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# Agricultural vehicles — Standardized access to repair and maintenance information (RMI) —

## Part 1:
## User interface requirements for web-based information systems

*Véhicules agricoles — Accès normalisés aux informations relatives à la réparation et à l'entretien (RMI) —*

*Partie 1: Exigences relatives à l'interface utilisateur des systèmes d'informations sur le web*

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# Contents

# 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).

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

This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*.

A list of all parts in the ISO 22172 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

# Introduction

The safe operation of tractors and agricultural equipment requires the correct repair and maintenance by well-educated and trained operators using the technical information and specifications provided by the vehicle manufacturer. Depending on the vehicle complexity and the structure of the distribution system, the vehicle manufacturer may choose between various options how to provide authorized or independent operators with this repair and maintenance information (RMI). With respect to RMI use case-based information systems as one option, a guideline including basic principles, use case definitions and technical requirements, is helpful:

— for the vehicle manufacturer when establishing such an information system;

— for the operator when asking for RMI information for vehicles of different manufacturers.

This document is intended to facilitate the installation of information systems by the manufacturers and its use by operators. It does not cover hardware, software and communication protocol requirements related to the access to on-board diagnostic (OBD) systems of agricultural vehicles.

# Agricultural vehicles — Standardized access to repair and maintenance information (RMI) —

# Part 1:
# User interface requirements for web-based information systems

## 1  Scope

This document specifies the standardized access to repair and maintenance information (RMI) systems to provide repair and maintenance information for vehicles used in agriculture and forestry. It provides

— general information and basic principles,

— use case definitions (functional requirements), and

— technical requirements

as guidelines for manufacturers intending to establish such an information system.

Annex A includes procedures to ensure the conformance of such information systems with the requirements specified by this document.

## 2  Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 12934, *Tractors and machinery for agriculture and forestry — Basic types — Vocabulary*

## 3  Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12934 and the following apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

**3.1**
**access level**
one of the levels of access to *RMI* (3.21)

Note 1 to entry: Two access levels are defined by this document, one access to RMI relevant to security and another one to RMI not relevant to security.

**3.2**
**accessories**
ex-factory supplementary features and parts selected by a vehicle owner to enhance safety, performance, comfort, etc. and whose fitting does not impact the vehicle approval

**1**

**3.3**
**authorized repairer**
**AR**
provider of repair and maintenance services for agricultural vehicles operating within the distribution system set up by the *vehicle manufacturer* (*VM*) (3.28)

**3.4**
**component**
device subject to approval or any other related regulation, which is intended to be part of a vehicle and which may be approved independently of a vehicle

**3.5**
**diagnostic trouble code**
**DTC**
numeric or alphanumeric identifier which identifies or labels a malfunction

**3.6**
**electronic maintenance history**
digital *information package* (3.10) with virtual stamps that confirms the execution of the prescribed maintenance actions according to the *VM's* (3.28) schedule

**3.7**
**final manufacturer**
manufacturer responsible for the approval of a completed vehicle in a multi-stage approval

**3.8**
**identification number**
number given by the manufacturer to identify a system or *component* (3.4)

**3.9**
**independent operator**
**IO**
company or legal entity other than an authorized dealer and repairer which is directly or indirectly involved in the repair and maintenance of agricultural and forestry equipment

EXAMPLE        In particular a repairer, manufacturer or distributor of repair equipment, tools or spare parts, publisher of technical information, automobile club, roadside assistance operator, operator offering inspection and testing services, operator offering training for installers, manufacturer or repairer of equipment for alternative fuel vehicles.

**3.10**
**information package**
collection of information provided by the VM RMI system

**3.11**
**information type**
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.

**3.12**
**maintenance history**
history of the performed, prescribed actions for maintaining a vehicle

EXAMPLE        Oil changes and other periodic maintenance.

**3.13**
**maintenance schedule**
prescribed sequence of maintenance actions for a vehicle following the requirements of the *VM* (3.28)

**3.14**
**multi-stage vehicle**
complete vehicle manufactured and approved in two or more stages usually by different *VMs* (3.28)

**3.15**
**on-board diagnostics**
**OBD**
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

**3.16**
**potential repair descriptions**
list of potential causes and possible actions recommended to fix a problem

**3.17**
**product features**
means for identifying a vehicle which may be used for navigation through the VM RMI system

EXAMPLE       Engine type (stage IIIA/stage IIIB/stage IV, etc.), transmission type (manual/powershift/CVT, etc.), final drive type (chain, shaft drive, belt, etc.).

