TECHNICAL SPECIFICATION

ISO/IEC TS 24192-1

First edition
2021-05

Cards and security devices for personal identification — Communication between contactless readers and fare media used in public transport —

Part 1: Implementation requirements for ISO/IEC 14443 (all parts)

Cartes et dispositifs de sécurité pour l'identification personnelle — Communication entre terminaux et objets sans contact utilisés en transport public —

Partie 1: Exigences d'implémentation pour l'ISO/IEC 14443 (toutes les parties)

Reference number
ISO/IEC TS 24192-1:2021(E)

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Published in Switzerland

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Foreword

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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 or www.iec.ch/members_experts/refdocs).

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This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology, Information technology,* Subcommittee SC 17*, Cards and security devices for personal identification*.

A list of all parts in the ISO/IEC TS 24192 series can be found on the ISO and IEC website.

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Introduction

This document defines the requirements related to the use of ISO/IEC 14443 (all parts) to ensure interoperability between fare management system terminals and multiple-form-factor contactless fare media (smartcards, e-tickets, mobile phones, USB keys, tablets, etc.).

These implementation requirements are not designed to repeat or duplicate the referenced specifications, essentially ISO/IEC 14443 (all parts) and ISO/IEC 10373-6, but to complement those specifications with public transport specific considerations.

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Cards and security devices for personal identification — Communication between contactless readers and fare media used in public transport —

Part 1: Implementation requirements for ISO/IEC 14443 (all parts)

1 Scope

This document defines the technical requirements to be met by contactless public transport (PT) devices in order to be able to interface together using the ISO/IEC 14443 (all parts) contactless communications protocol.

This document applies to PT devices:

— PT readers which are contactless fare management system terminals acting as a PCD contactless reader based on ISO/IEC 14443 (all parts);

— PT objects which are contactless fare media acting as a PICC contactless object based on ISO/IEC 14443 (all parts).

This document addresses interoperability of consumer-market NFC mobile devices, compliant to NFC Forum specifications, with above mentioned PT devices, aligns with ISO/IEC 14443 (all parts) and does not seek to limit compliance for PT readers with EMV Contactless Interface Specification.

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/TS 24192-2, *Cards and security devices for personal identification — Communication between contactless readers and fare media used in public transport — Part 2: Test plan for ISO/IEC 14443 (all parts)*

ISO/IEC 10373-6, *Cards and security devices for personal identification — Test methods — Part 6: Contactless proximity objects*

ISO/IEC 14443 (all parts), *Cards and security devices for personal identification — Contactless proximity objects*

ISO/IEC 15693-2, *Cards and security devices for personal identification — Contactless vicinity objects — Part 2: Air interface and initialization*

ISO/IEC 18092, *Information technology — Telecommunications and information exchange between systems — Near Field Communication — Interface and Protocol (NFCIP-1)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 14443-1, ISO/IEC 14443-2, ISO/IEC 14443-3, ISO/IEC 14443-4, ISO/IEC 10373-6 and the following apply.

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ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
common reader
PT reader (3.8) used in interoperable fare management system terminals with reduced performance requirements

Note 1 to entry: See 8.1.

3.2
IFM reader
PT reader (3.8) used in interoperable fare management system terminals

Note 1 to entry: See 8.1.

3.3
NFC mobile device
mobile device capable of near field communication that is offered in the consumer market and is used by PT customers as a contactless object or a contactless reader

3.4
NFC mobile device in card emulation mode
mobile device used as a *PT object* (3.7)

3.5
NFC mobile device in reader/writer mode
mobile device used as a *PT reader* (3.8)

3.6
PT device
PT reader (3.8) or *PT object* (3.7)

3.7
PT object
PICC specifically designed for the use in PT systems

Note 1 to entry: PICC is defined in ISO/IEC 14443 (all parts).

3.8
PT reader
PCD specifically designed for the use in PT systems

Note 1 to entry: PCD is defined in ISO/IEC 14443 (all parts).

4 Symbols and abbreviations

For the purposes of this document, the abbreviations given in ISO/IEC 14443-1, ISO/IEC 14443-2, ISO/IEC 14443-3, ISO/IEC 14443-4, ISO/IEC 10373-6 and the following apply.

ICS implementation conformance statements

NFC near field communication

PT public transport

t_{detect} maximum reference PICC time-to-detection

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