LabVIEW PROFINET VISA Driver

Getting Started

V1.5/19.12.2017

Revision History

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V1.5	19.12.2017	Added DCP (menu...)	AME
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1 Introduction

This document describes the set into operation procedure of the DF PROFINET IO board as a PROFINET IO Controller

1.1 Prerequisites:

- A **KUNBUS** DF PROFINET IO and a **KUNBUS** LabVIEW PROFINET VISA Driver Setup
- The National Instruments LabVIEW Development System installed on the Windows PC.
- Installed NI-VISA standard driver on the Windows-System.

2 Installation

- Install the DF PROFINET IO board in the PC-System.

Please note, if a DF PROFINET IO CPCI board is used, the board does not support Hot Plugging. If installing/uninstalling the board the Compact PCI system must be switched off and the power supply must be interrupted.

- Switch on the PC-System.
- Start the Setup from the **KUNBUS** CD delivered with the package.
- Install the board driver software:
  Windows 7:

  Go to system control panel and open the hardware manager.

  Windows 10:

  Right click Start (windows Symbol) in taskbar and open the hardware manger

  You will find an entry with the name **PowerPC-Processor** at the top of the list.

  Right click the PowerPC entry and choose **Update driver software**

  Search manually for the driver and choose the following file

  C:\Users\Public\Documents\KUNBUS GmbH\INF\DFPNIO_NIVISA.inf

  The driver will be installed.

- Check by the NI MAX (Measurement & Automation explorer) the proper installation of the DF PROFINET IOI board:

