

ISO 18541-6:2018-02 (E)

Road vehicles - Standardized access to automotive repair and maintenance information (RMI) - Part 6: L-Category vehicle specific RMI use cases and requirements

Contents		Page
	Foreword	viii
	Introduction	ix
1	Scope	1
2	Normative references	1
3	Terms, definitions and abbreviated terms	2
3.1	Terms and definitions.....	2
3.2	Abbreviated terms.....	8
4	Document overview and structure	10
5	General information	11
5.1	Access to vehicle RMI.....	11
5.2	Standardized access to RMI benefit examples.....	12
5.2.1	Independent operators.....	12
5.2.2	Vehicle manufacturers.....	13
5.3	L-Category and subcategories.....	13
5.4	Multi stage and RMI.....	13
6	Basic principles, use case and requirement overview	14
6.1	Basic principles.....	14
6.1.1	Basic principles for use case definition.....	14
6.1.2	Basic principles for requirements definition.....	15
6.1.3	Basic principles for functional user interface requirements definition.....	15
6.1.4	Basic principles for conformance test definition.....	15
6.2	Use case clusters.....	16
6.3	Requirements clusters.....	19
6.4	Functional user interface requirements clusters.....	22
6.5	Conformance test clustering.....	24
6.5.1	General.....	24
6.5.2	Main conformance test case clusters.....	24
7	Use cases	30
7.1	UC 1 User authentication, authorization and administration.....	30
7.1.1	UC 1.1 Register IO for use of the VM RMI system.....	30
7.1.2	UC 1.2 Register IO employee for use of the VM RMI system.....	31
7.1.3	UC 1.3 Maintain IO status.....	32
7.1.4	UC 1.4 Maintain user status.....	32
7.1.5	UC 1.5 Request to de-register IO employee.....	32
7.1.6	UC 1.6 Login to VM RMI system.....	33
7.1.7	UC 1.7 Grant access to security-related RMI.....	33
7.2	UC 2 Payment for RMI.....	34
7.3	UC 3 Vehicle identification.....	34
7.3.1	UC 3.1 Vehicle identification through product identifier.....	34
7.3.2	UC 3.2 Vehicle type identification via product features.....	35
7.4	UC 4 Provide selection methods for RMI.....	37
7.4.1	UC 4.1 Select information type.....	37
7.4.2	UC 4.2 Search by standardized terms.....	38
7.4.3	UC 4.3 Navigate using product structure.....	38
7.4.4	UC 4.4 Select by document identifier.....	38

