SFB-PN Configuration Tool
Manual

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Document information

Version:	V 2.01
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1   Introduction

The SFB Configuration Tool is used to check the module parameters in the engineering tool for safe control (e.g. TIA Portal) for correctness.
This is a safety-related validation measure. Without this check and the transfer of the checksum (F_iPar_CRC) from the SFB Configuration Tool to the F-PLC, the device will not operate.
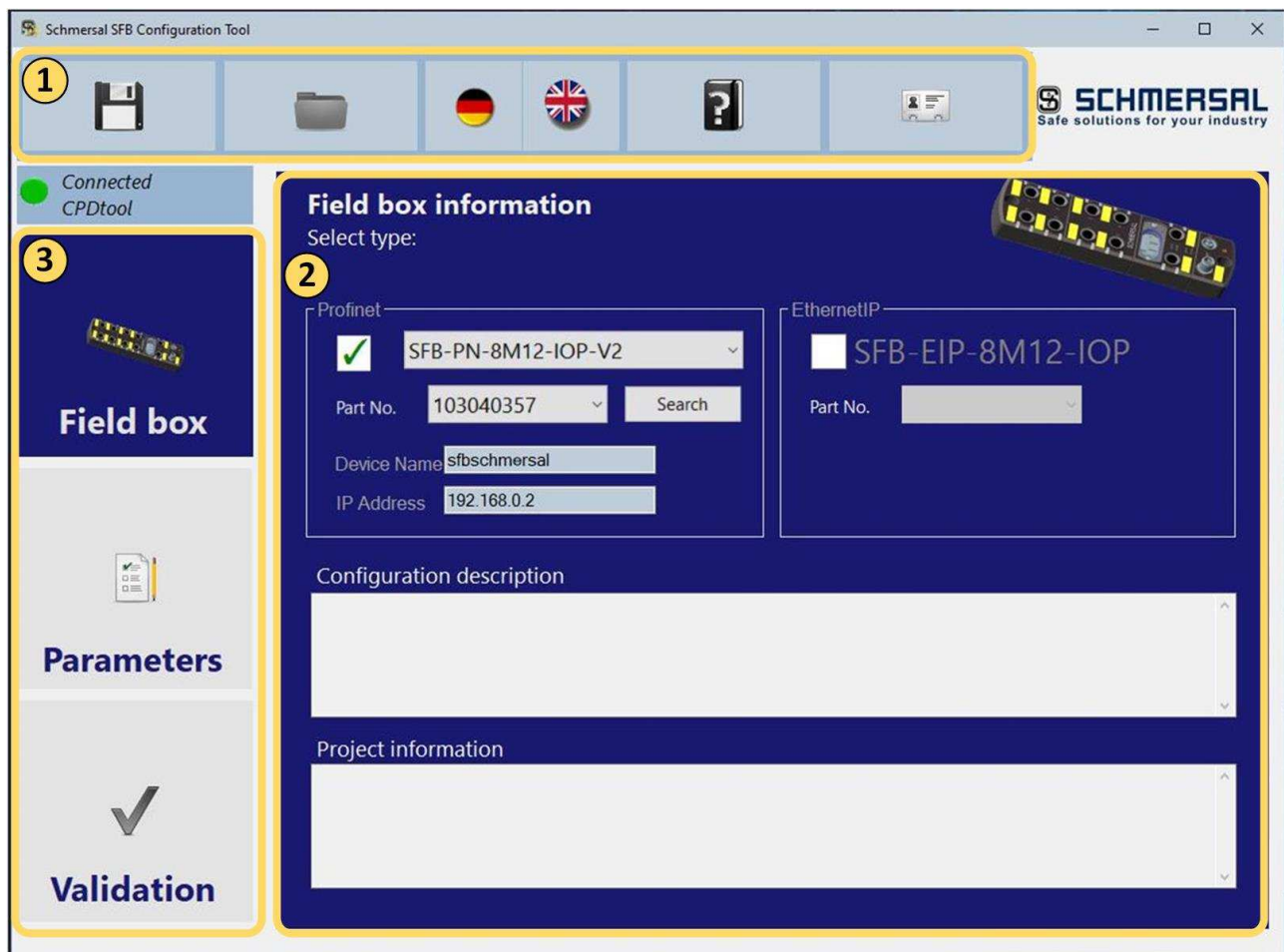
The main structure of the SFB configuration tool is:

