CPLD update tool information

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1   When is a CPLD update necessary?

1.1   Hardware version C and older

With hardware version C and older, a CPLD update must be applied when the PCD3.Rxxxx or the PCD3.Fxxx modules are used. In case the update has not been executed the modules will not be recognized correctly if more than two extension cabinets (PCD3.Cxxx) are connected to the PCD3 controller.

1.2   Hardware version D and later

With hardware version D and later, no CPLD update should be necessary. However, the very first versions of the PCD3 hardware version D have left our production facility with the CPLD incorrectly programmed.

2   Symptoms of an incorrectly programmed CPLD

2.1   Impact on PCD3.Fxxx modules

The PCD3.Fxxx communication modules will not be recognized if more than two PCD3.C100 or PCD3.C200 expansion modules are connected to the PCD3 controller. There will be an error in the configuration of the communication port.
In case a modem or the serial PGU port is configured on port 1, the PCD will not go in run at all (in the history a message "Modem port Init failed" or "PGU port init failed" is entered).

2.2   Impact on PCD3.R5xxx and PCD3.R6xxx modules

If the CPLD on a PCD3 controller is not correctly programmed, the new PCD3.R5xxx and PCD3.R6xxx modules cannot be used. Any attempt to address these modules will fail.
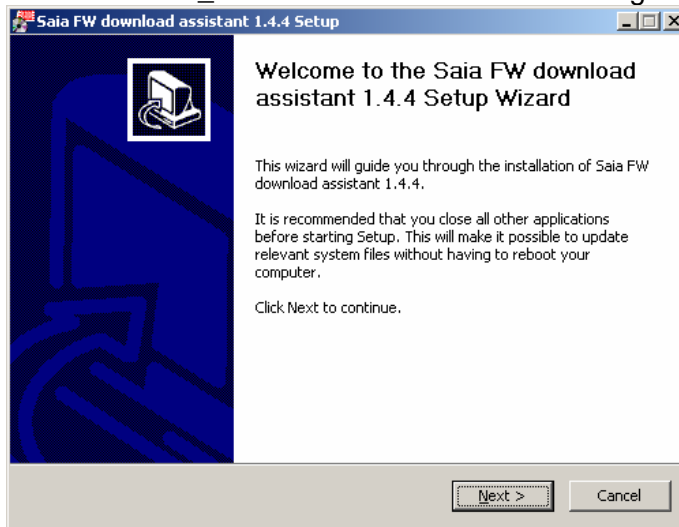

In these two cases a CPLD update will remedy the situation.
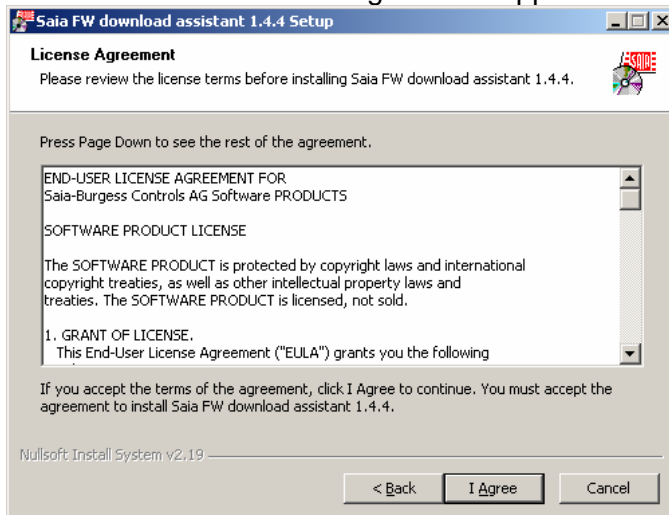
3   Procedure for update

3.1   Install the CPLD update tool

As first step for the update of the CPLD of a PCD3 the "Firemware download assistant 1.4.4" is to be installed:

- Launch "Install_FwDnldAssist.exe". The following screen should appear:
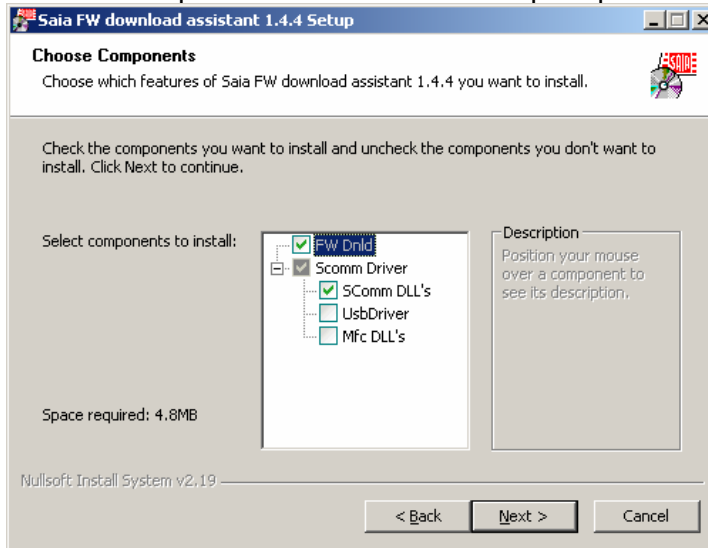

- Select "Next". The license agreement appears as next:

- Accept license agreement by clicking "I Agree".

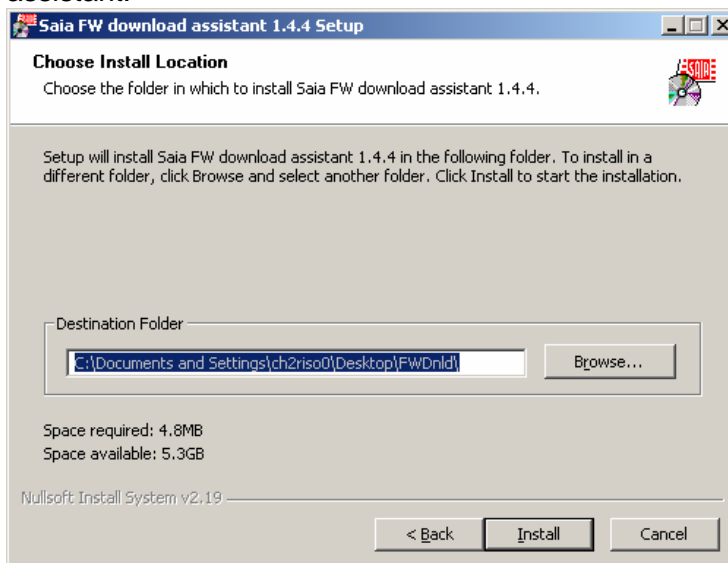- Now the components to be installed are prompted:

From this selection the SCommDlls must be selected in any case.
- o The SCommDlls must be selected in any case
- o UsbDriver and Mfc DLLs should only be selected if PG5 is not yet installed.

After having selected the appropriate components, click "Next"

- The next window prompts for the installation path of the Firmware download assistant:

Enter an installation path for the update tool and click the button "Install".

- The following screen informs that the installation has completed successfully. From now on the firmware download assistant is available from the Windows Start menu (by default placed in the PG5 1.4 folder).

3.2   CPLD update procedure

After having installed the "Firmware download assistant" as described in the previous chapter the CPLD of a PCD3 can be updated with the following procedure:
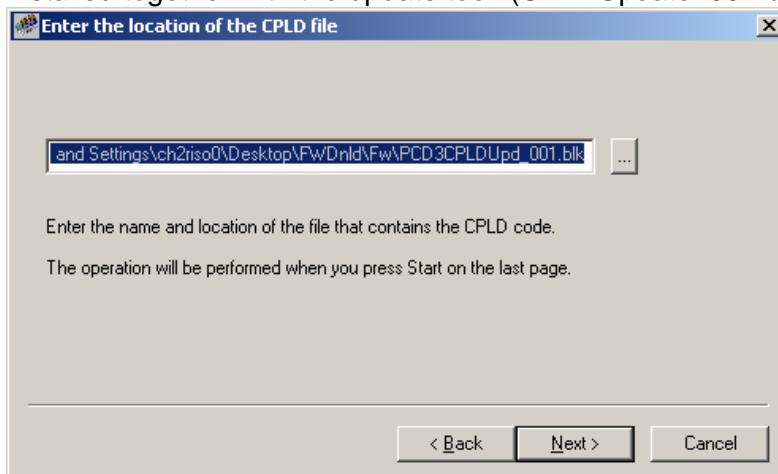
- Close all applications accessing the Saia Communication driver (ScommDll.dll). Therefore make sure PG5, WebConnect, Visi+ etc. are closed.