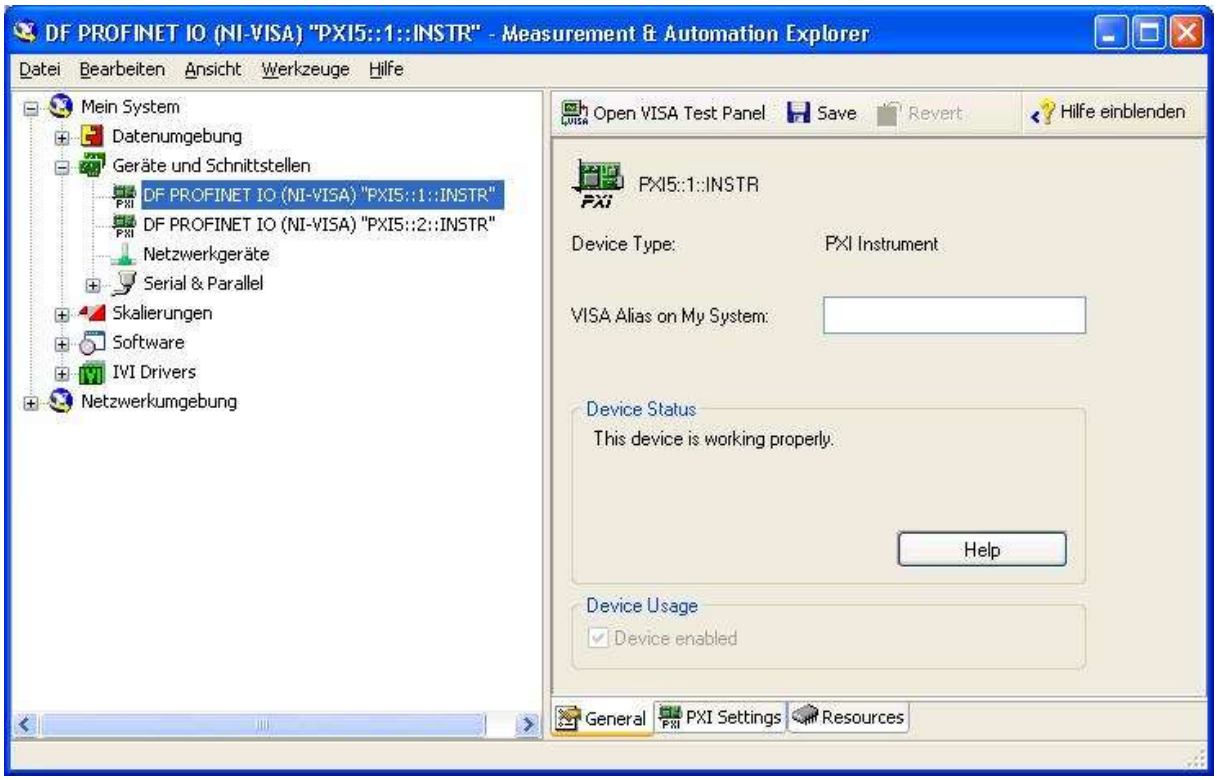

Figure 1: Measurement and Automation explorer

3 PROFINET IO configuration

The PROFINET IO configuration is carried out by the **KUNBUS** configuration tool Configurator III.

- Start Configurator III from the KUNBUS GmbH / KUNBUS Configurator menu. Configurator III allows to create the complete PROFINET IO configuration based on Device GSDML-Files. Refer to the online help menu for all details.
- Create and save the configuration.

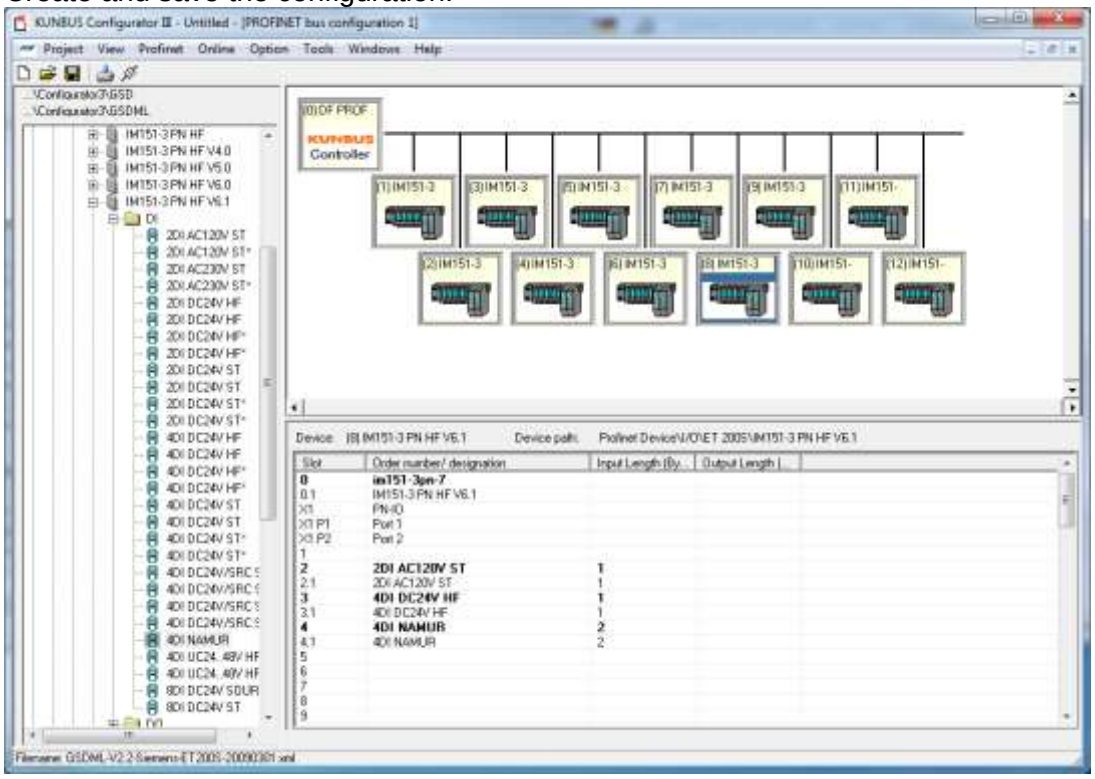

Figure 2: KUNBUS Configurator III

3.1 PROFINET Controller (Master) configuration

The PROFINET Controller configuration is carried out by the KUNBUS configuration tool Configurator III.

