13.56 MHz standard readers range to Architect® range migration

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I.   Introduction

This document will help you in the transition of our end of life products to the new range Architect®.

It describes the mapping products and or manipulation steps performed to ensure the transition to new references.

II.   Equivalences

II-1.   LXS hybrid reader migration grid

Original Reference	New Compatible Reference	Compatibility	Conditions
LXS-Rx1-A/BF0-xx	ARC-R31-I/BF5-xx	Total	-
LXS-Rx1-A/BF1-xx	ARC-R31-I/BF5-xx	Total with condition	SCB with SECard + import .spa & BCA
LXS-Rx1-A/BF2-xx	ARC-R31-I/BF5-xx	Total with condition	SCB with SECard + import .spa & BCA
LXS-Rx1-A/BF3-xx	ARC-R31-I/BF5-xx	Total with condition	SCB with SECard + import .spa & BCA
LXS-Rx1-A/BF4-xx	ARC-R31-I/BF5-xx	Total with condition	SCB with SECard + import .spa & BCA
LXS-Rx1-E/BF5-xx	ARC-R31-I/BF5-xx	Total	-
LXS-Sx1-E/BF5-xx	ARC-S31-I/BF5-xx	Total	-
LXS-Rx2-E/BF5-5AB	ARC-R32-I/BF5-xx	Total	-
LXS-Sx2-E/BF5-5AB	ARC-S32-I/BF5-xx	Total	-
LXS-Rx3-E/BF5-7AB	ARC-R33-I/BF5-xx	Total	-
LXS-Sx3-E/BF5-7AB	ARC-S33-I/BF5-xx	Total	-
LXS-Rx3-E/BF5-7AA + INT-R33-E	ARC-Rx3-I/BF5-7AA + INT-R33-E	Total	-
LXS-Sx3-E/BF5-7AA + INT-E-7AA/7BB	ARC-Sx3-I/BF5-7AA + INT-E-7AA/7BB	Total	-

II-2. LXS reader migration grid

Original Reference	New Compatible Reference	Compatibility	Conditions
LXS-R31-A/1A3-xx	ARC-R31-A/103-xx	Total	-
LXS-R31-A/PH1-xx	ARC-R31-A/PH5-xx	Total with condition	SCB with SECard + import .spa & BCA
LXS-R31-A/PH1-2K	No	-	-
LXS-R31-A/PH1-2R	No	-	-
LXS-R31-A/PH4-xx	ARC-R31-A/PH5-xx	Total with condition	SCB with SECard + import .spa & BCA
LXS-R31-A/PH2-2P	ARC-R31-A/103-xx	Total with condition	SCB with SECard + import .spa & BCA
LXS-R31-A/PH2-3T	ARC-R31-A/103-3T	Total	-
LXS-R31-A/2A3-3T	ARC-R31-L/LE2-3T	Total	-
	ARC-R31-A/103-3T	Partial	Not ISO 15693
LXS-R31-A/X03-xx 2B-2H-3CB-3I-3CA	ARC-R31-L/LE2-xx	Total	-
	ARC-R31-A/PH5-xx	Partial	Not ISO 15693
LXS-R31-A/103-2H	ARC-R31-A/PHP-xx	Total	-
LXS-R31-A/I02-2B	No	-	Not ISO 15693
LXS-R31-A/203-2B-2H-3C-3I	No	-	Not ISO 15693
LXS-R3x-A/X03-5X	ARC-R32-L/LE2-5AB	Total with condition	Integrated protocol 5AB
	ARC-R32-A/103-5AB	Partial	Not ISO 15693 + Integrated protocol 5AB
LXS-R32-D/203-5K	ARC-R32-L/LE2-5AB	Total with condition	Integrated protocol 5AB
	ARC-R32-A/103-5AB	Partial	Not ISO 15693 + Integrated protocol 5AB
LXS-R31-E/103-xx	ARC-R31-A/103-xx	Total	-
LXS-R31-E/PH5-xx	ARC-R31-A/PH5-xx	Total	-
LXS-S31-E/PH5-xx	ARC-S31-A/PH5-xx	Total	-
LXS-R32-E/PH5-5AB	ARC-R32-A/PH5-5AB	Total	-
LXS-S32-E/PH5-5AB	ARC-S32-A/PH5-5AB	Total	-
LXS-R33-E/PH5-7AB	ARC-R33-A/PH5-7AB	Total	-
LXS-S33-E/PH5-7AB	ARC-S33-A/PH5-7AB	Total	-
LXS-R33-E/PH5-7AA + INT-R33-E	ARC-R33-A/PH5-7AA + INT-R33-E	Total	-
LXS-S33-E/PH5-7AA + INT-E-7AA/7AB	ARC-S33-A/PH5-7AA + INT-E-7AA/7AB	Total	-
LXS-R31-F/LE2-2TA	ARC-R31-L/LE2-xx	Partial	Not 2TA protocol on ARC + SEGIC configuration for swap reading
LXS-R31-F/LE2-3La/3Lb/3i	ARC-R31-L/LE2-xx	Total	-

