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REVIEWS

Rev	Date	Reviewer	Department

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ABBREVIATIONS

Builder Operator	Operator of the “FW-Update Builder” assembling the “FW-Update Safe”
DLL	Dynamic Link Library
FW	Firmware, hardware depending software
FW-Update	Firmware update
FW-Update Builder	Builder of the “FW-Update Safe”, tool to select all needed components and to encrypt the “FW-Update Safe”
FW-Update Loader	Software for decryption of the “FW-Update Safe” and host for the “FW-Update Software”
FW-Update Process	The process of installing the firmware
FW-Update Safe	Encrypted container of all components needed for the “FW-Update Process” during offline operation
FW-Update SW	Software executing the “FW-Update Process”
Genesis	Legacy Name of Cordone1
HW	Hardware
Offline Operation	Without connection to the Xylem-Network
Online Operation	Directly or via VPN connected to the Xylem-Network
PCB ID	Printed Circuit Board Identifier, unique identification number of the Cordone1 HW
SW	Software
Update Operator	Operator executing the “FW-Update Process”
VPN	Virtual Private Network

Table 1.1 Abbreviations

1. Introduction

A general introduction of the “FW-Update package” is referenced by [FWU_PK].

1.1 Content

This document gives a brief overview of the “FW-Update Software”. This software is the worker who updates the FW on a Cordonel™.

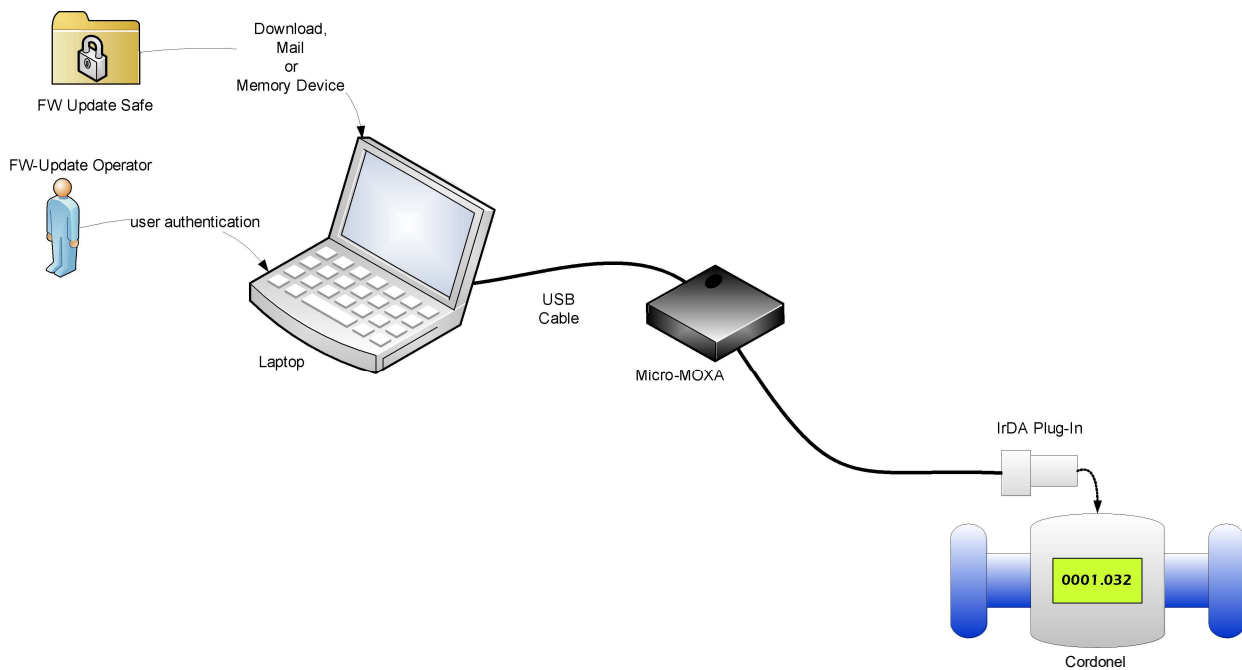


Figure 1.1 FW-Update – Offline Operation

2. Prerequisites

2.1 Hardware Requirements

- PC with MS-Windows™ 10 Operating system.
- Micro-MOXA or mini-MOXA with IrDA head.

2.2 Software Requirements

Microsoft™ .NET framework 4.7.2 has to be installed in advance.

3. Installation

3.1 FW-Update Software Installation

The “FW-Update Software” is included in the “FW-Update Safe”. It can neither be installed nor executed without the “FW-Update Loader” as this software will not be delivered as executable (*.exe). The execution will directly be started with a button on the “FW-Update Loader”.

3.2 Micro-MOXA Driver Installation and Setup

The UPort 1130 Series with on serial port (here shown a type 1250 with two serial ports) has to be installed and setup with administrator rights. After installation this device is visible on Multi-port serial adapters and mapped to one Port (COM & LPT) named MOXA UPort Com Port 1 (COMxx) assigned to a serial COMxx interface.

