INTERNATIONAL STANDARD

ISO/IEC 7816-4

Identification cards — Integrated circuit cards —

Part 4:
Organization, security and commands for interchange

AMENDMENT 1: Multiple record handling

Cartes d'identification — Cartes à circuit intégré —

Partie 4: Organisation, sécurité et commandes pour les échanges

AMENDEMENT 1: Manutention multiple record

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AMENDMENT 1: Multiple record handling

Page 17, Table 6

Replace text in the "Meaning" column for SW1 = '62' and SW2 = '87' with the following:

> At least one of the referenced records is not processed for some reason, e.g. record deactivated, security status not satisfied or conditions of use not satisfied.

Page 74, 11.3.2, second paragraph, third sentence

Replace the description in parentheses with the following:

> At least one of the referenced records is not processed.

Page 74, 11.3.2, NOTE

Replace the text of the NOTE with the following:

> If the number of records exceeds the numbering range ('01' to 'FE') of the record handling command, records can be handled, e.g. by using next occurrence option of the record identifier, or by using multiple record handling with record number DO '02'.

Page 74, 11.3.2, sixth paragraph

Replace the text in P2 with the following:

> P2 — If bits b8 to b4 are not all equal, these bits are a short EF identifier according to Table 69 and bits b3 to b1 depend upon the command. If bits b8 to b1 are set to 11111000 (i.e. P2 = 'F8'), P2 indicates multiple record handling (for details, see 11.3.3 to 11.3.10).

Page 74, Table 69

Replace Table 69 and its title with the following:

Table 69 — Coding of P2

b8	b7	b6	b5	b4	b3	b2	b1	Meaning
0	0	0	0	0	—	—	—	Current EF
Not all equal					—	—	—	Short EF identifier (a number from one to thirty)
1	1	1	1	1	0	0	0	Multiple record handling (for details, see 11.3.3 to 11.3.10)
1	1	1	1	1	Not all zero			RFU

Page 74, 11.3.2

Add the following paragraph after the last paragraph:

> In the multiple record handling option of this command group, SW1-SW2 set to '6287' indicates that some command processes are done and others are not (e.g. some addressed records are read

but others are not). SW1-SW2 set to '6F00' indicates that all command processes are not completed for different reasons (e.g. record deactivated, security status not satisfied).

Page 75, 11.3.3

Add the following paragraphs before Table 70:

If INS = 'B2' and bits b8 to b1 of P2 are set to 11111000 (i.e. P2 = 'F8'), then this command may read multiple records in different EFs. The command data field contains one or more record handling DO'7F76' each containing one file reference DO'51' and one or more integer DO'02'. The value field of DO'51' contains a file identifier or a short EF identifier indicating the record structure EF under current DF. This field may also contain a relative path or an absolute path. The value field of DO'02' is a record number to be read from the file referenced by DO'51'. DO'02' may indicate record number over 254. For each DO'02' under DO'7F76' in the command data field, the response data field contains a corresponding DO'53' or DO'04'. If the addressed record is readable (i.e. record exists, record is activated and security status satisfies the security attributes) then the corresponding DO'53' contains the entire record. When present, a DO'53' denotes an implicit normal processing without corresponding status bytes, i.e. '9000'. Otherwise the corresponding DO'04' contains value of status bytes defined in Table 5 and 6 indicating why the record data is not read. If at least one addressed record is not read, the status bytes '6287' shall be returned. The VA and the record pointer shall not be changed in case P2 = 'F8'.

If INS='B2' and P2 = 'F8' and the command data references missing files or files with incompatible file structure or missing record(s), the command shall be aborted with the respective return code from table 5 or 6 (e.g. command incompatible with file structure '6981', file not found '6A82', record not found '6A83', etc.).

Page 75, Table 70

Replace the two rows in 'Data field' with the following:

Data field	INS = 'B2' and bits b8 to b1 of P2 set to 11111000	One or more record handling DO'7F76'
	INS = 'B2' and bits b8 to b1 of P2 not set to 11111000	Absent
	INS = 'B3'	Offset DO

Data field	INS = 'B2' and bits b8 to b1 of P2 set to 11111000	One or more discretionary data DO'53' and/or DO'04' containing value of status bytes.
	INS = 'B2' and bits b8 to b1 of P2 not set to 11111000	Data read
	INS = 'B3'	Discretionary DO for encapsulating the data read

Page 75, Table 71

Replace Table 71 with the following table:

b8	b7	b6	b5	b4	b3	b2	b1	Meaning	
x	x	x	x	x	—	—	—	Short EF identifier according to Table 69	
(Not all one)									
Not all one					0	x	x	**Record identifier in P1**	
					0	0	0	— Read first occurrence	
					0	0	1	— Read last occurrence	
					0	1	0	— Read next occurrence	
					0	1	1	— Read previous occurrence	
					1	x	x	**Record number in P1**	
					1	0	0	— Read record P1	
					1	0	1	— Read all records from P1 up to the last (for INS = 'B2' only)	
					1	1	0	— Read all records from the last up to P1 (for INS = 'B2' only)	
1	1	1	1	1	0	0	0	INS = 'B2'	P1 set to '00' and one or more record handling DO'7F76' in the command data field
— Any other value is RFU.									

Page 76, 11.3.4

Add the following paragraph before Table 72:

If bits b8 to b1 of P2 are set to 11111000 (i.e. P2 = 'F8'), then this command may write multiple records in different EFs. The command data field contains one or more record handling DO'7F76' each containing one file reference DO'51' and one or more sets of an integer DO'02' and a discretionary data DO'53'. The value field of DO'51' contains a file identifier or a short EF identifier indicating the record structure EF under current DF. This field also may contain a relative path or an absolute path. The value field of DO'02' is a target record number in the file referenced by DO'51'. The value field of DO'53' is the record to be written. DO'02' may indicate record number over 254. This command can be performed only when all addressed records are stored in record structure EF(s), addressed records are present and activated, and when the security status satisfies the security attributes. If at least one addressed record is not written, any of addressed record is not written. The VA and the record pointer shall not be changed in case P2 = 'F8'.

