

APPLICATION NOTE

ID ISC.SDK.xxx

Programmers Guide for Firmware Update

Note

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This manual supercedes all previous editions.

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The installation instructions given in this manual are based on advantageous boundary conditions. FEIG ELECTRONIC GmbH does not give any guarantee promise for perfect function of an **IDENTIFICATION**-system in cross surroundings.

General Information Regarding this Document

- The following figure formats are used:
 - 0...9: for decimal figures
 - 0x00...0xFF: for hexadecimal figures,
 - b0...1 for binary figures.
- The hexadecimal value in brackets "[]" marks a command.

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1. Safety Instructions / Warning - Read Before Start-Up!

- The device may only be used for the intended purpose designed by for the manufacturer.
- The operation manual should be conveniently kept available at all times for each user.
- Unauthorized changes and the use of spare parts and additional devices which have not been sold or recommended by the manufacturer may cause fire, electric shocks or injuries. Such unauthorized measures shall exclude any liability by the manufacturer.
- The liability-prescriptions of the manufacturer in the issue valid at the time of purchase are valid for the device. The manufacturer shall not be held legally responsible for inaccuracies, errors, or omissions in the manual or automatically set parameters for a device or for an incorrect application of a device.
- Repairs may only be executed by the manufacturer.
- Installation, operation, and maintenance procedures should only be carried out by qualified personnel.
- Use of the device and its installation must be in accordance with national legal requirements and local electrical codes.
- When working on devices the valid safety regulations must be observed.

2. Introduction

This application note lists instructions for programmers who want to perform a firmware update out of their application by using a SDK of FEIG. It is strongly recommended to follow these instructions to avoid outages of Readers in the field.

FEIG ELECTRONIC GmbH has developed different, hierarchical structured software libraries to simplify the integration of FEIG RFID readers into customer's applications.

A common attribute of all components is the support of all FEIG reader families with a uniform Application Programming Interface (API).

More information to the APIs can be found in the SDK manuals, the HTML API documentation and in the SDK-Tutorial H60810-e-ID-B.

The firmware update module is also the basic component of the Reader Firmware Update Tool and included in the library FedmlscCoreApi. It supports the firmware file type (*.obid.fw.xml) with meta-information to check if the Reader matches all requirements shipped as metadata inside the firmware file. This increases the security for the update process. Secondly, the file type can contain multiple firmware files, if a Reader has more than one CPU. This allows a single invoke of the update function for each Reader.

3. Revision History

Revision	Date	Description
8.06.00	2020-05-11	Support of ID HyWEAR compact xT Support of ID SPAD.U Support of ID CPR60 bugfix for LRU3000 in detect dialog
8.05.00	2019-11-21	Recommended version for ID HyWEAR compact
8.04.01	2019-08-06	Support for Wifi-Module Update in ID HyWEAR compact Removed support of old Reader types
8.02.00	2019-03-18	Support of ID HyWEAR compact
8.01.01	2019-01-14	Bugfix for XML document version 2
8.01.00	2018-12-17	Support for ID ISC.LRU500i-PoE and –BD and ID MAX.U500i
8.00.02	2018-05-07	Workaroud for ID ISC.MR102 with Firmware Version 2.09.00
8.00.00	2018-01-15	Support for XML document version 2.0 with additional metadata
7.09.01	2017-09-25	Increased Timeout for ID ISC.LRU1002/ID MAX.U1002
7.09.00	2017-09-07	Support of ID ISC.ANT.U500/270-GA and -DM
7.08.00	2017-01-13	Support of ID CPR.74 Support of ID ISC.LRU1002/ID MAX.U1002 with improved hardware
7.06.00	2015-06-02	Modifications for ACC v3.0.0 of ID ISC.LR2500-A: special firmware package to support update of partition 0. Please note the Product Change Note for this firmware version
7.05.00	2015-04-23	Modifications for ACC v3.0.0 of ID ISC.LRU3x00: special firmware package to support update of partition 0. Please note the Product Change Note for this firmware version
7.02	2014-07-25	Support of ID MAX.U1002 Support of WLAN-Module Update for ID ISC.PRH200 Support of Bootloader Update for ID ISC.PRH200
7.01	2013-12-06	Support of OBID myAXXESS onTop, ID ISC.LRU1002 and ID ISC.PRH200
7.00.02	2013-06-05	Support for ID CPR47.xx
6.10.02	2012-12-17	Modification for ID ISC.LRU3000: Update process modified for new CONFIGfs partition
6.10	2012-07-10	Modification for ID ISC.LR1002: Update process changed for multiple banks