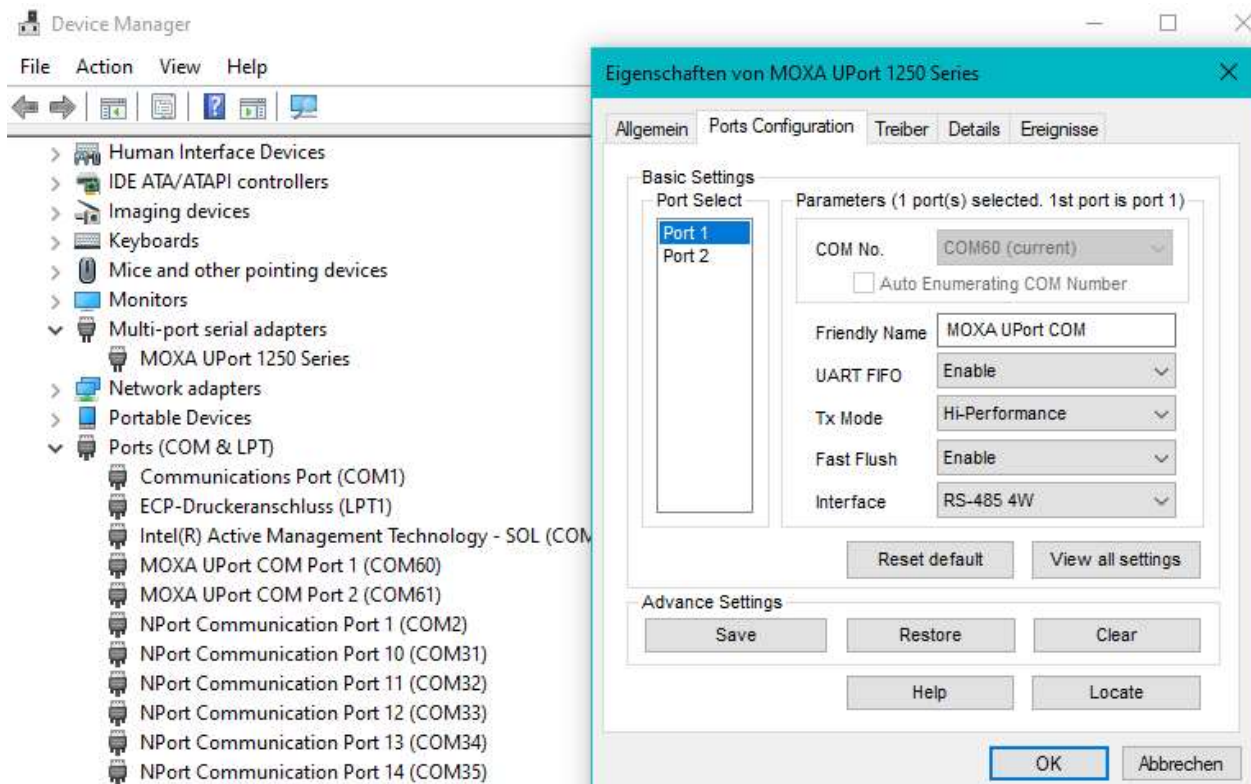


Figure 3.1 Setup Micro-MOXA – RS-485 4W

The setup has to be done to RS485 4W according to the setups shown in the figure above.

4. Security

The software is protected by a license for a specific version and has an expiration date.

Key Values:

- License control in Laatzen DB – SW will immediately exit if not licensed or validation date expired,
- The “FW-Update SW” cannot be run by just clicking on it as it is a special format which needs to be loaded and executed by the “FW-Update Loader”,
- All sensitive information will be directly exchanged between the “FW-Update Loader” and the “FW-Update SW” without intermediate storage to hard disk.

5. Confidence Notice

The Update Operator cannot influence the update process. There is nothing, which can be made wrong. The “FW-Update SW” takes the responsibility for the entire process.

Even if the update cannot be performed, the Cordone!™ will remain fully functional. The only critical point is after the “burn” command (internal idiom is TRIGGER_UPGRADE). This will take all downloaded applications on overwrite the current once.

If for some reason the process will be interrupted at this step, the “FW-Update SW” will proceed with the next connection and finalize the operation. A possible cause of an interruption may be a power loss due to a low battery of the update operator PC, some environmental events like rain, thunderstorm or light exposure, or the slipping out of the IrDA plug-in.

6. Operational Warning

ATTENTION:

All logging files installed in the Cordonel will be erased during the “FW-Update Procedure” and generated from the scratch as empty files after the FW update. Clarify with the customer in ADVANCE if he needs these files. If so, the FW update has to be dismissed until these files are read using e.g. the DIAVASO software.

After the FW update the logging will be proceeding as usual.