Figure 1: SFB Configuration Tool

Legend

1. Menu
2. Working area
3. Navigation

2 General working

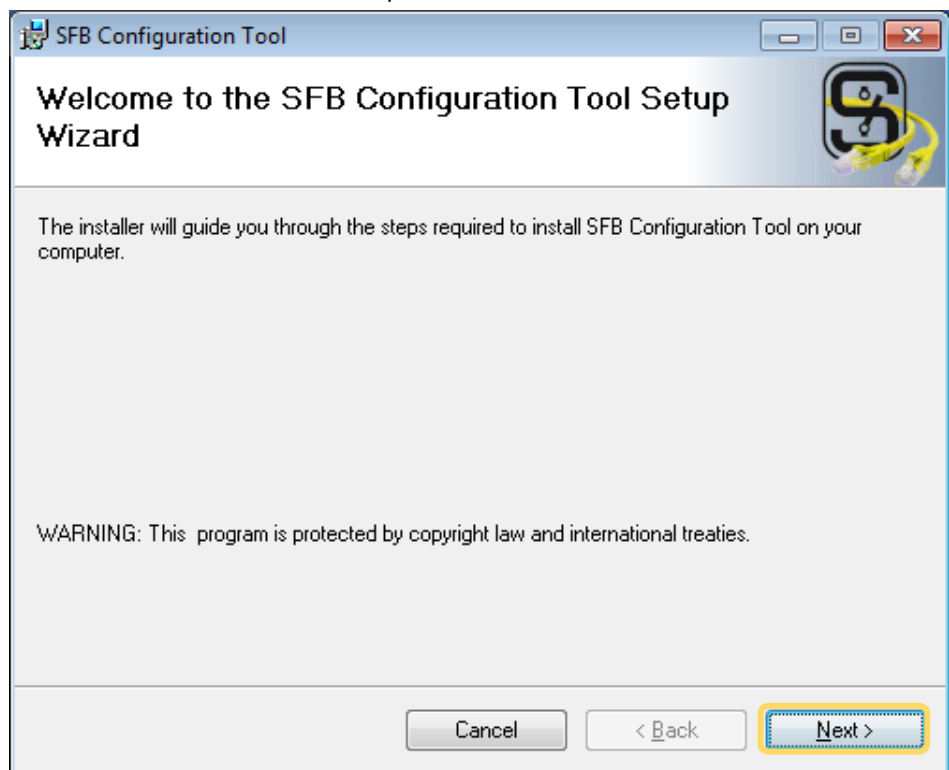## 2.1 Installation

The installation setup of the SFB configuration tool consists in an executable file, which includes all the packages necessary for the installation.
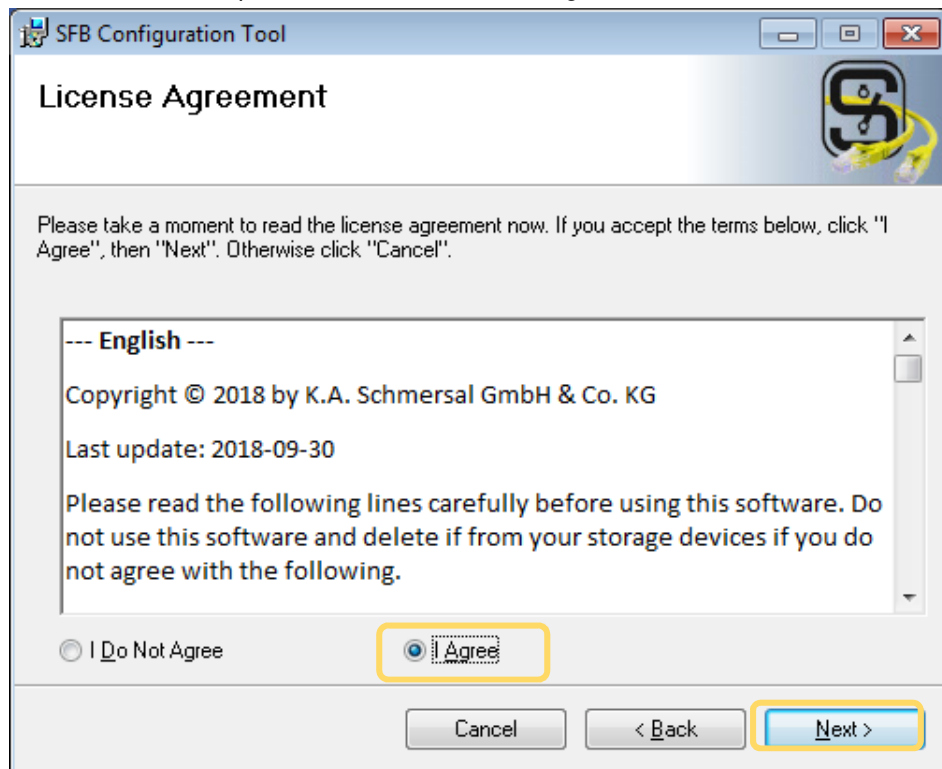

Follow the installation process of the SFB configuration tool. Notice that it is necessary administrator rights in the target computer.
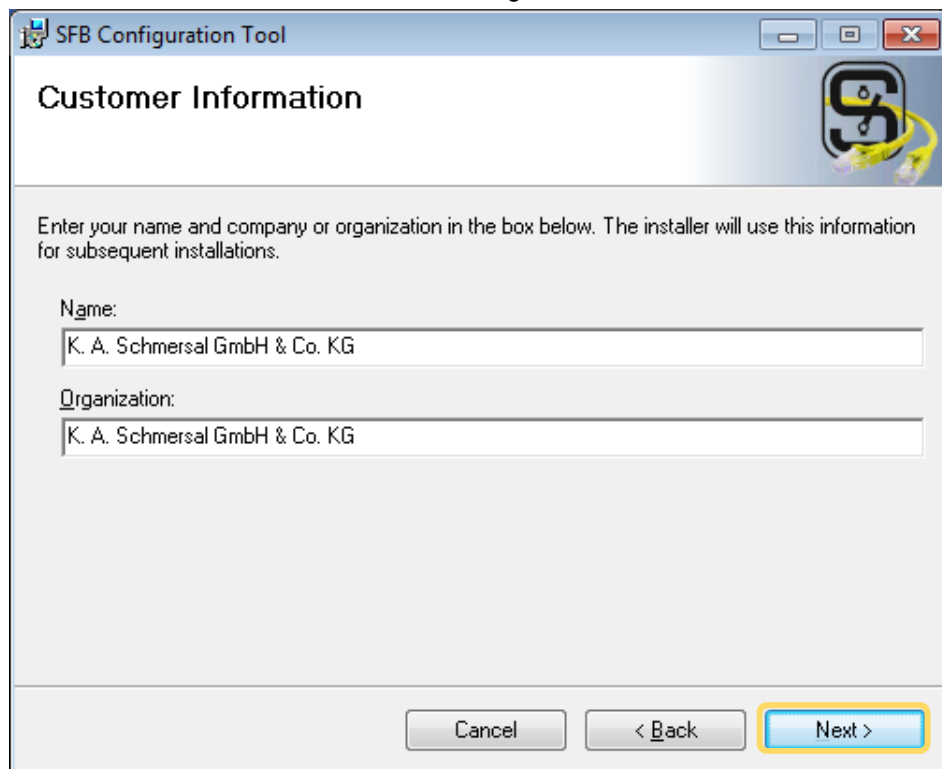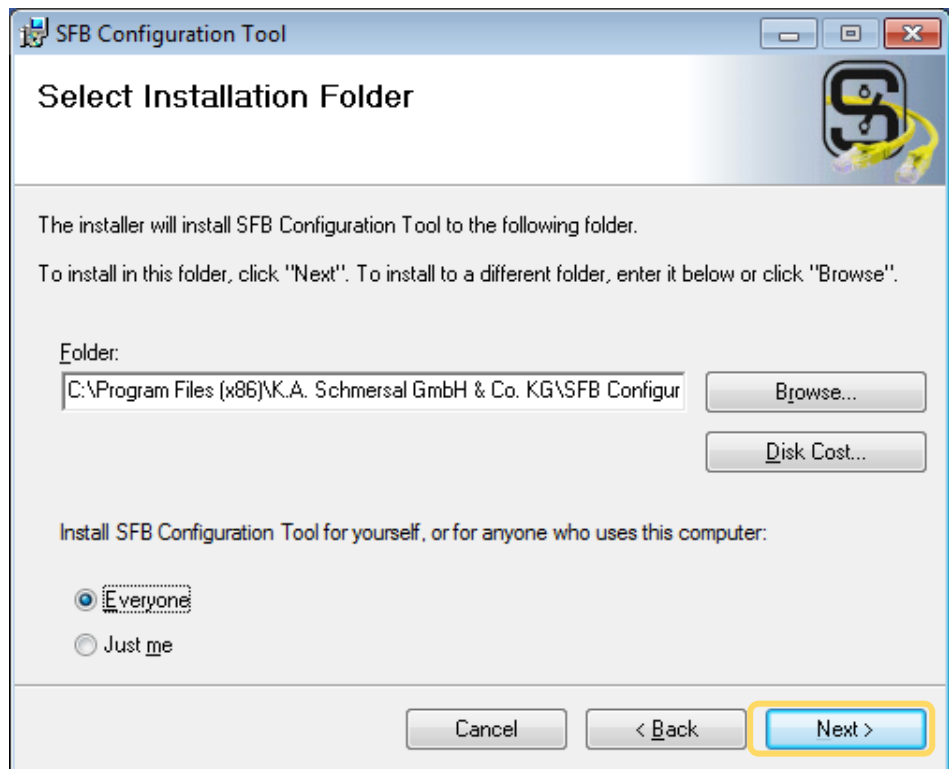
- Start the installer process.