Original Reference	New Compatible Reference	Compatibility	Conditions
LXS-W32-A/PH1-5D	ARC-W32-A/PH5-5AA	Total with condition	Integrated SSCP protocol
LXS-W32-A/PH1-5M	No	-	SSCP = 1 stop bit
LXS-W32-A/PH1-5V	ARC-W32-A/PH5-5AA	Partial	UID Master Mode (fn autonomous) + integrated SSCP protocol
LXS-W3x-A/St1-5J	No	-	-
LXS-W32-D/PH3-5K	No	-	Not ISO 15693
LXS-W33-A/PH1-7B	ARC-W33-A/PH5-7AA	Total with condition	Integrated SSCP protocol
LXS-W3x-B/I01-5i	No	-	-
LXS-W32-C/LE1-5E	ARC-W32-L/LE2-5AA	Total with condition	Integrated LEGIC SSCP protocol
LXS-W32-E/PH5-5AA	ARC-W32-A/PH5-5AA	Total	-
LXS-W33-E/PH5-7AA	ARC-W33-A/PH5-7AA	Total	-
LXS-W33-E/PH5-7AD	ARC-W33-A/PH5-7AD	Total	-
LXS-W33-E/PH5-7BB + INT-E-xAA/7BB (Remote Secure)	ARC-W33-A/PH5-7BB + INT-E-xAA/7BB	Total	-
LXS-W32-F/Le2-5Le	ARC-W32-L/LE2-5AA	Total with condition	Integrated LEGIC SSCP protocol
LXS-W33-F/Le2-7Le	ARC-W33-L/LE2-7AA	Total with condition	Integrated LEGIC SSCP protocol
LXS-W32-E/PH5-5AA	ARC-W32-A/PH5-5AA	Total	-
LXS-W33-E/PH5-7AA	ARC-W33-A/PH5-7AA	Total	-
LXS-W33-E/PH5-7AD	ARC-W33-A/PH5-7AD	Total	-
LXS-W33-E/PH5-7BB + INT-E-xAA/7BB	ARC-W33-A/PH5-7BB + INT-E-xAA/7BB	Total	-

II-3.   LXE reader migration grid

Original Reference	New Compatible Reference	Compatibility	Conditions
LXE-R31-E/103-xx	ARC-R31-A/103-xx	Total with condition	Larger gauge
	ARC1-R31-(A or B)/PH1-xx	Total with condition	Configured for UID reading
	ARC1-R31-(A or B)/PH5-xx	Total with condition	Configured for UID reading
LXE-R31-E/PH5-xx	ARC1-R31-(A or B)/PH5-xx	Total	-
LXE-S31-E/PH5-xx	ARC1-S31-(A or B)/PH5-xx	Total	-
LXE-R32-E/PH5-5AB	ARC-R32-A/PH5-5AB	Total with condition	Larger gauge
LXE-S32-E/PH5-5AB	ARC-S32-A/PH5-5AB	Total with condition	Larger gauge
LXE-R33-E/PH5-7AB	ARC1-R33-(A or B)/PH5-7AB	Total	-
LXE-S33-E/PH5-7AB	ARC1-S33-(A or B)/PH5-7AB	Total	-
LXE-R33-E/PH5-7AA + INT-R33-E-xx (Easy Secure)	ARC1-R33-(A or B)/PH5-7AA + INT-R33-E-xx (Easy Secure)	Total	-
LXE-S33-E/PH5-7AA + INT-E-7AA/7AB (EasySecure)	ARC1-S33-(A or B)/PH5-7AA + INT-E-7AA/7AB (EasySecure)	Total	-
LXE-W32-E/PH5-5AA	ARC-W32-A/PH5-5AA	Total with condition	Larger gauge
LXE-W33-E/PH5-7AA	ARC1-W33-(A or B)/PH5-7AA	Total	-
LXE-W33-E/PH5-7BB + INT-E-xAA/7BB (RemoteSecure)	ARC1-W33-(A or B)/PH5-7BB + INT-E-xAA/7BB (RemoteSecure)	Total	-

II-4. LX1 reader migration grid

Original Reference	New Compatible reference	Compatibility	Conditions
LX1-R31-A/1A3-xx	ARC1-R31-(A or B)/PH1-xx	Total with conditions	3 m cable (instead of 0.5 m)
LX1-R31-A/PH1-xx	ARC1-R31-(A or B)/PH1-xx	Total with conditions	3 m cable (instead of 0.5 m) SCB with SECard + import .spa & BCA
LX1-R31-B/1A3-xx	ARC1-R31-(A or B)/PH1-xx	Total	-
LX1-R31-B/PH1-xx	ARC1-R31-(A or B)/PH1-xx	Total with conditions	SCB with SECard + import .spa & BCA
LX1-R31-(A ou B)/PH1-2K	No	-	-
LX1-R31-A/PH2-3T	ARC1-R31-(A or B)/PH5-3T	Total with conditions	3 m cable (instead of 0.5 m) Conf. SECard
LX1-R31-B/PH2-3T	ARC1-R31-(A or B)/PH5-3T	Total with conditions	SECard configuration
LX1-R31-E/103-xx	ARC1-R31-(A or B)/PH1-xx	Total with conditions	3 m cable (instead of 0.5 m)
LX1-R31-G/103-xx	ARC1-R31-(A or B)/PH1-xx	Total	-
LX1-R31-E/PH1-xx	ARC1-R31-(A or B)/PH1-xx	Total with conditions	3 m cable (instead of 0.5 m)
LX1-R31-G/PH1-xx	ARC1-R31-(A or B)/PH1-xx	Total	-
LX1-R31-E/PH5-xx	ARC1-R31-(A or B)/PH5-xx	Total with conditions	3 m cable (instead of 0.5 m)
LX1-R31-G/PH5-xx	ARC1-R31-(A or B)/PH5-xx	Total	-
LX1-S31-E/PH5-xx	ARC1-S31-(A or B)/PH5-xx	Total with conditions	3 m cable (instead of 0.5 m)
LX1-S31-G/PH5-xx	ARC1-S31-(A or B)/PH5-xx	Total	-

