4 Select by document identifier	34
7.5	UC 5 Retrieve information packages	34

7.5.1	UC 5.1 Workshop procedures	34
7.5.2	UC 5.2 Wiring diagrams	34
7.5.3	UC 5.3 Technical service bulletin	34
7.5.4	UC 5.4 Recall information	35
7.5.5	UC 5.5 Maintenance schedule	35
7.5.6	UC 5.6 Spare parts	35
7.5.7	UC 5.7 Accessories	35
7.5.8	UC 5.8 Labour times	35
7.5.9	UC 5.9 Converted vehicles	36
7.5.10	UC 5.10 Special tools	36
7.5.11	UC 5.11 Type-approval related information	36
7.6	UC 6 Vehicle diagnostics	36
7.6.1	UC 6.1 DTC resolution	36
7.6.2	UC 6.2 VM symptom resolution	36
7.6.3	UC 6.3 Integrated diagnostics	37
7.7	UC 7 Updating, replacing and tuning of modules (ECUs)	37
7.7.1	UC 7.1 Updating and replacing modules	37
7.7.2	UC 7.2 Tuning kit	37
7.8	UC 8 Electronic maintenance history	37
7.9	UC 9 Repair assistance technical support	37
7.10	UC 10 Request contact for specific RMI	37
7.10.1	UC 10.1 Electronic tool information (Diagnostic, Reprogramming, VCI)	37
7.10.2	UC 10.2 Test equipment and diagnostic tool manufacturers	37
7.10.3	UC 10.3 Training material (delegate information)	37
7.10.4	UC 10.4 Redistributors	37
7.10.5	UC 10.5 Republishers	38
7.10.6	UC 10.6 Inspection and testing services	38
7.10.7	UC 10.7 Alternative fuels retrofit systems	38
7.10.8	UC 10.8 Engine and components remanufacturing	38
7.10.9	UC 10.9 Component and parts manufacturers	38
7.10.10	UC 10.10 Validation of independently developed non-proprietary VCIs	38
7.11	UC 11 Courses and training information	38
8	Technical requirements	38
8.1	Requirements cluster -- Access-related data administration	38
8.1.1	[TREQ-1] General access-related data administration	38
8.1.2	[TREQ-2] Administration of IO data by the VM	38
8.1.3	[TREQ-3] Administration of IO employee data by the VM	38
8.1.4	[TREQ-4] Administration of payment data by the VM	38
8.1.5	[TREQ-5] Administration of access event data by the VM	38
8.1.6	[TREQ-6] Administration of access event data to security-related RMI by the VM	39
8.2	Requirements cluster -- IT architecture	39
8.2.1	[TREQ-7] Conceptual architecture	39
8.2.2	[TREQ-8] Implementation principles	39
8.3	Requirements cluster -- External interfaces	39
8.3.1	[TREQ-9] Vehicle communication interface (VCI)	39
8.3.2	[TREQ-10] Trust centre (certificate management)	39
8.3.3	[TREQ-11] Parts ordering for security-related features	39
8.3.4	[TREQ-12] Partnered accessory provider systems	39
8.4	Requirements cluster -- Technical infrastructure	39
8.4.1	[TREQ-13] Type of device	39
8.4.2	[TREQ-14] Hardware features	39
8.4.3	[TREQ-15] Operating systems	39
8.4.4	[TREQ-16] Web browsers	39
8.4.5	[TREQ-17] Presentation formats for information packages	40
8.4.6	[TREQ-18] Internet connection	40
8.4.7	[TREQ-19] Performance of the VM RMI system	40
8.5	Requirements cluster -- Co-existence of VM software installed on IO client	40
8.5.1	[TREQ-20] Requirements for installing VM-specific software on the IO client	40
8.5.2	[TREQ-21] Requirements for updating of installed VM data and applications on the IO client	40
8.5.3	[TREQ-22] Requirements for the operation of VM-specific software on the IO client	40

8.5.4	[TREQ-23] Requirements for the uninstalling of VM-specific software on the IO client	40
8.5.5	[TREQ-24] Requirements for restoring in case of an abnormal termination of the VM-specific software on the IO client	40
8.6	Requirements cluster -- Operations	40
8.6.1	[TREQ-25] VM RMI system availability time	40
8.6.2	[TREQ-26] Support for the usage of the VM RMI system	40
8.6.3	[TREQ-27] Operation of the IO PC	40
8.6.4	[TREQ-28] Requirements cluster "functional user interface"	40
8.7	ISO 18541-2:2014, Annex A	41
9	Functional user interface requirements	41
9.1	Requirements cluster 1 -- Standardized access mode	41