**3.18**
**product structure**
inter-related set of units and sub-units into which a vehicle can be divided

Note 1 to entry: The product structure is VM-specific.

**3.19**
**recall**
process where a *VM* (3.28) notifies all affected owners of a specific vehicle of a condition or defect that could affect safety, safe operation or environmental issues of the vehicle

**3.20**
**redistributor**
*independent operator* (3.9) offering *RMI* (3.21) within their own internal (closed) network, such as garage networks

**3.21**
**repair and maintenance information**
**RMI**
information needed to maintain the original configuration, or the manufacturer's latest required configuration, of a vehicle as placed on the market

EXAMPLE       Information required for diagnosis, servicing, inspection, periodic monitoring and repair of the vehicle and which the manufacturer provides to their authorized dealers and repairers, including all subsequent amendments and supplements to such information.

**3.22**
**republisher**
*independent operator* (3.9) who publishes *RMI* (3.21) to an external network using the RMI of the VM

**3.23**
**selection methods**
possible methods to select *RMI* (3.21)

**3.24**
**system**
assembly of devices combined to perform one or more specific functions in a vehicle and which is subject to approval or any other relevant regulation

**3**

**3.25**
**technical service bulletin**
bulletin issued by the manufacturer detailing a fix for a known concern

Note 1 to entry: The bulletin is for informational purposes only.

**3.26**
**vehicle**
machine that is self-propelled or towed

EXAMPLE    In the EU, this includes agricultural and forestry tractors (T and C), trailers (R), trailed implements (S) and self-propelled machines.

**3.27**
**vehicle identification**
**VI**
unique identification number given by the *VM* (3.28) to identify individual agricultural and forestry vehicles or equipment

**3.28**
**vehicle manufacturer**
**VM**
any natural or legal person who is responsible for market surveillance concerns for the vehicles, systems and *components* (3.4) produced, whether or not the natural or legal person is directly involved in all stages of the design and construction of the vehicle, system or component

**3.29**
**workshop procedure**
information provided by a *VM* (3.28) describing a specific repair and maintenance requirements, such as advice on best practice and other additional instructions

# 4   General

To allow the standardized access to repair and maintenance information systems, this document specifies the following (see also Figure 1):

— General information and basic principles: Clause 5 provides an overview of the concepts and basic principles for the implementation of the access to repair and maintenance information.

— Use case definitions: Clause 6 specifies the functional user interface requirements for a VM's RMI system.

— Technical requirements: Clause 7 specifies all technical requirements related to a VM's RMI system; these requirements will reflect the deriving needs from the specified use cases.

— Conformance test: Annex A specifies procedures for a VM assessment of self-conformance of the VM's RMI system.

Navigation shall be provided by document structure or sitemap.

| Basic principles (Clause 5) | | |
| --- | --- | --- |
| **Use case definitions** (Clause 6) | | **Technical requirements** (Clause 7) |
| **UC 1 User authentification, authorization & administration**<br>- UC 1.1 IO registration<br>- UC 1.2 Maintain IO status<br>- UC 1.3 Request for de-registration<br>- UC 1.4 Login | **UC 6 Electronic maintenance history**<br><br>**UC 7 request contact for  Specific RMI**<br>- UC 7.1 Redistributors<br>- UC 7.2 Republishers | **Access-related data administration**<br>- TREQ 1 Administration of IO data<br>- TREQ 2 Administration of payment data<br>- TREQ 3 Administration of access event data<br>- TREQ 4 General access related data administration |
| **UC 2 Payment**<br><br>**UC 3 Vehicle identification**<br>- UC 3.1 by VI, model or serial number<br>- UC 3.2 via product features | **UC 8 Courses & training**<br><br>**UC 9 Vehicle diagnostics**<br>- UC 9.1 DTC resolution<br>- UC 9.2 VM symptom resolution | **Technical infrastructure**<br>- TREQ 5 Presentation formats for information packages<br>- TREQ 6 Internet connection |
| **UC 4 Selection methods**<br>- UC 4.1 Select information type<br>- UC 4.2 Navigation<br>- UC 4.3 Select by document identifier | | **Operations**<br>- TREQ 7 System availability time<br>- TREQ 8 Support for usage<br>- TREQ 9 Operation of IO PC |
| **UC 5 Retrieve information**<br>- UC 5.1 Workshop procedures<br>- UC 5.2 Wiring & hydraulic diagrams<br>- UC 5.3 Technical service bulletin<br>- UC 5.4 Recall for announcements<br>- UC 5.5 Maintenance schedule<br>- UC 5.6 Spare parts<br>- UC 5.7 Labour times<br>- UC 5.8 Special tools<br>- UC 5.9 Safety related information | | |
| **Conformance procedures** (Informative Annex A) | | |

**Figure 1 — Overview of the structure and requirements of this document**

# 5   General information and basic principles

## 5.1   General information

**5.1.1**    The RMI requirements in this document for vehicles includes all configurations offered by the VM, which holds an approval.