7. Operating Instructions

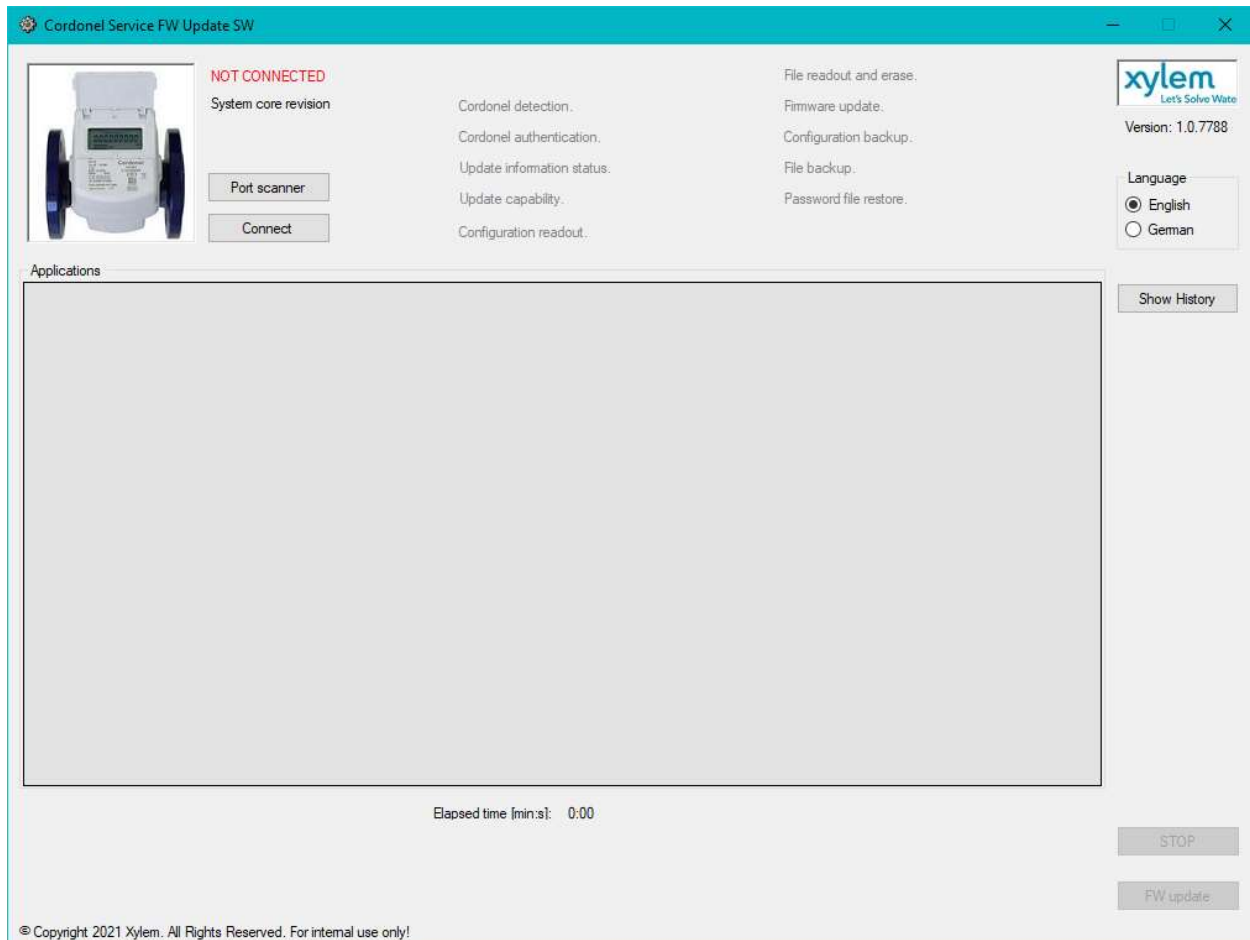


Figure 7.1 Start Screen

At least now, the IrDA plugin has to be attached to the Cordonel and the USB cable of the Micro-MOXA to the PC.

Press [Connect] to establish the connection to the Cordonel.

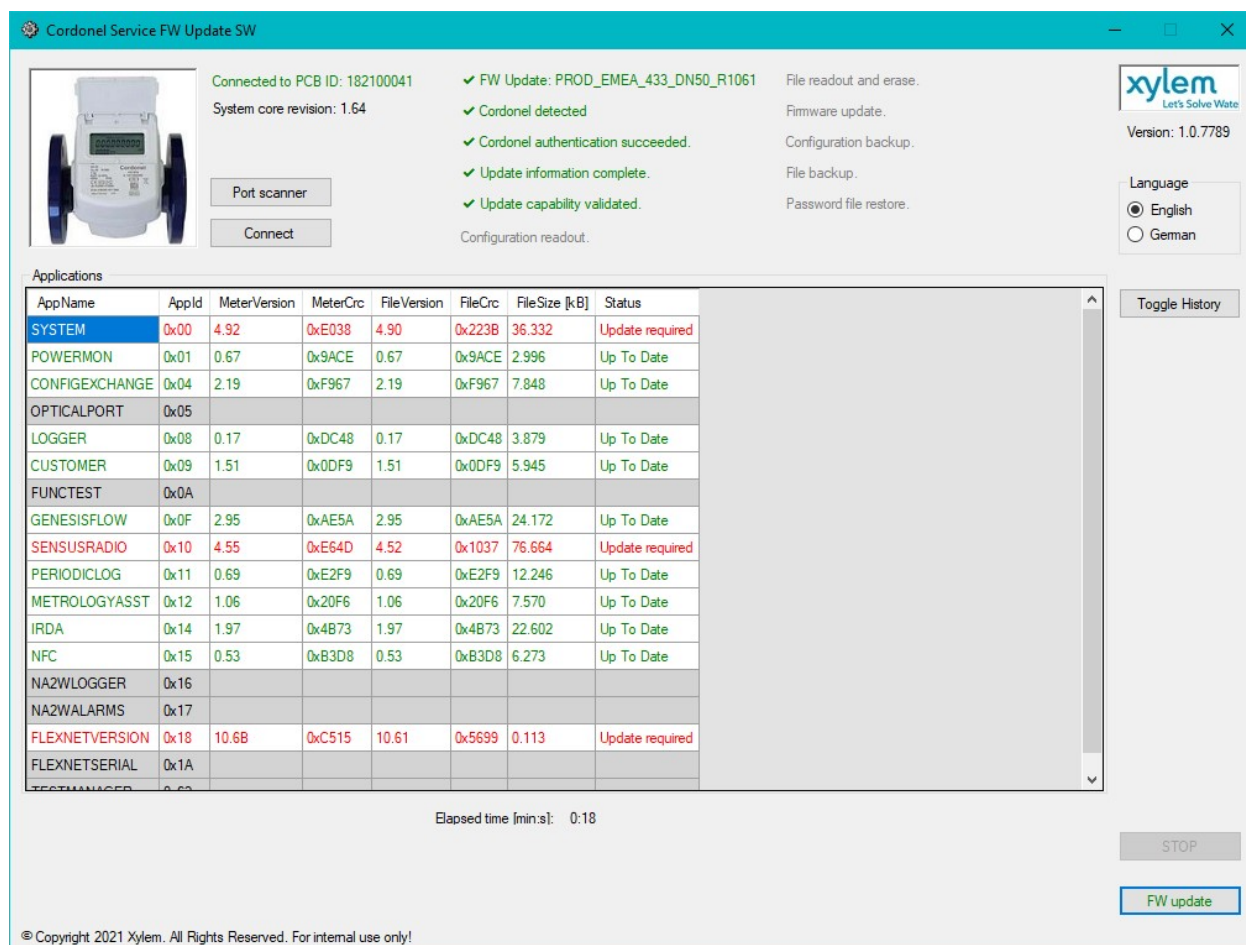


Figure 7.2 Ready For Update

Press [Update]....

During the update process the Cordone display will show:

IdLE

8888

After successfully update it returns to a normal display state showing the flow.

