INTERNATIONAL STANDARD

ISO/IEC 10373-6

Fourth edition
2020-07

AMENDMENT 2
2020-11

Cards and security devices for personal identification — Test methods —

Part 6: Contactless proximity objects

AMENDMENT 2: Enhancements for harmonization

Cartes et dispositifs de sécurité pour l'identification personnelle — Méthodes d'essai —

Partie 6: Objets sans contact de proximité

AMENDEMENT 2: Améliorations pour harmonisation

Reference number
ISO/IEC 10373-6:2020/Amd.2:2020(E)

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Published in Switzerland

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

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Cards and security devices for personal identification — Test methods —

Part 6: Contactless proximity objects

AMENDMENT 2: Enhancements for harmonization

4.7, Table 3

Add the following row at the end of the table:

"

Parameter	Description	Unit
Type A collision resolution supported	Collision resolution for Type A	

"

H.2.3.4, Table H.8

Replace the table with the following:

"

Explanation	Test result
Only when the PCD: — starts the bit frame anticollision loop or — resets the operating field	PASS
Any other case	FAIL

"

H.2.4.1

Add the following sentence at the end of the paragraph:

"Procedure 4 defined in H.2.4.3.4 is only applicable to PCDs supporting Type A collision resolution; and Procedure 5 defined in H.2.4.3.5 is only applicable to PCDs not supporting Type A collision resolution (see Table 3)."

H.2.4.3.5

Add the following paragraph at the beginning of the subclause:

"This procedure is only applicable to PCDs supporting Type A collision resolution (see Table 3)."

H.2.4.3.6

Add the following new subclause after H.2.4.3.5:

"

H.2.4.3.6 Procedure 5 (Detection of full bitwise anticollision loop for PICC)

This procedure is only applicable to PCDs not supporting Type A collision resolution (see Table 3).

Use the following sequence:

a) The UT performs the activation procedure according to H.1.8.1.

b) The LT waits until the PCD sends a valid REQA/WUPA command frame.

c) The LT answers with ATQA indicating bit frame anticollision and UID size: single (bits b8 and b7 equal (00)b).

d) The PCD shall send ANTICOLLISION command: '93 20'.

e) The LT answers by a stream of 40 bits by emulating a collision on every bit, including parity bits.

f) The PCD shall reset the operating field.

Table H.13 gives part of the procedure as a scenario.

Table H.13 — Scenario H.5: Detection of full bitwise anticollision loop for PICC (Procedure 5)

Test	PCD		LT
REQA/WUPA	REQA/WUPA	→	
		←	ATQA (single size UID)
ANTICOLLISION	ANTICOLLISION command ('93 20')	→	
		←	40 bits full collision frame
RESET	Reset of the operating field	→	

"

H.2.4.4, Table H.13

Replace the table with the following:

"

Explanation	Test result
Only when the PCD's behavior matches each applicable procedure expected scenario	PASS
Any other case	FAIL

"

H.2.5.3.2

Delete the subclause "H.2.5.3.2 Procedure 1" and renumber the subsequent subclauses.

H.2.10.3

Replace step g) with the following:

"g) The PCD either shall send $R(NAK)_0$ or shall send an S(DESELECT) request or shall reset the operating field."

H.2.10.3, Table H.24

Replace the last row with the following:

"

PCD		LT
$R(NAK)_0$ ('BA' CID CRC or 'B2' CRC) or S(DESELECT) or reset of the operating field	→	

"

H.3.3.3.2

Replace step l) with the following:

"l) The PCD either shall send an S(DESELECT) request without NAD and CID or shall reset the operating field."

H.3.3.3.2, Table 28

Replace the last row with the following:

"

PCD		LT
Optional $R(NAK)_0$ without NAD and CID	→ ←	 Mute
S(DESELECT) request without NAD and CID or reset of the operating field	→	

"

H.3.3.3.3

Replace step k) at the end with the following:

"k) The PCD either shall send an S(DESELECT) request with CID value equals to '0X' and without NAD or shall reset the operating field."

H.3.3.3.3, Table H.29

Replace the last row with the following:

"

PCD		LT
Optional $R(NAK)_0$ with CID value equals '0X' and without NAD	→	
	←	Mute
S(DESELECT) request with CID value equals '0X' and without NAD or reset of the operating field	→	

"

H.4.4.3.3

Replace step f) with the following:

"f) The PCD either shall send a $R(NAK)_0$ or shall send an S(DESELECT) request or shall reset the operating field."