II-5. MS module migration grid

Original Reference	New Compatible Reference	Compatibility	Conditions
MS-R31-A/1A3-xx	MS-R31-E/103-xx	Total	-
MS-R31-A/PH1-xx	MS-R31-E/PH5-xx	Total with condition	SCB with SECard + import .spa & BCA
MS-R31-A/PH1-2K	No	-	-
MS-R31-A/PH2-3T	MS-R31-E/103-3T	Total	-
MS-R31-A/X03-2B	MS-R31-E/103-2B	Partial	Not ISO 15693
MS-R31-A/X03-2H	MS-R31-E/103-2H	Partial	Not ISO 15693
MS-R31-A/X03-3CB	MS-R31-E/103-3CB	Partial	Not ISO 15693
MS-R31-A/X03-3i	MS-R31-E/103-3i	Partial	Not ISO 15693
MS-R31-A/X03-3CA	MS-R31-E/103-3CA	Partial	Not ISO 15693
MS-R31-A/203-2B	No	-	Not ISO 15693
MS-R31-A/203-2H	No	-	Not ISO 15693
MS-R31-A/203-3C	No	-	Not ISO 15693
MS-R31-A/203-3i	No	-	Not ISO 15693
MS-R31-A/103-5D	MS-R31-E/PH5-5AB		Integrated protocol 5AB
MS-W31-X/PH1-5D	MS-W31-E/PH5-5AA	Total with condition	Integrated SSCP protocol
MS-W31-X/St1-5J	No	-	-
MS-W31-X/PH1-5M	No	-	SSCP = 1 stop bit
MS-W31-X/St1-5N	No	-	-
MS-W31-A/PH1-5V	MS-W31-E/PH5-5AA	Partial	UID Master Mode (fn autonomous) + integrated SSCP protocol
MS-W31-D/PH3-5K	No	-	Not ISO 15693

II-6. M1 module migration grid

Original Reference	New Compatible Reference	Compatibility	Conditions
M1-X31-A/PH1-5V	No	-	-
M1-R31-A/1A3-XX	No	-	-
M1-R31-A/PH1-XX	No	-	-

II-7. STR reader migration grid

Original Reference	New Compatible Reference	Compatibility	Conditions
STR-R3x-B/x03-5X	ARC-R3x-G/PH5-5AB	Partial	Not ISO 15693 + Integrated protocol 5AB
	ARC-R3x-L/LE2-5AB	Totale with conditions	Integrated protocol 5AB
STR-R35-E/PH5-5AB	ARC-R35-G/PH5-5AB	Total	-
STR-R32-E/PH5-5AB	No		No ARC RS232 desktop reader
STR-S35-E/PH5-5AB	ARC-S35-G/PH5-5AB	Total	-
STR-S32-E/PH5-5AB	No		No ARC RS232 desktop reader
STR-W35-B/PH1-5D	ARC-W35-G/PH5-5AA	Totale with conditions	Integrated SSCP protocol
STR-W3X-B/PH1-5M	No	-	SSCP = 1 stop bit
STR-W3X-B/PH1-5V	ARC-W35-G/PH5-5AA	Partial	UID Master Mode (fn autonomous) + integrated SSCP protocol
STR-W3X-B/PH3-5K	No	-	No ISO 15693 in read / write
STR-W32-E/PH5-5AA	No		No ARC RS232 desktop reader
STR-W35-E/PH5-5AA	ARC-W35-G/PH5-5AA	Total	-

II-8. Keypad reader migration grid

Original Reference	New Compatible Reference	Compatibility	Conditions
LCI-R31-A/1A3-xx	ARC-R31-B/103-xx	Total	-
LCI-R31-A/PH1- xx	ARC-R31-B/PH5-xx	Totale with conditions	SCB with SECard + import .spa & BCA
LXC-R31-E/103- xx	ARC-R31-B/103-xx	Total	-
LXC-R31-G/103- xx	ARC-R31-B/103-xx	Total	-
LXC-R31-G/PH5- xx	ARC-R31-B/PH5-xx	Total	-
LXC-S31-G/PH5-xx	ARC-S31-B/PH5-xx	Total	-
LXC-R32-E/PH5-5AB	ARC-R32-B/PH5-5AB	Total	-
LXC-S32-E/PH5-5AB	ARC-S32-B/PH5-5AB	Total	-
LXC-R33-E/PH5-7AB	ARC-R33-B/PH5-7AB	Total	-
LXC-S33-E/PH5-7AB	ARC-S33-B/PH5-7AB	Total	-
LXC-W32-E/PH5-5AA	ARC-W32-B/PH5-5AA	Total	-
LXC-W33-E/PH5-7AA	ARC-W33-B/PH5-7AA	Total	-

II-9. Biometric reader migration grid

Original Reference	New Compatible Reference	Compatibility	Conditions
LDS-R31-E/PH5-xx	ARC-R31-D/PH5-xx	Total	-
LDS-S31-E/PH5-xx	ARC-S31-D/PH5-xx	Total	-
LDS-R33-E/PH5-7AA + INT-R33-E-xx (EasySecure)	ARC-R33-D/PH5-7AA + INT-R33-E-xx (EasySecure)	Total	-
LDS-W33-E/PH5-7AA	ARC-W33-D/PH5-7AA	Total	-

III. Implementation of mixed fleet

Many cases may require a mixed fleet of Standard readers A and/or E and ARCHITECT® readers:

- ✓ Case 1: extension of an installation with standard A reader.