- Accept the terms in the licence agreement.

- Introduce user name and organization.
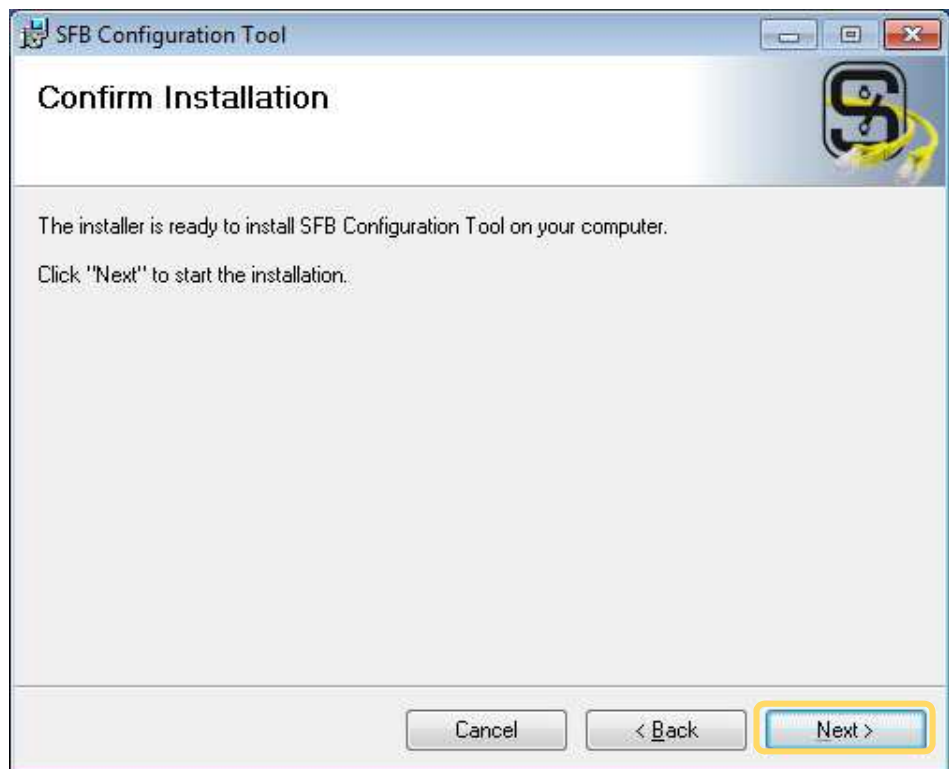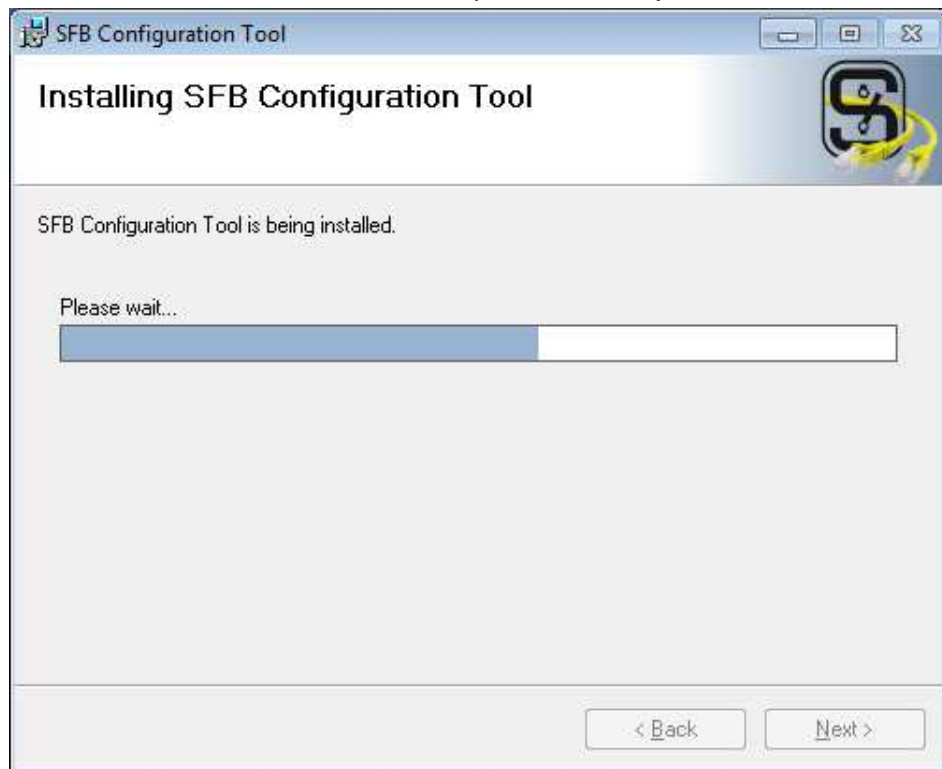
2 General working

- Select the destination folder.

- Confirm and start installation.

- Wait until the installation process is ready.

- Finish and close the installation.

Figure 2: Installation Process

2 General working
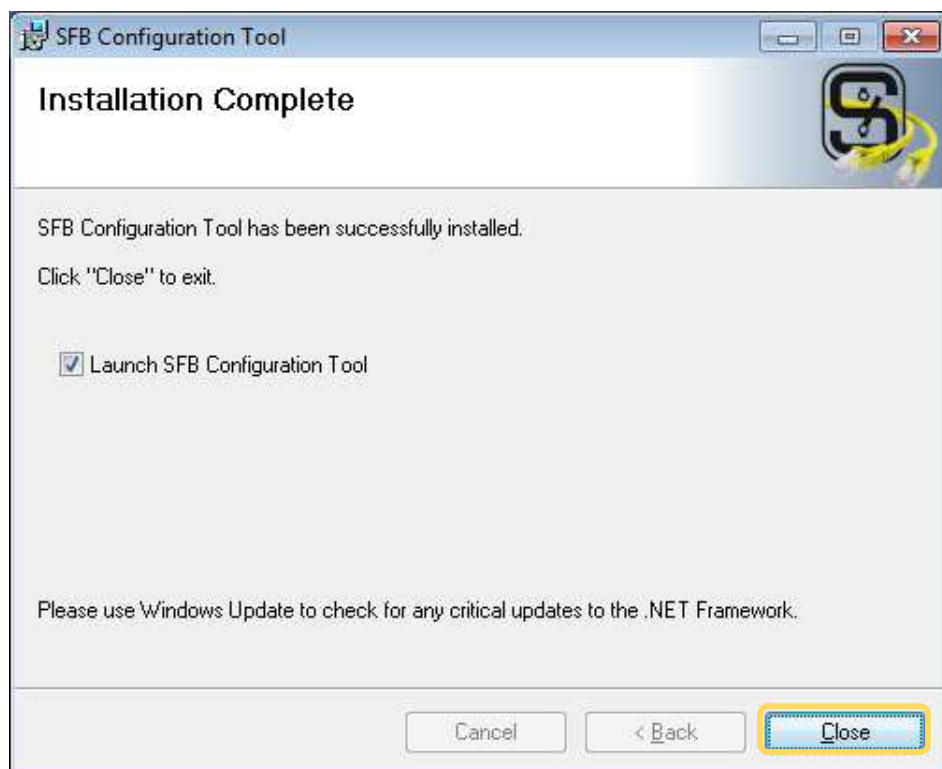
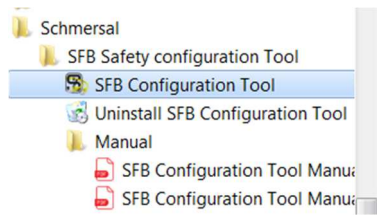The application will be installed, and a start menu will be created:

Figure 3: Start menu

2.2 Deinstallation

To uninstall the application, use the Uninstaller available in the start menu.

Follow the steps for the deinstallation.

2.3 Run and create a new project

2.3.1 Start the application

There are two ways of running the application:

1. Run the SFB configuration tool from the start menu
2. If you are configuring a PROFINET device, you can start it directly from your engineering tool

To open the SFB configuration tool from Siemens TIA portal you must right click over the SFB device.
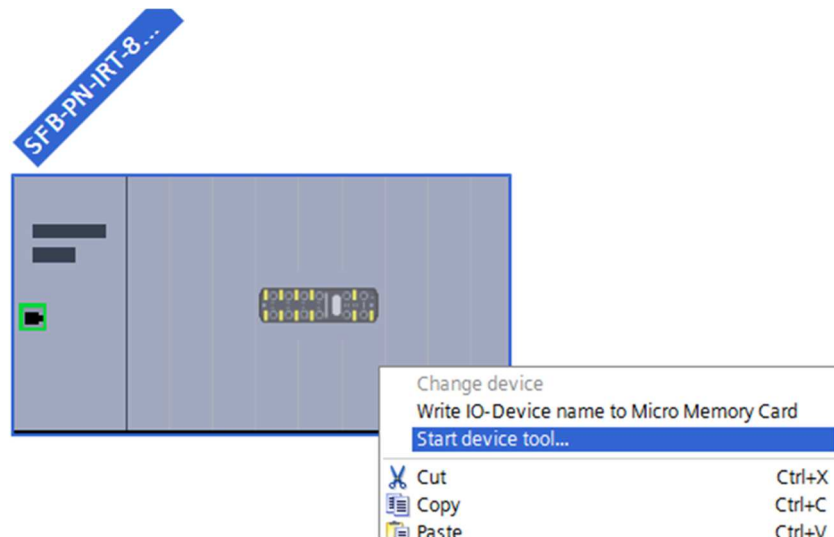
- Select „Start device tool".

Figure 4: Start device tool from engineering tool

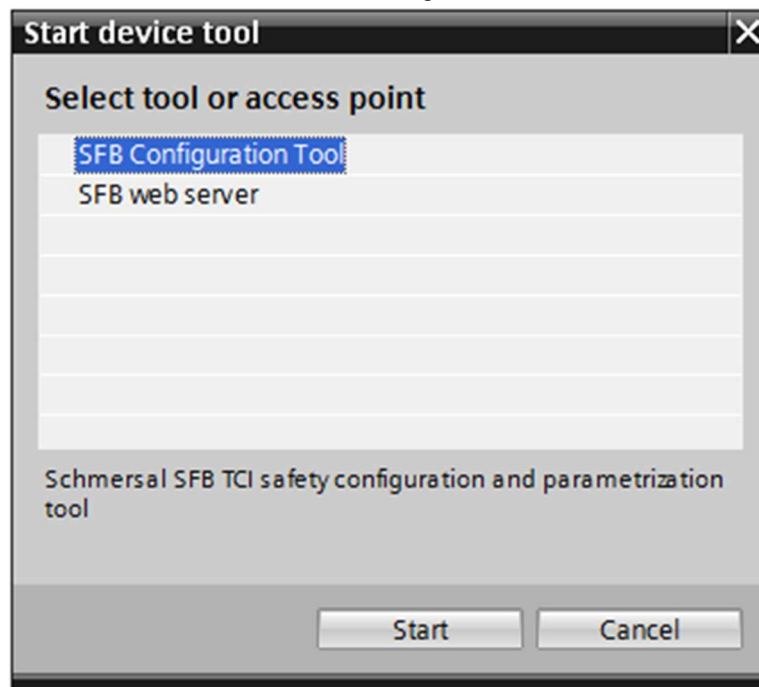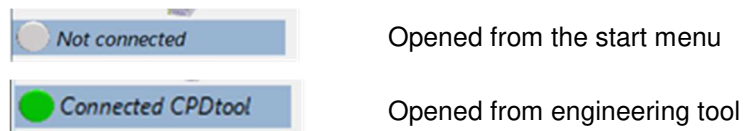SCHMERSAL

- Select the SFB configuration tool from the list

Start device tool

Select tool or access point

SFB Configuration Tool
SFB web server

Schmersal SFB TCI safety configuration and parametrization tool

Start   Cancel

Figure 5: Select "SFB Configuration Tool" from engineering tool

2.3.2 Connection

PROFINET

In the left upper part of the SFB Configuration tool, you can see if it has been opened from the engineering tool or not:

Not connected   Opened from the start menu

Connected CPDtool   Opened from engineering tool

This mechanism is valid for the SFB-PROFINET device. If the tool has been connected as CPD tool, several PROFINET information are transferred to the SFB Configuration tool.

NOTE
You may see that some parameters are blocked and cannot be changed. Those values should be changed previously in the engineering tool.

2.3.3 Device type and information

When the application is started offline, it is necessary to select the device type (PROFINET device, or EthernetIP device).

Figure 6: Select device type

When selected one of the types for the SFB device, there you can choose the corresponding part number for the device that you have.

Figure 7: Select corresponding part number

PROFINET

When opening the SFB Configuration tool from the engineering tool, the part number is automatically selected, and the device name and IP address of the configuration in the engineering tool are also shown.

Figure 8: Configuration description, project information

	NOTE
i	Notice that the device name and IP address shown in the field box information tab when opening online are the values configured in the project of the engineering tool!

It is possible to introduce more information about the project (Project information) or the configuration (Configuration description). When saving the configuration, this data are stored in addition to the parameters in the project file.

	NOTE
i	This information will be deleted if the configuration is not saved.

2.3.3.1 Search device in network

PROFINET

It is possible to search for devices within a network. The purpose of this action is to know the devices available, and identify them.

You can open the PROFINET search device window with the "Search" button in the "field box information" tab.

