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Supply chain applications of RFID — Product tagging

*Applications de chaîne d'approvisionnements de RFID —
Étiquetage de produit*



Reference number
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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17367 was prepared by Technical Committee ISO/TC 122, *Packaging*, Subcommittee SC , .

This second edition cancels and replaces the first edition (ISO 17367:2009), which has been technically revised.

This International Standard has three annexes: [Annexes A](#) and [B](#), which are informative, and [Annex C](#), which is normative.

Introduction

The 'Supply Chain' is a multi-level concept that covers all aspects of taking a product from raw materials to a final product including shipping to a final place of sale, use and maintenance and potentially disposal. Each of these levels covers many aspects of dealing with products, and the business process for each level is both unique and overlapping with other levels.

This International Standard has been created in order to ensure compatibility at the physical, command and data levels with the four other International Standards under the general title *Supply chain applications of RFID*. Where possible, this compatibility takes the form of interchangeability. Where interchangeability is not feasible, the International Standards within this suite are interoperable and non-interfering. The International Standards within the complete series of *Supply chain applications of RFID* include

- ISO 17363, *Supply chain applications of RFID — Freight containers*;
- ISO 17364, *Supply chain applications of RFID — Returnable transport items (RTIs) and returnable packaging items (RPIs)*;
- ISO 17365, *Supply chain applications of RFID — Transport units*;
- ISO 17366, *Supply chain applications of RFID — Product packaging*;
- ISO 17367, *Supply chain applications of RFID — Product tagging*.

These International Standards define the technical aspects and data hierarchy of information required in each layer of the supply chain. The air-interface and communications protocol standards supported within the *Supply chain applications of RFID* International Standards are ISO/IEC 18000; commands and messages are specified by ISO/IEC 15961 and ISO/IEC 15962; semantics are defined in ISO/IEC 15418; syntax is defined in ISO/IEC 15434.

Although not pertinent to this International Standard, the following work is considered valuable:

- ISO/IEC JTC 1, *Information technology, SC 31, Automatic identification and data capture techniques*, in the areas of air interface, data semantic and syntax construction and conformance standards, and
- ISO/TC 104, *Freight containers*, in the area of freight container security, including electronic seals (e-seals) (i.e. ISO 18185) and container identification.

Supply chain applications of RFID — Product tagging

1 Scope

This International Standard defines the basic features of RFID for use in the supply chain when applied to product tagging. In particular it

- provides specific recommendations about the encoded identification of the product,
- makes recommendations about additional information about the product on the RF tag,
- makes recommendations about the semantics and data syntax to be used,
- makes recommendations about the data protocol to be used to interface with business applications and the RFID system, and
- makes recommendations about the air interface standards between the RF interrogator and RF tag.

This International Standard only addresses *product tagging* and does not address *product packaging*.

2 Conformance and performance specifications

All of the devices and equipment that claim conformance with this International Standard shall also conform to the appropriate sections and parameters specified in ISO/IEC 18046 for performance and ISO/IEC 18047-6 (for ISO/IEC 18000-63, Type C) and ISO/IEC 18047-3 (for the ASK interface of ISO/IEC 18000-3, Mode 3) for conformance.

NOTE [Annex A](#) gives an illustrative example of an industry-specific conformance/quality document.

3 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 445, *Pallets for materials handling — Vocabulary*

ISO 830, *Freight containers — Vocabulary*

ISO 8601, *Data elements and interchange formats — Information interchange — Representation of dates and times*

ISO/IEC/IEEE 8802-15-4, *Information technology — Telecommunications and information exchange between systems — Local and metropolitan area networks — Specific requirements Part 15.4: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Low-Rate Wireless Personal Area Networks (WPANs)*

ISO/IEC 15418, *Information technology — Automatic identification and data capture techniques — GS1 Application Identifiers and ASC MH10 Data Identifiers and maintenance*

ISO/IEC 15434, *Information technology — Automatic identification and data capture techniques — Syntax for high-capacity ADC media*

ISO/IEC 15459 (all parts), *Information technology — Automatic identification and data capture techniques — Unique identification*

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ISO/IEC 15961, *Information technology — Radio frequency identification (RFID) for item management — Data protocol: application interface*

ISO/IEC 15962:—¹⁾, *Information technology — Radio frequency identification (RFID) for item management — Data protocol: data encoding rules and logical memory functions*

ISO/IEC 15963, *Information technology — Radio frequency identification for item management — Unique identification for RF tags*

ISO/IEC 16022, *Information technology — Automatic identification and data capture techniques — Data Matrix bar code symbology specification*

ISO 17364:2013, *Supply chain applications of RFID — Returnable transport items (RTIs) and Returnable packaging items (RPIs)*

ISO/IEC 18000-3, *Information technology — Radio frequency identification for item management — Part 3: Parameters for air interface communications at 13,56 MHz*

ISO/IEC 18000-63, *Information technology — Radio frequency identification for item management — Part 63: Parameters for air interface communications at 860 MHz to 960 MHz Type C*

ISO/IEC 18004, *Information technology — Automatic identification and data capture techniques — QR Code bar code symbology specification*

ISO/IEC 18046 (all parts), *Information technology — Radio frequency identification device performance test methods*

ISO/IEC 18047 (all parts), *Information technology — Radio frequency identification device conformance test methods*

ISO/IEC 19762 (all parts), *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary*

ISO 21067, *Packaging — Vocabulary*

ISO/IEC/IEEE 21451-5 [IEEE 1451.5], *Information technology — Smart Transducer Interface for Sensors and Actuators — Wireless Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats*

ISO/IEC/IEEE 21451-7, *Information technology — Smart transducer interface for sensors and actuators — Part 7: Transducer to radio frequency identification (RFID) systems communication protocols and Transducer Electronic Data Sheet (TEDS) formats*

ISO/IEC/TR 24729-1, *Information technology — Radio frequency identification for item management — Implementation guidelines — Part 1: RFID-enabled labels and packaging supporting ISO/IEC 18000-6C*

ISO/IEC 29160, *Information technology — Radio frequency identification for item management — RFID Emblem*

ANS MH10.8.2, *Data Identifiers and Application Identifiers*

GS1 EPC Tag Data Standard Version 1.6

GS1 General Specifications

ICNIRP Guidelines, *Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz)*

IEEE C95-1, *IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz*

1) To be published.