- Start Configurator III from the KUNBUS GmbH / KUNBUS Configurator menu. Configurator III allows to create the complete PROFINET IO configuration based on Device GSDML-Files. Refer to the on line help menu for all details.
- Create and save the configuration.

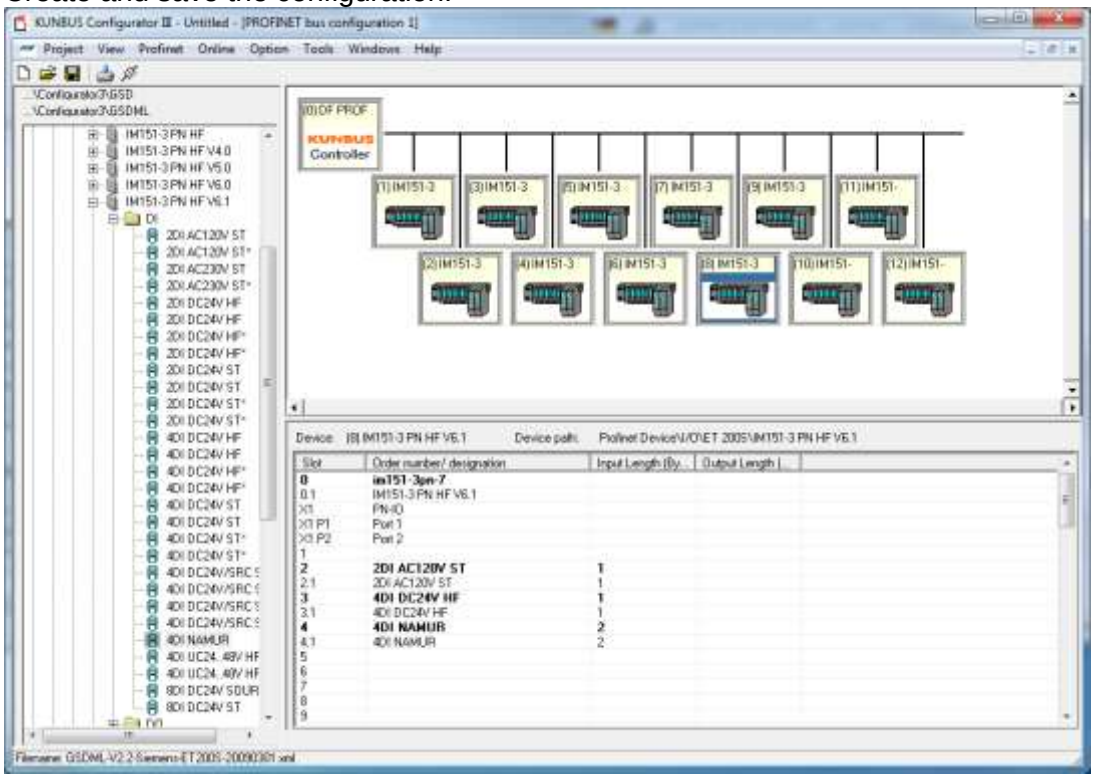

Figure 3: KUNBUS Configurator III

3.1.1 Configuration download

The configuration has to be downloaded and stored in the memory of the DF PROFINET IO interface card.

Proceed the following steps:

- **Select from the menu “Online” the function “Driver selection”** and the Hardware Selection Dialog opens. Depending on the selected KUNBUS PROFINET IO Controller in the bus configuration the Hardware Selection Dialog will be slightly different.
  If a fitting KUNBUS PROFINET IO Controller is found, it will be shown in the dialog.