7.5	UC 5 Retrieve information packages.....	39
7.5.1	UC 5.1 Workshop procedures.....	39
7.5.2	UC 5.2 Wiring diagrams.....	40
7.5.3	UC 5.3 Technical service bulletin.....	40
7.5.4	UC 5.4 Recall information.....	41
7.5.5	UC 5.5 Maintenance schedule.....	41
7.5.6	UC 5.6 Spare parts.....	42
7.5.7	UC 5.7 Accessories.....	42
7.5.8	UC 5.8 Labour times.....	43
7.5.9	UC 5.9 Special tools.....	44
7.5.10	UC 5.10 Type-approval related information.....	44
7.6	UC 6 Vehicle diagnostics.....	44
7.6.1	UC 6.1 DTC resolution.....	44
7.6.2	UC 6.2 VM symptom resolution.....	45
7.6.3	UC 6.3 Integrated diagnostics.....	45
7.7	UC 7 Updating and replacing modules (ECUs).....	46
7.8	UC 8 Electronic Maintenance history.....	47
7.9	UC 9 Repair assistance technical support.....	47
7.10	UC 10 Request contact for specific RMI.....	47
7.10.1	UC 10.1 Electronic tool information (Diagnostic, Reprogramming, VCI).....	47
7.10.2	UC 10.2 Test equipment and diagnostic tool manufacturers.....	48
7.10.3	UC 10.3 Training material (delegate information).....	48
7.10.4	UC 10.4 Redistributors.....	49
7.10.5	UC 10.5 Republishers.....	49
7.10.6	UC 10.6 Inspection and testing services.....	50
7.10.7	UC 10.7 Alternative fuels retrofit systems.....	50
7.10.8	UC 10.8 Engine and components remanufacturing.....	50
7.10.9	UC 10.9 Component and parts manufacturers.....	51
7.10.10	UC 10.10 Validation of independently developed non-proprietary VCIs.....	51
7.11	UC 11 Courses and training information.....	52
8	Technical requirements.....	53
8.1	Requirements cluster 1 — Access-related data administration.....	53
8.1.1	[TREQ-1] General access-related data administration.....	53
8.1.2	Administration of IO and IO employee data by the VM.....	53
8.1.3	[TREQ-4] Administration of payment data by the VM.....	54
8.1.4	[TREQ-5] Administration of access event data by the VM.....	55
8.1.5	[TREQ-6] Administration of access event data to security-related RMI by the VM.....	55
8.2	Requirements cluster 2 – IT architecture.....	56
8.2.1	[TREQ-7] Conceptual architecture.....	56
8.2.2	[TREQ-8] Implementation principles.....	57
8.3	Requirements cluster 3 – External interfaces.....	60
8.3.1	[TREQ-9] Vehicle communication interface (VCI).....	60
8.3.2	[TREQ-10] Trust centre (certificate management).....	63
8.3.3	[TREQ-11] Parts ordering for security-related features.....	64
8.3.4	[TREQ-12] Partnered accessory provider systems.....	64
8.4	Requirements cluster 4 — Technical infrastructure.....	64
8.4.1	[TREQ-13] Type of device.....	64
8.4.2	[TREQ-14] Hardware features.....	65
8.4.3	[TREQ-15] Operating systems.....	65
8.4.4	[TREQ-16] Web browsers.....	65
8.4.5	[TREQ-17] Presentation formats for information packages.....	66
8.4.6	[TREQ-18] Internet connection.....	66
8.4.7	[TREQ-19] Performance of the VM RMI system.....	66

8.5	Requirements cluster 5 – Co-existence of VM software on IO client.....	67
8.5.1	[TREQ-20] Requirements for installing VM-specific software on the IO client.....	67
8.5.2	[TREQ-21] Requirements for updating of installed VM data and applications on the IO client.....	68
8.5.3	[TREQ-22] Requirements for the operation of VM-specific software on the IO client.....	68
8.5.4	[TREQ-23] Requirements for the uninstalling of VM-specific software on the IO client.....	69
8.5.5	[TREQ-24] Requirements for restoring in case of an abnormal termination of the VM-specific software on the IO client.....	69
8.6	Requirements cluster 6 – Operations.....	70
8.6.1	[TREQ-25] VM RMI system availability time.....	70
8.6.2	[TREQ-26] Support for the usage of the VM RMI system.....	70
8.6.3	[TREQ-27] Operation of the IO PC.....	71
8.7	[TREQ-28] Requirements cluster 7 – Functional user interface.....	71
9	Functional user interface requirements.....	72
9.1	General description.....	72
9.1.1	Navigational pathway from standardized use cases to VM-specific navigation position.....	72
9.1.2	VM RMI system standardised navigation.....	73
9.2	Requirements cluster 8 — Standardized access mode.....	75
9.2.1	[FREQ-1] RMI access mode.....	75
9.2.2	[FREQ-2] Registration and login support.....	76
9.3	Requirements cluster 9 — Use cases map.....	76
9.3.1	[FREQ-3] VM RMI system implemented use cases map.....	76
9.3.2	[FREQ-4] Download area.....	78
9.4	Requirements cluster 10 – Navigational pathway.....	78
9.4.1	[FREQ-5] Navigational pathway.....	78
10	Conformance test cases.....	79
10.1	Conformance test case — General structure.....	79
10.1.1	Overview.....	79
10.1.2	Test case reference number and title [RMI-CT_...] [title].....	79
10.1.3	Test purpose.....	79
10.1.4	Configuration.....	79
10.1.5	Preamble (setup state).....	79
10.1.6	Test execution.....	79
10.1.7	Postamble.....	80
10.1.8	Result criteria.....	80
10.2	CT cluster 1 – Access-related data administration.....	80
10.2.1	[RMI-CT_TREQ-13, 14, 15, 16, 18, Annex B] Test client configuration.....	80
10.2.2	[RMI-CT_TREQ-17] Test presentation formats for information packages.....	81
10.3	CT cluster 2 — Test client’s external interfaces.....	82
10.3.1	[RMI-CT_TREQ-9] Test vehicle communication interface (VCI).....	82
10.3.2	[RMI-CT_TREQ-11] Test parts ordering for security-related features.....	83
10.3.3	[RMI-CT_TREQ-12] Test partnered accessory provider systems.....	83
10.4	CT cluster 3 — Test user authentication, authorization and administration.....	84
10.4.1	[RMI-CT_UC1.1] Test to register IO for use of the VM RMI system.....	84
10.4.2	[RMI-CT_UC1.2_A] Test to register IO employee for use of the VM RMI system — Scenario A.....	85
10.4.3	[RMI-CT_UC1.2_B] Test to register IO employee for use of the VM RMI system — Scenario B.....	86
10.4.4	[RMI-CT_UC1.3] Test to maintain IO status.....	87
10.4.5	[RMI-CT_UC1.4] Test to maintain user status.....	88
10.4.6	[RMI-CT_UC1.5] Test to de-register an IO employee.....	89
10.4.7	[RMI-CT_UC1.6] Test login to VM RMI system.....	90
10.4.8	[RMI-CT_UC1.7] Test for granting access to security-related RMI.....	91

