

B.2.2 Request for waiting time extension

Scenario 2 Waiting time extension

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.				<====	S(WTX) request		rule 9
3.	rule 3		S(WTX) response	====>			
4.	rule B	1		<====	I(0) ₀		rule 10
5.			I(0) ₁	====>		1	rule D
6.	rule B	0		<====	I(0) ₁		rule 10

B.2.3 DESELECT

Scenario 3 DESELECT

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.	rule B	1		<====	I(0) ₀		rule 10
3.			S(DESELECT) request	====>			
4.				<====	S(DESELECT) response		rule 3

B.2.4 Chaining

Scenario 4 PCD uses chaining

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(1) ₀	====>		0	rule D
2.	rule B	1		<====	R(ACK) ₀		rule 2
3.	rule 7		I(0) ₁	====>		1	rule D
4.	rule B	0		<====	I(0) ₁		rule 10
5.			I(0) ₀	====>		0	rule D
6.	rule B	1		<====	I(0) ₀		rule 10

Scenario 5 PICC uses chaining

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.	rule B	1		<===	I(1) ₀		rule 10
3.	rule 2		R(ACK) ₁	====>		1	rule E
4.	rule B	0		<===	I(0) ₁		rule 13
5.			I(0) ₀	====>		0	rule D
6.	rule B	1		<===	I(0) ₀		rule 10

B.3 Error handling

B.3.1 Exchange of I-blocks

Scenario 6 Start of protocol

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	==>			
2.	time-out			<= =	-		
3.	rule 4		R(NAK) ₀	====>			
4.		no change		<===	R(ACK) ₁		rule 12
5.	rule 6		I(0) ₀	====>		0	rule D
6.	rule B	1		<===	I(0) ₀		rule 10
7.			I(0) ₁	====>		1	rule D
8.	rule B	0		<===	I(0) ₁		rule 10

Scenario 7 Exchange of I-blocks

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.	rule B	1		<===	I(0) ₀		rule 10
3.			I(0) ₁	==>			
4.	time-out			<= =	-		
5.	rule 4		R(NAK) ₁	====>			
6.		no change		<===	R(ACK) ₀		rule 12
7.	rule 6		I(0) ₁	====>		1	rule D
8.	rule B	0		<===	I(0) ₁		rule 10
9.			I(0) ₀	====>		0	rule D
10.	rule B	1		<===	I(0) ₀		rule 10

ISO/IEC 14443-4:2001(E)

Scenario 8 Exchange of I-blocks

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.				<==#	I(0) ₀		rule 10
3.	rule 4		R(NAK) ₀	====>			
4.	rule B	1		<====	I(0) ₀		rule 11
5.			I(0) ₁	====>		1	rule D
6.	rule B	0		<====	I(0) ₁		rule 10

Scenario 9 Exchange of I-blocks

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.				<==#	I(0) ₀		rule 10
3.	rule 4		R(NAK) ₀	==#>			
4.	time-out			<= =	-		
5.	rule 4		R(NAK) ₀	====>			
6.	rule B	1		<====	I(0) ₀		rule 11
7.			I(0) ₁	====>		1	rule D
8.	rule B	0		<====	I(0) ₁		rule 10

B.3.2 Request for waiting time extension

Scenario 10 Request for waiting time extension

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.				<==#	S(WTX) request		rule 9
3.	rule 4		R(NAK) ₀	====>			
4.				<====	S(WTX) request		rule 11
5.	rule 3		S(WTX) response	====>			
6.	rule B	1		<====	I(0) ₀		rule 10
7.			I(0) ₁	====>		1	rule D
8.	rule B	0		<====	I(0) ₁		rule 10

Scenario 11 Request for waiting time extension

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.				<==#	S(WTX) request		rule 9
3.	rule 4		R(NAK) ₀	==#>			
4.	time-out			<==	-		
5.	rule 4		R(NAK) ₀	====>			
6.				<===	S(WTX) request		rule 11
7.	rule 3		S(WTX) response	====>			
8.	rule B	1		<===	I(0) ₀		rule 10
9.			I(0) ₁	====>		1	rule D
10.	rule B	0		<===	I(0) ₁		rule 10

Scenario 12 Request for waiting time extension

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.				<===	S(WTX) request		rule 9
3.	rule 3		S(WTX) response	==#>			
4.	time-out			<==	-		
5.	rule 4		R(NAK) ₀	====>			
6.				<===	S(WTX) request		rule 11
7.	rule 3		S(WTX) response	====>			
8.	rule B	1		<===	I(0) ₀		rule 10
9.			I(0) ₁	====>		1	rule D
10.	rule B	0		<===	I(0) ₁		rule 10

Scenario 13 Request for waiting time extension

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.				<===	S(WTX) request		rule 9
3.	rule 3		S(WTX) response	====>			
4.				<==#	I(0) ₀		rule 10
5.	rule 4		R(NAK) ₀	====>			
6.	rule B	1		<===	I(0) ₀		rule 11
7.			I(0) ₁	====>		1	rule D
8.	rule B	0		<===	I(0) ₁		rule 10

ISO/IEC 14443-4:2001(E)

Scenario 14 Request for waiting time extension

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.				<====	S(WTX) request		rule 9
3.	rule 3		S(WTX) response	====>			
4.				<==#	I(0) ₀		rule 10
5.	rule 4		R(NAK) ₀	==#>			
6.	time-out			<==	-		
7.	rule 4		R(NAK) ₀	====>			
8.	rule B	1		<====	I(0) ₀		rule 11
9.			I(0) ₁	====>		1	rule D
10.	rule B	0		<====	I(0) ₁		rule 10