9.1.1	VM RMI system standardized navigation	41
9.1.2	[FREQ-1] RMI access mode	41
9.1.3	[FREQ-2] Registration and login support	41
9.2	Requirements cluster 2 -- Use cases map	41
9.2.1	[FREQ-3] VM RMI system implemented use cases map	41
9.2.2	[FREQ-4] Download area	42
9.3	Requirements cluster 3 -- Navigational pathway	42
9.3.1	[FREQ-5] Navigational pathway	42
10	Conformance test cases	43
10.1	CT cluster 1 -- Test technical infrastructure	43
10.1.1	[RMI-CT_TREQ-13, 14, 15, 16, 18, Annex A] Test client configuration	43
10.1.2	[RMI-CT_TREQ-17] Test presentation formats for information packages	43
10.2	CT cluster 2 -- Test client's external interfaces	43
10.2.1	[RMI-CT_TREQ-9] Test vehicle communication interface	43
10.2.2	[RMI-CT_TREQ-11] Test parts ordering for security-related features	43
10.2.3	[RMI-CT_TREQ-12] Test partnered accessory provider systems	43
10.3	CT cluster 3 -- Test user authentication, authorization and administration	43
10.3.1	[RMI-CT_UC1.1] Test to register IO for use of the VM RMI system	43
10.3.2	[RMI-CT_UC1.2_A] Test to register IO employee for use of the VM RMI system -- Scenario A	43
10.3.3	[RMI-CT_UC1.2_B] Test to register IO employee for use of the VM RMI system -- Scenario B	43
10.3.4	[RMI-CT_UC1.3] Test to maintain IO status	43
10.3.5	[RMI-CT_UC1.4] Test to maintain user status	43
10.3.6	[RMI-CT_UC1.5] Test to de-register an IO employee	43
10.3.7	[RMI-CT_UC1.6] Test login to VM RMI system	43
10.3.8	[RMI-CT_UC1.7] Test for granting access to security-related RMI	44
10.4	CT cluster 4 - Test functional user interface implementation	44
10.4.1	[RMI-CT_FREQ-1] Test for RMI access mode	44
10.4.2	[RMI-CT_FREQ-2] Test for registration and login support	44
10.4.3	[RMI-CT_FREQ-3] Test for implemented use cases map	44
10.4.4	[RMI-CT_FREQ-4] Test for download area	44
10.4.5	[RMI-CT_FREQ-5] Test for navigational pathway	44
10.5	CT cluster 5 - Test payment for RMI	44
10.5.1	[RMI-CT_UC2] Test payment for RMI	44
10.6	CT cluster 6 -Test for vehicle identification	44
10.6.1	[RMI-CT_UC3.1] Test vehicle identification through use of VIN	44
10.6.2	[RMI-CT_UC3.2] Test vehicle identification via product features	44
10.6.3	[RMI-CT_UC3.3] Test vehicle identification through product identifier	44
10.6.4	[RMI-CT_UC3.4] Test unequivocal engine identification	45
10.6.5	[RMI-CT_UC3.5] Test engine type identification via engine features	46
10.7	CT cluster 7 -- Test selection methods for RMI	47
10.7.1	[RMI-CT_UC4.1] Test selection of information type	47
10.7.2	[RMI-CT_UC4.2] Test search by standardized terms	47
10.7.3	[RMI-CT_UC4.3] Test navigation using product structure	47
10.7.4	[RMI-CT_UC4.4] Test selection by document identifier	47
10.8	CT cluster 8 - Test retrieval of information packages	47
10.8.1	[RMI-CT_UC5.1.1] Test retrieval of general workshop procedures	47
10.8.2	[RMI-CT_UC5.1.2] Test retrieval of body repair procedures	47

10.8.3	[RMI-CT_UC5.1.3] Test retrieval of temporary repair procedures	47
10.8.4	[RMI-CT_UC5.1.4] Test retrieval of preparation for PTI	47
10.8.5	[RMI-CT_UC5.2] Test retrieval of wiring diagrams	48
10.8.6	[RMI-CT_UC5.3] Test retrieval of technical service bulletin	48
10.8.7	[RMI-CT_UC5.4] Test retrieval of recall information	48
10.8.8	[RMI-CT_UC5.5] Test retrieval of maintenance schedule	48
10.8.9	[RMI-CT_UC5.6.1] Test retrieval of spare parts (identification)	48
10.8.10	[RMI-CT_UC5.6.2] Test retrieval of spare parts (access)	48
10.8.11	[RMI-CT_UC5.7.1] Test retrieval of accessory information factory fitted (included in general RMI)	48
10.8.12	[RMI-CT_UC5.7.2] Test retrieval of accessory information partnered with a VM part number	48
10.8.13	[RMI-CT_UC5.7.3] Test retrieval of fitting information for accessories with no VM part number	48
