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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

Page

Foreword

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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* (3.25)

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

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* (3.5)

3.9
independent operator
IO
company or legal entity other than an authorized dealer and repairer which are 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, operators offering training for installers, manufacturers and repairers 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* (3.25) 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 manufacturers 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* (3.25) to an external network using the RMI of the VM

3.23
selection methods
possible methods to select *RMI* (3.25)

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

3.25
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
any mobile equipment

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* (3.5) 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.

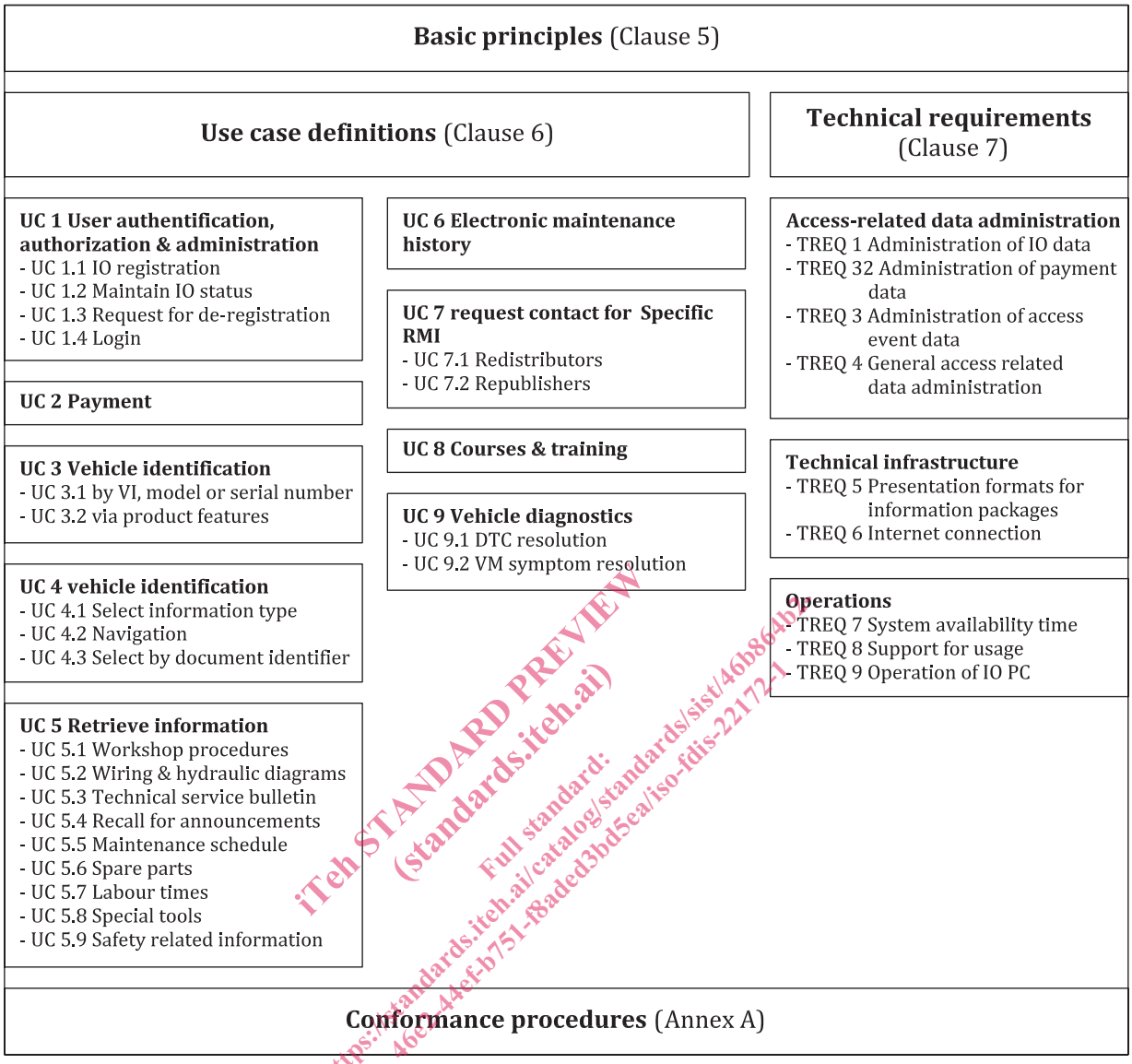

Figure 1 — Overview of the structure and requirements of this document

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.