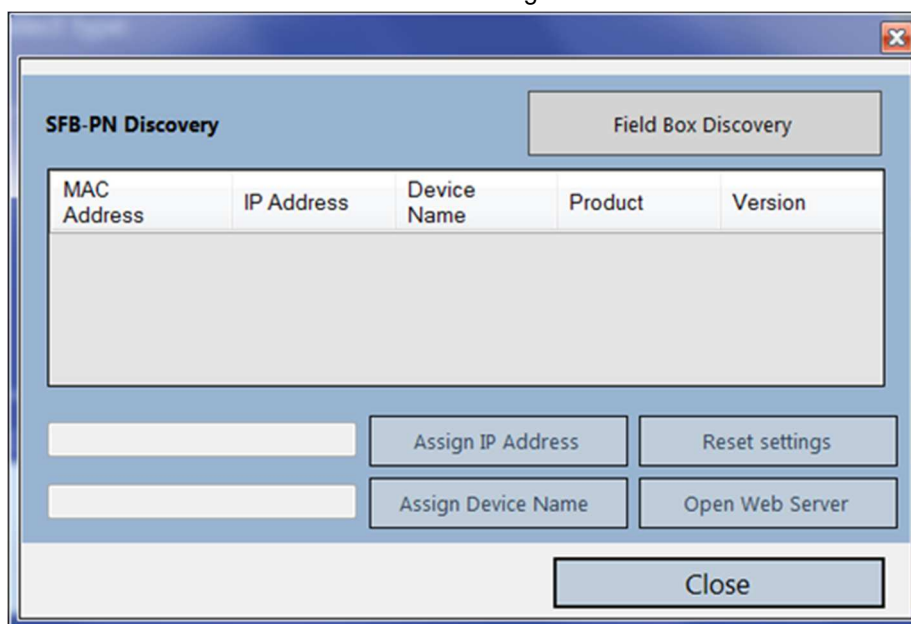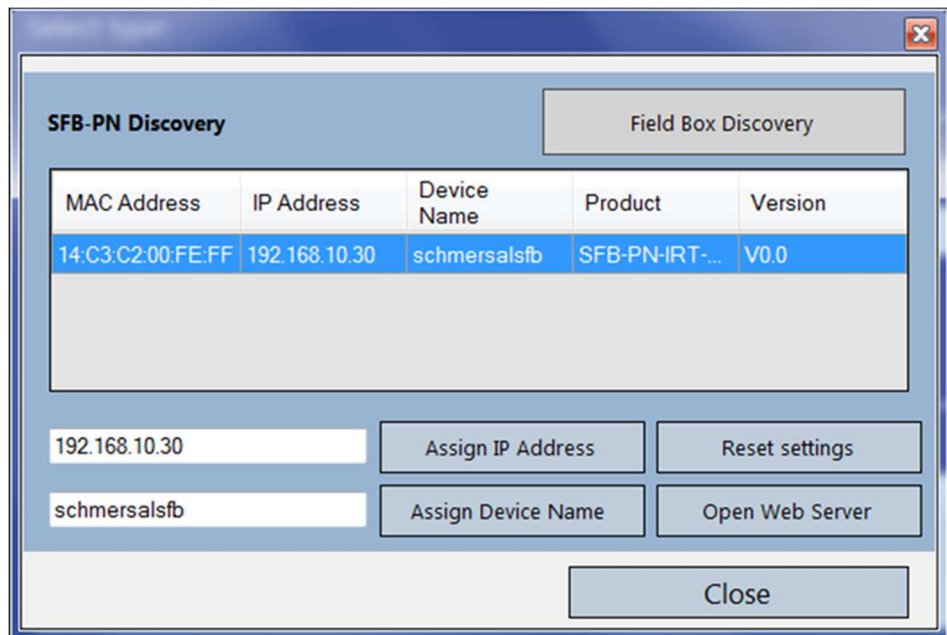- You can start the search using the button: "Field Box Discovery".

Figure 9: PROFINET search device window

	NOTE
i	It is necessary that the devices and the network adapter of the computer are in the same connection network.

SCHMERSAL

After some time, the found devices are listed in the table:

Figure 10: Found devices

The information shown is:

MAC Address:

This is the MAC address of the device that was given by the manufactory of the device. This number is unique, and it is the way to identify an individual device before the configuration by the user.

IP Address:

This is the configured IP address in the device. If the device is in factory settings, the IP address is zero (0.0.0.0).

Device Name:

This is the configured PROFINET device name in the device. If the device is in factory settings, the device name will be empty (no device name configured).

Product:

This is the product name of the device. It is used to identify it from other device types.

Version:

This is the version of the device.

By clicking on the button "Open Web Server", the web browser will connect to the web server and the information of the device will be shown.

Figure 11: Web Server

2.3.4 Set parameters

In the "Parameter" tab you can select the values for the five parameters for each of the 8 device ports (Port-0 to Port-7):

- Cross fault detection
- Safety Inputs
- Stable time
- Monitoring time
- Safety Outputs

Figure 12: Set parameters

The parameters must meet certain dependences:

Dependence 1   If **Cross fault detection** is OFF, then **Safety Inputs** should be 2-channel (OSSDs).

Dependence 2   If **Cross fault detection** is ON, then **Safety Outputs** should be 1-wire (PL d) (contacts).

Dependence 3   **Monitoring time** should be at least 5 times **Stable time**.

You can obtain all the information about each parameter by placing the mouse over the parameter name and a pop-up message will be shown.

