

MorphoAccess® Sigma Series



Application Notes: Upgrade
process enhancement

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Osny, France

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Revision History

The table below contains the history of changes made to the present document.

Version	Date	Description
01	2016	First version
02	2016	Updates after review
03	December 2017	Update company name (IDEMIA)

Introduction

Firmware upgrade process has evolved in order to secure upgrade against poor network's quality exchange or brief network disconnection.

The goal of this application note is to provide a guide to use the new upgrade mechanism through MBTB, Secure Admin and MorphoManager.

These software are using new PC tool: MA_Sigma_Upgrade_Tool.exe (version 2.0.3 (or higher)).

This new version is **mandatory** to upgrade Firmware with **a target version higher than or equal to version 3.1**.

This new version is fully compatible with previous firmware version (Cf. FAQ for more information)

Important: If the firmware version on the terminal is lower than 3.1 (< 3.1), an intermediate version need to be installed before being able to install version MA3.1 or higher.

This intermediate version is named **MA1.8.X.TEMP** (with X meaning last version available).

The only purpose of this intermediate version is to secure following upgrade to version 3.1 or higher. This version isn't functionally tested and shall not be used in the field.

If intermediate version is not used to upgrade Firmware with a version higher than or equal to version 3.1, process will end with error code 7 (description of error code 7: The firmware update package is incompatible with this terminal firmware).

Remark : This note is not applicable to MorphoAccess® SIGMA Extreme Series.

MorphoBioToolBox (MBTB)

MBTB version 3.4.2 (or higher) is **mandatory** to upgrade Firmware with **a target version higher than or equal to version 3.1.**

MorphoManager (MM)

Feature to upgrade Firmware with a **target version higher than or equal to version 3.1** is available in Morpho Manager.

A manual action is required to be able to upgrade new Firmware version 3.1.0 or higher.

PC tool named MA_Sigma_Upgrade_Tool.exe shall be update manually to version 2.0.3 (or higher).

Step to follow to update MA_Sigma_Upgrade_Tool.exe on MoprhoManager:

1. Get latest version MA_Sigma_Upgrade_Tool.exe (via hotline). Version should be 2.0.3 or higher. Refer to *FAQ* to know how to check tool's version.
2. Locate and enter to the MorphoManager installation directory on your computer.
For example "C:\Program Files (x86)\Morpho\MorphoManager\".
3. Enter in folder ".\Server/"
4. Rename existing file named "MA_Sigma_Upgrade_Tool.exe" to "MA_Sigma_Upgrade_Tool_OLD.exe"
5. Paste in folder ".\Server/" the new tool got in step 1.
Before continuing, ensure new tool is correctly named "MA_Sigma_Upgrade_Tool.exe" and the version is 2.0.3 (or higher). Refer to *FAQ* to know how to check tool's version if necessary.
6. Restart computer.

Secure Admin (SA)

A manual action is required to be able to upgrade new Firmware version 3.1.0 or higher.

PC tool named MA_Sigma_Upgrade_Tool.exe shall be update manually to version 2.0.3 (or higher).

Step to follow to update MA_Sigma_Upgrade_Tool.exe on Secure Admin:

1. Get latest version MA_Sigma_Upgrade_Tool.exe (via hotline). Version should be 2.0.3 or higher. Refer to *FAQ* to know how to check tool's version.
2. Locate and enter to the Secure Admin installation directory on your computer.
For example "C:\Program Files (x86)\Morpho\SA\".
3. Enter in folder ".\SecureAdmin Server"
4. Rename existing file named "MA_Sigma_Upgrade_Tool.exe" to "MA_Sigma_Upgrade_Tool_OLD.exe"
5. Paste in folder ".\SecureAdmin Server/" the new tool got in step 1.
Before continuing, ensure new tool is correctly named "MA_Sigma_Upgrade_Tool.exe" and the version is 2.0.3 (or higher). Refer to *FAQ* to know how to check tool's version if necessary.

Summary of process:

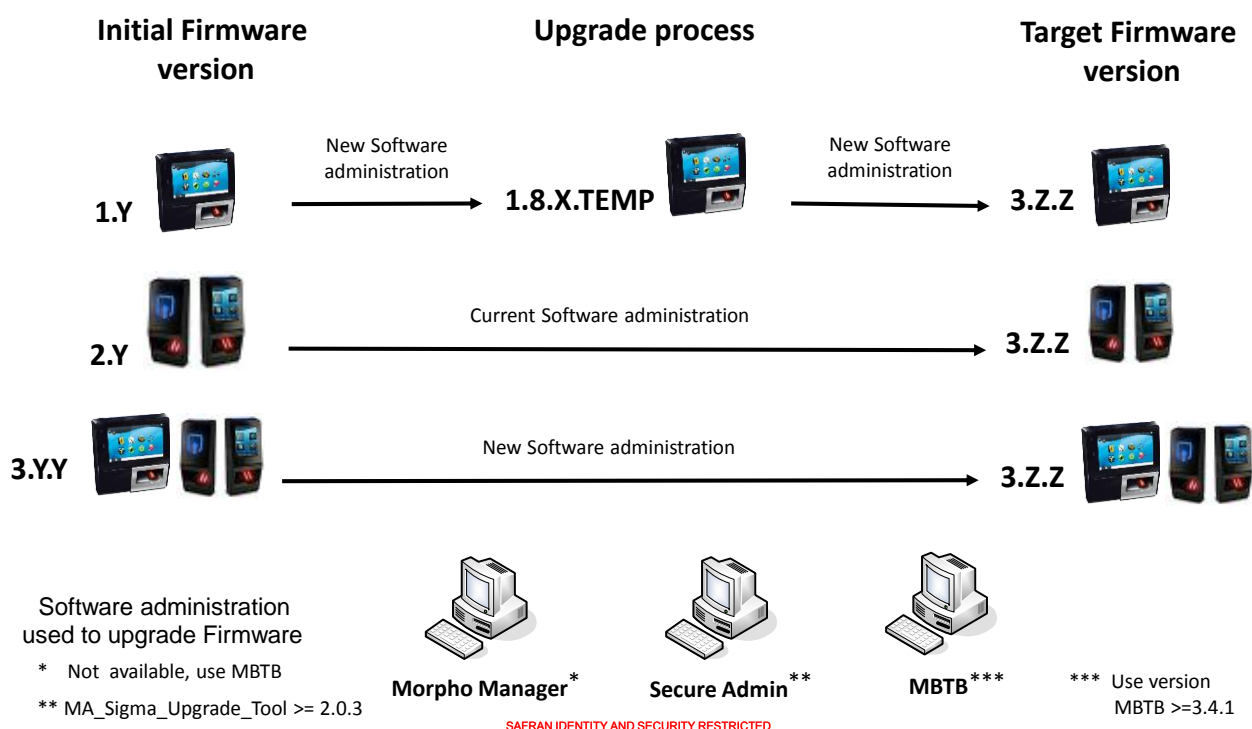


Figure 1 : Upgrade process illustration

Summary of compatibility:

Firmware Version Software version	Initial version on the terminal	Target version to install	Compatibility	Comment
Old releases MA_Sigma_Upgrade_Tool < 2.0.0 MBTB < 3.4.1 SA < 4.1.20.0.1.0.0 MM < 10.0.7	MA1.X.X	MA1.Y.Y	Compatible	
	MA1.X.X	MA1.8.Z.TEMP	Compatible	Compatible but not recommended. Prefer use of new version of software to upgrade to MA1.8.Z.TEMP
	MA1.X.X	MA3.Y.Y	Incompatible	Use new version of software
	MA2.X.X	MA3.Y.Y	Compatible	
	MA2.X.X	MA2.Y.Y	Compatible	
	MA1.8.Z.TEMP	MA3.Y.Y	Incompatible	Use new version of software
	MA1.8.Z.TEMP	MA1.Y.Y	Compatible	
New releases MA_Sigma_Upgrade_Tool >= 2.0.3 MBTB >= 3.4.1 SA and MM with manual action required	MA1.X.X	MA1.Y.Y	Compatible	
	MA1.X.X	MA1.8.Z.TEMP	Compatible	
	MA1.X.X	MA3.Y.Y	Incompatible	Error 7 : Upgrade terminal to version MA1.8.Z.TEMP before MA3.Y.Y
	MA2.X.X	MA3.Y.Y	Compatible	
	MA2.X.X	MA2.Y.Y	Compatible	
	MA1.8.Z.TEMP	MA3.Y.Y	Compatible	
	MA1.8.Z.TEMP	MA1.Y.Y	Compatible	

*Index X, Y and Z in this table can take all value to form an existing Firmware version

Examples:

- If a terminal version is MA1.4.1 and I want to upgrade version MA3.1.1.
Installation procedure shall be the following:
 1. Install new software version (ex: version 2.0.x of Morpho's Upgrade tool named "MA_Sigma_Upgrade_Tool.exe")
 2. Upgrade terminal Firmware from version MA1.4.1 to MA1.8.X.TEMP (with X meaning last version available).
 3. Upgrade terminal Firmware from version MA1.8.X.TEMP (with X meaning last version available) to MA3.1.1
- If a terminal version is MA2.2.1 and I want to upgrade version MA3.1.1.
Installation procedure shall be the following:
 1. Optional and not mandatory: Install new software version (ex: version 2.0.x of Morpho's Upgrade tool named "MA_Sigma_Upgrade_Tool.exe"). All upgrade tool version are compatible.
 2. Upgrade terminal Firmware from version MA2.2.1 to MA3.1.1

FAQ

I cannot upgrade my terminal Firmware to version MA3.1 or higher?

