INTERNATIONAL STANDARD

ISO/IEC 18000-1

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Information technology — Radio frequency identification for item management —

Part 1:
Reference architecture and definition of parameters to be standardized

Technologies de l'information — Identification par radiofréquence (RFID) pour la gestion d'objets —

Partie 1: Architecture de référence et définition des paramètres à normaliser

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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national 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 and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 18000-1 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 18000-1:2004), which has been technically revised.

ISO/IEC 18000 consists of the following parts, under the general title *Information technology — Radio frequency identification for item management*:

⎯ *Part 1: Reference architecture and definition of parameters to be standardized*

⎯ *Part 2: Parameters for air interface communications below 135 kHz*

⎯ *Part 3: Parameters for air interface communications at 13,56 MHz*

⎯ *Part 4: Parameters for air interface communications at 2,45 GHz*

⎯ *Part 6: Parameters for air interface communications at 860 MHz to 960 MHz*

⎯ *Part 7: Parameters for active air interface communications at 433 MHz*

Introduction

ISO/IEC 18000 has been developed by ISO/IEC JTC 1/SC 31/WG 4, radio frequency identification for item identification and management, in order to provide parameter definitions for communications protocols within a common framework for internationally useable frequencies for radio frequency identification (RFID), and, where possible, to determine the use of the same protocols for ALL frequencies such that the problems of migrating from one to another are diminished; to minimise software and implementation costs; and to enable system management and control and information exchange to be common as far as is possible.

Informative Annexes to this part of ISO/IEC 18000 provide contact information in respect of the radio regulations within which such systems have to operate, and some informational views of system architectures within which RFID for item management is likely to be used (Annexes A and C).

There are no specific patents applicable to this part of ISO/IEC 18000. Known patents relating to other parts of ISO/IEC 18000 will be found in the appropriate part of ISO/IEC 18000.

Information technology — Radio frequency identification for item management —

Part 1:
Reference architecture and definition of parameters to be standardized

1 Scope

1.1 This part of ISO/IEC 18000 defines the generic architecture concepts in which item identification may commonly be required within the logistics and supply chain and defines the parameters that need to be determined in any standardized air interface definition in the subsequent parts of ISO/IEC 18000. The subsequent parts of ISO/IEC 18000 provide the specific values for definition of the air interface parameters for a particular frequency/type of air interface from which compliance (or non-compliance) with this part of ISO/IEC 18000 can be established. This part of ISO/IEC 18000 also provides a description of example conceptual architectures in which these air interfaces are often to be utilized.

1.2 This part of ISO/IEC 18000 limits its scope to transactions and data exchanges across the air interface at **reference point delta** (see Figure 1). The means of generating and managing such transactions, other than a requirement to achieve the transactional performance determined within this part of ISO/IEC 18000, are outside the scope of this part of ISO/IEC 18000, as is the definition or specification of any supporting hardware, firmware, software or associated equipment.

1.3 Standardization of other reference points is outside the scope of this part of ISO/IEC 18000. (See Figure 1.)

1.4 This part of ISO/IEC 18000 is an enabling standard which supports and promotes several RFID implementations without making conclusions about the relative technical merits of any available option for any possible application.

1.5 This part of ISO/IEC 18000 also provides reference information in respect of patents that have been declared to the developers of ISO/IEC 18000 as pertinent and provides reference addresses in respect of regulations under which ISO/IEC 18000 must operate.

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

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

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

IEC 60601-1-2, *Medical electrical equipment — Part 1-2: General requirements for basic safety and essential performance — Collateral standard: Electromagnetic compatibility — Requirements and tests*