Figure 13: Pop-up Message

The SFB Configuration Tool will ensure that the dependences are meet automatically, since the fields will be blocked according to those dependencies.
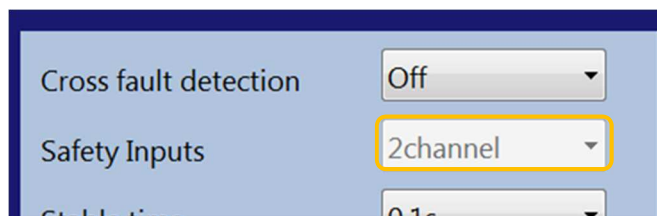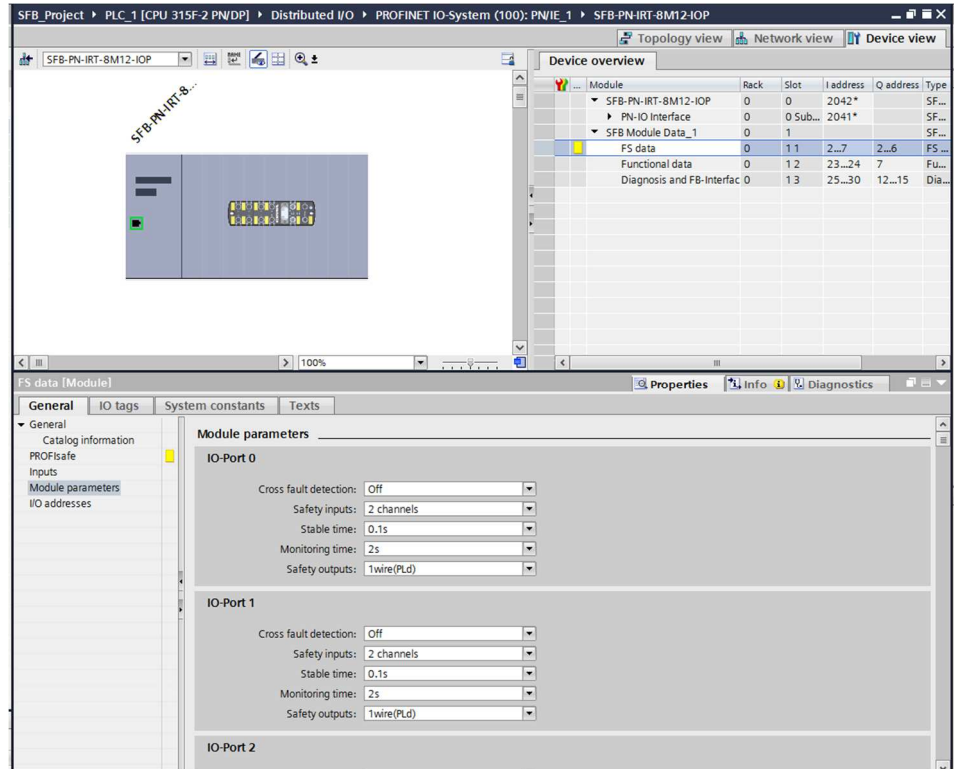

Figure 14: dependences are meet automatically

PROFINET

When the tool has been opened from the engineering tool (Online), the parameters selected for each port are transferred from the values in the engineering tool.

- Parameters are set in engineering tool.

- Parameters transferred to the SFB configuration tool online.

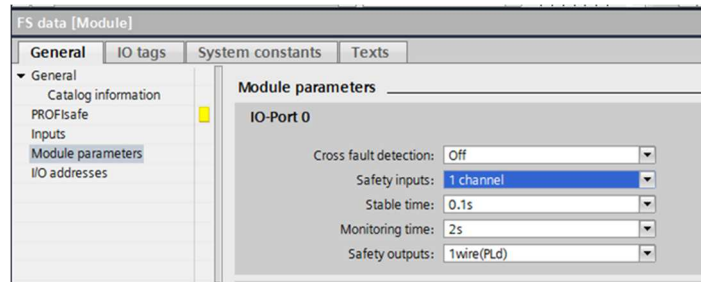Figure 15: transferred parameters from the engineering tool

	NOTE
[ℹ️]	Notice that if any of the parameters does not meet the dependences stablished working online, you will have to close the configuration tool, and change it from the engineering tool. After the change, you have to open the tool again.

In the following pictures, one of the parameters do not meet the dependencies:

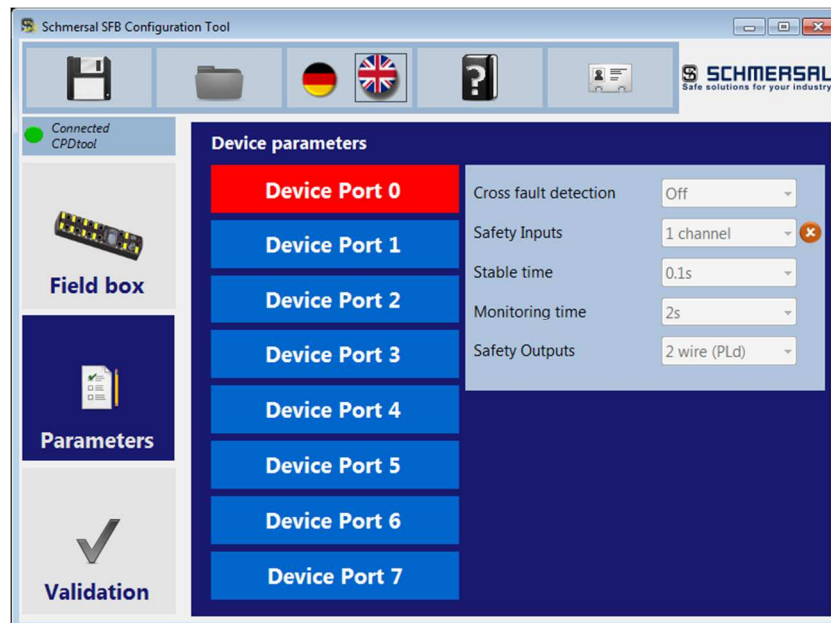Engineering Tool

SFB Configuration Tool

Figure 16: Parameter doesn't meet the dependencies

2.3.5 Validation

The "Validation" tab will be active only if a device type has been selected in "Field box" tab.

According to the fieldbus selected, the validation and the parameters transference will be different.

2.3.5.1 PROFINET SFB validation

Figure 17: Validation

The validation of the parameters for a PROFINET/PROFIsafe device consists in the following steps (Figure 17):

1. Check that the selected values are valid for all the IO-Ports. You can see the icon next to each port showing if the parameters are valid or not for that certain IO-Port.

2. Confirm the parameters by checking all the port parameters groups

3. Click to calculate the CRC. Notice that this button will be inactive until you have checked the parameters of each device port.

4. Confirm that you have checked and proved the safety parameters

The CRC values will be shown, and can be copied in the clipboard to be used in the engineering tool.
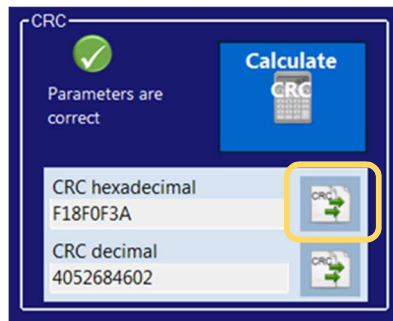

Figure 18: Copy CRC to the clipboard

 PROFINET

If the SFB configuration tool has been open from the engineering tool (online) the

F-Parameters from the engineering tool will be ported to the SFB configuration tool, and will be displayed in the F-Parameters group:
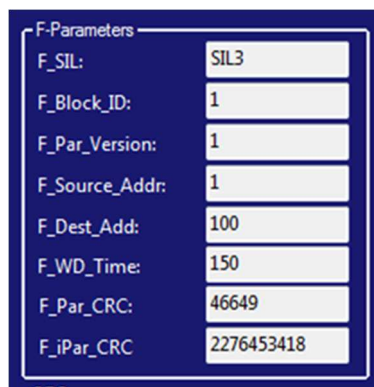