- ✓ Case 2: replacement of standard A reader.

- ✓ Case 3: extension of an installation with standard E reader.

- ✓ Case 4: replacement of standard E reader.

III-1. Case 1 and 2

Reading of CSN only

Standard readers A and Architect® readers are configured to read MIFARE Classic® serial number (UID).
This case does not require specific operation. Compatibility between the two ranges is complete.

Private Id reading

Readers must be configured to read a private ID on MIFARE Classic®.
This case requires two configuration cards, a BCA for standard readers A and a SCB for Architect® readers.

III-2. Case 3 and 4

Reading of CSN only

Standard readers E and Architect® readers are configured to read the serial number (UID) of the same chips.
This case does not require specific operation. Compatibility between the two ranges is complete.

Reading of Private ID

Readers must be configured to read the same private ID on chip MIFARE®.
The SCB created to configure the standard reader E are compatible with Architect® readers.
In this case, the Architect® readers behave like standard readers (no management of news functionalities). No specific action is required.

To manage all the news Architect® features it will be necessary to recreate a SCB configuration card with SECard (from V2.0.x).

IV. Migration of configuration: SECard

Objectives:

- ✓ Generate, with SECard, a new configuration card (SCB) that will allow Architect® readers to read user cards identically to standard readers A.

- ✓ Generate, with SECard, a new configuration card (SCB) that will allow Architect® readers to read user cards identically to standard readers E and to use the latest Architect® features.

- ✓ Create user cards indifferently with PRG-PH1 or SECard.

IV-1. Objective 1

Generate, with SECard, a new configuration card (SCB) that will allow Architect® readers to read user cards identically to standard readers (methods 1, 2 or 3).
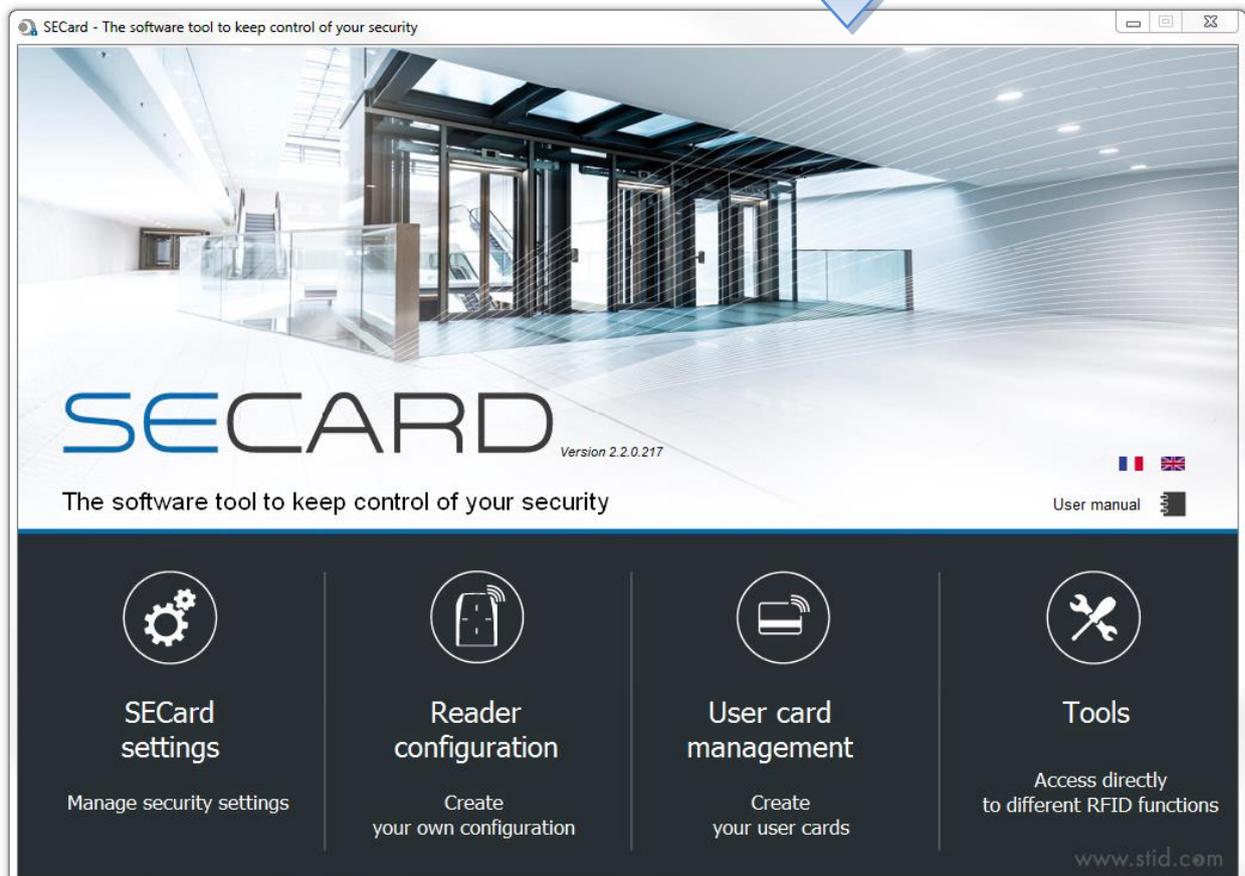
Architect® readers must be configured with a configuration card (SCB) created from the SECard software. They cannot be configured with the old configuration card (BCA) created with PRG-PH1.