**5.1.2**    VM shall provide the same access to RMI for IO and AR relating to the systems, components and technical units that hold an approval.

**5.1.3**    Manufacturers of systems, components and separate technical units shall provide access to RMI for IO relating to the systems, components and technical units that hold an approval as a separate technical unit to be used in a step-by-step or mixed vehicle approval.

## 5.2 Basic principles

### 5.2.1 General

Basic principles have been established as guidelines to define the RMI use cases and requirements.

### 5.2.2 Basic principles for use case definition

— RMI use cases describe the interaction between an IO and the VM RMI system for RMI access.

— RMI use cases define a common way to organize VM RMI system for RMI access.

— The content of the technical information provided by the VM RMI system for RMI is the responsibility of the VM.

— Actors for the use cases are an IO, VM RMI system and VM.

— The VM is only expected to provide the VM RMI system and information in the languages as provided to its authorized repairers.

### 5.2.3 Basic principles for requirements definition

— The technical requirements shall not specify any implementation details and leave maximum freedom to technical developments.

  NOTE    Implementation details refer to the VM RMI system and not to RMI data.

— A requirement is identified by a TREQ-xx, where 'xx' is the requirement number. Each requirement consists of a "Main title", "Requirement definition", "Requirement description", "Explanatory/ Example" and "Classification".

— The requirements have been formulated with the aim of minimizing the number of IO devices required to access different VM RMI systems.

### 5.2.4 Basic principles for functional user interface requirements definition

— The requirements shall allow for flexible navigational pathways to RMI in the VM RMI system, as appropriate.

— The requirements shall allow for concepts to be able to implement navigational principles to minimize the impact to the existing VM's RMI systems.

## 5.3 Use case clusters

Table 1 provides an overview of the main RMI use cases. A main RMI use case cluster may have one or more use cases.

**Table 1 — Main use case clusters**

| # | Main title of use case cluster | Brief description | Use case reference |
|---|---|---|---|
| 1 | User authentication, authorization and administration | The use cases belonging to this cluster describe how to obtain a license to use the VM RMI system, keep user data and access level up to date, protect RMI against misuse and how to get access to the VM RMI system. | UC 1.1 Register IO for use of the VM's RMI system <br> UC 1.2 Maintain IO status <br> UC 1.3 Request to de-register IO <br> UC 1.4 Login to VM's RMI system |

**Table 1** *(continued)*

| # | Main title of use case cluster | Brief description | Use case reference |
|---|---|---|---|
| 2 | Payment for RMI | The use cases belonging to this cluster describe the handling of payments. | UC 2 Payment for RMI |
| 3 | Vehicle identification | The use cases belonging to this cluster describe how to identify a specific vehicle, vehicle summary and type of vehicle. The identification methods are:<br><br>by VI search and/or product feature. | UC 3.1 Vehicle identification through use of the VI or model and/or serial number<br><br>UC 3.2 Vehicle type identification via product features or term |
| 4 | Provide selection methods for RMI | The use cases belonging to this cluster describe how to choose the preferred method to locate and select information.<br><br>The VM's RMI system presents a list of all selection methods supported by the system.<br><br>The purpose of these use cases is to enable the user to find the required information. There shall be ways to find this information by at least one of the predefined selection methods.<br><br>The selection methods supported are:<br><br>— by information types, or<br><br>— by product structure, and/or<br><br>— by document identifier. | UC 4.1 Select information type<br><br>UC 4.2 Navigate using product structure<br><br>UC 4.3 Select by document identifier |
| 5 | Retrieve information packages | The use cases belonging to this cluster describe the retrieval of selected repair and maintenance information packages.<br><br>The user selects one of many documents in the search result list. The VM's RMI system displays the selected package of information which are:<br><br>— workshop procedures;<br><br>— wiring and hydraulic diagrams;<br><br>— technical service bulletins;<br><br>— maintenance information. | UC 5.1 Workshop procedures<br><br>UC 5.2 Wiring and hydraulic diagrams<br><br>UC 5.3 Technical service bulletin<br><br>UC 5.4 Recall<br><br>UC 5.5 Maintenance schedule<br><br>UC 5.6 Spare parts (identification)<br><br>UC 5.7 Labour times<br><br>UC 5.8 Special tools<br><br>UC 5.9 Safety related information |
| 6 | Electronic maintenance history | The use cases belonging to this cluster describe how to get access and to update the history of VM prescribed maintenance actions. | UC 6 Electronic maintenance history |
| 7 | Request contact information | The use cases belonging to this cluster describe how to request contact information in order to receive RMI information. | UC 7.1 Redistributors<br><br>UC 7.2 Republishers |
| 8 | Courses and training information | The use cases belonging to this cluster describe how to get information regarding training course availability. | UC 8 Courses and training information |
| 9 | Vehicle diagnostics | The use cases belonging to this cluster provides diagnostics related information. | UC 9.1 DTC resolution<br><br>UC 9.2 VM's symptom resolution |