Figure 19: F-Parameters ported to SFB Configuration Tool

After the calculation of the CRC (this CRC value is known as F_iPar_CRC in the F-Parameters) it will be shown, if the configured F_iPar_CRC in the engineering tool matches the last CRC value calculated by the SFB Configuration tool.
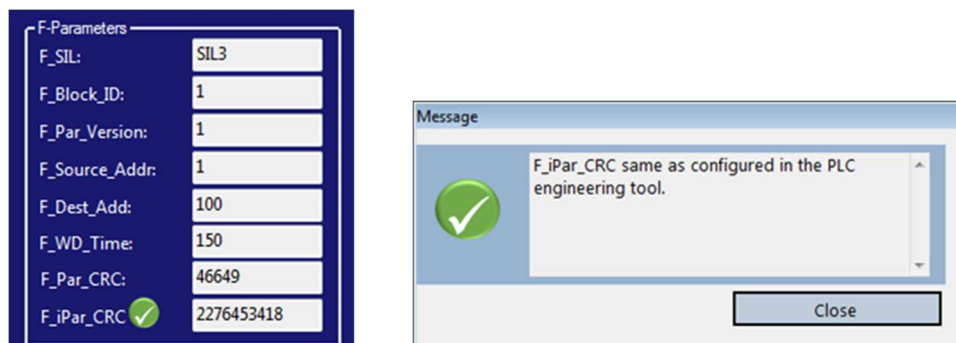

Figure 20: CRC is correct
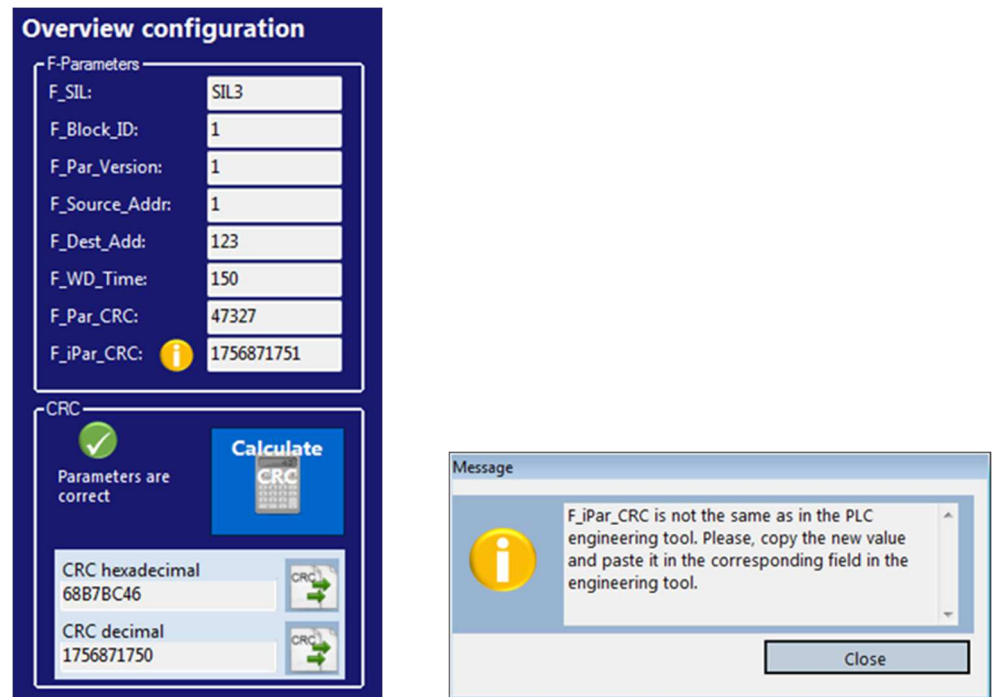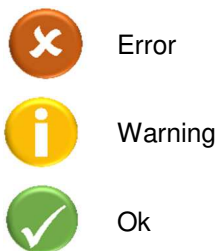
F_iPar_CRC is not the same as in the PLC engineering tool:

Figure 21: CRC is wrong

There are three types of notifications:

 Error

 Warning

 Ok

For example, if any of the parameters has not a valid value, it will be shown with the error symbol:

- You can click on the error symbol, and a message window will show the case of the error.

Figure 22: Messages (Example click on the error symbol)

2.4 Save, open, and print project

2.4.1 Save parameters as data

The parameter set can be saved in a xml file to be used afterwards.

After you have selected the device type, and introduced the parameters, click on the Save button of the menu.

In the "Save As" window, select the path and introduce the file name.
In the "Save as type" field, make sure you have selected "xml files" as file type.

- When you save the parameters as xml data, you will be able to open them
  at any time.

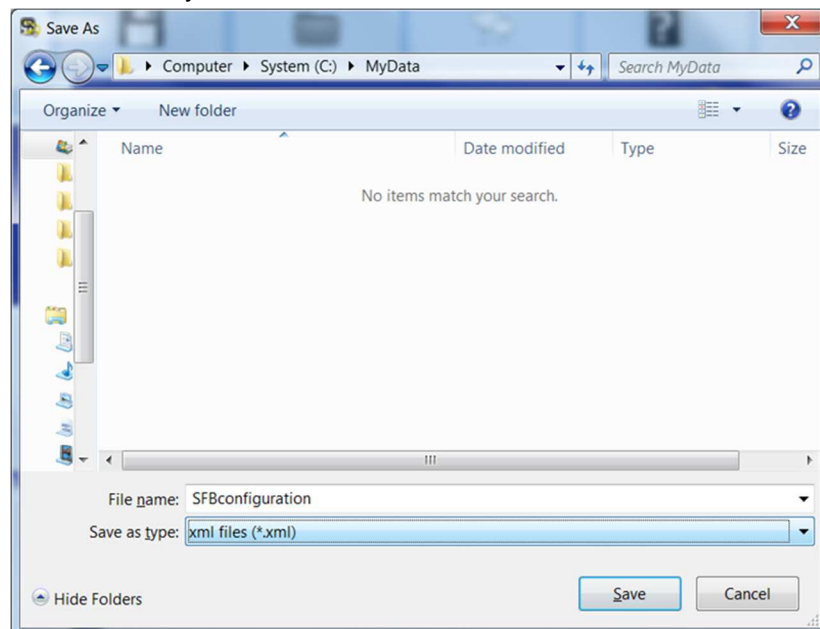Figure 23: Save parameters as data (*.xml)

2.4.2 Open parameters from data

If you have saved the parameters in the xml data file, you may open them using the open button of the menu.