B.3.3 DESELECT

Scenario 15 DESELECT

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.	rule B			<====	I(0) ₀		rule 10
3.			S(DESELECT) request	==#>			
4.	time-out			<==	-		
5.	rule 8		S(DESELECT) request	====>			
6.				<====	S(DESELECT) response		rule 3

B.3.4 Chaining

Scenario 16 PCD uses chaining

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(1) ₀	====>		0	rule D
2.				<==#	R(ACK) ₀		rule 2
3.	rule 4		R(NAK) ₀	====>			
4.	rule B	1		<====	R(ACK) ₀		rule 11
5.	rule 7		I(1) ₁	====>		1	rule D
6.	rule B	0		<====	R(ACK) ₁		rule 2
7.	rule 7		I(0) ₀	====>		0	rule D
8.	rule B	1		<====	I(0) ₀		rule 10
9.			I(0) ₁	====>		1	rule D
10.	rule B	0		<====	I(0) ₁		rule 10

Scenario 17 PCD uses chaining

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(1) ₀	====>		0	rule D
2.	rule B	1		<===	R(ACK) ₀		rule 2
3.	rule 7		I(1) ₁	==>			
4.	time-out			<==	-		
5.	rule 4		R(NAK) ₁	====>			
6.		no change		<===	R(ACK) ₀		rule 12
7.	rule 6		I(1) ₁	====>		1	rule D
8.	rule B	0		<===	R(ACK) ₁		rule 2
9.	rule 7		I(0) ₀	====>		0	rule D
10.	rule B	1		<===	I(0) ₀		rule 10
11.			I(0) ₁	====>		1	rule D
12.	rule B	0		<===	I(0) ₁		rule 10

Scenario 18 PCD uses chaining

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(1) ₀	====>		0	rule D
2.				<==	R(ACK) ₀		rule 2
3.	rule 4		R(NAK) ₀	==>			
4.	time-out			<==	-		
5.	rule 4		R(NAK) ₀	====>			
6.	rule B	1		<===	R(ACK) ₀		rule 11
7.	rule 7		I(1) ₁	====>		1	rule D
8.	rule B	0		<===	R(ACK) ₁		rule 2
9.	rule 7		I(0) ₀	====>		0	rule D
10.	rule B	1		<===	I(0) ₀		rule 10
11.			I(0) ₁	====>		1	rule D
12.	rule B	0		<===	I(0) ₁		rule 10

ISO/IEC 14443-4:2001(E)

Scenario 19 PICC uses chaining

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.	rule B	1		<====	I(1) ₀		rule 10
3.	rule 2		R(ACK) ₁	==>			
4.	time-out			<==	-		
5.	rule 5		R(ACK) ₁	====>		1	rule E
6.	rule B	0		<====	I(1) ₁		rule 13
7.	rule 2		R(ACK) ₀	====>		0	rule E
8.	rule B	1		<====	I(0) ₀		rule 13
9.			I(0) ₁	====>		1	rule D
10.	rule B	0		<====	I(0) ₁		rule 10

Scenario 20 PICC uses chaining

	Comment	Block No. (0)	PCD		PICC	Block No. (1)	Comment
1.	rule 1		I(0) ₀	====>		0	rule D
2.	rule B	1		<====	I(1) ₀		rule 10
3.	rule 2		R(ACK) ₁	====>		1	rule E
4.				<==>	I(1) ₁		rule 13
5.	rule 5		R(ACK) ₁	====>		no change	
6.	rule B	0		<====	I(1) ₁		rule 11
7.	rule 2		R(ACK) ₀	====>		0	rule E
8.	rule B	1		<====	I(0) ₀		rule 13
9.			I(0) ₁	====>		1	rule D
10.	rule B	0		<====	I(0) ₁		rule 10

Annex C (informative)

Block and frame coding overview

This clause gives an overview of the different block and frame coding sent by the PCD. The type of a block respectively frame is indicated by the first byte.

Definitions made in ISO/IEC 14443-3:

REQA	(0100110)b (7 bit)
WUPA	(1010010)b (7 bit)
REQB / WUPB	(00000101)b
Slot-MARKER (Type B only)	(xxxx0101)b
SELECT (Type A only)	(1001xxxx)b
ATTRIB (Type B only)	(00011101)b
HLTA	(01010000)b
HLTB	(01010000)b

Definitions made in this part of ISO/IEC 14443:

RATS	(11100000)b
PPS	(1101xxxx)b
I-block	(00xxxxxx)b (not (00xxx101)b)
R-block	(10xxxxxx)b (not (1001xxxx)b)
S-block	(11xxxxxx)b (not (1110xxxx)b and not (1101xxxx)b)

The following table describes the first byte of the defined block and frame coding.

Table C.1 — Block and frame coding

Bit	I-block PCB	R-block PCB	S-block PCB		REQB / WUPB	Slot-MARKER	SELECT	ATTRIB	HLTA	HLTB	RATS	PPS
			DESELECT	WTX								
b8	0	1	1		0	X	1	0	0	0	1	1
b7	0	0	1		0	X	0	0	1	1	1	1
b6	0 (RFU)	1	0	1	X	X	0	0	0	0	1	0
b5	Chaining	ACK/NAK	0	1	X	X	1	1	1	1	0	1
b4	CID	CID	CID		0	0	X	1	0	0	0	X
b3	NAD	0 (no NAD)	0 (no NAD)		1	1	X	1	0	0	0	X
b2	1	1 (RFU)	1 (RFU)		0	0	X	0	0	0	0	X
b1	block number	block number	0 (RFU)		1	1	X	1	0	0	0	X

ICS 35.240.15

Price based on 34 pages

© ISO/IEC 2001 – All rights reserved