FA Technical Report

Product:	**IDENTControl System; IQH1-…-V1**
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Description

This documentation describes the procedure for access to the AFI and DSFID of a 13,56MHz ISO 15693 RFID tag.

AFI: (Application family identifier)
In ISO 15693, the AFI describes the type of application targeted by the reader. This identifier is used to extract all transponders in the reader field that meet the required application criteria. After the reader sends out the AFI, only the AFI-compliant transponders of the appropriate family will respond.
Programmed by the transponder issuer, the AFI is read-only and its value cannot be modified.

> è Create groups of data carrier

DSFID: (Data storage format identifier)
The Data storage format identifier indicates how the data is structured in the VICC memory. It may be programmed and locked by the respective commands. It is coded on one byte. It allows for instant knowledge on the logical organisation of the data. If its programming is not supported by the VICC, the VICC shall respond with the value zero ('00').

> è Classification of data carrier formatting

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Write and Lock AFI:

The writing of the AFI can execute with the command SC (single write configuration). The AFI is readable with the command SG (single get configuration).

Command:
<SC> <Channel> <ConfAddr> <Data 1> <Data 2> <Data 3> <Data 4>

Response:
<SC> <Channel> <Status>

Parameter:
<Channel>   Channel where the RFID head is connected
<ConfAddr>   Configuration address; 30h = '0'
<Data 1>   Lock of the AFI; 00h / 30h without Lock AFI; 01h / 31h with lock of the AFI
<Data 2>   Value of the AFI
<Data 3>   not in use; 00h (don't care)
<Data 4>   no in use; 00h (don't care)

If the AFI is locked before a new execution of writing or write with lock of the AFI gives back the status 5.

Example:
Write the AFI on channel 1 with value 0x39 without lock.
    è SC1009\000\000<CHCK><ETX>
    ß 01<CHCK><ETX>

Readout the AFI on channel 1
    è SG10<CHCK><ETX>
    ß 30.31.0F.84.15.35.04.00.01.04.E0.38.39.1B.03.01<CHCK><ETX>

84.15.35.04.00.01.04.E0	Fixcode
38	DSFID
39	AFI

Write and Lock DSFID:

The writing of the DSFID can execute with the command SC (single write configuration). The DSFID is readable with the command SG (single get configuration).

Command:
<SC> <Channel> <ConfAddr> <Data 1> <Data 2> <Data 3> <Data 4>

Response:
<SC> <Channel> <Status>

Parameter:
<Channel>   Channel where the RFID head is connected
<ConfAddr>   Configuration address; 31h = '1'
<Data 1>   lock of the DSFIS; 00h / 30h without Lock DSFID; 01h / 31h with Lock DSFID
<Data 2>   Value of the DSFID
<Data 3>   not in use; 00h (don't care)
<Data 4>   not in use; 00h (don't care)

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If the DSFID is locked before a new execution of writing or write with lock of the DSFID gives back the status 5.

Example:
Write the DSFID on channel 1 with value 0x32 without lock
- è SC1102\000\000<CHCK><ETX>
- ß 01<CHCK><ETX>

Readout the DSFID on channel 1
- è SG10<CHCK><ETX>
- ß 30.31.0F.84.15.35.04.00.01.04.E0.32.39.1B.03.01<CHCK><ETX>

84.15.35.04.00.01.04.E0	Fixcode
32	DSFID
39	AFI

Get System Information:

The AFI and the DSFID is readable with the help of the command SG (single get configuration).

Command:
<SG> <Channel> <ConfAddr>

Response:
<SG><Channel><Status> <Data 1> <Data 2> … <Data n>

<Channel>	Channel where the RFID head is connected
<ConfAddr>	Configuration address; 30h = '0'
<Data 1>	Infoflags
<Data 2>	UID (LSB)
	… UID
<Data 9>	UID (MSB)
[<Data 10>	DSFID]*
[<Data 11>	AFI]*
[<Data 12>	VICC memory size, number of blocks -1]*
[<Data 13>	VICC memory size, block size in Bytes - 1]*
[<Data 14>	IC reference]*

* This data will only send if the correspondent information flag in <Data 1> is set by the chip manufacturer. (look at ISO 15693-3:2001 chapter 10.4.12). If the data are not transmitting the following data will transfer in these positions.

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