		<i>Support of update over secured connection Support of ID CPR20.xx and ID CPR46.xx</i>
6.09	2012-02-01	<i>Support of ID ISC.LR1002</i>
6.08	2011-10-19	<i>Modification for ID ISC.LRU3000/3500: Update process changed for ACC to support large partitions Support of ID ISC.MRU102-A / -USB / -PoE</i>
6.07	2011-05-18	<i>Modification for ID ISC.MRU200</i>
6.06	2011-03-09	<i>Support of ID ISC.MR102-PoE and ID ISC.LR2500-A</i>
6.05	2011-01-31	<i>Support of ID ISC.MR102-A / -B / -USB, ID ISC.LR2500-B, ID CPR30.xx and ID CPR52.xx</i>
6.04	2010-09-02	<i>Support of ID CPR.44.0x-4SCUSB-B</i>
6.03	2010-06-23	<i>Support of almost all FEIG readers Improved update of FPGA controller, if firmware in reader is missing or wrong</i>

4. Supported Readers

The following readers are supported:

FEIG HF and UHF reader:

- ID ISC.M02
- ID ISC.M02.M8-B
- ID ISC.MR/PR/PRH101
- ID ISC.MR102
- ID ISC.MR200
- ID ISC.LR1002
- ID ISC.LR2500-A
- ID ISC.LR2500-B
- ID ISC.MU02.02
- ID ISC.PRH102 (not with Bluetooth interface)
- ID ISC.PRHD102 (not with Bluetooth interface)
- ID ISC.PRH200
- ID ISC.MRU102
- ID SPAD.U (with internal ID ISC.MRU102)
- ID ISC.LRU1002 (also in 2017 improved hardware)
- ID ISC.LRU3000 / LRU3500
- ID MAXU.1002 (also in 2017 improved hardware)
- ID ISC.ANT.U500/270-GA and -DM (with internal ID ISC.LRU1002)
- ID ISC.LRU500i-PoE and –BD
- ID MAX.U500i
- ID HyWEAR compact
- ID HyWEAR compact xT

FEIG CPR reader:

- ID CPR.02
- ID CPR.M02
- ID CPR30.xx
- ID CPR40.xx
- ID CPR44.xx
- ID CPR46.xx
- ID CPR47.xx
- ID CPR50.xx
- ID CPR74.xx
- ID MAX50.xx

5. Known Issues

<i>Reader</i>	<i>ISSUE</i>
-	-

6. General Important Notes

- *For the Update it is recommended to configure the Host Mode in the reader.*
- *Before an update on the LAN interface is started, the Windows Firewall should be switched off temporary.*
- *Update over WLAN is not recommended if another interface is available.*
- *Do not interrupt the power supply until the update process has not been finished.*
- *Avoid any converters like USB to RS232 or RS232 to TCP/IP if it is possible.*
- *For RS232/485, the maximum baudrate should be 38400 baud.*
- *It is not recommended to use an USB-Hub for an update over USB. It is strongly recommended to connect the reader directly with an USB port at the PC.*
- *Do not interrupt the application until the update process has not been finished.*
- *If existing we recommend to use the TCP/IP interface.*
- *After the successful installation of the new firmware the current version of the ISOStart demo program should be used to test the reader. The current ISOStart version can be downloaded from the download area of FEIG ELECTRONIC GmbH.*
- *If the update was not successful and the old firmware has been already deleted please call the customer support of FEIG ELECTRONIC GmbH.*

7. Notes for Programmers

The Firmware Update Module is part of the C++ library stack and has dependencies to other libraries.

