DRAFT AMENDMENT ISO/IEC 14443-4.2:2008/DAM 5

ISO/IEC JTC **1** Secretariat: **ANSI**

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Identification cards — Contactless integrated circuit cards — Proximity cards —

Part 4: Transmission protocol

AMENDMENT 5: Handling rules of RFU bits

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

Partie 4: Protocole de transmission

AMENDEMENT 5: Règles de manipulation des bits RFU

ICS 35.240.15

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Foreword

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Amendment 5 to ISO/IEC 14443-4:2008 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 4: Transmission protocol

Amendment 5: Handling rules of RFU bits

Page 2, Clause 4

Add the following paragraphs after last dash:

“For the purposes of this part of ISO/IEC 14443, the following general rule applies:

A PICC or PCD sending RFU bits shall set these bits to the value indicated herein or to (0)b if no value is given. A PICC or PCD receiving RFU bits shall disregard the value of these bits and shall maintain and not change its function, unless explicitly stated otherwise.”

Page 6, 5.1 (Amended by ISO/IEC 14443-4:2008/Amd.2:2012)

Replace second dash and NOTE with the following dash and note:

“— Until the RFU values 'D' - 'F' are assigned by ISO/IEC, a PICC receiving a FSDI with a value = 'D' - 'F' shall interpret it as FSDI = 'C' (FSD = 4 096 bytes).

NOTE This PCD requirement is added for PCD's compatibility with future PICCs when ISO/IEC defines the behaviour for the RFU values of 'D' - 'F'.”

Delete fourth dash.

Page 7, 5.2.3

Replace first dash with:

“— b8 is RFU.”

Replace fourth dash and NOTE with the following dash and NOTE:

“— Until the RFU values 'D' - 'F' are assigned by ISO/IEC, a PCD receiving a FSCI with a value = 'D' - 'F' shall interpret it as FSCI = 'C' (FSC = 4 096 bytes).

NOTE This PICC requirement is added for PICC´s compatibility with future PCDs when ISO/IEC defines the behaviour for the RFU values of 'D' - 'F'.”

Replace Figure 5 with:

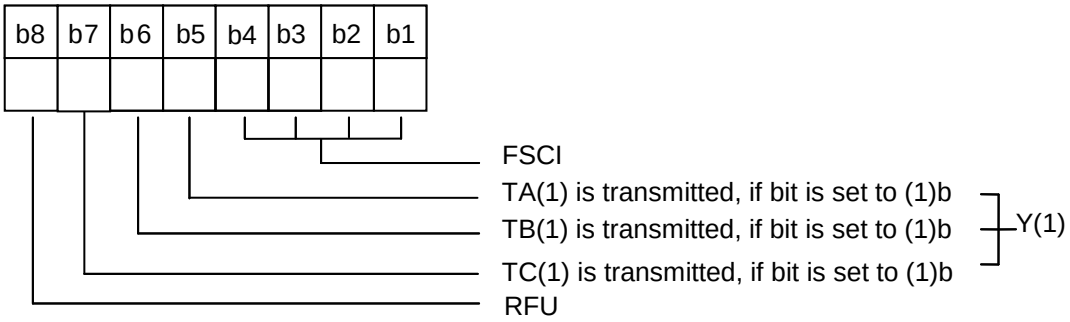

Figure 5 — Coding of format byte

Page 8, 5.2.4

Replace third dash with:

"— b4 shall be set to (0)b."

Replace Figure 6 with:

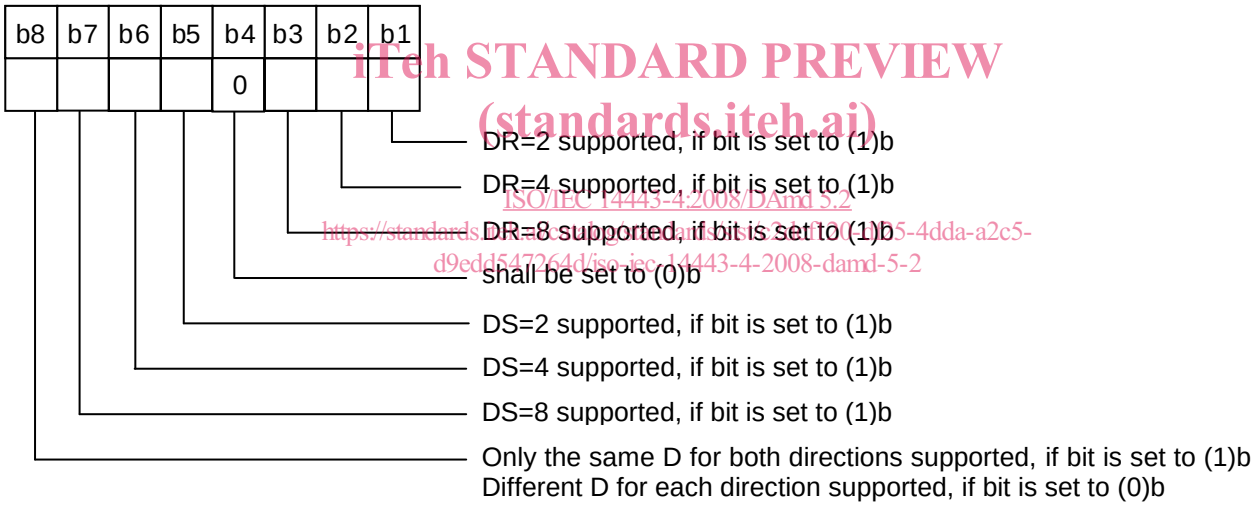

Figure 6 — Coding of interface byte TA(1)

Replace last paragraph with:

A PCD receiving TA(1) with b4 =(1)b shall interpret it as (b8-b1) = (00000000)b, implying 106kbit/s in both directions. The definition of TA(1) with b4 = (1)b is otherwise undefined

Page 9, 5.2.5

Replace last two paragraphs with:

"Until the RFU value 15 is assigned by ISO/IEC, a PCD receiving SFGI = 15 shall interpret it as SFGI = 0.

Until the RFU value 15 is assigned by ISO/IEC, a PCD receiving FWI = 15 shall interpret it as FWI = 4."

Page 9, 5.2.6

Replace first dash of second paragraph with:

"— b8 to b3 are each RFU."

Delete third dash of second paragraph.

Replace Figure 8 with:

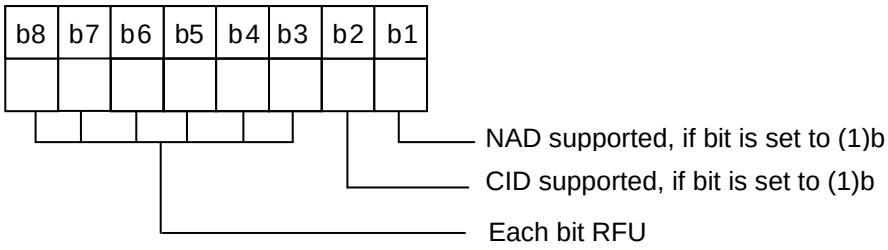

Figure 8 — Coding of interface byte TC(1)

Page 11, 5.3.2

Replace first sentence of second paragraph with:

"The PCD shall set (b4 to b1) = (0001)b and (b8 to b6) = (000)b."

Replace Figure 11 with:

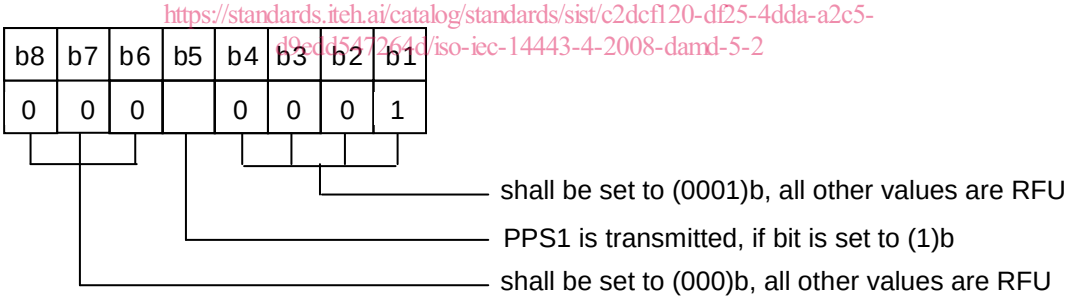

Figure 11 — Coding of PPS0

Page 11, 5.3.3

Replace the four dashes of first paragraph with:

"– b8 to b5 shall each be (0)b; a PICC receiving any bit b8 to b5 set to (1)b shall apply 5.6.2.2 (b)."

– The two bit value field (b4, b3) is called DSI and codes the selected divisor integer from PICC to PCD.

– The two bit value field (b2, b1) is called DRI and codes the selected divisor integer from PCD to PICC."