- Launch the "FwDnldAssist.exe".

- Connect the PCD3 to be updated to the PC. The possible connections are either PGU (using the programming cable PCD8.K111) or USB.
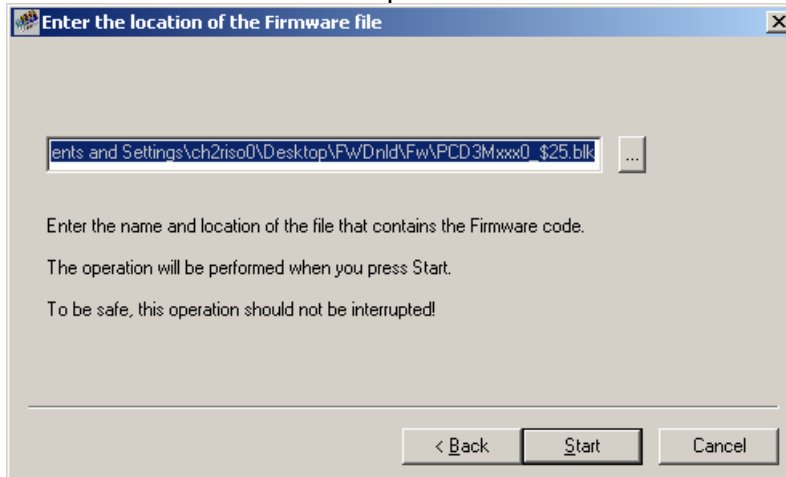
   Important: On old PCD3 controllers the update can only be applied via PGU connection. On the back of the PCD3 a label with details of the hardware and firmware is present. The original firmware (as delivered) must be >=016 for an update via USB to be possible.

- Click the button "Next".

- In the appearing screen the path to the location of the CPLD block file is to be specified. The correct path should already be selected by default, as this file is installed together with the update tool. (CPLDUpdate: 001.blk)

- Select "Next".

- On the next screen enter the path for firmware to be loaded after the CPLD update.
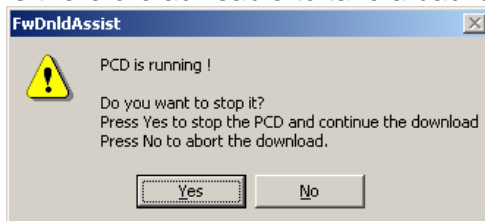

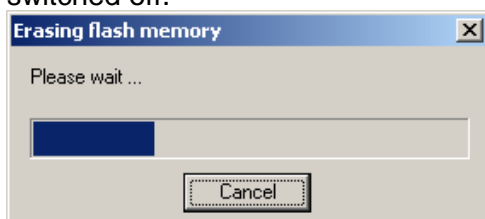By default, the tool references firmware $25 (Classic); the following firmware versions are delivered with the tool
  - o **Classic:** 024 (official) and $25 (supports the PCD3.R6xx flash modules)
  - o **XX7:** V1.450

It is strongly recommended using the latest firmware available on www.sbc-support.ch in the PCD3 section rather than the installed (older) ones.

- Start the download. The PCD is stopped during this procedure. Please note that the user program and the hardware settings are deleted in the course of the download. It is therefore advisable to take a backup before downloading.

- During the download, the cable **must not** be unplugged and the PCD3 **must not** be switched off.

- Also after the download of the files has completed the PCD **must not** be switched off until the following message appears:

- After the update the firmware version and 'Modification 8' shall be indicated on the backside of the PCD for future recognition of the CPLD update.

After the update the PCD is in a HALT state and an entry "MEDIA CORRUPTION" will be written into the history. This is normal, as the entire memory has been erased by the update procedure.