Java and .NET libraries are realized as a small wrapper layer above the C++ library FEDM and have almost the same API.

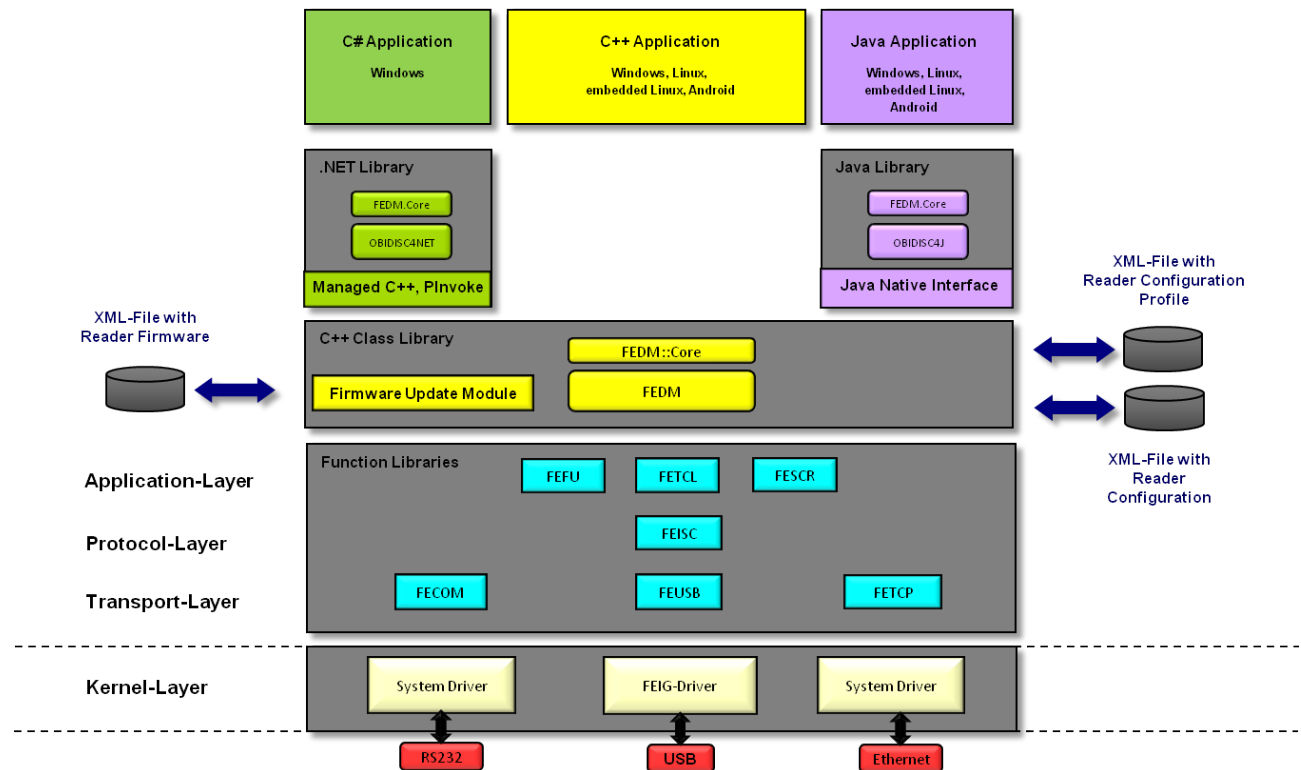


Fig. 1: Library stack from which the particular SDKs are built

In the following, all explanations are based on the library C++ FEDM. Its internal structure is pictured in Fig. 2.