To install Firmware version MA3.1 or higher following conditions have to be respected:

- Check the current version of software used to upgrade (see table in previous page)
- Current Firmware version shall be MA1.8.X.TEMP (with X a number)

Upgrade process stops just after process is run

First connection may fail, a second try may be necessary to establish the connection between PC and terminal.

What are differences with previous version?

New upgrade process allows upgrading Firmware in a more secure way regarding network problem (brief disconnection, bad quality exchange). It is fully compatible with all existing Firmware versions.

The new version of the tool (MA_Sigma_Upgrade_Tool.exe) has changed. It can be integrated in existing high level application.

One new return code is added:

- Return code number : 7
- Return code description : The firmware update package is incompatible with this terminal firmware

How to check executable version

Follow steps:

1. Right click on executable, click on *properties*
2. Enter *Details*
3. Check number in *file version*

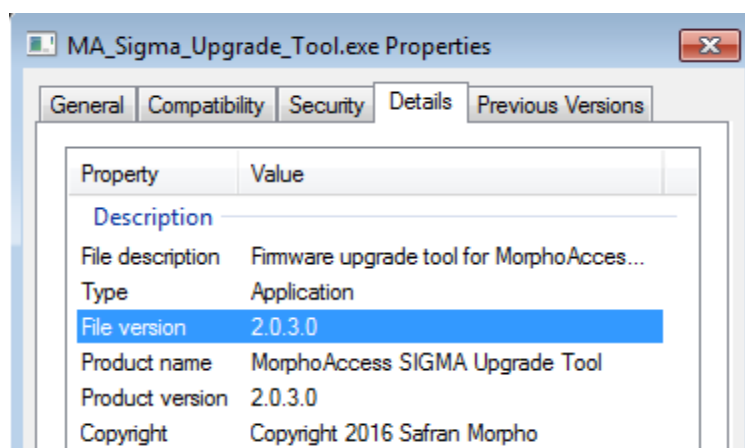


Figure 2 : Tool version in file property

How can I have more information on executable parameters or return codes?

Follow steps :

1. Locate folder containing executable « *MA_Sigma_Upgrade_Tool.exe* »
2. Click and maintain shift key and then click right on folder found in step 1. Select « Open Command Window Here »

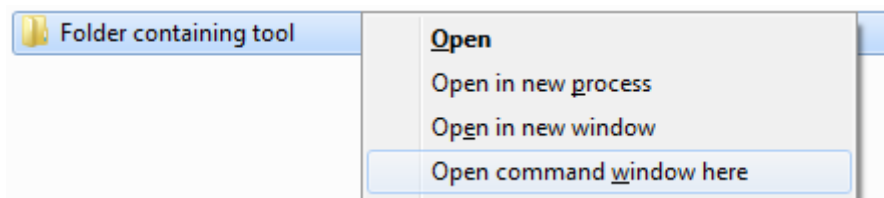


Figure 3 : Select "Open command line here" option

3. Enter « *MA_Sigma_Upgrade_Tool.exe -h* » in console
4. Quick help and example will be displayed

```

C:\windows\system32\cmd.exe
C:\Upgrade>MA_Sigma_Upgrade_Tool.exe -h
MorphoAccess SIGMA Upgrade Tool. Copyright Safran Morpho 2016.
Options:
  -h [ --help ]           Displays help and exit without upgrading
                           firmware.
  -v [ --verbose ]        Enables verbose mode.
  -q [ --quiet ]          Enables quiet mode.
  -f [ --file ] arg       Path to the binary file used for upgrade.
  -e [ --term ] arg       IP address of the terminal to upgrade.
  -p [ --port ] arg (<=1001) Application port of the terminal to upgrade.
  -t [ --timeout ] arg (<=10000) Connection timeout in milliseconds.

Examples:
  MA_Sigma_Upgrade_Tool.exe -f new_firmware.bin -e 192.168.1.2
  Upgrades firmware of terminal at address 192.168.1.2 using file new_firm
  ware.bin

  MA_Sigma_Upgrade_Tool.exe -f new_firmware.bin -e 192.168.1.2 -t 15000
  as above, using a timeout of 15 seconds.

  MA_Sigma_Upgrade_Tool.exe -v -f new_firmware.bin -e 192.168.1.2
  as above, enabling using verbose mode.

Return codes:
  0: The terminal firmware has been successfully updated.
  1: The application has encountered an internal error.
  2: The firmware update package is invalid or corrupted.
  3: The application cannot connect to the terminal.
  4: The terminal signaled an error during the update.
  5: The firmware update package is incompatible with this terminal.
  6: The application given an invalid argument.
  7: The firmware update package is incompatible with this terminal firmware
  version.
  
```

Figure 4 : Tool help call window in console