Replace Figure 12 with:

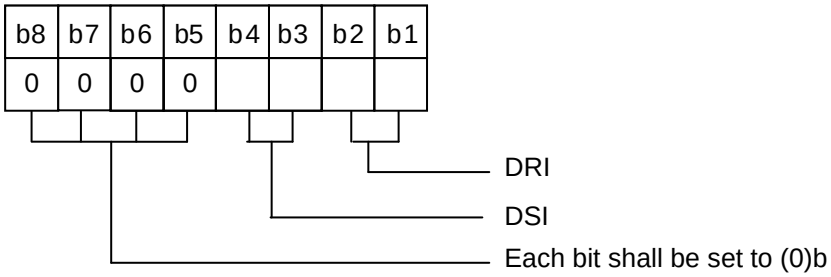

Figure 12 — Coding of PPS1

Page 12, 5.4

Replace second paragraph with:

“The new bit rates shall become effective in the PICC immediately after it has sent the PPS response. The

PCD shall not change the bit rate when the PPS response is missing or invalid or when the PPSS returned by the PICC is not identical with the PPSS sent by the PCD.”

Page 12, 5.6.1.2

Replace b) and c) with:

“b) receives a valid HLTA, the PICC

— shall process the command and shall enter HALT state.

c) receives an invalid command, an error or a RATS command with CID = 15, the PICC

— shall not respond and shall enter IDLE state or HALT state as specified in Figure 7 “PICC Type A State Diagram” of ISO/IEC 14443-3.”

Page 15, 7.1.1.1 (renumbered to 7.1.2.1 by ISO/IEC 14443-4:2008/FDAM4)

Replace 7.1.2.1 with the following and renumber subsequent tables:

“The PCB is used to convey the information required to control the data transmission.

The protocol defines three fundamental types of blocks:

— I-block used to convey information for use by the application layer.

— R-block used to convey positive or negative acknowledgements. An R-block never contains an INF field. The acknowledgement relates to the last received block.

— S-block used to exchange control information between the PCD and the PICC. The support of the S(PARAMETERS) block is optional for PCDs and PICCs. Three different types of S-blocks are defined:

1) "Waiting time extension" containing a 1 byte long INF field,

2) "DESELECT" containing no INF field,

3) "PARAMETERS" containing a n-byte long INF field with n ≥ 0.

NOTE FSD and FSC should be large enough to contain the expected S(PARAMETERS) blocks.

The coding of the PCB depends on its type and is defined by the following figures. The setting of (b8, b7) is used to identify its block type as defined in Table 3.

A PICC or PCD receiving (b8, b7) = (01)b shall treat it as a protocol error.

Table 3 — Coding of Block type

a) (b8, b7)	b) Block Type
c) (00)b	d) I-block
e) (01)b	f) RFU
g) (10)b	h) R-block
i) (11)b	j) S-block

The coding of I-block PCB is shown in Figure 16.

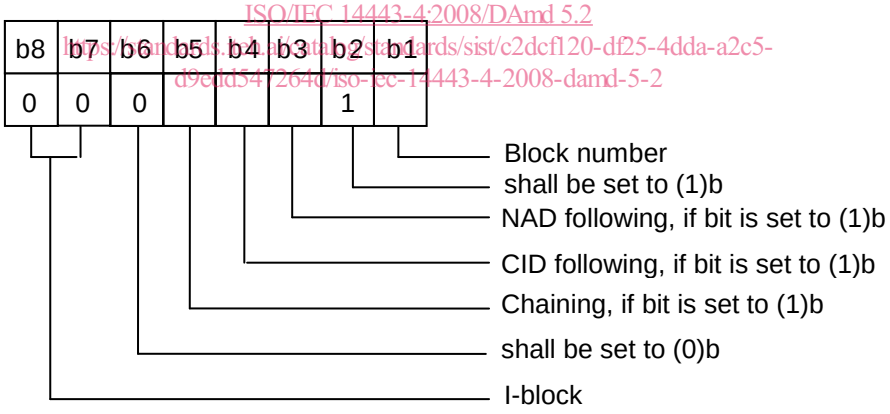

Figure 16 – Coding of I-block PCB

A PICC or PCD receiving an I-Block with b2 = (0)b shall treat it as a protocol error.

A PICC or PCD receiving an I-Block with b6 = (1)b should treat it as a protocol error.

The coding of R-block PCB is shown in Figure 17.