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Information technology — Telecommunications and information exchange between systems — Magnetic field area network (MFAN) —

Part 3: Relay Protocol for Extended Range

Technologies de l'information — Téléinformatique — Réseau de zone de champ magnétique (MFAN)

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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.

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).

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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/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

This first edition of ISO/IEC 15149-3, together with ISO/IEC 15149-1, ISO/IEC 15149-2, and ISO/IEC 15149-4, cancels and replaces ISO/IEC 15149:2011, which has been technically revised.

ISO/IEC 15149 consists of the following parts, under the general title *Information technology — Telecommunications and information exchange between systems*:

— *Part 1: Air Interface*

— *Part 2: In-Band Control Protocol for Wireless Power Transfer*

— *Part 3: Relay Protocol for Extended Range*

— *Part 4: Security Protocol for Authentication*

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Introduction

This part of ISO/IEC 15149 provides protocols for magnetic field area networks (MFAN). MFAN can support the service based on wireless communication and wireless power transfer in harsh environments. MFAN is composed of four protocols; air interface, in-band control protocol, relay protocol and security protocol.

ISO/IEC 15149-1 specifies the physical layer and media access control layer protocols of wireless network over a magnetic field.

ISO/IEC 15149-2 specifies the control protocol for wireless power transfer based on magnetic field area network.

ISO/IEC 15149-3 specifies the relay protocol to extend effective network coverage of magnetic field area network.

ISO/IEC 15149-4 specifies the security protocol to authenticate nodes to communicate in magnetic field area network.

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Information technology — Telecommunications and information exchange between systems — Magnetic field area network (MFAN) —

Part 3:
Relay Protocol for Extended Range

1 Scope

This part of ISO/IEC 15149 specifies relay protocol to extend effective network coverage of magnetic field area networks. The addressing, request and response codes are defined.

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 15149-1:2014, *Information technology — Telecommunications and information exchange between systems — Magnetic field area network (MFAN) — Part 1: Air Interface*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 15149-1:2014 and the following apply.

3.1
wireless power transfer
WPT
mechanism in which a unit having enough power wirelessly transfer it to other units

3.2
Magnetic Field Area Network
MFAN
wireless network that provides reliable communication in harsh environments using magnetic field

3.3
Magnetic Field Area Network - Coordinator
MFAN-C
device that manages the connection and release of nodes within the communication area and the sending and receiving time of data in an MFAN

3.4
Magnetic Field Area Network – Node
MFAN-N
device except the coordinator that forms a network in an MFAN

3.5
Magnetic Field Area Network – Repeater
MFAN-R
device among MFAN-Ns that performs partial functions of coordinator

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