The detailed definition of each use case is defined in .

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## 5.4 Requirements clusters

Table 2 illustrates the technical requirements clusters. It provides an overview about all technical requirements clusters and the specific technical requirements. Each technical requirement is identified by the abbreviation "TREQ" followed by Arabic numerals. The name of the technical requirement is descriptive for the area.

**Table 2 — Main requirements clusters**

| # - Main title of cluster | Brief description | Technical requirements [TREQ] reference |
|---|---|---|
| 1 — Access-related data administration | Describes the main data types to be administered by the VM's RMI system and the requirements for the appropriate management procedures in order to comply with the standardized access to RMI. RMI requirements related to cluster access-related data administration are:<br><br>— requirements for the administration of IO data by the VM;<br><br>— requirements for the administration of payment data by the VM;<br><br>— requirements for the administration of access event data by the VM. | [TREQ-1] Administration of IO's data by the VM or the redistributor<br><br>[TREQ-2] Administration of payment data by the VM or VM representative<br><br>[TREQ-3] Administration of access event data by the VM<br><br>[TREQ-4] General access-related data administration |
| 2 — Technical infrastructure | Compatibility conditions, minimum requirements for components and Internet connection parameters to give an acceptable performance. This cluster intends to define minimal development guiding rules that shall be followed by the VM in order to ensure acceptable performance.<br><br>This requirements cluster specifies the technical infrastructure recommendations which are:<br><br>— requirements related to type of device;<br><br>— requirements related to hardware features;<br><br>— requirements related to operating systems, runtime languages, libraries;<br><br>— requirements related to Web browsers;<br><br>— requirements related to presentation formats for information packages;<br><br>— requirements related to internet connection;<br><br>— requirements related to performance of the VM's RMI system. | [TREQ-5] Presentation formats for information packages<br><br>[TREQ-6] Internet connection |
| 3 — Operations | This requirements cluster specifies:<br><br>— requirements related to the VM's RMI system availability time;<br><br>— requirements related to the support for the usage of the VM's RMI system;<br><br>— requirements related to the operation of the IO's PC. | [TREQ-7] VM RMI system availability time<br><br>[TREQ-8] Support for the usage of the VM's RMI system<br><br>[TREQ-9] Operation of the IO's PC |
| NOTE The requirements for the technical infrastructure specified by the VM are to be fulfilled by the IO to the same levels as those required of the VM's ARs. | | |

## 6 Use cases

### 6.1 UC 1 User authentication, authorization and administration

#### 6.1.1 UC 1.1 Register IO for use of the VM's RMI system

Table 3 specifies the applicable use case to meet the requirements.