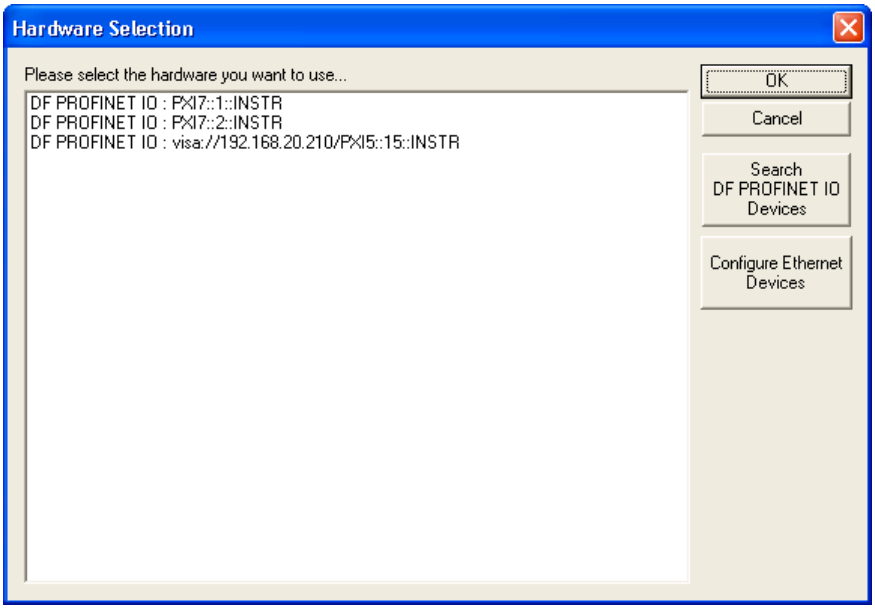

Figure 4: KUNBUS Configurator III Hardware Selection

LabVIEW-based KUNBUS PROFINET IO Controller has to be searched with the Button "Search xxx Devices", if the KUNBUS PROFINET IO Controller is not shown in the dialog! _

Figure 5: KUNBUS Configurator III Find VISA devices dialog

CONFIGURATOR III scans for available LabVIEW based KUNBUS PROFINET IO Controllers and displays all found devices.

Refer to the online help system of Configurator II for details of the driver selection.

- **Download the PROFINET IO configuration**

Click the Download Symbol in the tool bar of Configurator III :

Figure 6: KUNBUS Configurator III Download button

The PROFINET IO configuration will be downloaded to the DF PROFINET IO board:

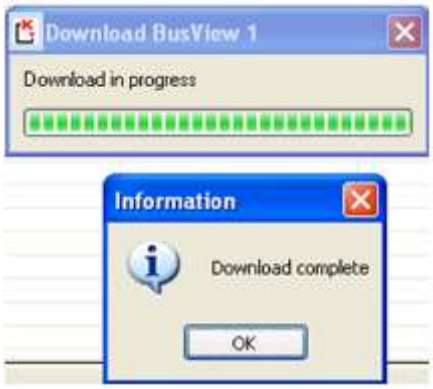

Figure 7: KUNBUS Configurator III Download complete

3.1.2 Monitor/Modify mode

With the Monitor/Modify mode of the Configurator III the flashed PROFINET IO configuration can be tested immediately. Please note that the configured PROFINET IO devices must be connected to the DF PROFINET IO board.

Click the Monitor/Modify symbol of the Toolbar of Configurator III:

Figure 8: KUNBUS Configurator III Monitor/Modify

Configurator III displays the PROFINET-Network in Online mode:

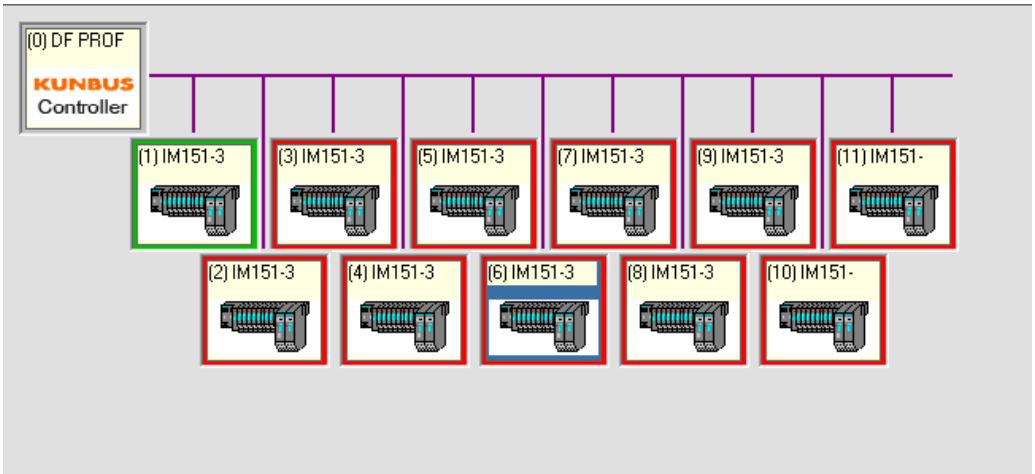

Figure 9: KUNBUS Configurator III Online mode

Configurator III displays the status of every PROFINET IO device (coloured frame) and allows to monitor and modify the I/O data by clicking the PROFINET IO devices. For further details please refer to the online help system of Configurator III.

3.2 PROFINET Device (Slave) configuration

The DF PROFINET IO interface card comes with a typical PN IO Device description file (GSDML-file), which is located in the folder \users\public\documents\KUNBUS GmbH\GSDML
Moreover the GSDML-file and the belonging picture is also included in the Example project.

The GSDML-file is used to configure the DF PROFINET IO Device on the relating PROFINET IO Controller i.e. a PLC. To configure the DF PROFINET IO device, import the GSDML-file into the relating PROFINET IO Controller configuration tool.

The GSDML-file offers several modules with different data sizes for input- output- and combined inputs/outputs, which can be used to configure the slot based DF PROFINET IO device.

The DF PROFINET IO device supports shared Device operation mode, which means that multiple PROFINET IO controllers can access different slots of DF PROFINET IO device simultaneously. For the proper configuration of shared devices, refer to the relating user manual of the PROFINET IO controller configuration tool.

4 PROFINET IO menu

The delivery package includes VIs to initialize the DF PROFINET IO as Controller and/or as Device and VIs for cyclic data communication and acyclic services for diagnostic and alarm handling. For detailed information about the function of each VI of the palette, refer to the Context Help of LabVIEW.

4.1 PROFINET VISA driver menu

The KUNBUS DF PROFINET IO menu is located under the Industrial Communications menu of the Function palette:

- KUNBUS GmbH menu

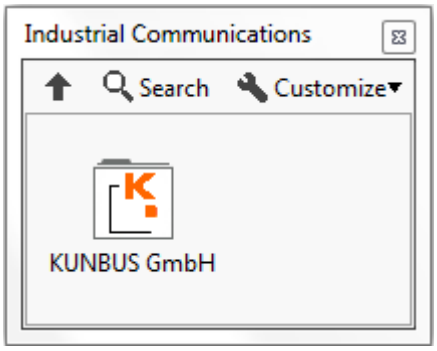

Figure 10: KUNBUS menu

- DF PROFINET IO menu

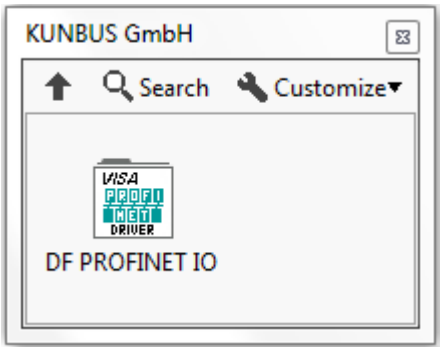

Figure 11: DF PROFINET IO menu

➢ Controller and Device menu

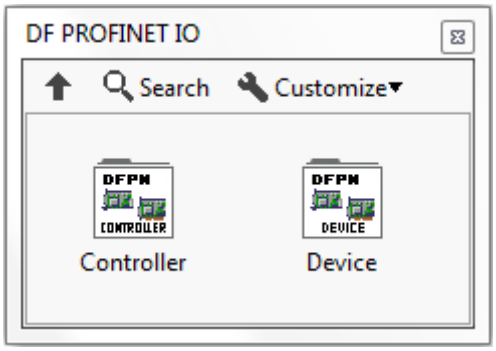

Figure 12: Controller and Device menu

4.1.1 PROFINET IO Controller menu

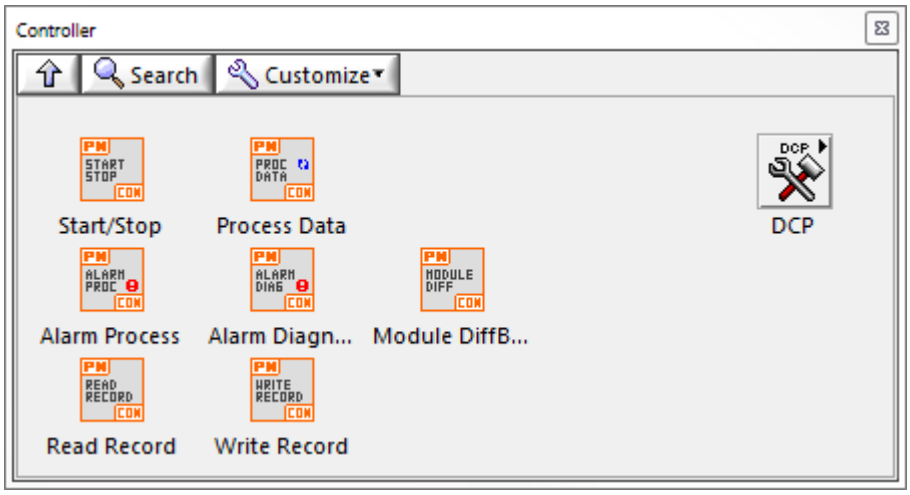

Figure 13: PROFINET IO Controller menu

4.1.1.1 PROFINET IO Controller DCP menu

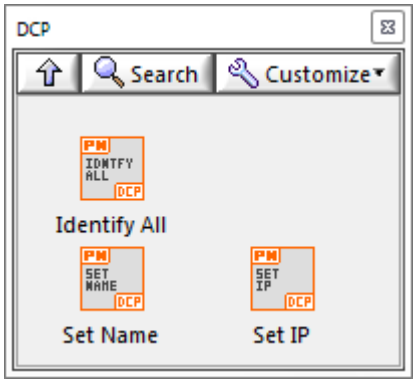

Figure 14: PROFINET IO Controller DCP menu

4.1.2 PROFINET IO Device menu

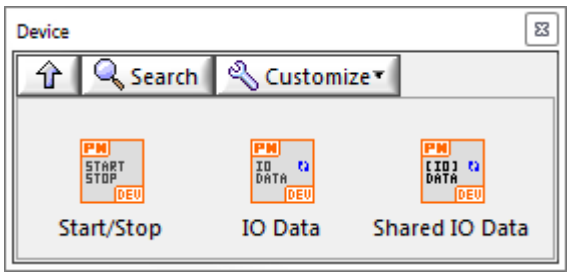

Figure 15: PROFINET IO Device menu

5 PROFINET IO examples

For a successful communication, find the DF PROFINET IO samples in the NI Example Finder:
LabVIEW → Help → Find Examples

Choose the directory:
Toolkits and Modules → Third-Party Add-Ons → KUNBUS GmbH → PROFINET

Open the LabVIEW project *DF PROFINET IO GettingStarted.lvproj.*

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