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BSI Standards Publication

Information and documentation — RFID in libraries

Part 4: Encoding of data elements based on rules from ISO/IEC 15962 in an RFID tag with partitioned memory

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National foreword

This Published Document is the UK implementation of ISO/TS 28560-4:2014.

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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.

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 ISO documents 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 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).

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

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 46, *Information and documentation,* Subcommittee SC 4, *Technical interoperability*.

ISO 28560 consists of the following parts, under the general title *Information and documentation — RFID in libraries*:

— *Part 1: Data elements and general guidelines for implementation*

— *Part 2: Encoding of RFID data elements based on rules from* ISO/IEC 15962

— *Part 3: Fixed length encoding*

— *Part 4: Encoding of data elements based on rules from* ISO/IEC 15962 *in an RFID tag with partitioned memory*

Introduction

Libraries are implementing radio frequency identification (RFID) as item identification to replace bar codes. RFID streamlines applications like user self-service, security, and materials handling. A standard data model for encoding information on RFID tags could increase the cost-effectiveness of the technology within libraries particularly through greater interoperability of RFID tags and equipment, and enhance support for resource sharing between libraries.

A standard data model, taking into account the lessons learned from the national schemes and vendor solutions was developed with ISO 28560-1, which defines the set of mandatory and optional data elements. ISO 28560-2 and ISO 28560-3 define encoding rules for those libraries that choose to use High Frequency RFID technology operating at 13,56 MHz.

This part of ISO 28560 defines encoding rules for those libraries that choose to use UHF RFID technology operating at 860 MHz to 960 MHz, with the interrogators (readers) set to conform to local radio regulations that specify only part of this spectrum. The UHF tags can function efficiently in any of the radio regulated regions. This part of ISO 28560 uses encoding rules that are specified in ISO/IEC 15962, as does ISO 28560-2. Some of the encoding rules are different because of the nature of the different RFID technology, but a number of rules are similar if not identical.

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Part 4: Encoding of data elements based on rules from ISO/IEC 15962 in an RFID tag with partitioned memory

1 Scope

This part of ISO 28560 defines rules for ISO 28560-1 data elements to be encoded in radio frequency identification (RFID) tags with a memory structure that is partitioned into four memory banks. This primarily applies to ISO/IEC 18000-63 (previously known as ISO/IEC 18000-6 Type C), operating in the UHF frequency, but not necessarily restricted to this technology.

The rules for encoding a subset of data elements taken from the total set of data elements defined in ISO 28560-1 are based on ISO/IEC 15962, which uses an object identifier structure to identify data elements. This part of ISO 28560 defines the rules for encoding a unique item identifier in a specific memory bank, known as MB 01, taking into account different requirements for privacy. It also defines the rules for encoding other relevant data in a separate memory bank, known as MB 11. Each of these memory banks is addressable using different command set of the appropriate RFID technology.

As with other parts of ISO 28560, this part of ISO 28560 is appropriate for the needs of all types of libraries (including academic, public, corporate, special, and school libraries).

This part of ISO 28560 provides essential standards based information about RFID in libraries. A source of additional information about implementation issues is provided in Annex A.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 15961-1, *Information technology — Radio frequency identification (RFID) for item management: Data protocol — Part 1: Application interface*

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

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 18046-1, *Information technology — Radio frequency identification device performance test methods — Part 1: Test methods for system performance*

ISO/IEC 18046-2, *Information technology — Radio frequency identification device performance test methods — Part 2: Test methods for interrogator performance*

ISO/IEC 18046-3, *Information technology — Radio frequency identification device performance test methods — Part 3: Test methods for tag performance*

ISO/IEC 18047-6, *Information technology — Radio frequency identification device conformance test methods — Part 6: Test methods for air interface communications at 860 MHz to 960 MHz*