**Table 3 — UC 1.1 Register IO for use of the VM's RMI system**

| Actor | IO |
|---|---|
| Goal | To register the IO for use of the VM's RMI system. |
| Use case input | IO's data:<br>— IO's name or first name/family name;<br>— IO's postal address;<br>— country;<br>— business registration number;<br>— e-mail address for communication with the IO in all aspects of the VM's RMI system usage;<br>— optionally, the preferred language.<br>Further input may be requested in recognition of local legislation.<br>Agreement to:<br>— terms and conditions;<br>— registration fee if applicable. |
| Use case output | Notification of:<br>— whether contract agreement between IO and VM is established or rejected;<br>— user-ID and password (user-ID will be unique in the VM's system).<br>Justification in case of rejection. |
| Brief description | The VM validates the identity and the legitimacy of the requester. The implemented validation mechanism is VM-specific.<br><br>If the data entered by the IO is incorrect or the identity and the legitimacy of the requester cannot be validated, then the VM has the right to reject the requested registration and the VM shall inform the requester of the reason in a prompt and traceable manner. In case of rejection the IO has the right to remedy, rectify, correct or re-input the data according to the reason for rejection.<br><br>Based on the declaration of intent, an extended contract may be necessary for republishing. The contract details are negotiated and agreed between IO and VM.<br><br>IO formally agrees with the Terms and Conditions for VM's RMI system use.<br><br>The VM accepts IO as a user. The VM's RMI system will provide the user with a User ID and assigns a first password to the user or allows them to enter one that satisfies the VM´s password security requirements.<br><br>VM may charge a reasonable registration fee to the IO.<br><br>Language may be pre-assigned by language browser setting or assign a standard language. The languages provided are those offered to the AR. |
| Classification | Mandatory |

#### 6.1.2 UC 1.2 Maintain IO's status

Table 4 specifies the applicable use case to meet the requirements.

**Table 4 — UC 1.2 Maintain IO's status**

| Actor | IO |
|---|---|
| Goal | Keep IO's data up to date. |
| Use case input | Request to change IO's data. |
| Use case output | Updated IO's data. |
| Brief description | On the IO's request, the VM's RMI system or the VM's administrator updates the IO's data. Some changes may require a new validation or even a new registration of the IO (for example new company name and type). A clear policy statement on the conditions for a new validation or registration is reflected in the terms and conditions on the VM's RMI system. |
| Classification | Optional. |

### 6.1.3 UC 1.3 Request to de-register IO

Table 5 specifies the applicable use case to meet the requirements.

**Table 5 — UC 1.3 Request to de-register IO**

| Actor | IO |
|---|---|
| Goal | Request to de-register an IO |
| Use case input | The IO requests to be de-registered |
| Use case output | The IO's account(s) is de-activated |
| Brief description | The IO requests to de-register their account(s). The VM's RMI system processes the request. The IO is notified of the result of the de-activation of the account(s). |
| Classification | Optional. |

### 6.1.4 UC 1.4 Login to VM's RMI system

Table 6 specifies the applicable use case to meet the requirements.

**Table 6 — UC 1.4 Login to VM's RMI system**

| Actor | IO |
|---|---|
| Goal | Access to the VM's RMI system. |
| Use case input | User ID Password |
| Use case output | Successful login into the VM's RMI system. |
| Brief description | The VM's RMI system offers the possibility to enter user's ID and password. After a successful authentication the first navigation level is displayed. Standardized access mode. This requirements cluster describes the functional user entry point for standard access for an IO to agricultural RMI, and registration and login support. |
| Classification | Mandatory. |

## 6.2 UC 2 Payment for RMI

Table 7 specifies the applicable use case to meet the requirements.

**Table 7 — UC 2 Payment for RMI**

| | |
|---|---|
| Actor | IO |
| Goal | Handling of payments |
| Use case input | Select subscription<br><br>Select payment arrangement<br><br>Payment-relevant data (card data, account id, etc.) |
| Use case output | Subscription activated<br><br>Receipt<br><br>User can start using the VM's RMI |
| Brief description | The VM's RMI system displays a page showing all valid subscriptions (hourly, daily, monthly and yearly access) to the different access levels and the VM-supported payment arrangements. In addition to time-based access VMs may establish and make available fees per transaction. All payment shall be in accordance with the terms and conditions for the VM's RMI system.<br><br>The user selects the desired subscription and the preferred payment arrangement.<br><br>The VM's RMI system requests the user to enter the necessary data to process the payment arrangement.<br><br>The VM's RMI system validates the input, activates the corresponding subscription and issues a receipt. |
| Classification | Mandatory for VMs who charge for RMI |

## 6.3 UC 3 Vehicle identification

### 6.3.1 UC 3.1 Vehicle identification through use of the VI or model or serial number

Table 8 specifies the applicable use case to meet the requirements.