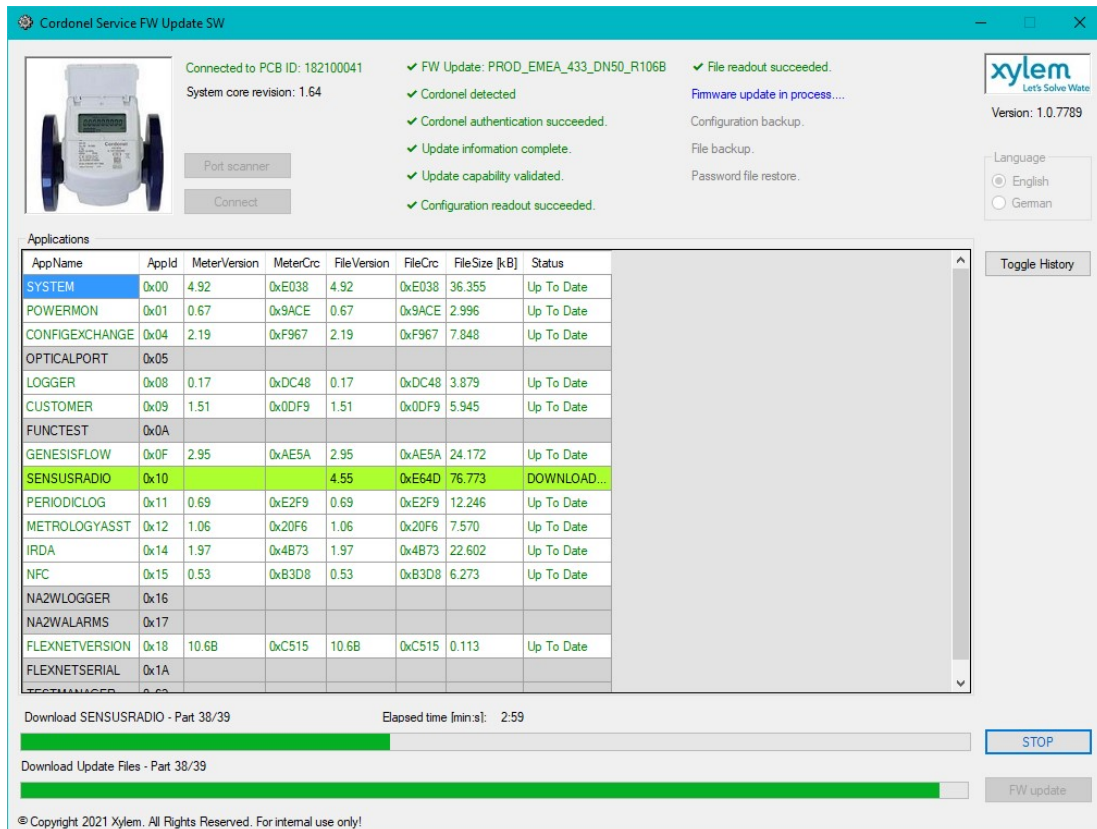


Figure 7.3 Update Ongoing

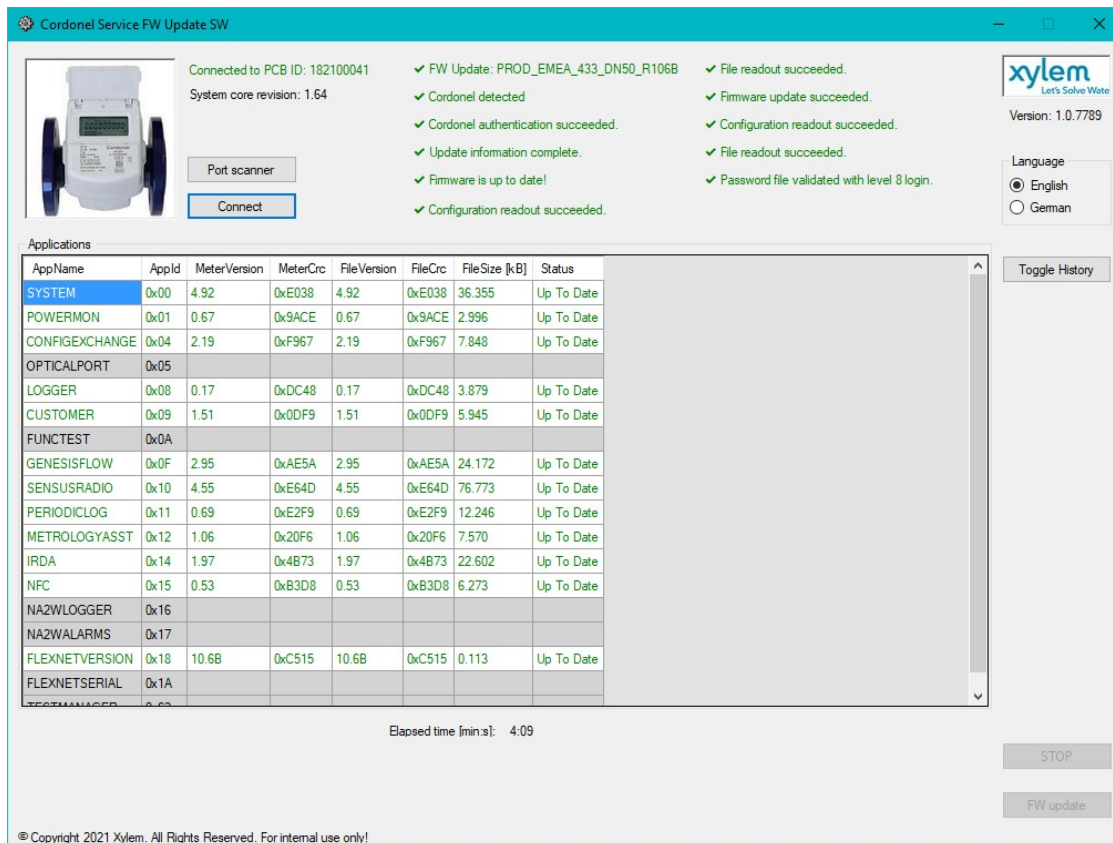


Figure 7.4 Update Successful

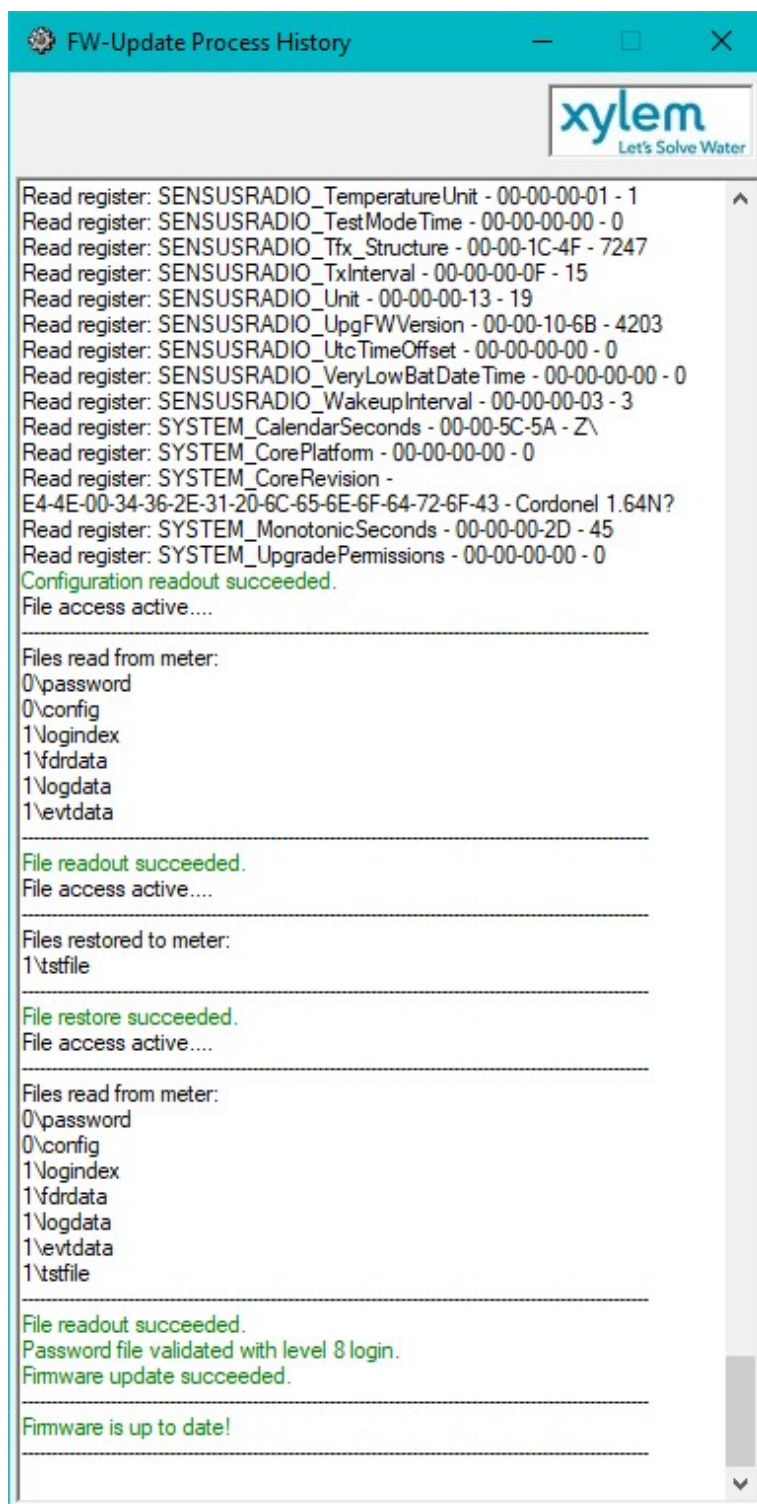


Figure 7.5 History Window – Firmware Up To Date

8. Trouble Shooting

Cordonel connection cannot be established:

- Check USB connection to Micro-MOXA
- Check IrDA-Plugin Header
- Check daylight or artificial light exposure as the IrDA connection is very light sensitive

