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Information technology — Radio frequency identification for item management —

Part 65:
Parameters for air interface communications for streaming sensors based on ISO/IEC 18000-63

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

Partie 65: Paramètres de communication d'une interface radio pour capteurs de flux basée sur l'ISO/IEC 18000-63

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Foreword

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

A list of all parts in the ISO/IEC 18000 series can be found on the ISO and IEC websites.

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Introduction

Passive-backscatter Interrogator-Talks-First (ITF) systems comprise Interrogators, also known as readers and tags. To differentiate the tags in ordinarily ITF system from the functional tags defined in this document, the functional tag is referred as to streaming sensor. A streaming sensor comprises, at least, a tag, which exploits the backscatter technology to establish the tag-to-interrogator link and an optional digital sensor. If a stream sensor involves a digital sensor, the tag provides a unique identification number for the digital sensor as well as working as a wireless modem between the interrogator and the digital sensor. Depending on the usage of the system, the interrogator may process, store and pass-through the received data from the tag. General functions as an item management application, specifically inventory, reading and writing tags are utilizing functionality defined in ISO/IEC 18000-63.

This document is based on ISO/IEC 18000-63. The unique features of this document are to accommodate the backscatter communication capability to various digital sensors and to allow simultaneous communication between streaming sensors and interrogators.

The described backscatter sensor system supports the following system capabilities in addition to the basic capability of ISO/IEC 18000-63:

— allocation of dedicated subcarrier frequency, bitrate and channel coding method to a selected set of streaming sensors;

— start and stop control of continuous data streaming from the set of streaming sensors to the interrogator;

— configuration and read/write of digital sensors from the interrogator through the tag in a streaming sensor.

Information technology — Radio frequency identification for item management —

Part 65:
Parameters for air interface communications for streaming sensors based on ISO/IEC 18000-63

1 Scope

This document establishes the air interface based on ISO/IEC 18000-63 for radio frequency identification (RFID) devices operating in the 860 MHz to 930 MHz range used in sensing as well as item management applications.

This document specifies the physical and logical requirements for a passive-backscatter Interrogator-Talks-First (ITF) system.

This document specifies:

— logical and physical procedures between the interrogator and tags to allocate a dedicated subcarrier channel to each of the tags to produce continuous data streaming;

— logical and physical procedure between the interrogator and the tags to start and stop the continuous data streaming;

— logical interface between the interrogator and the tag to configure a digital sensor and to receive data from the digital sensor through the tag.

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 18000-63:2026, *Information technology — Radio frequency identification for item management — Part 63: Parameters for RAIN air interface communications at 860 MHz to 930 MHz Type C*[1)]

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