Three methods allow import the current configuration in SECard.

Depending on the method, the configuration allows:
- To configure only the reader to read existing user cards.
- To configure the reader to read existing user cards and to create new ones.

The choice of method is listed below:

No BCA card No configuration file .spa	Method 1	Manual entry of readers' configuration and users cards creation
BCA card	Method 2	Import readers'configuration settings
Configuration file .spa	Method 3	Import readers'configuration and user cards creation settings

Method 1: Manual entry of configuration in SECard

All configuration parameters must be entered in the appropriate fields in the Setup Wizard SECard.
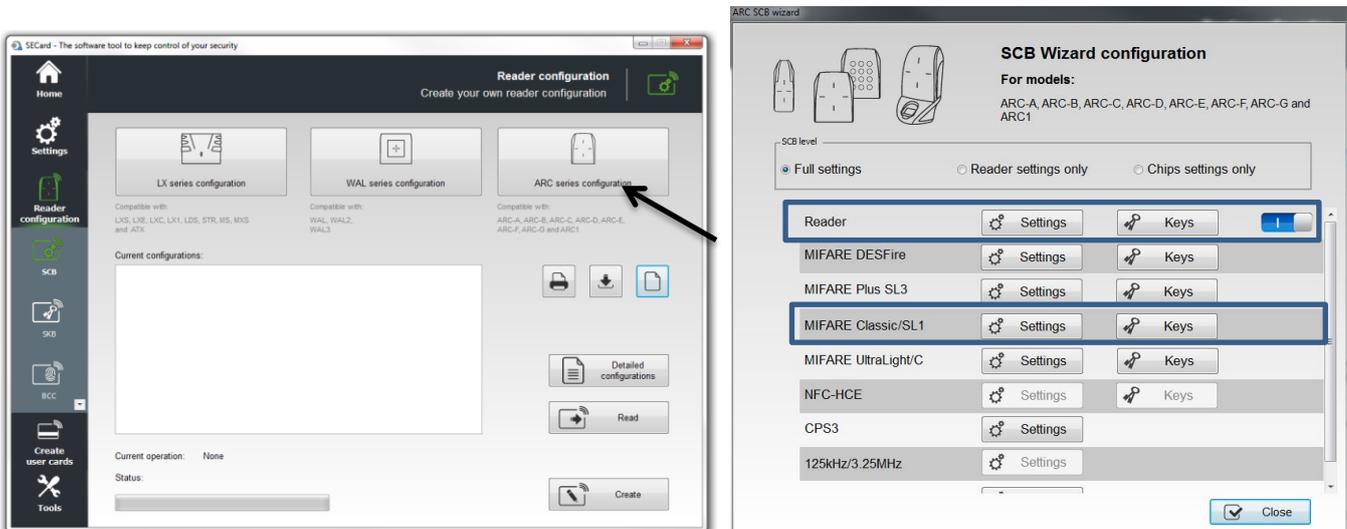
Method 2: Import, in SECard, of reading parameters from BCA configuration card, created with PRG-PH1.

For this readers' migration, a tool has been added to SECard allows import the reading parameters of A reader, from BCA configuration card created with PRG-PH1.

It is necessary to know the value of the company key BCA.
This tool is accessible, in SECard (V.2.x.x), from button "Tools"
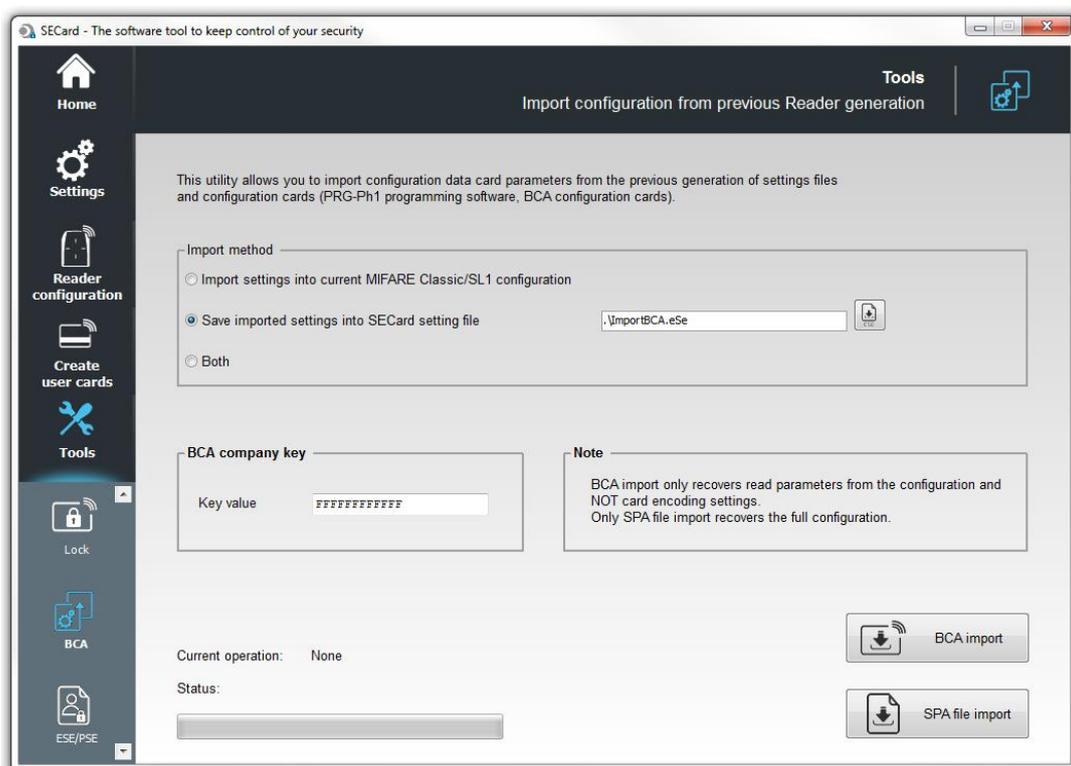

