

**PLCnext**

**PLCnext to PLCnext Data coms**

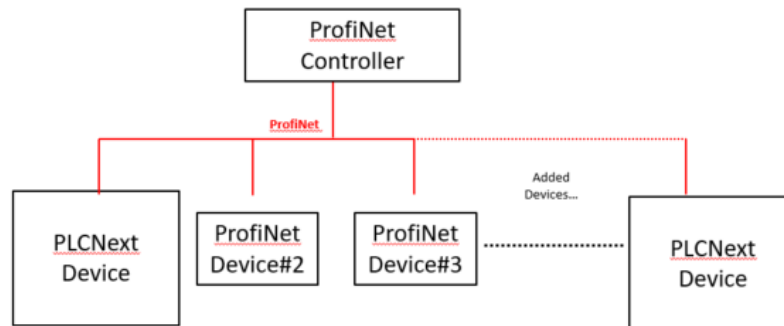
**Using**

**ProfiNet Controller / Device**

**Setup and Configuration**

## 1. Introduction

If you want to Transfer Data from PLCnext to PLCnext, then this document will assist in setting up the 'Controller' and how the Data is arranged on the Controller and Device Sides. There should be only 1 ProfiNet 'Controller', but many 'Devices'.



The ProfiNet Controller/Device allows 512Bytes to go from Controller to each PLCnext Device and 512Bytes to go from the PLCnext Device to the PLCnext Controller.

One thing to note... In a PLCnext to PLCnext Application, it really doesn't matter who is the Controller or Device. However, since they are configured Differently, you must designate them so that all is clear on the communications side.



## 2. ProfiNet 'Device' Setup and Configuration

The PLCnext comes out of the box with Profinet Device Activated. I know that this sounds weird, but you do not have to anything. The Data is already defined and Ready to Go. You just have to Read the Inputs and Write the Outputs. Once this 'Device' is set up properly to a corresponding Controller (see Section 3), the Data will appear like the following:

To see the Predifined – Global Bytes, see below:

System Variables			
axc-f-2152-1 / PLC.PND_S1_PLC_RUN	BOOL	Global	
axc-f-2152-1 / PLC.PND_S1_VALID_DATA_CYCLE	BOOL	Global	
axc-f-2152-1 / PLC.PND_S1_OUTPUT_STATUS_GOOD	BOOL	Global	
axc-f-2152-1 / PLC.PND_S1_INPUT_STATUS_GOOD	BOOL	Global	
axc-f-2152-1 / PLC.PND_S1_DATA_LENGTH	WORD	Global	
axc-f-2152-1 / PLC.PND_S1_OUTPUTS	PND_IO_512	Global	
axc-f-2152-1 / PLC.PND_S1_INPUTS	PND_IO_512	Global	
axc-f-2152-1 / PLC.PND_IO_DRIVEN_BY_PLC	INT	Global	
axc-f-2152-1 / PLC.AXIO_DIAG_STATUS_REG_HI	BYTE	Global	

The Predefined Array is PND\_IO\_512, so the

Input Data from the Controller is in Registers: PLC.PND\_S1\_INPUTS[0..511] - in Bytes

Output Data to the Controller is in Registers: PLC.PND\_S1\_OUTPUTS[0..511] - in Bytes

You can get the status of the Coms network, by using the following Tags:

System Variables				
axc-f-2152-1 / PLC.PND_S1_PLC_RUN	BOOL	Global		FALSE
axc-f-2152-1 / PLC.PND_S1_VALID_DATA_CYCLE	BOOL	Global		FALSE
→ axc-f-2152-1 / PLC.PND_S1_OUTPUT_STATUS_GOOD	BOOL	Global		FALSE
→ axc-f-2152-1 / PLC.PND_S1_INPUT_STATUS_GOOD	BOOL	Global		FALSE

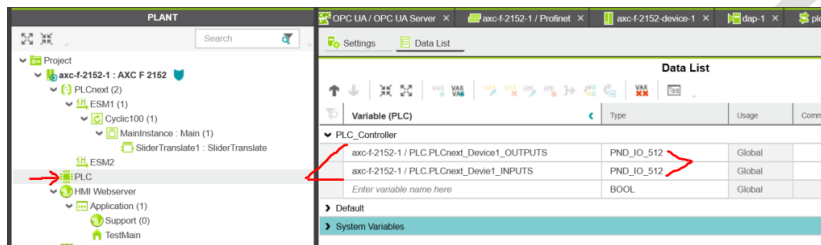
That is all there is to it...you can define the Tags PND\_S1\_INPUTS and PND\_S1\_OUTPUTS (make "External" ) and then you can get direct access to all the data them in your programs.

### 3. ProfiNet Controller Setup and Configuration

The PLCnext comes out of the Box with ProfiNet Controller Functionality, but it needs to be configured and after a few simple items – you will be ready to go.