10.8.14	[RMI-CT_UC5.8] Test retrieval of labour times	48
10.8.15	[RMI-CT_UC5.9] Test retrieval of converted vehicle information	48
10.8.16	[RMI-CT_UC5.10] Test retrieval of special tool information	49
10.8.17	[RMI-CT_UC5.11] Test type-approval related information	49
10.9	CT cluster 9 -- Test vehicle diagnostics	49
10.9.1	[RMI-CT_UC6.1] Test DTC resolution	49
10.9.2	[RMI-CT_UC6.2] Test VM symptom resolution	50
10.9.3	[RMI-CT_UC6.3] Test integrated diagnostics	50
10.10	CT cluster 10 -- Test updating, replacing and tuning of modules (ECUs)	50
10.10.1	[RMI-CT_UC7.1] Test updating and replacing modules information	50
10.10.2	[RMI-CT_UC7.2] Test tuning kit	50
10.11	CT cluster 11 -- Test electronic maintenance history	50
10.11.1	[RMI-CT_UC8] Test electronic maintenance history information	50
10.12	CT cluster 12 -- Test repair assistance, technical support	50
10.12.1	[RMI-CT_UC9] Test repair assistance technical support information	50
10.13	CT cluster 13 -- Test request for contact information	50
10.13.1	[RMI-CT_UC10.1] Test for retrieval of electronic tool information (Diagnostic, Reprogramming, VCI)	50
10.13.2	[RMI-CT_UC10.2] Test for retrieval of test equipment and diagnostic tool manufacturers information	50
10.13.3	[RMI-CT_UC10.3] Test for retrieval of training material (delegate information)	50
10.13.4	[RMI-CT_UC10.4] Test for retrieval of redistributor contact information	50
10.13.5	[RMI-CT_UC10.5] Test for retrieval of republisher contact information	51
10.13.6	[RMI-CT_UC10.6] Test for retrieval of inspection and testing services information	51
10.13.7	[RMI-CT_UC10.7] Test for retrieval of alternative fuels retrofit system information	51
10.13.8	[RMI-CT_UC10.8] Test for retrieval of engine and components remanufacturing information	51
10.13.9	[RMI-CT_UC10.9] Test for retrieval of component and parts manufacturer information	51
10.13.10	[RMI-CT_UC10.10] Test for retrieval of validation of independently developed non- proprietary VCI information	51
10.14	CT cluster 14 -- Test courses and training information	51
10.14.1	[RMI-CT_UC11] Test for courses and training information	51
10.15	CT cluster 15 -- Test data administration requirements	51
10.15.1	[RMI-CT_TREQ-1] Test general access-related data administration	51
10.15.2	[RMI-CT_TREQ-2] Test administration of IO data by the VM	51
10.15.3	[RMI-CT_TREQ-3] Test administration of IO employee data by the VM	51
10.15.4	[RMI-CT_TREQ-4] Test administration of payment data by VM	51
10.15.5	[RMI-CT_TREQ-5] Test administration of access event data by VM	52
10.15.6	[RMI-CT_TREQ-6] Test administration of access event data to security-related RMI by VM	52
10.16	CT cluster 16-- Test VM software installation on the IO client	52
10.16.1	[RMI-CT_TREQ-20] Test for requirements for installing VM-specific software on the IO client	52
10.16.2	[RMI-CT_TREQ-21] Test for requirements for updating of installed VM data and applications on the IO client	52
10.16.3	[RMI-CT_TREQ-22] Test for requirements for the operation of VM-specific software on the IO client	52

- 10.16.4 [RMI-CT_TREQ-23] Test for requirements for the uninstalling of VM-specific software on the IO client 52
- 10.16.5 [RMI-CT_TREQ-24] Test for requirements for restoring in case of an abnormal termination of the VM specific software 52
- 10.17 CT cluster 17 -- Test VM RMI operations 52
- 10.17.1 [RMI-CT_TREQ-25] Test for VM RMI system availability time 52
- 10.17.2 [RMI-CT_TREQ-26] Test for support for the usage of the VM RMI system 52
- 10.18 CT cluster 18 -- Test trust centre (certificate management) 52
- 10.18.1 [RMI-CT_TREQ-10] Test for trust centre (certificate management) 52
- Bibliography 53