INTERNATIONAL STANDARD

ISO/IEC 15963-1

First edition
2020-02

Information technology — Radio frequency identification for item management —

Part 1: Unique identification for RF tags numbering systems

Technologies de l'information — Identification par radiofréquence pour la gestion des objets —

Partie 1: Systèmes numériques pour l'identification unique des tags RF

Reference number
ISO/IEC 15963-1:2020(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Abbreviated terms **2**
5 Unique identifiers **3**
6 Unique identification of an RF tag **4**
6.1 Unique identification 4
6.1.1 General 4
6.1.2 Virtual ID 4
6.1.3 Data as a unique ID 4
6.1.4 Time as a unique ID 4
6.1.5 Position as a unique ID 4
6.2 Permanent unique ID 4
6.2.1 Unique ID 4
6.2.2 Benefits of permanent unique ID versus virtual ID 5
6.2.3 Selection of the size of a permanent unique ID 5
Annex A (normative) **Numbering system of a permanent unique RF tag identifier (TID)** **6**
Annex B (normative) **ISO/IEC 7816-6 numbering systems for RFID** **10**
Annex C (normative) **ISO 14816 — Numbering and data structures** **12**
Annex D (normative) **ISO/IEC 18000-63 or ISO/IEC 18000-3 Mode 3 numbering systems for RFID** **13**
Annex E (normative) **ISO/IEC 15963-2 numbering systems** **15**
Bibliography **16**

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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 document 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see http://patents.iec.ch).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

This first edition of ISO/IEC 15963-1, together with of ISO/IEC 15963-2, cancels and replaces ISO/IEC 15963:2009, which has been technically revised.

The main changes compared to the previous edition are as follows:

— Update to include the addition of part 2 — registration details, and to add new registration information.

A list of all parts in the ISO/IEC 15963 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

ISO/IEC 15963 (all parts) is one of a series of International Standards and Technical Reports developed by ISO/IEC JTC 1/SC 31 for the identification of items (Item Management) using radio frequency identification (RFID) technology.

This document describes numbering systems for the unique identification of RF tags.

It is intended for use in conjunction with other International Standards developed by SC 31 for "RFID for item management" and “Real time locating systems”, such as ISO/IEC 18000 (all parts) and ISO/IEC 24730 (all parts).

Information technology — Radio frequency identification for item management —

Part 1:
Unique identification for RF tags numbering systems

1 Scope

This document describes numbering systems that are available for the identification of RF tags and assigns various allocation classes to various agencies that issue manufacturer codes.

The unique ID can be used:

— for the traceability of the integrated circuit itself for quality control in its manufacturing process;

— for the traceability of the RF tag during its manufacturing process and along its lifetime;

— for the completion of the reading in a multi-antenna configuration;

— by the anti-collision mechanism to inventory multiple tags in the reader's field of view; and

— for the traceability of the item to which the RF tag is attached.

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/IEC 7816-6, *Identification cards — Integrated circuit cards — Part 6: Interindustry data elements for interchange*

ISO 14816, *Road transport and traffic telematics — Automatic vehicle and equipment identification — Numbering and data structure*

ISO/IEC 15963-2, *Information technology — Radio frequency identification for item management — Part 2: Unique identification for RF tags registration procedures*

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

GS1 General Specifications (GS1, Brussels)

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19762 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/