There are three import methods:

Reading an existing BCA configuration card

✓ and import configuration parameters to the Mifare Classic/SL1 configuration:
The MIFARE® Classic parameters are filled into card configuration utility of SECard "SCB Wizard".

✓ and save the parameters into .eSe file:
Parameters are saved in .eSe file (by default BCAImport.eSe) different from that used for the general configuration.

✓ Both:
The MIFARE® Classic parameters are filled into card configuration utility of SECard "SCB Wizard"
and saved in .eSe file (by default BCAImport.eSe) different from that used for the general configuration.

Once method selected click on   BCA import
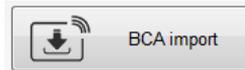
With this method only the parameters necessary for the reader **to read card users** will be imported (ie. green boxes).
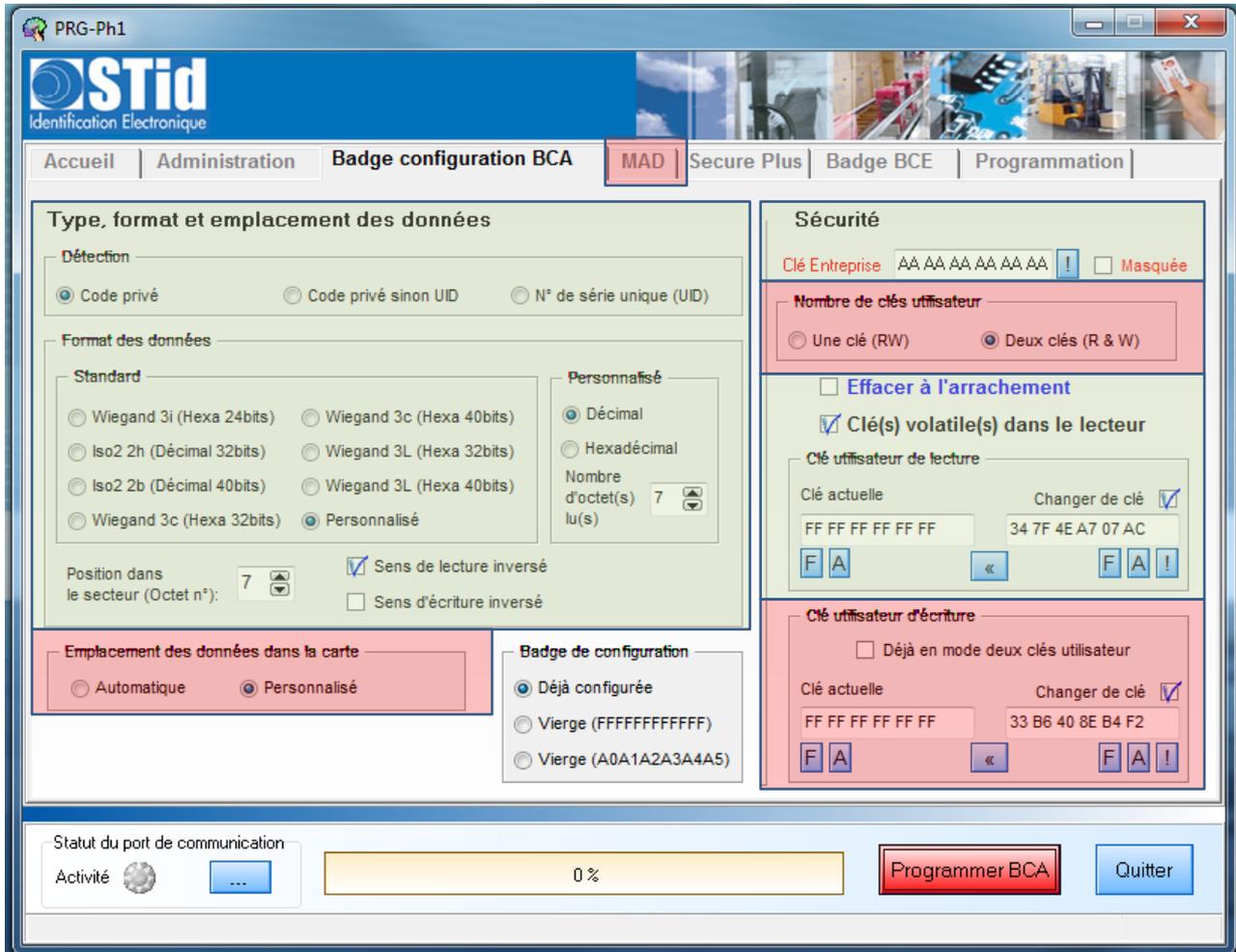
## Method 3: Import, in SECard, of configuration file .spa, created with PRG-PH1

For this readers' migration, a tool has been added to SECard allows import the reading parameters of A reader, from .spa file configuration created with PRG-PH1.