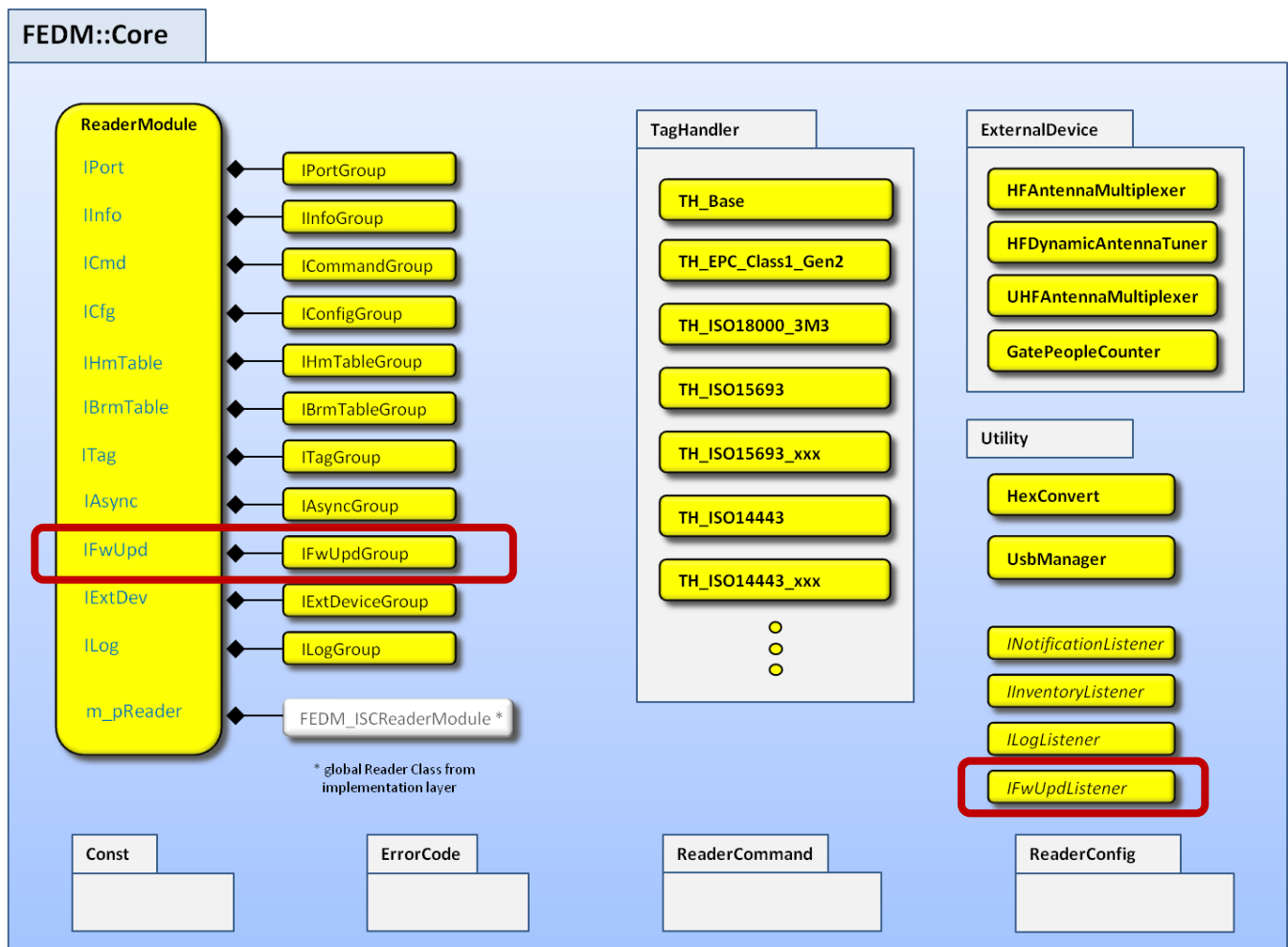


Fig. 2: Internal structure of C++ Library

The firmware update function can be found in the nested group IFwUpd of type IFwUpdGroup of the class ReaderModule.

The progress of the update can be optionally reflected into an application, when a class is derived from the listener IFwUpdListener.

The methods of the classes are described in the HTML help files to the class library.

8. Example

The ID ISC.SDK.Win contains a console sample called FWUpdateSample with example code.