#### 3.1 Create your Global Tags for Each PLCnext Device:

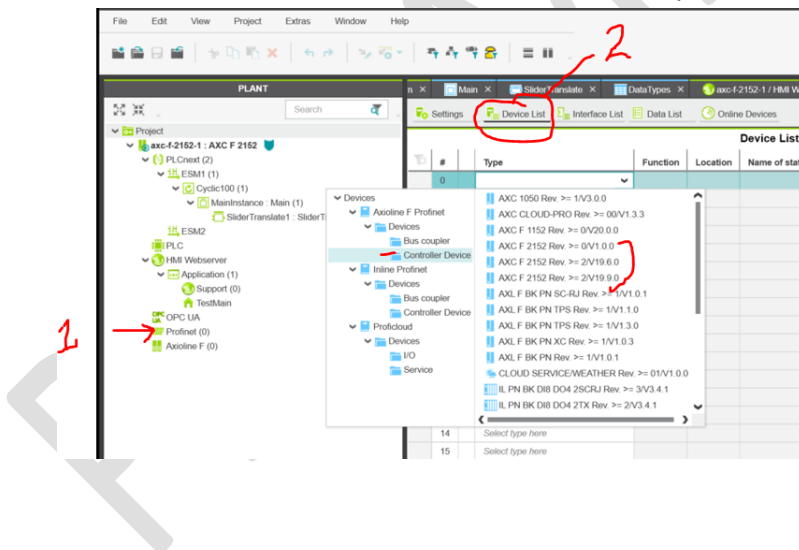
I created Tags for Input and Output with the Datatype being the same as the Device Above (PND\_IO\_512)



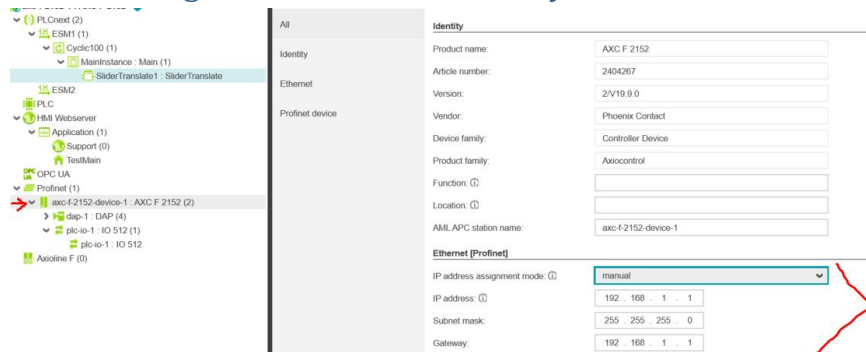
If you have multiple 'PLCnext Devices' duplicate the above for each – with unique Variable Tags.

#### 3.2 Insert the Proper PLCnext 'Device' into the Plant side of your Controller.

NOTE: The Firmware in the 'Device' must match your Selection:



### 3.3 Configure the IP Addresses of your PLCNext 'Device'



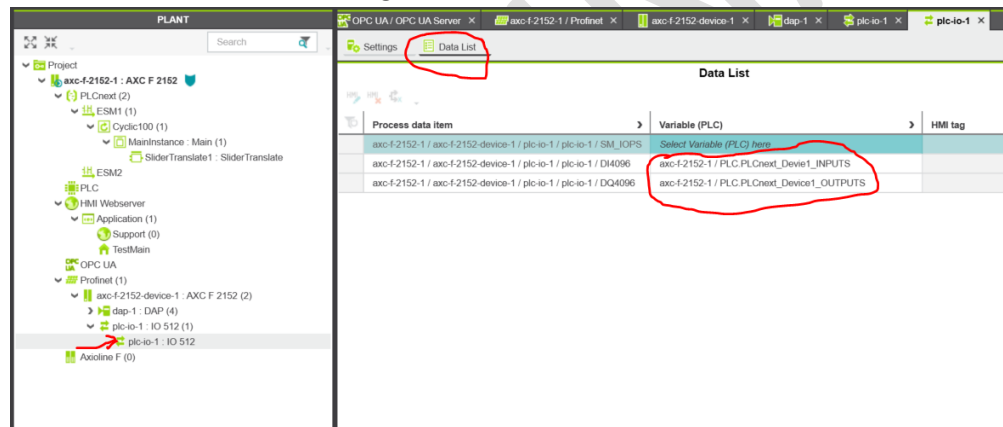
Identity	
Product name:	AXC F 2152
Article number:	2404267
Version:	2/V19.9.0
Vendor:	Phoenix Contact
Device family:	Controller Device
Product family:	Autocontrol
Function:	
Location:	
AML/PC station name:	axc-f-2152-device-1

Ethernet [Profnet]	
IP address assignment mode:	manual
IP address:	192.168.1.1
Subnet mask:	255.255.255.0
Gateway:	192.168.1.1

### 3.4 Assign the PLCnext Tags to Match what you entered in Step 3.1

Now, assign the Tags Created (Step 3.1) to Send To/Receive From the Device PLC so that the information from the Device PLC will be put into the proper Register locations. Without this Step, the information received from the Device PLC will not be used.

It will be similar to the following:



Process data item	Variable (PLC)	HMI tag
axc-f-2152-1 / axc-f-2152-device-1 / plc-io-1 / plc-io-1 / SM_IOPS	Select Variable (PLC) here	
axc-f-2152-1 / axc-f-2152-device-1 / plc-io-1 / plc-io-1 / DI4096	axc-f-2152-1 / PLC.PLcNext_Device1_INPUTS	
axc-f-2152-1 / axc-f-2152-device-1 / plc-io-1 / plc-io-1 / DI4096	axc-f-2152-1 / PLC.PLcNext_Device1_OUTPUTS	

If you have multiple 'PLCnext Devices' duplicate the above for each – Starting at Section 3.1.

When you have completed all of the Device Entries for each you, you are now complete with the Communication between the 'Controller' and each 'Device'.

The Outputs from the Controller are directly correlated to the Inputs on the Device.  
The Inputs to the Controller are directly correlated to the Outputs from the Device.