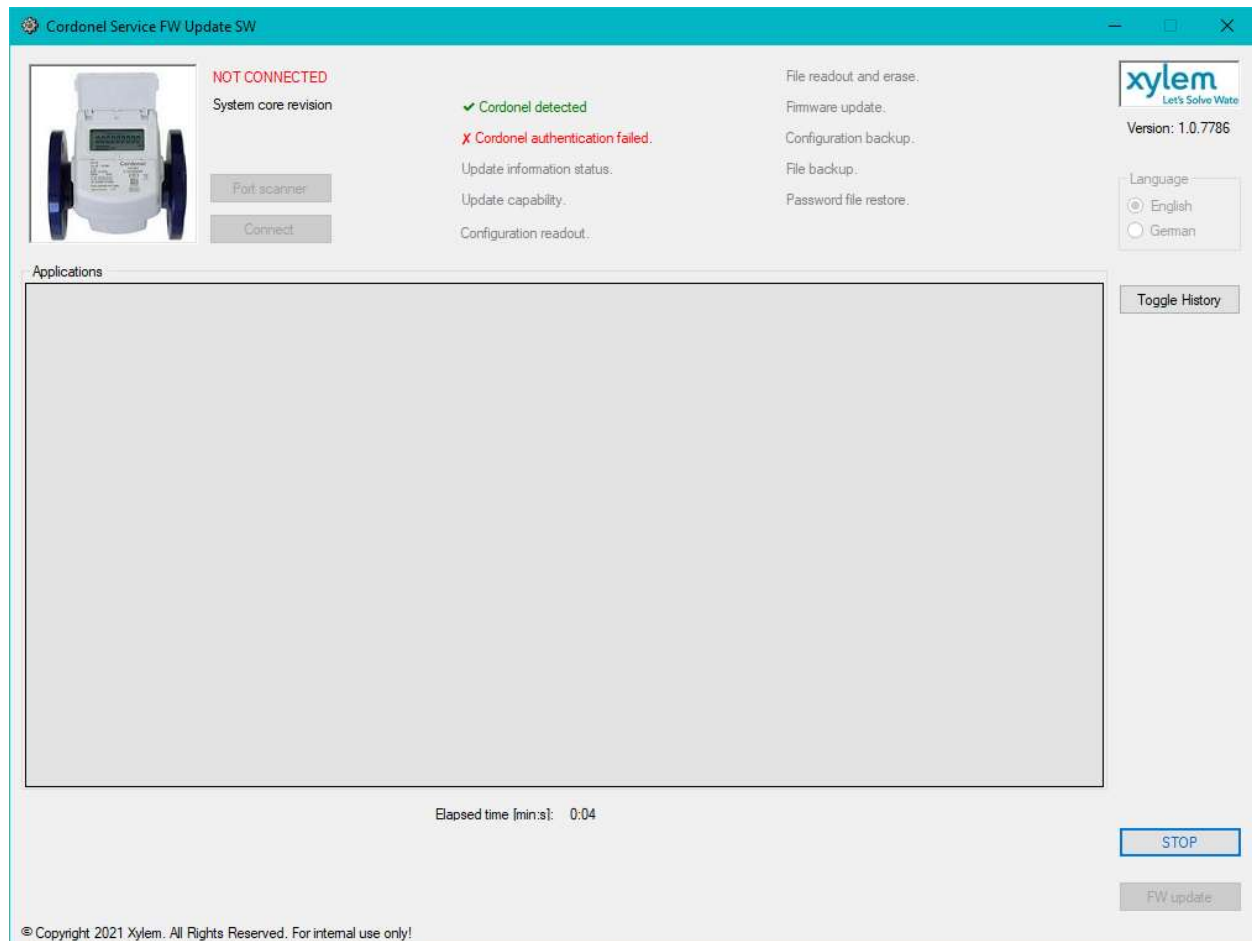


Figure 8.1 Authentication Failed

The Cordonel authentication failed:

- Timeout on connection, retry with [Connect],
- Password file corrupted, cannot be fixed, a new safe is needed.

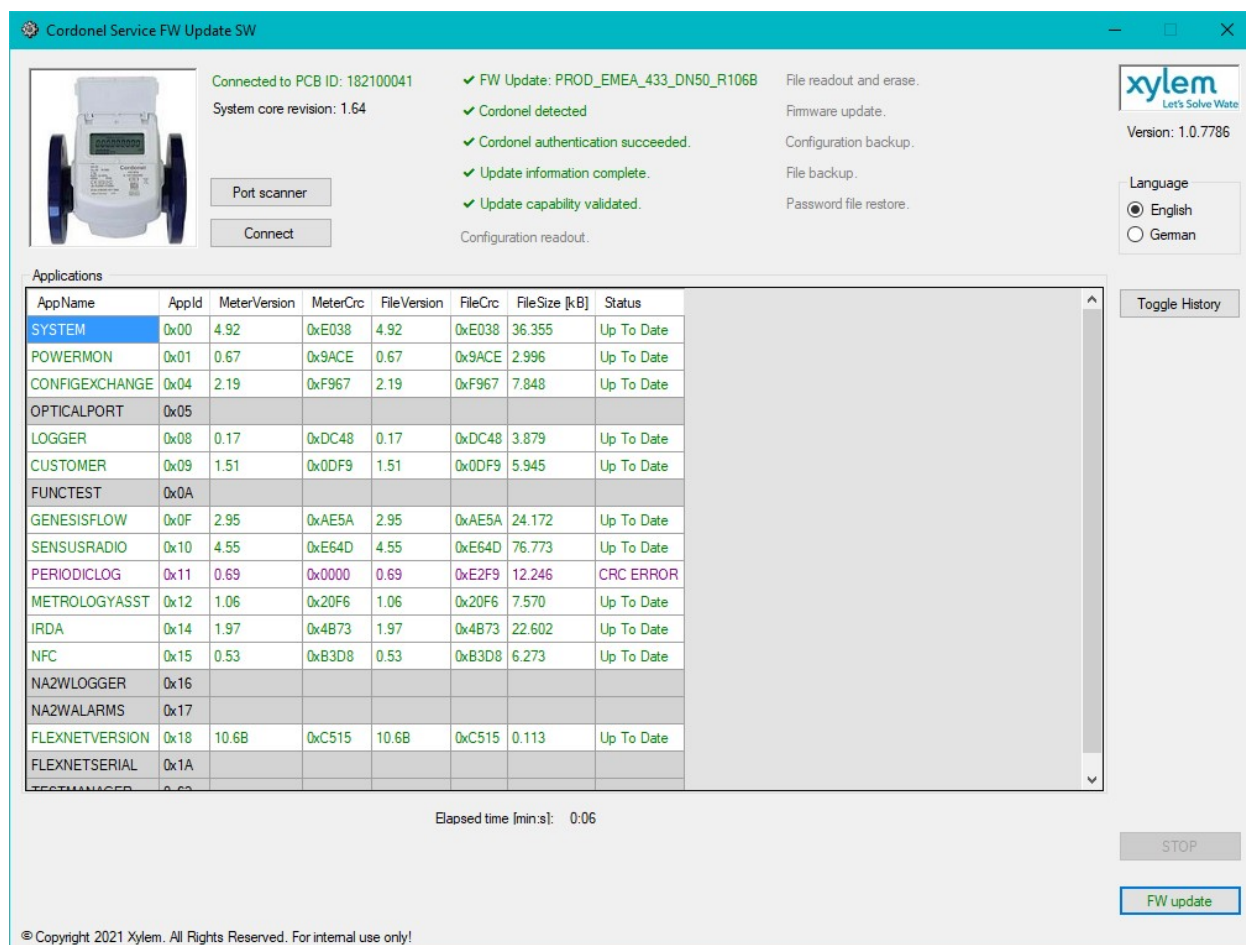


Figure 8.2 CRC ERROR

CRC error:

- From time to time a communication problem indicates a wrong CRC. As this is doubtful, press [Connect] again to correct this message.