H.4.4.3.3, Table H.42

Replace the last row with the following:

"

PCD		LT
$R(NAK)_0$ ('BA' CID CRC or 'B2' CRC) or S(DESELECT) or reset of the operating field	→	

"

H.4.4.3.4, Table H.43

Replace the last row with the following:

"

PCD		LT
$R(NAK)_0$ ('BA' CID CRC or 'B2' CRC) or S(DESELECT) or reset of the operating field	→	

"

H.4.4.3.5

Replace step d) with the following:

"d) The PCD either shall send an S(DESELECT) request or shall reset the operating field."

H.4.4.3.5, Table H.44

Replace the last row with the following:

"

PCD		LT
S(DESELECT) request or reset of the operating field	→	

"

H.4.4.3.7

Replace step f) with the following:

"f) Record all responses from the PCD. The PCD either shall send an $R(NAK)_0$ or shall send an S(DESELECT) request or shall reset the operating field."

H.4.4.3.7, Table H.46

Replace the last row with the following:

"

PCD		LT
$R(NAK)_0$ or S(DESELECT) request or reset of the operating field	→	

"

H.4.4.3.13

Delete the subclause "H.4.4.3.13 Procedure 12 (ISO/IEC 14443-4:2018, 7.5.3.2 rule 8)" and renumber the subsequent subclauses.

I.3.1.1

Delete NOTE.

Replace steps h), i) and j) with the following:

"

h) The PCD either shall send an S(DESELECT) request using the bit rate selected or shall reset the operating field.

i) If the PCD sent an S(DESELECT) request in step h) then the PCD-test-apparatus sends a valid S(DESELECT) response using the bit rate selected. Otherwise the PCD-test-apparatus checks that the PCD resets the operating field.

j) If the PCD sent an S(DESELECT) request in step h), the PCD shall send a valid WUPA command frame using the bit rate $f_c/128$. Otherwise the PCD shall send either a valid REQA or a valid WUPA command frame using the bit rate $f_c/128$.

"

I.3.1.1, Table I.2

Replace the last two rows with the following:

"

PCD		PCD-test-apparatus
S(DESELECT) request or reset of the operating field	→ ←	 If S(DESELECT) request then S(DESELECT) response (using selected bit rate)
If S(DESELECT) request then WUPA else WUPA/REQA (using bit rate f_c/128)	→ ←	 ATQA (using bit rate f_c/128)

"

I.3.2.1

Delete NOTE.

Replace steps g), h) and i) with the following:

"

g) The PCD either shall send an S(DESELECT) request using the bit rate selected or shall reset the operating field.

h) If the PCD sent an S(DESELECT) request in step g) then the PCD-test-apparatus sends a valid S(DESELECT) response using the bit rate selected. Otherwise the PCD-test-apparatus checks that the PCD resets the operating field.

i) If the PCD sent an S(DESELECT) request in step g), the PCD shall send a valid WUPB command frame using the bit rate f_c/128. Otherwise the PCD shall send either a valid REQB or a valid WUPB command frame using the bit rate f_c/128.

"

I.3.2.1, Table I.4

Replace the last two rows with the following:

"

PCD		PCD-test-apparatus
S(DESELECT) request or reset of the operating field	→ ←	 If S(DESELECT) request then S(DESELECT) response (using selected bit rate)
If S(DESELECT) request then WUPB else WUPB/REQB (using bit rate f_c/128)	→ ←	 ATQB (using bit rate f_c/128)

"

I.3.3.1

Delete NOTE 3.

Replace steps h), i) and j) with the following:

"

h) The PCD either shall send an S(DESELECT) request using the bit rate selected or shall reset the operating field.

i) If the PCD sent an S(DESELECT) request in step h) then the PCD-test-apparatus sends a valid S(DESELECT) response using the bit rate selected. Otherwise the PCD-test-apparatus checks that the PCD resets the operating field.

j) If the PCD sent an S(DESELECT) request in step h), the PCD shall send a valid WUPA for Type A or a valid WUPB for Type B command frame using the bit rate f_c/128. Otherwise the PCD shall send either a valid REQA or a valid WUPA for Type A or a valid REQB or a valid WUPB for Type B command frame using the bit rate f_c/128.

"