**Table 8 — UC 3.1 Vehicle identification through use of the VI, model or serial number**

| | |
|---|---|
| Actor | IO |
| Goal | Identification of a specific vehicle and vehicle summary. |
| Use case input | VI or model or serial number |
| Use case output | Vehicle type<br><br>Product features<br><br>Accessories<br><br>Approval number of the vehicle model, if available |
| Brief description | The VM's RMI system presents available information related to that VI, model and/or serial number as provided to the VM´s AR and the approval number, if available, of the vehicle model. The VM can choose one of these inputs for the vehicle identification as also used for AR. |
| Classification | Optional |

### 6.3.2 UC 3.2 vehicle type identification via product features or term

Table 9 specifies the applicable use case to meet the requirements.

**Table 9 — UC 3.2 Vehicle type identification via product features or term**

| Actor | IO |
|---|---|
| Goal | Identification of a specific vehicle and vehicle summary. |
| Use case input | Product features selection filter, for example:<br>— Model;<br>— Model code;<br>— Model year;<br>— Drive type;<br>— Engine type;<br>— Transmission type.<br>Final drive type |
| Use case output | Identified vehicle type or vehicle types according to selected product features for subsequent VM's RMI system use purposes. |
| Brief description | The VM's RMI system behaviour depends on the policy followed by the VM regarding product feature support for the VM's ARs.<br><br>If the VM's RMI system provides product features to his ARs, the VM's RMI system should provide the same features to the IO for the same filter selection setting. |
| Classification | Optional |

## 6.4 UC 4 Provide selection methods for RMI

### 6.4.1 UC 4.1 Select information type

Table 10 specifies the applicable use case to meet the requirements.

**Table 10 — UC 4.1 Select information type**

| Actor | IO |
|---|---|
| Goal | Select relevant information types |
| Use case input | Search for information |
| Use case output | Once purchased, display of information types available for the identified vehicle for example:<br>Workshop procedures;<br>Wiring and hydraulic diagrams;<br>Technical service bulletin;<br>Maintenance schedule;<br>DTC use information. |
| Brief description | The VM's RMI system issues a list of information types.<br><br>This information varies by VM but the information is the same as for the AR.<br><br>The user selects at least one information type. |
| Classification | Mandatory |

### 6.4.2 UC 4.2 Navigate using product structure

Table 11 specifies the applicable use case to meet the requirements.

**Table 11 — UC 4.2 Navigate using product structure**

| Actor | IO |
|---|---|
| Goal | Find information by navigating through the product structure. |
| Use case input | Select the items in the presented product structure. |
| Use case output | Either a next detail level in the product structure or finally a list of available information for the chosen component. Note that the information provided to the AR and IO will be the same, but the navigation and displayed output may be different. |
| Brief description | The VM's RMI system displays a product structure and finally displays the information selected. |
| Classification | Optional but mandatory if provided by VM to VM's AR. |

### 6.4.3 UC 4.3 Select by document identifier

Table 12 specifies the applicable use case to meet the requirements.

**Table 12 — UC 4.3 Select by document identifier**

| Actor | IO |
|---|---|
| Goal | Find information by document identifier. |
| Use case input | Exact document identifier. |
| Use case output | Display document once purchased. |
| Brief description | The VM's RMI system displays the requested document. |
| Classification | Optional but Mandatory if provided by VM to VM's AR. |

## 6.5 UC 5 Retrieve information packages

### 6.5.1 UC 5.1 Workshop procedures

Table 13 specifies the applicable use case to meet the requirements.

**Table 13 — UC 5.1 Workshop procedures**

| Actor | IO |
|---|---|
| Goal | Access to the workshop procedures. |
| Use case input | Select the title of one of the workshop procedures. |
| Use case output | Once purchased display the selected workshop procedures. |
| Brief description | The user selects one of many workshop procedures. The VM's RMI system displays the selected package of information. |
| Classification | Optional, but mandatory if provided by VM to VM's AR. |

### 6.5.2 UC 5.2 Wiring and hydraulic diagrams

Table 14 specifies the applicable use case to meet the requirements.

**Table 14 — UC 5.2 Wiring and hydraulic diagrams**

| Actor | IO |
|---|---|
| Goal | Access to the wiring and hydraulic diagrams. |
| Use case input | Select the desired information package in which the wiring diagram can be found. |
| Use case output | Once purchased display the selected information package with the wiring and hydraulic diagrams. |
| Brief description | The user selects one of many information packages with the wiring and hydraulic diagrams. The VM's RMI system displays the selected package of information. |
| Classification | Optional, but mandatory if provided by VM to VM's AR. |

### 6.5.3 UC 5.3 Technical service bulletin

Table 15 specifies the applicable use case to meet the requirements.

