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Information technology — Data protocol for radio frequency identification (RFID) for item management —

Part 1: Application interface

Technologies de l'information — Protocole de données relatif à l'identification par radiofréquence (RFID) pour la gestion d'objets —

Partie 1: Interface d'application

Reference number
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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 or www.iec.ch/members_experts/refdocs).

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 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. In the IEC, see www.iec.ch/understanding-standards.

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

This second edition cancels and replaces the first edition (ISO/IEC 15961-1:2013), which has been technically revised.

The main changes are as follows:

— Clauses from ISO/IEC 15962 which had been reproduced in this document have been removed and replaced by references to these clauses.

— The requirement for backwards compatibility with the 2004 version of this document (ISO/IEC 15961:2004) has been clarified.

— The document was edited for clarity and conformity with ISO/IEC Directives Part 2 drafting rules.

A list of all parts in the ISO/IEC 15961 series can be found on the ISO and IEC websites.

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.

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Introduction

The technology of radio frequency identification (RFID) is based on non-contact electronic communication across an air interface. The structure of the bits stored on the memory of the tag is invisible and accessible between the tag and the interrogator only using an air interface protocol, as specified in the appropriate part of ISO/IEC 18000. The result of the transfer of data between an application and an interrogator in open systems requires data to be encoded in a consistent manner on any tag that is part of that open system. This is not only to allow equipment to be interoperable, but in the special case of data carriers, for the data to be encoded on the tag in one system's implementation and to be read at a later time in a completely different and unknown system's implementation. The data bits stored on each tag must be formatted in such a way as to be reliably read at the point of use if the tag is to fulfil its basic objective. This reliability is achieved through the specification of a Data Protocol in this document and the data encoding rules of ISO/IEC 15962. Additionally, ISO/IEC 24791-1 specifies a software system infrastructure architecture that enables RFID system operations between business applications and RFID interrogators. Specific parts of the infrastructure standards address data management requirements (ISO/IEC 24791-2) and device interface requirements (ISO/IEC 24791-5). These support defined implementations that incorporate the encoding rules of ISO/IEC 15962 and the functional rules of the commands and responses in this document.

Manufacturers of RFID equipment (e.g. interrogators, tags) and users of RFID technology require standards-based Data Protocols for RFID for item management. This document, ISO/IEC 15962, ISO/IEC 24791-1, ISO/IEC 24791-2 and ISO/IEC 24791-5 specify these protocols, which are layered above the air interface standards defined in the ISO/IEC 18000 series.

The transfer of data to and from an application, supported by appropriate application commands, is the subject of this document. This document is intended to be used as a reference to develop software appropriate for RFID applications and equipment. ISO/IEC 15962, which is intended to be used with this document, specifies the overall process and the methodologies developed to format the application data into a structure to store on the tag.

NOTE ISO/IEC 15961:2004 is a withdrawn standard, replaced by ISO/IEC 15961-1, ISO/IEC 15961-2, ISO/IEC 15961-3 and ISO/IEC 15961-4. ISO/IEC 15961:2004 is referenced to point out the differences with this document because some systems still use the withdrawn version. All information pertaining to the use of the withdrawn ISO/IEC 15961:2004 is contained in this document. The intention is to remove reference to the withdrawn standard in the next version of this document.

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