10.5	CT cluster 4 — Test functional user interface implementation.....	92
10.5.1	[RMI-CT_FREQ-1] Test for RMI access mode	92
10.5.2	[RMI-CT_FREQ-2] Test for registration and login support.....	92
10.5.3	[RMI-CT_FREQ-3] Test for implemented use cases map.....	93
10.5.4	[RMI-CT_FREQ-4] Test for download area	94
10.5.5	[RMI-CT_FREQ-5] Test for navigational pathway.....	95
10.6	CT cluster 5 — Test payment for RMI	96
10.6.1	[RMI-CT_UC2] Test payment for RMI.....	96
10.7	CT cluster 6 — Test for vehicle identification	97
10.7.1	[RMI-CT_UC3.1] Test vehicle identification through product identifier	97
10.7.2	[RMI-CT_UC3.2] Test vehicle identification via product features.....	98
10.8	CT cluster 7 — Test selection methods for RMI.....	99
10.8.1	[RMI-CT_UC4.1] Test selection of information type.....	99
10.8.2	[RMI-CT_UC4.2] Test search by standardized terms.....	100
10.8.3	[RMI-CT_UC4.3] Test navigation using product structure.....	101
10.8.4	[RMI-CT_UC4.4] Test selection by document identifier.....	102
10.9	CT cluster 8 — Test retrieval of information packages.....	103
10.9.1	[RMI-CT_UC5.1.1] Test retrieval of general workshop procedures	103
10.9.2	[RMI-CT_UC5.1.2] Test retrieval of body repair procedures.....	103
10.9.3	[RMI-CT_UC5.1.3] Test retrieval of temporary repair procedures.....	104
10.9.4	[RMI-CT_UC5.1.4] Test retrieval of preparation for PTI	105
10.9.5	[RMI-CT_UC5.2] Test retrieval of wiring diagrams	106
10.9.6	[RMI-CT_UC5.3] Test retrieval of technical service bulletin.....	107
10.9.7	[RMI-CT_UC5.4] Test retrieval of recall information.....	108
10.9.8	[RMI-CT_UC5.5] Test retrieval of maintenance schedule	109
10.9.9	[RMI-CT_UC5.6.1] Test retrieval of spare parts (identification).....	110
10.9.10	[RMI-CT_UC5.6.2] Test retrieval of spare parts (access).....	111
10.9.11	[RMI-CT_UC5.7.1] Test retrieval of accessory information factory fitted (included in general RMI).....	111
10.9.12	[RMI-CT_UC5.7.2] Test retrieval of accessory information partnered with a VM part number.....	112
10.9.13	[RMI-CT_UC5.7.3] Test retrieval of fitting information for accessories with no VM part number	113
10.9.14	[RMI-CT_UC5.8] Test retrieval of labour times.....	114
10.9.15	[RMI-CT_UC5.9] Test retrieval of special tool information	115
10.9.16	[RMI-CT_UC5.10] Test retrieval of type approval information.....	116
10.10	CT cluster 9 — Test vehicle diagnostics.....	116
10.10.1	[RMI-CT_UC6.1] Test DTC resolution	116
10.10.2	[RMI-CT_UC6.2] Test VM symptom resolution	117
10.10.3	[RMI-CT_UC6.3] Test integrated diagnostics.....	118
10.11	CT cluster 10 — Test updating and replacing of modules (ECUs).....	119
10.11.1	[RMI-CT_UC7] Test updating and replacing modules information	119
10.12	CT cluster 11 — Test electronic maintenance history.....	120
10.12.1	[RMI-CT_UC8] Test electronic maintenance history	120
10.13	CT cluster 12 — Test repair assistance, technical support.....	121
10.13.1	[RMI-CT_UC9] Test repair assistance technical support.....	121
10.14	CT cluster 13 — Test request for contact information.....	122
10.14.1	[RMI-CT_UC10.1] Test for retrieval of electronic tool information (Diagnostic, Reprogramming, VCI).....	122
10.14.2	[RMI-CT_UC10.2] Test for retrieval of test equipment and diagnostic tool manufacturers information.....	123
10.14.3	[RMI-CT_UC10.3] Test for retrieval of training material (delegate information).....	124
10.14.4	[RMI-CT_UC10.4] Test for retrieval of redistributor contact information	125
10.14.5	[RMI-CT_UC10.5] Test for retrieval of republisher information.....	125
10.14.6	[RMI-CT_UC10.6] Test for retrieval of inspection and testing services information.....	126
10.14.7	[RMI-CT_UC10.7] Test for retrieval of alternative fuels retrofit system information.....	127