Page 76, Table 72

Replace one row 'Data field' which is command data field with the following:

Data field	Bits b8 to b1 of P2 set to 11111000	One or more record handling DO'7F76'
	Bits b8 to b1 of P2 not set to 11111000	Record to be written

Page 76, Table 73

Replace Table 73 and its title with the following:

Table 73 — Coding of P2 in the WRITE RECORD command and the UPDATE RECORD command with even INS code

b8	b7	b6	b5	b4	b3	b2	b1	Meaning
x	x	x	x	x	—	—	—	Short EF identifier according to Table 69
(Not all one)								
Not all one					0	x	x	**P1 set to '00'**
					0	0	0	— First record
					0	0	1	— Last record
					0	1	0	— Next record
					0	1	1	— Previous record
Not all one					1	0	0	**Record number in P1**
1	1	1	1	1	0	0	0	P1 set to '00' and one or more record handling DO'7F76' in the command data field
— Any other value is RFU.								

Page 77, 11.3.5

Add the following paragraph before Table 74:

If INS = 'DC' and bits b8 to b1 of P2 are set to 11111000 (i.e. P2 = 'F8'), then this command may update multiple records in different EFs. The command data field contains one or more record handling DO'7F76' each containing one file reference DO'51' and one or more sets of an integer DO'02' and a discretionary data DO'53'. The value field of DO'51' contains a file identifier or a short EF identifier indicating the record structure EF under current DF. This field also may contain a relative path or an absolute path. The value field of DO'02' is a target record number in the file referenced by DO'51'. The value field in DO'53' is the updating data for the target record. DO'02' may indicate record number over 254. This command can be performed only when all addressed records are stored in record structure EF(s), addressed records are present and activated, and when the security status satisfies the security attributes. If at least one addressed record is not updated, any of addressed record is not updated. The VA and the record pointer shall not be changed in case P2 = 'F8'.

Page 77, Table 74

Replace one row 'Data field' which is command data field with the following:

Data field	INS = 'DC' and bits b8 to b1 of P2 set to 11111000	One or more record handling DO'7F76'
	INS = 'DC' and bits b8 to b1 of P2 not set to 11111000	Updating data
	INS = 'DD'	Offsets DO and discretionary DO for encapsulating the updating data

Page 78, 11.3.6

Add the following paragraph before Table 76:

If bits b8 to b1 of P2 are set to 11111000 (i.e. P2 = 'F8'), then this command may append multiple records to different EFs. The command data field contains one or more record handling DO'7F76' containing one file reference DO'51' and one or more discretionary data DO'53'. The value field of DO'51' contains a file identifier or a short EF identifier indicating the record structure EF under current DF. This field also may contain a relative path or an absolute path. The value field of DO'53' is the record to be appended. This command can be performed only when all addressed EFs are record structure and have enough space for appending record, and when the security status satisfies the security attributes. If at least one of the records is not appended, any of records is not appended to the addressed EFs. The VA and the record pointer shall not be changed in case P2 = 'F8'.

Page 78, Table 76

Replace the row 'P2' with the following:

P2	See Table Amd.1-1

Page 78, Table 76

Replace one row 'Data field' which is command data field with the following:

Data field	Bits b8 to b1 of P2 set to 11111000	One or more record handling DO'7F76'
	Bits b8 to b1 of P2 not set to 11111000	Record to be appended

Page 78

Add the following table after Table 76:

Table — Amd.1-1 — Coding of P2 in the APPEND RECORD command

b8	b7	b6	b5	b4	b3	b2	b1	Meaning
x	x	x	x	x	—	—	—	Short EF identifier according to Table 69
\(Not all one\)								
Not all one					0	0	0	Command data field containing record to be appended
1	1	1	1	1	0	0	0	One or more record handling DO'7F76'
— Any other value is RFU.								

Page 78, 11.3.7

Replace the first sentence with the following:

If bits b8 to b1 of P2 are not set to 11111000 (i.e. P2 = 'F8'), this command initiates a simple or enhanced or proprietary search on records stored within one addressed EF.

Page 78, 11.3.7

Add the following paragraph after the first paragraph:

If bits b8 to b1 of P2 are set to 11111000 (i.e. P2 = 'F8'), this command initiates a search on records stored within one or more addressed EFs (search through multiple EFs). Two options are provided for search through multiple EFs such as simple and enhanced search through multiple EFs. The command data field contains one record handling DO'7F76'. The search covers all activated records in all the EFs addressed by file reference DOs. The response data field gives one or more record handling DO'7F76' each containing one file reference DO'51' with one or more integer DO'02'. DO'51' gives file reference to an EF storing the record matching the search criteria. Value field of DO'02' is the record number indicating the record matching the search criteria. DO'02' may indicate record number over 254. This command can be performed on each activated record in each EF when the security status satisfies the security attribute. If the command data references missing files or files with incompatible file structure, the command shall be aborted with the respective return code from table 5 or 6 (e.g. command incompatible with file structure '6981', file not found '6A82', etc.).

For simple search through multiple EFs, record handling DO'7F76' contains one or more file reference DO'51' and one discretionary data DO'53' (see Table Amd.1-2). The value field of each DO'51' contains a file identifier or a short EF identifier indicating the record structure EF under current DF. This field also may contain a relative path or an absolute path. The value field of DO'53' is a search string. The search covers all activated records in all the EFs addressed by file reference DOs.

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