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Information technology — Radio frequency identification for item management — Elementary tag licence plate functionality for ISO/IEC 18000 air interface definitions

Technologies de l'information — Identification de radiofréquence pour la gestion d'objets — Fonctionnalité du numéro matricule utilisant des tags élémentaires pour les définitions de l'interface d'air pour l'ISO/CEI 18000

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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.

In exceptional circumstances, the joint technical committee may propose the publication of a Technical Report of one of the following types:

— type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;

— type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;

— type 3, when the joint technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

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 TR 24710, which is a Technical Report of type 3, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

Introduction

ISO/IEC 18000 (all parts) defines the operation of radio frequency identification (RFID) air interfaces for item identification and management.

ISO/IEC 18000 has been designed to encompass a full range of data capture and carrier functionality. Both read and write operations are enabled, and the interfaces can efficiently support both simple and complex data transactions.

This approach facilitates user implementation by providing consistency between differing types of RFID data transactions. Equally it provides architecture to guide future RFID development whilst maintaining the backward compatibility necessary to sustain market confidence.

Recent developments in the design and management of distributed databases holding item level information have focused attention on "identification data element" operation of RFID systems. In this application, the RFID tag carries only sufficient data to permit reference to attribute information held elsewhere. Typically this data does not change during the validity of the "licence" and is of relatively low bit count.

This Technical Report has been prepared to assist users intending to implement ISO/IEC 18000 RFID air interface standards, with particular focus on so-called elementary tags, i.e. tags possessing limited memory — typically but not exclusively 256 bits or less — and lacking write capability (but not excluding WORM devices).

The annexes to this Technical Report describe the implementation of ISO/IEC 18000-2, -3, -4, -6 and -7 in such an application.

Users are strongly advised to refer to ISO/IEC 15961 and ISO/IEC 15962 for a full exposition of the management issues relating to data strings used for identification data element purposes.

Bodies external to ISO also specify identification data element length and structure for particular applications.

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1 Scope

This Technical Report defines for each of ISO/IEC 18000-2, -3, -4, -6 and -7, and, where relevant, for each Mode within each part, a transaction that achieves an elementary tag "identification data element" for item identification and management.

The transaction uses the existing air interface protocols defined in the corresponding parts of ISO/IEC 18000 or a subset thereof.

2 Normative references

ISO/IEC 18000-2, *Information technology — Radio frequency identification for item management — Part 2: Parameters for air interface communications below 135 kHz*

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 18000-4, *Information technology — Radio frequency identification for item management — Part 4: Parameters for air interface communications at 2,45 GHz*

ISO/IEC 18000-6, *Information technology — Radio frequency identification for item management — Part 6: Parameters for air interface communications at 860 MHz to 960 MHz*

ISO/IEC 18000-7, *Information technology — Radio frequency identification for item management — Part 7: Parameters for active air interface communications at 433 MHz*

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