**Table 15 — UC 5.3 Technical service bulletin**

| Actor | IO |
|---|---|
| Goal | Access to the technical service bulletins. |
| Use case input | Select the title of one of the technical service bulletins. Might only be accessible with a VI, model or serial number. |
| Use case output | Once purchased, display the selected technical service bulletin. |
| Brief description | The user selects one of many technical service bulletins. The VM's RMI system displays the selected package of information. |
| Classification | Optional but Mandatory if provided by VM to VM's AR. |

### 6.5.4 UC 5.4 Recall announcement

Table 16 specifies the applicable use case to meet the requirements.

**Table 16 — UC 5.4 Recall for safety and environment announcement which affect RMI**

| Actor | IO |
|---|---|
| Goal | Identify if a recall is required on a vehicle. |
| Use case input | VI, model and/or serial number Select recall announcement alert |
| Use case output | Information whether the vehicle is subject of a recall |
| Brief description | The VM's RMI system displays the information whether the vehicle is subject of a recall and AR or VM shall be contacted. |
| Classification | Optional |

NOTE    Owners of registered vehicles are usually informed directly; for non-registered vehicles / machinery this can be an option.

### 6.5.5 UC 5.5 Maintenance schedule

Table 17 specifies the applicable use case to meet the requirements.

**Table 17 — UC 5.5 Maintenance schedule**

| Actor | IO |
|---|---|
| Goal | Access to maintenance schedule for the vehicle. |
| Use case input | Vehicle identification: VI, model, and/or serial number |
| Use case output | Once purchased maintenance schedule for the vehicle. |
| Brief description | The VM's RMI system, descriptions or reference to the suitable document for the selected vehicle |
| Classification | Mandatory (related to use case) |

### 6.5.6 UC 5.6 Spare parts (identification)

Table 18 specifies the applicable use case to meet the requirements.

**Table 18 — UC 5.6 Spare parts (identification)**

| Actor | IO |
|---|---|
| Goal | Locate the required spare part information. |
| Use case input | Select the content of one of the information packages, or locate link to spare parts catalogue. |
| Use case output | Once purchased display the selected document, or provide an access path to a spare parts catalogue. |
| Brief description | The VM's RMI system either provides spare parts information or routes the user to the spare parts information system. The VM's RMI system may offer access to spare parts information also through the repair information packages. The spare parts information shall be to the same level and content as provided by VM to the VM's AR. |
| Classification | Optional but mandatory if provided by VM to VM's AR. |

### 6.5.7 UC 5.7 Labour times

Table 19 specifies the applicable use case to meet the requirements.

**Table 19 — UC 5.7 Labour times**

| Actor | IO |
|---|---|
| Goal | Identify vehicle specific labour times. |
| Use case input | Select specific labour times. |
| Use case output | Once purchased, display the selected labour times. |
| Brief description | The VM's RMI provides labour times. |
| Classification | Optional |

### 6.5.8 UC 5.8 Special tools

Table 20 specifies the applicable use case to meet the requirements.

**Table 20 — UC 5.8 Special tools**

| Actor | IO |
|---|---|
| Goal | Access to the special tool information. |
| Use case input | Select the content of one of the information packages or locate the link to special tools. |
| Use case output | Once purchased display the selected information package. |
| Brief description | The VM's RMI system enables identification of special tools. |
| Classification | Optional but mandatory if provided by VM to VM's AR. |

### 6.5.9 UC 5.9 Safety related information multi-stage vehicles

Table 21 specifies the applicable use case to meet the requirements.

**Table 21 — UC 5.9 Safety related information multi-stage vehicles**

| Actor | IO |
|---|---|
| Goal | Access to safety related information |
| Use case input | VI, model, serial number or product identification number<br><br>Request safety related information |
| Use case output | A manufacturer responsible for a particular stage of a multi-stage approved vehicle shall provide in addition to approval number of the product type.<br><br>Website address of the manufacturer or manufacturers responsible for the previous stage or stages.<br><br>The final manufacturer of a multi-stage approved vehicle shall provide, in addition, the:<br><br>Name and address of the manufacturer or manufacturers responsible for the previous stage or stages;<br><br>Approval number of the previous stage or stages;<br><br>Engine number (directly or via a link to the relevant previous manufacturer), if applicable. |
| Brief description | The RMI system provides in addition information allowing to identify the manufacturer of the previous stage (for example approval number). |
| Classification | Optional but mandatory if provided by VM to VM's AR. |

## 6.6 UC 6 Electronic maintenance history

Table 22 specifies the applicable use case to meet the requirements.