10.14.8	[RMI-CT_UC10.8] Test for retrieval of engine and components remanufacturing information.....	128
10.14.9	[RMI-CT_UC10.9] Test for retrieval of component and parts manufacturer information.....	129
10.14.10	
	[RMI-CT_UC10.10] Test for retrieval of validation of independently developed non-proprietary VCI information.....	130
10.15	CT cluster 14 — Test courses and training information.....	131
10.15.1	[RMI-CT_UC11] Test for courses and training information.....	131
10.16	CT cluster 15 — Test data administration requirements.....	132
10.16.1	[RMI-CT_TREQ-1] Test general access-related data administration.....	132
10.16.2	[RMI-CT_TREQ-2] Test administration of IO data by the VM.....	132
10.16.3	[RMI-CT_TREQ-3] Test administration of IO employee data by the VM.....	133
10.16.4	[RMI-CT_TREQ-4] Test administration of payment data by VM.....	134
10.16.5	[RMI-CT_TREQ-5] Test administration of access event data by VM.....	134
10.16.6	[RMI-CT_TREQ-6] Test administration of access event data to security-related RMI by VM.....	135
10.17	CT cluster 16 — Test VM software installation on the IO client.....	135
10.17.1	[RMI-CT_TREQ-20] Test for requirements for installing VM-specific software on the IO client.....	135
10.17.2	[RMI-CT_TREQ-21] Test for requirements for updating of installed VM data and applications on the IO client.....	136
10.17.3	[RMI-CT_TREQ-22] Test for requirements for the operation of VM-specific software on the IO client.....	137
10.17.4	[RMI-CT_TREQ-23] Test for requirements for the uninstalling of VM-specific software on the IO client.....	138
10.17.5	[RMI-CT_TREQ-24] Test for requirements for restoring in case of an abnormal termination of the VM specific software on the IO client.....	139
10.18	CT cluster 17 — Test VM RMI operations.....	140
10.18.1	[RMI-CT_TREQ-25] Test for VM RMI system availability time.....	140
10.18.2	[RMI-CT_TREQ-26] Test for support for the usage of the VM RMI system.....	140
10.19	CT cluster 18 — Test trust centre (certificate management).....	141
10.19.1	[RMI-CT_TREQ-10] Test for trust centre (certificate management).....	141
Annex A (normative) Adopted elements from ISO 18541-1, ISO 18541-2, ISO 18541-3 and ISO 18541-4.....		143
Annex B (informative) PC specification.....		154
Bibliography.....		155