This tool is accessible, in SECard (V2.x.x), from button "Tools"
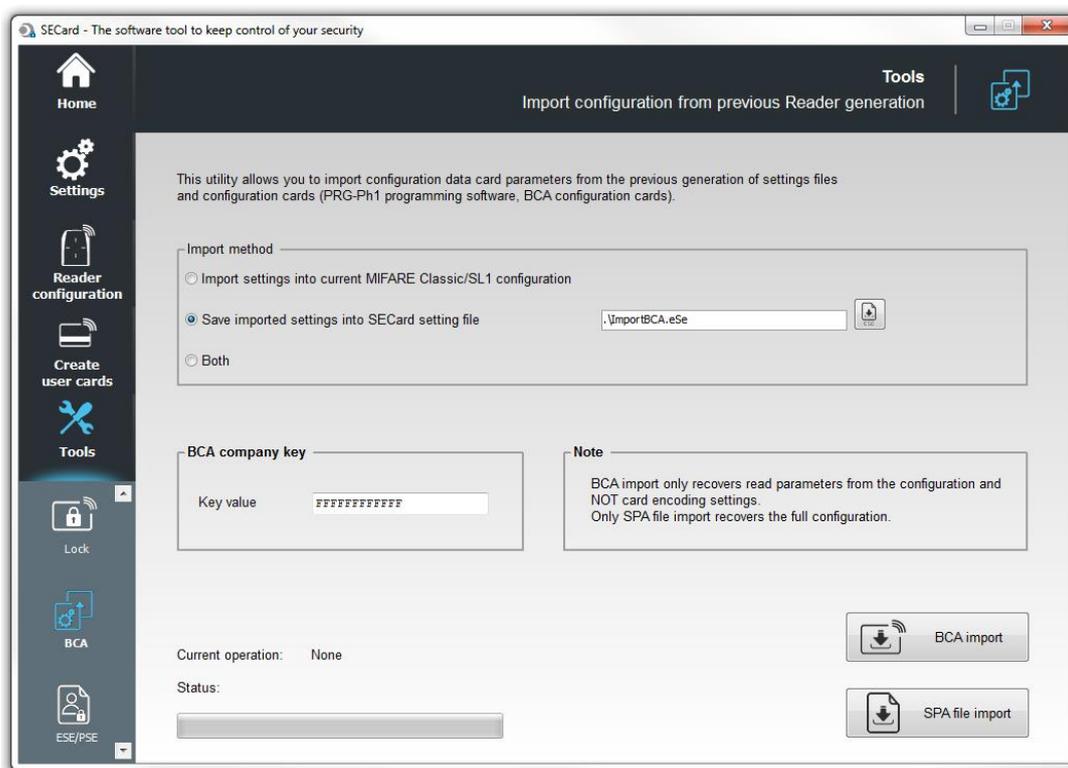
There are three import methods:

✓ Import configuration parameters from existing .spa file to the Mifare Classic/SL1 configuration:
The MIFARE® Classic parameters are filled into card configuration utility of SECard "SCB Wizard".

✓ Save .eSe file:
Parameters are saved in .eSe file (by default BCAImport.eSe) different from that used for the general configuration.

✓ Both:
The MIFARE® Classic parameters are filled into card configuration utility of SECard "SCB Wizard"
and saved in .eSe file (by default BCAImport.eSe) different from that used for the general configuration.
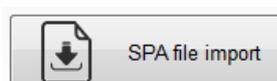
Once method selected click on

With this method **all** the parameters necessary for the reader to read users card will be imported (i.e. green boxes) and all write parameters (i.e. red boxes) necessary for the encoding of new user card.

Note:

- "BCA company key" on 6 bytes will be imported into "SCB company key" field with zero padding left to reach the 16 bytes.

- Secure Plus parameters will not be imported because the functionality does not exist in this form in SECard.

- The configuration of communication parameters (baudrate, COM port number) will not be imported in view of the differences between the range E / A & ARC.

- The key values of BCE card will be copied in the table of values read "Crypto1keys" of SKB card.
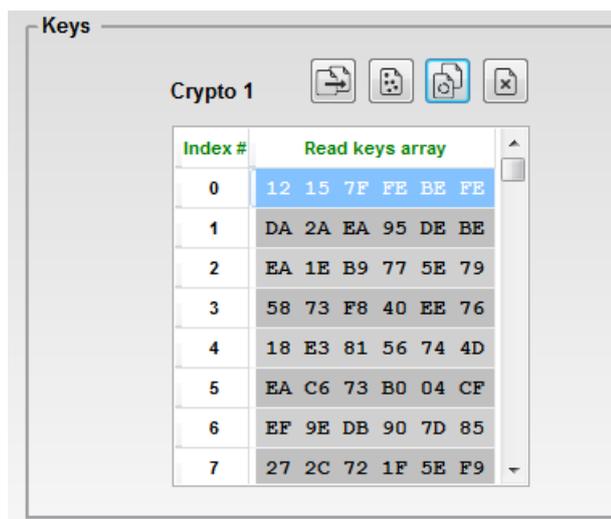
IV-2. Objective 2

Generate, with SECard, a new configuration card (SCB) that will allow Architect® readers to read user cards identically to standard readers E and to use the latest Architect® features (**method 4**).