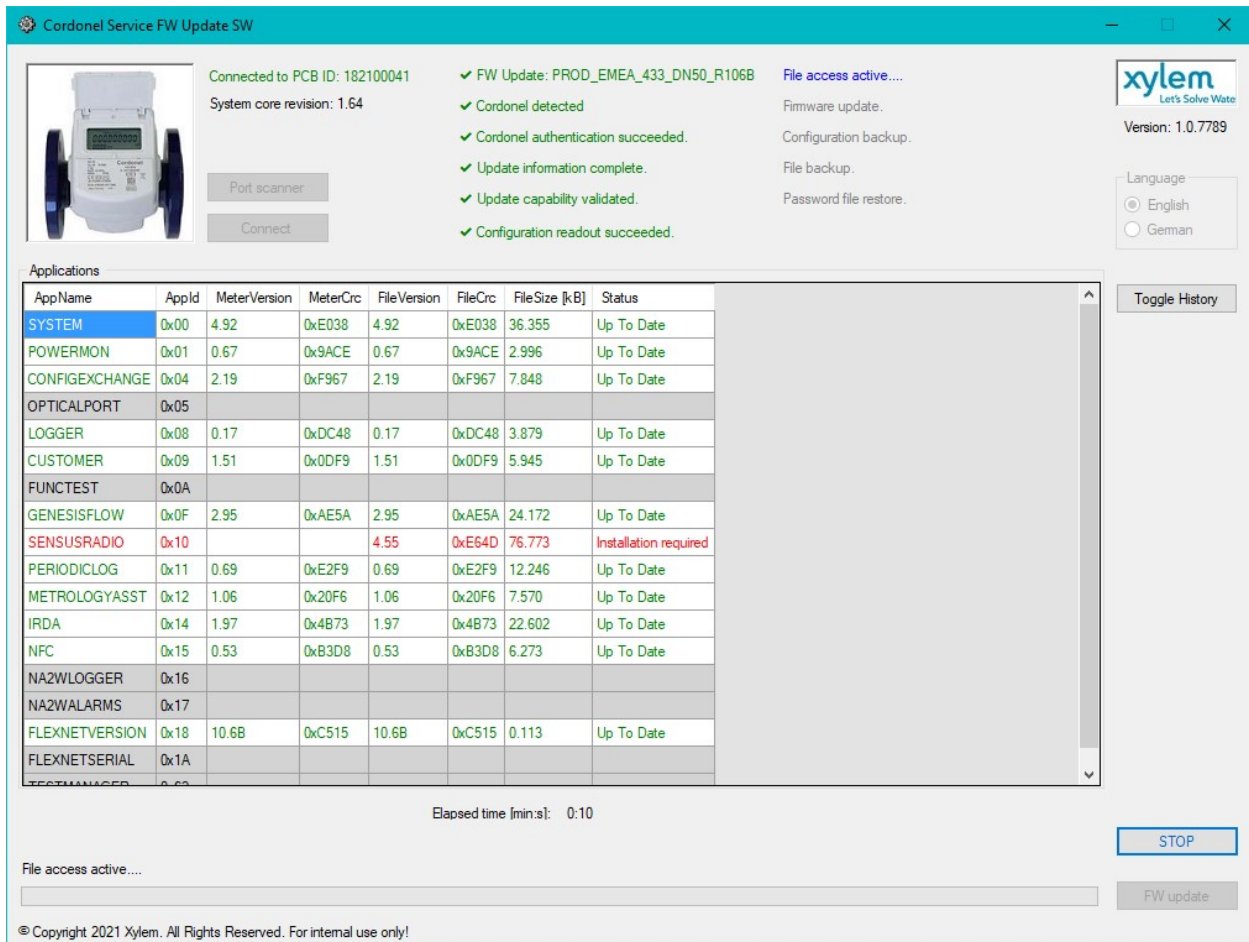


Figure 8.3 Missing Application

Missing Application:

- From time to time a communication problem indicates a missing application. As this is doubtful, press [Connect] again to correct this message.

