



DRAFT INTERNATIONAL STANDARD ISO/DIS 18541-1.2

ISO/TC 22/SC 3

Secretariat: DIN

Voting begins on
2012-02-02

Voting terminates on
2012-04-02

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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

Part 1: General information and use case definition

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

Partie 1: Informations générales et définitions de cas d'usage

ICS 43.040.15; 43.180

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the European Committee for Standardization (CEN), and processed under the **CEN-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

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Contents

	Page
Foreword	iv
Introduction.....	v
1 Scope	1
3 Terms, definitions, symbols and abbreviated terms	2
3.1 Terms and definitions	2
3.2 Abbreviated terms	7
4 Document overview and structure	8
5 General information	10
5.1 Access to vehicle RMI.....	10
5.2 Standardized access to RMI benefit examples	11
6 RMI use case overview and principles.....	12
6.1 Overview.....	12
7 RMI use cases.....	16
7.1 UC 1 User authentication, authorization and administration.....	16
7.2 UC 2 Payment for RMI.....	18
7.3 UC 3 Identify vehicle and product features	19
7.4 UC 4 Provide selection methods for RMI.....	20
7.5 UC 5 Retrieve information packages.....	21
7.6 UC 6 Vehicle diagnostics.....	28
7.7 UC 7 Updating, replacing and tuning of modules (ECUs).....	30
7.8 UC 8 Electronic maintenance history.....	31
7.9 UC 9 Repair assistance technical support.....	32
7.10 UC 10 Request contact for specific RMI	32
7.11 UC 11 Courses and training information	37
Bibliography.....	38

Foreword

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

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 18541-1 was prepared by Technical Committee ISO/TC 22, *Road vehicles* and by Technical Committee CEN/CENELEC/TC 301, *Road vehicles* in collaboration.

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

- Part 1: *General information and use case definition*
- Part 2: *Technical requirements*
- Part 3: *Functional user interface requirements*
- Part 4: *Conformance test*

Introduction

This set of standards 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 standard only covers the access to automotive repair and maintenance information for light passenger and commercial vehicles¹⁾ 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 the standard 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].

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

Part 1: General information and use case definition

1 Scope

ISO 18541 is structured into four parts:

- Part 1: General information and use case definition
- Part 2: Technical requirements
- Part 3: Functional user interface requirements
- Part 4: Conformance test

This part of the standard includes "General Information" which provides a general overview and structure about each part of the standard. It also specifies "Use Cases" related to Repair and Maintenance Information (RMI) systems in order to standardize the access to RMI for independent operators.

This part of the standard also describes the use cases applicable to the standardized access to automotive RMI. The use cases address real world scenarios when e.g. servicing vehicles in regard to information access necessary to perform vehicle roadside assistance, inspection, diagnosis, repair and maintenance, including updating and replacement of Electronic Control Units (ECU).

The RMI systems used by personnel to perform the services consist of:

- a Web-based system, which provides access to RMI needed to perform the service(s);
- provides contact information for specific RMI;
- a security framework to protect access to security related RMI;

Reading part 1 of this standard will provide an overview about the entire standard and how it applies to the automotive industry.

This part of ISO 18541 is applicable to light passenger and commercial vehicles as defined in regulation (EC) 715/2007 Article 2 [5].

ISO 18542 is a complementary standard that defines the 'Standardized RMI terminology' and consists of two parts:

- Part 1: General information and use case definition
- Part 2: Standardized process implementation requirements and Registration Authority

The standardized RMI terminology is contained in a so-called 'Digital Annex'.

2 Normative references

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

ISO 15031-6, *Road vehicles — Communication between vehicle and external test equipment for emissions-related diagnostics — Part 6: Diagnostic Trouble Code Definitions*

ISO 18542-DA, *Road vehicles — Standardized repair and maintenance information (RMI) terminology — Digital Annex*

3 Terms, definitions, symbols and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1

access levels

one of the levels of access to RMI.

EXAMPLE One may consider an access to RMI relevant to security and another one to RMI not relevant to security. They represent two different access levels.

3.1.2

accessories

supplementary features and components selected by a vehicle owner to enhance safety, performance, comfort, etc.

3.1.3

alternate fuels retrofit systems

engine systems mounted on an already registered vehicle for the purpose of operation with alternative fuels.

3.1.4

alternate fuel

a type of fuel that is either gaseous at atmospheric temperature and pressure or substantially non-mineral oil derived.

NOTE Adopted from Regulation (EC) 715/2007 [5].

3.1.5

alternative fuels system manufacturer

manufacturer of an engine system operating with an alternative fuel.

3.1.6

appropriate software level

applicable software version for the individual vehicle.

3.1.7

authorized repairer

AR
a provider of repair and maintenance services for motor vehicles operating within the distribution system set up by a supplier of motor vehicles; see Regulation (EC) 461/2010 article 1 (1)(c) [7].

3.1.8

certificate

an electronic document which uses a digital signature to bind a public key with an identity.

3.1.9**converted vehicle**

is a factory-produced vehicle which has been altered by the addition, deletion, substitution or modification of the body, chassis or essential parts that resembles, but is no longer identical to, the original vehicle, for a special purpose e.g. to act as rescue vehicle or taxicab.