**Table 22 — UC 6 Electronic maintenance history**

| Actor | IO |
|---|---|
| Goal | Access and update the history of VM prescribed maintenance actions. |
| Use case input | VI, model or serial number;<br><br>Electronic maintenance history selection. |
| Use case output | Updated maintenance history |
| Brief description | The VM's RMI system provides the vehicle history of VM prescribed maintenance.<br><br>The IO provides the requested parameters and is able to view and print the entire maintenance history under the same conditions as ARs.<br><br>After performing the maintenance, the IO acknowledges that the maintenance actions have been performed by submission of maintenance history update. |
| Classification | Optional |

## 6.7 UC 7 Request contact for specific RMI

### 6.7.1 UC 7.1 Redistributors

Table 23 specifies the applicable use case to meet the requirements.

**Table 23 — UC 7.1 Redistributors**

| | |
|---|---|
| Actor | Redistributor |
| Goal | To obtain RMI for redistribution within their own closed network, such as garage networks. |
| Use case input | Request VM's contact information and identification of desired information and request for redistribution. |
| Use case output | VM's contact information |
| Brief description | The VM's RMI system provides the relevant contact for redistribution of the desired information.<br><br>The contact may be market specific.<br><br>Provision of material is subject to individual contractual agreement between the redistributor and the VM for the agreed material. |
| Classification | Mandatory to provide VM's contact information |

### 6.7.2 UC 7.2 Republishers

Table 24 specifies the applicable use case to meet the requirements.

**Table 24 — UC 7.2 Republishers**

| | |
|---|---|
| Actor | Republisher |
| Goal | To obtain permission for re-publication and distribution of RMI to an external network. |
| Use case input | Request VM's contact information and identification of desired information and request for republishing. |
| Use case output | VM's contact information for contractual agreement to republish the desired information. |
| Brief description | The VM's RMI system provides the relevant contact for republishing.<br><br>The contact may be market specific.<br><br>Provision of material is subject to individual contractual agreement between the republisher and the VM. |
| Classification | Mandatory to provide the VM's contact information. |

## 6.8 UC 8 Courses and training information

Table 25 specifies the applicable use case to meet the requirements.

**Table 25 — UC 8 Courses and training information**

| | |
|---|---|
| Actor | IO |
| Goal | Get information regarding training courses availability and/or online training. |
| Use case input | Model or VI |
| Use case output | List of available training classes |
| Brief description | VM's training courses information or online or web-based information |
| Classification | Mandatory if provided to AR |

## 6.9 UC 9 Vehicle diagnostics

### 6.9.1 UC 9.1 DTC resolution

Table 26 specifies the applicable use case to meet the requirements.

**Table 26 — UC 9.1 DTC resolution**

| | |
|---|---|
| Actor | IO |
| Goal | Provide DTC information |
| Use case input | — Once purchased DTC (search in system or document)<br><br>— Once purchased, VI by VIN, PIN, model or serial number |
| Use case output | Diagnostic information related to the entered DTC if it is relevant to the vehicle and module and appropriate for the access level |
| Brief description | The VM's RMI system provides a description of the DTC if it is relevant to the vehicle and module.<br><br>The VM's RMI system delivers a list of potential causes or hints for further investigation, to the same level and content as provided to AR. |
| Classification | Optional but mandatory if provided to AR. |

### 6.9.2 UC 9.2 VM symptom resolution

Table 27 specifies the applicable use case to meet the requirements.

**Table 27 — UC 9.2 VM symptom resolution**

| | |
|---|---|
| Actor | IO |
| Goal | Provide search results of purchased RMI |
| Use case input | — symptoms;<br><br>VI by VIN, PIN, model or serial number; by product features (only if provided to VM AR) |
| Use case output | — diagnostic information;<br><br>potential repair descriptions;<br><br>as appropriate for the access level. |
| Brief description | The user enters or selects a VM symptom as found by reading the published technical documentation.<br><br>The VM's RMI system delivers a list of potential causes or hints for further investigation, to the same level and content as provided to AR. |
| Classification | Optional |

# 7 Technical requirements

## 7.1 Requirements cluster 1 — Access-related data administration

### 7.1.1 Administration of IO's data by the VM or the redistributor

#### 7.1.1.1 [TREQ-1] Administration of IO's data by the VM

Table 28 defines the requirements for the administration of IO's data by the VM or redistributor.