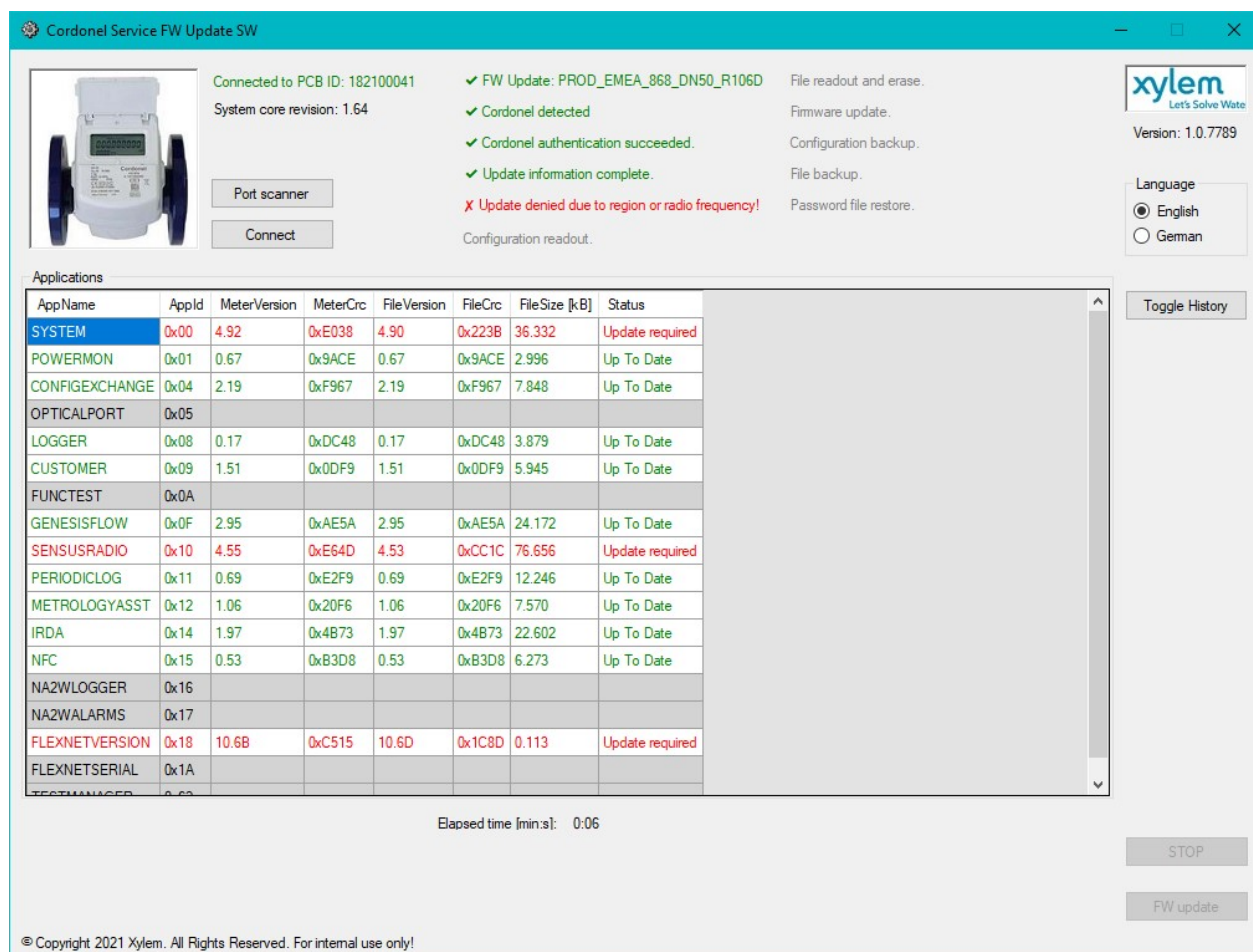


Figure 8.4 Wrong Radio Frequency

This package cannot be installed! All update capability checks will deny an update if they are not matching:

- If the GENESISFLOW mentioned as metrology version is different,
- If the Radio Frequency or Region is different,
- If the Core version is out of range.

The history window will show detailed information:

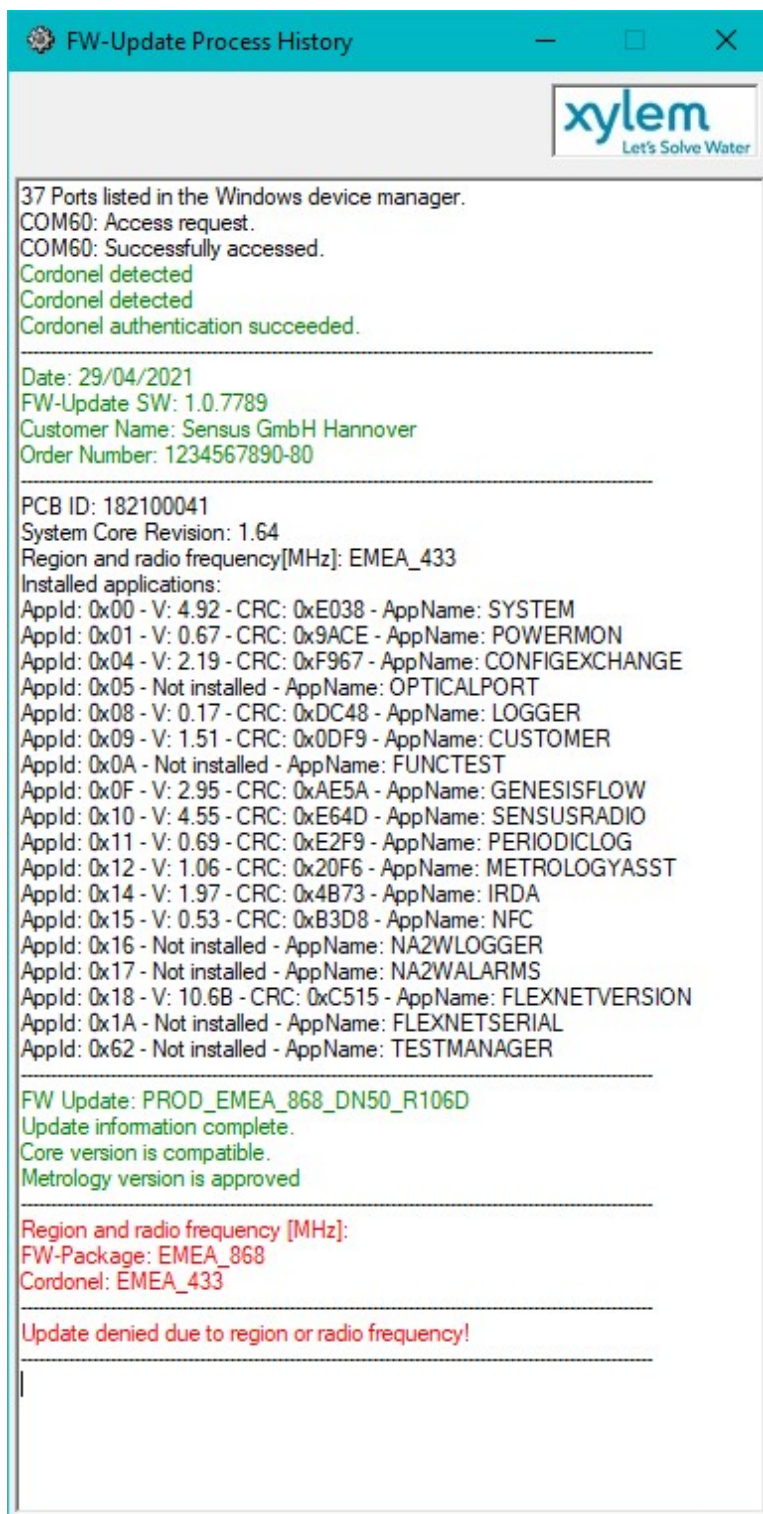


Figure 8.5 History Window - Wrong Radio Frequency

9. Contacts

Name	Funktion	Mail

*Table 9.1 Contacts***10. References**

- [FWU_MRD] **Cordonel Service FW-Update Process MRD**; *Published: SENSUS GmbH*; Author: Thomas Wiedebusch; Edition: September 2020 - Revision B
- [FWU_BLD] **Quick Reference Cordonel Service FW-Update Builder**; *Published: SENSUS GmbH*; Author: Thomas Wiedebusch; Edition: April 2021 - Revision A
- [FWU_LDR] **Quick Reference Cordonel Service FW-Update Loader**; *Published: SENSUS GmbH*; Author: Thomas Wiedebusch; Edition: April 2021 - Revision A
- [FWU_PK] **Quick Reference Cordonel Service FW-Update Packet**; *Published: SENSUS GmbH*; Author: Thomas Wiedebusch; Edition: April 2021 - Revision A