For this readers' migration, a tool has been added to SECard allows import the reading parameters of E reader, from .ese file configuration created with SECard version < 2.x.x.

It is necessary to know the password of .ese file if the file is protected.
This tool is accessible, in SECard (V2.x.x), from button "Tools"
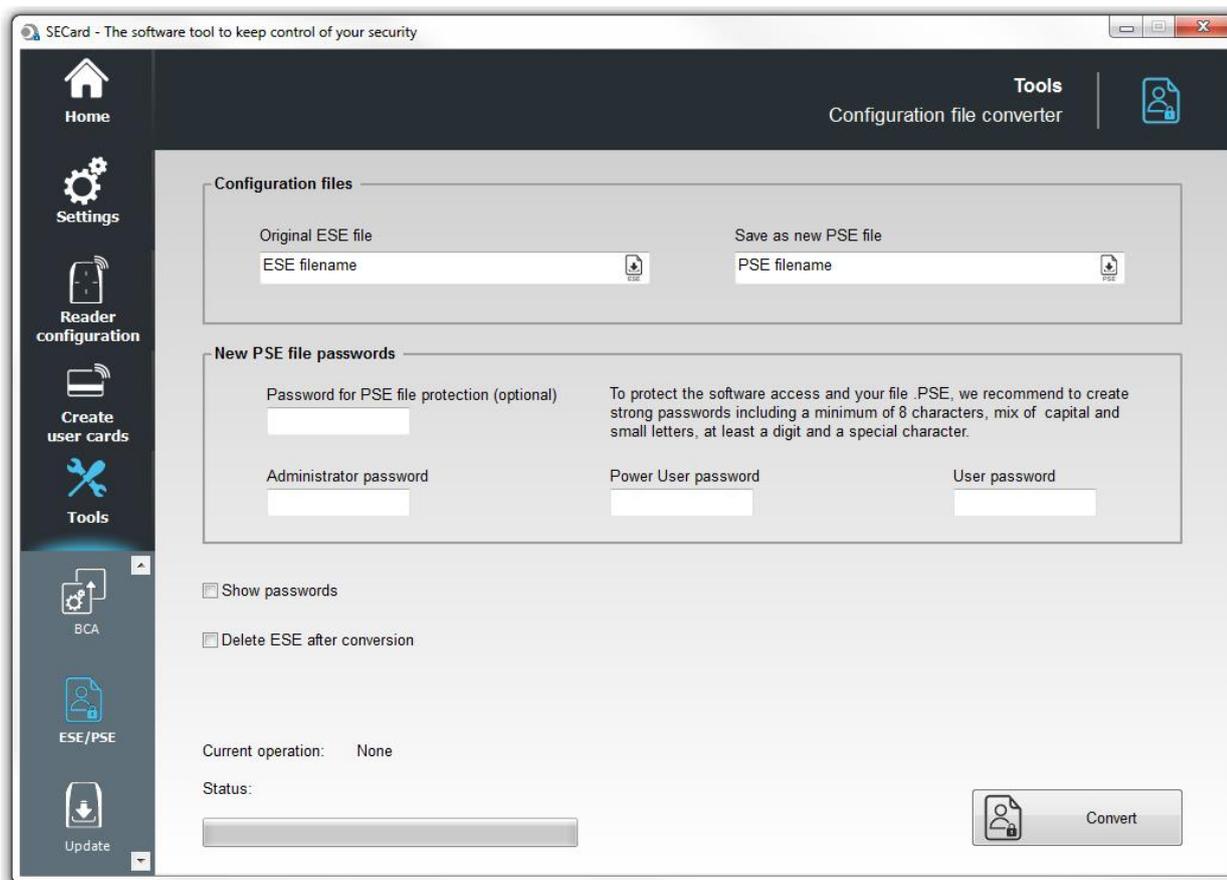
After .pse file created, the configuration wizard allows you to change reader settings.

Refer to SECard manual to create the configuration card and save the configuration into .pse file.

IV-3. Objective 3

Create user cards indifferently with PRG-PH1 or SECard once set.

You have to follow the method 1, 3 or 4 so that all the parameters necessary for encoding user cards are entered in the SECard software.

V.   Serial readers Read / Write

Protocols (5D, 5V, 7B) of range A are not available on Standard E readers or on Architect® readers.

To support new generations of chips and implement secure communications functions, the STid Secure Common Protocol (SSCP) has been developed.

All functionalities of range A have been kept in Standard E and Architect® range.

The open protocol SSCP can secure the connection between the reader and the system, by data encryption (AES) and mutual authentication "reader-controller" before any communication

This serial protocol allows the exploitation of all chips range Mifare® securely or insecurely: MIFARE® Classic, MIFARE Plus®, MIFARE® DESFire® and DESFire® EV1, MIFARE® Ultralight® C.

Serial interface parameters:

Baudrate	9600, 19200, 38400, 57600, 115200 bauds. *default 38400*
Number of bits	8
Transfer Mode	LSB first
Stop bit	1
RS485	Default broadcast address 00h.

MIFARE® SDK (DEVKIT) will enable the integration of SSCP protocol and functions read and write for Ultralight® C, MIFARE® Classic, MIFARE Plus® and MIFARE® DESFire® chips.

Training is available to assist you in the integration of MIFARE Plus® and DESFire® technologies in access control systems, and in the development of applications using these technologies.