- Browse the file and open the file you wish containing the parameters.
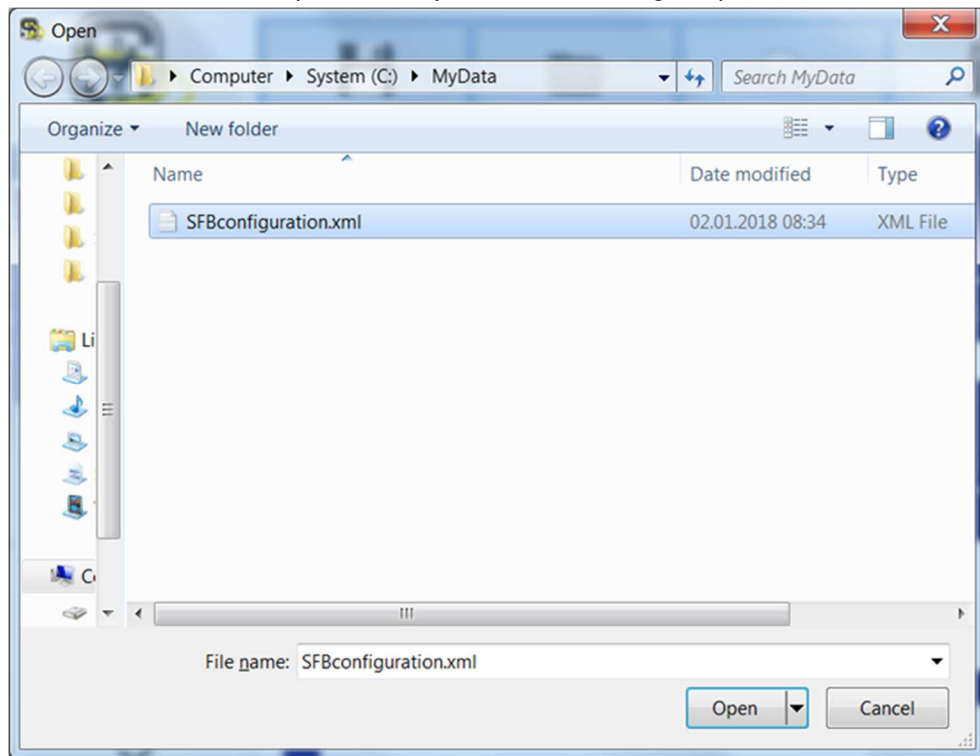

Figure 24: Open parameter file

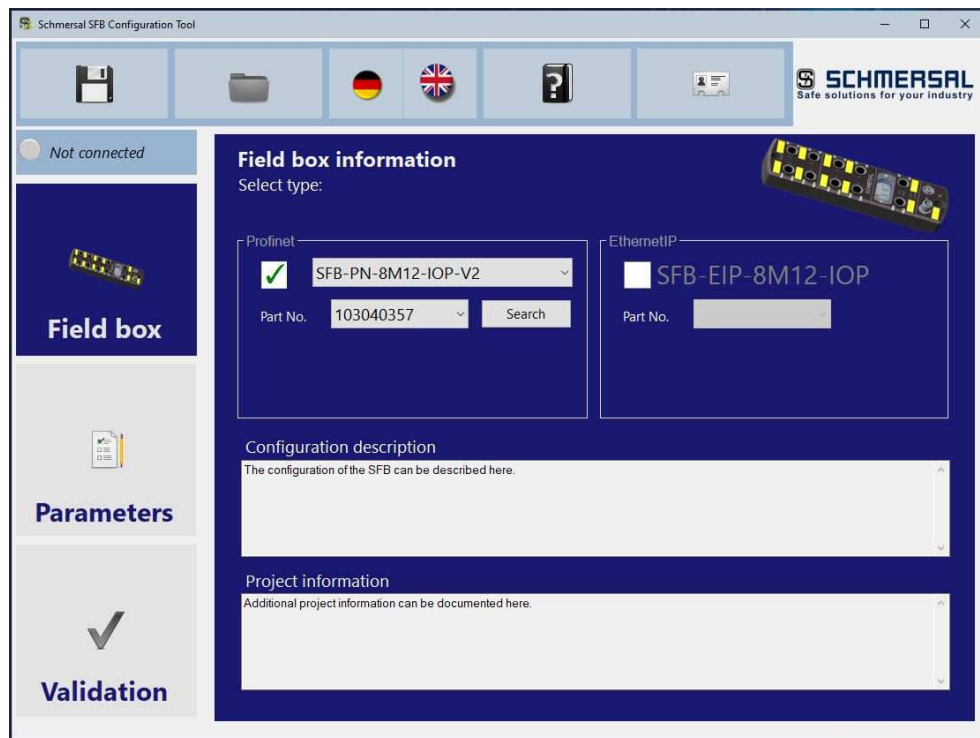Device type, configuration description and project information will be opened as well.

Figure 25: Opened parameters

2.4.3 Save parameters as pdf

It is also possible to save the parameters as pdf, so they can be printed in a report format.

Using the save button of the menu.

Browse the folder where you want to save the file, and introduce the name.

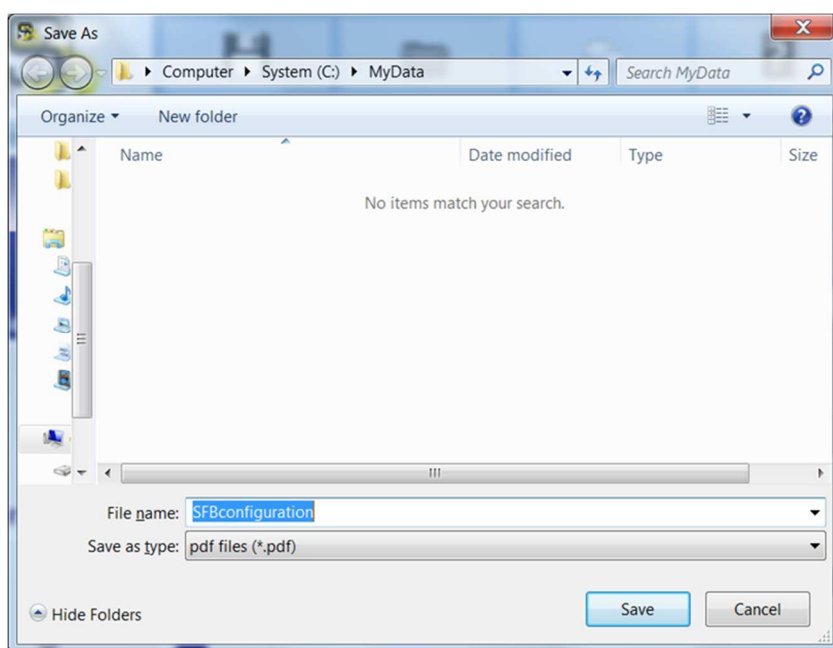Make sure that you have selected "pdf files" as file type.

Figure 26: Save parameters as PDF (*.pdf)

The SFB configuration report saved is as follows:

Figure 27: PDF-File with device parameters

	NOTE
i	To visualize the pdf document containing the configuration, you will need to have installed any pdf reader in your computer.

2.5 Languages

The SFB configuration too starts in English.

You can change the language of the tool at any moment using the language buttons in the menu bar. Select the language you wish clicking on the "flags icons".

The language will be changed automatically.

2.6 Help

To open the manual of the SFB configuration tool, you must click on the help button in the menu.

The manual of the SFB configuration tool will be opened in the current language of the tool.

	NOTE
	To visualize the pdf document containing the manual, you will need to have installed any pdf reader in your computer.

2.7 About

Information about the SFB configuration tool can be found in the about window by clicking on the "info" button of the menu.

About SFB Configuration Tool

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