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AMENDMENT 3
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Identification cards — Contactless integrated circuit cards — Proximity cards —

Part 3: Initialization and anticollision

AMENDMENT 3: Alternating between PICC and PCD functionalities, and PICC supporting both types

Cartes d'identification — Cartes à circuit(s) intégré(s) sans contact — Cartes de proximité —

Partie 3: Initialisation et anticollision

AMENDEMENT 3: Alternance entre fonctionnalités PICC et PCD, et PICC supportant les deux types

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Foreword

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Amendment 3 to ISO/IEC 14443-3:2011 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and personal identification*.

Identification cards — Contactless integrated circuit cards — Proximity cards —

Part 3: Initialization and anticollision

AMENDMENT 3: Alternating between PICC and PCD functionalities, and PICC supporting both types

Page 1, Clause 1

Add new bullet after last bullet:

— optional capability to allow a device to alternate between the functions of a PICC and a PCD to communicate with a PCD or a PICC, respectively. A device which implements this capability is called a PXD and shall comply with all PXD requirements in this standard.

Replace last paragraph by:

This part of ISO/IEC 14443 is applicable to PICCs of Type A and of Type B and PCDs (as described in ISO/IEC 14443-2) and to PXDs.

Page 2, Clause 3

Add new definitions and renumber all definitions in alphabetical order:

3.7
PICC Mode
Mode in which a PXD operates as a PICC

3.8
PCD Mode
Mode in which a PXD operates as a PCD

Page 2, Clause 4

Add new symbols and abbreviated terms and list all symbols and abbreviated terms in alphabetical order:

PXD Proximity eXtended Device

t_{cyc} maximum automatic mode alternation cycle time

t_{diff} minimum time difference of PICC Mode durations

Page 5, Clause 5

Move existing Clause 5, subclauses 5.1, 5.2, 5.3 and 5.4 into new subclauses 5.2, 5.2.1, 5.2.2, 5.2.3 and 5.2.4, respectively.

Replace all references to “Clause 5” by “5.2”.

Create new Clause 5 and subclause 5.1:

5 Initial dialogs

5.1 Alternating PICC and PCD support (PXD)

A proximity extended device (PXD) shall alternately support PICC requirements (PICC Mode) and PCD requirements (PCD Mode).

The alternation between the PICC Mode and the PCD Mode may be either automatic or a Mode (PICC Mode or PCD Mode) may be explicitly selected by the user.

The PICC Mode and the PCD Mode are defined as PICC and PCD in ISO/IEC 14443.

The automatic alternation is defined as follows:

— the PXD shall alternate between the PICC Mode and the PCD Mode with maximum cycle time $t_{cyc} = 1$ s and shall stay in PICC Mode (ready for receiving REQA/WUPA or REQB/WUPB commands, except for the first 5 ms) longer than in PCD Mode (generating operating field), until a communication to either a PICC, a PCD or another PXD is established,

— the PXD shall randomly set the PICC Mode duration for each cycle to a value chosen from a set of at least 2 different values differing by at least $t_{diff} = 5$ ms between each of them,

— in PICC Mode, after reception of a valid REQA/WUPA or REQB/WUPB command, the PXD shall not go in PCD Mode before a POWER-OFF state,

— when leaving the PCD Mode after processing of a PICC (or a PXD in PICC mode), the PXD shall resume its automatic mode alternation with the PICC Mode first.

NOTE 1 The PXD may check the presence of external operating field to decide not to enter PCD Mode, i.e. to stay in PICC Mode for a further random PICC Mode duration.

NOTE 2 The detection of the removal of a PICC (or PXD in PICC Mode) should be done by a PICC presence check method without switching off the operating field to keep the same UID/PUPI and to avoid PXD entering the PCD Mode.

Page 5, 5.1 renumbered to 5.2

Add the following examples after EXAMPLE 4:

EXAMPLE 5 When a PICC supporting Type A and Type B is exposed to field activation it shall be able to accept a REQA (or WUPA) within 5 ms of unmodulated operating field.

EXAMPLE 6 When a PICC supporting Type A and Type B is exposed to field activation it shall be able to accept a REQB (or WUPB) within 5 ms of unmodulated operating field.

Add the following paragraph and note at the end and renumber existing NOTE to NOTE 1:

If the PICC supports Type A and Type B, then it shall be locked in the type of the first processed request command (after Answer to Request of one type, the other type is disabled until the PICC enters POWER-OFF state).

NOTE 2 PCDs may need to adapt their polling cycles if they want to detect such a PICC in the disabled type.