3.1.10**diagnostic information**

a description of an error or symptom and a list of potential causes or hints for further investigation to the same level and content as provided to AR.

3.1.11**diagnostic trouble code****DTC**

a numeric or alphanumeric identifier which identifies or labels a malfunction.

NOTE Adopted from United Nations – Global Technical Regulation N°5 [8].

3.1.12**electronic maintenance history**

a digital information package with virtual stamps that confirms the execution of the prescribed maintenance actions according to the VM's schedule.

3.1.13**global technical regulation****GTR**

is the World-Wide Harmonized On-Board Diagnostics Global Technical Regulation N°5 [8].

3.1.14**independent operator****IO**

means undertakings other than authorized dealers and repairers which are directly or indirectly involved in the repair and maintenance of motor vehicles, in particular repairers, manufacturers or distributors of repair equipment, tools or spare parts, publishers of technical information, automobile clubs, roadside assistance operators, operators offering inspection and testing services, operators offering training for installers, manufacturers and repairers of equipment for alternative fuel vehicles.

3.1.15**information package**

is a collection of information provided by the VM RMI system in response to a specific request.

3.1.16**information type**

a category, group or set of information.

EXAMPLE Workshop procedures (for body repair, temporary repair, periodic technical inspection), wiring diagrams, technical service bulletins, recall information and maintenance information.

3.1.17**integrated diagnostics**

a process which interprets via an integrated application the memory content of ECUs and gives a diagnostic and repair recommendation.

NOTE Diagnostic application and VM RMI system cooperate online, so technical information is provided during the diagnostics process and used for the diagnostic steps.

**3.1.18
on-board diagnostics
OBD**

a system on board of a vehicle or engine which has the capability of detecting malfunctions, and, if applicable, of indicating their occurrence by means of an alert system, of identifying the likely area of the malfunctions by means of information stored in computer memory, and/or communicating that information off-board.

NOTE Module 'A' of GTR N°5 [8] concerns the whole vehicle. By referring to that module, the OBD definition shall be understood as not being restricted to emissions.

**3.1.19
partnered accessories**

accessories which have been tested, quality assured and certified by the VM and for which the VM assumes product liability.

**3.1.20
potential repair descriptions**

a list of potential causes and possible actions recommended to fix a problem.

**3.1.21
detailed diagnosis**

a diagnostic process that identifies, with precision, potential malfunction causes.

NOTE A precise diagnosis may be achieved in several steps, whereby the user may be requested to perform test actions on the vehicle or to enter symptoms. .

**3.1.22
product features**

features of a specific vehicle that may be used for navigation through the VM RMI system.

EXAMPLE engine type (petrol/diesel), transmission type (manual/automatic), etc.

**3.1.23
product structure**

the inter-related set of units and sub-units in which a vehicle can be divided.

NOTE The product structure is VM-specific.

**3.1.24
p-code**

standardized DTC for powertrain errors according to ISO 15031-6.

**3.1.25
periodic technical inspection service
PTI service**

a particular procedure for testing a vehicle during a PTI.

EXAMPLE procedure for testing brake lights.

**3.1.26
recall**

the process where a VM notifies all owners of a specific vehicle of a condition or defect that could affect safety, safe operation or environmental issues of the vehicle.

**3.1.27
redistributor**

IO offering RMI within their own internal (closed) network e.g. RAC, ADAC, garage networks.

3.1.28**remanufacturing**

a process of overhauling an engine, major assembly or component, to return the engine, major assembly or component to the VM original specification.

3.1.29**repair and maintenance information****RMI**

all information required for diagnosis, servicing, inspection, periodic monitoring, repair, re-programming or re-initialising of the vehicle and which the manufacturers provide for their authorized dealers and repairers, including all subsequent amendments and supplements to such information.

NOTE 1 This information includes all information required for fitting parts or equipment on vehicles.

NOTE 2 adopted from Regulation (EC) 715/2007 [5].

3.1.30**republisher**

an IO offering RMI in an external (open) network.

3.1.31**security framework**

the set of processes, roles and technical devices for access to security-related RMI recommended by the EC Forum on Vehicle RMI to the EC as mandated in the Regulations (EC) 715/2007 [5] and (EC) 692/2008 [6].

NOTE The framework is based on the approval and authorization of independent operators by certified entities to access security related RMI at the VM RMI system. The physical access to the VM RMI system for security related RMI is bound to a digital certificate.

3.1.32**security related RMI**

RMI subject to protection measures in the security framework.

3.1.33**selection methods**

possible methods to select RMI

EXAMPLE searches for a term in the document titles, information type, document ID or other criteria.

3.1.34**maintenance history**

history of the performed, prescribed actions for maintaining a vehicle

EXAMPLE oil changes and other periodic maintenance.

3.1.35**maintenance schedule**

a prescribed sequence of maintenance actions for a vehicle following the requirements of the manufacturer.

3.1.36**standardized non-proprietary VCI functionality**

current standards for communication with a vehicle.

EXAMPLE ISO 22900-2, SAE J2534-1/-2.

3.1.37**technical service bulletin****TSB**

a bulletin issued by the manufacturer detailing a fix for a known concern; the bulletin is for informational purposes only.

