SIEMENS

CMS X-Tools

User Manual - ION SIMATIC S7-1200

User Manual - ION SIMATIC S7-1500

English

Release 2021-09

Safety Guidelines

This document contains notices which you should observe to ensure your own personal safety as well as to avoid property damage. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring to property damage only have no safety alert symbol.

Danger

indicates an **imminently** hazardous situation which, if not avoided, will result in death or serious injury.

Warning

indicates a **potentially** hazardous situation which, if not avoided, could result in death or serious injury.

Caution

used with the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Caution

used without safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Notice

used without the safety alert symbol indicates a potential situation which, if not avoided, may result in an undesirable result or state.

When several danger levels apply, the notices of the highest level (lower number) are always displayed. If a notice refers to personal damages with the safety alert symbol, then another notice may be added warning of property damage.

Qualified Personnel

The device/system may only be set up and operated in conjunction with this documentation. Only qualified personnel should be allowed to install and work on the equipment. Qualified persons are defined as persons who are authorized to commission, to earth, and to tag circuits, equipment and systems in accordance with established safety practices and standards.

Intended Use

Please note the following:

Warning

This device and its components may only be used for the applications described in the catalog or technical description, and only in connection with devices or components from other manufacturers approved or recommended by Siemens.

This product can only function correctly and safely if it is transported, stored, set up and installed correctly, and operated and maintained as recommended.

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Disclaimer of Liability

We have checked the contents of this document for agreement with the hardware and software described. Since deviations cannot be precluded entirely, we cannot guarantee full agreement. However, the data in the manual are reviewed regularly, and any necessary corrections will be included in subsequent editions. Suggestions for improvement are welcomed.

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1 Preface

1.1 Purpose of this Document

This document provides an introduction and supports you by commissioning and using of the software

- *ION SIMATIC S7-1200*
- *ION SIMATIC S7-1500*

of the CMS product line.

1.2 Basic Knowledge required

In order to understand this manual, general knowledge of automation technology and software packages *CMS X-Tools* (in the following, *X-Tools*), TIA PORTAL is required.

In addition, you must be familiar with network technology (TCP/IP) and with using computers with Windows.

1.3 Validity of this Document

This document is valid for the following software:

- CMS X-Tools - ION SIMATIC S7-1200 V 01.12
- CMS X-Tools - ION SIMATIC S7-1500 V 01.12

During the following pages, this software will be referred to by the term *ION SIMATIC S7-1200/1500*.

1.4 Terms

The following terms are used within this document:

Definition	Description
CMS	Condition Monitoring System
CP	Communication Processor
DB	Data Block
FB	Function Block
ION	I/O-Node
OB	Organization Block
UIK	Universal Identification Key
SW	Software

2   Scope of Delivery

2.1   Scope of Delivery

What is shipped?

- CD
    - CMS X-Tools - ION SIMATIC S7-1200/1500 - Software & Documentation

2.2   Unpacking and checking

After unpacking, please check

- the packet for completeness and
- all parts for transport damage.

Caution
Do not use any content / parts that show evidence of damage!

3   Product Characteristics

3.1   What is CMS X-Tools?

CMS X-Tools is an industrial-suited Condition Monitoring System for technical and technological services in industrial plants. **X-Tools** is a modular, scalable analysis and diagnosis system. It is optimized for reaction less measurement of analog, binary and numerical data. **X-Tools** can be integrated in existing and new industrial plants.

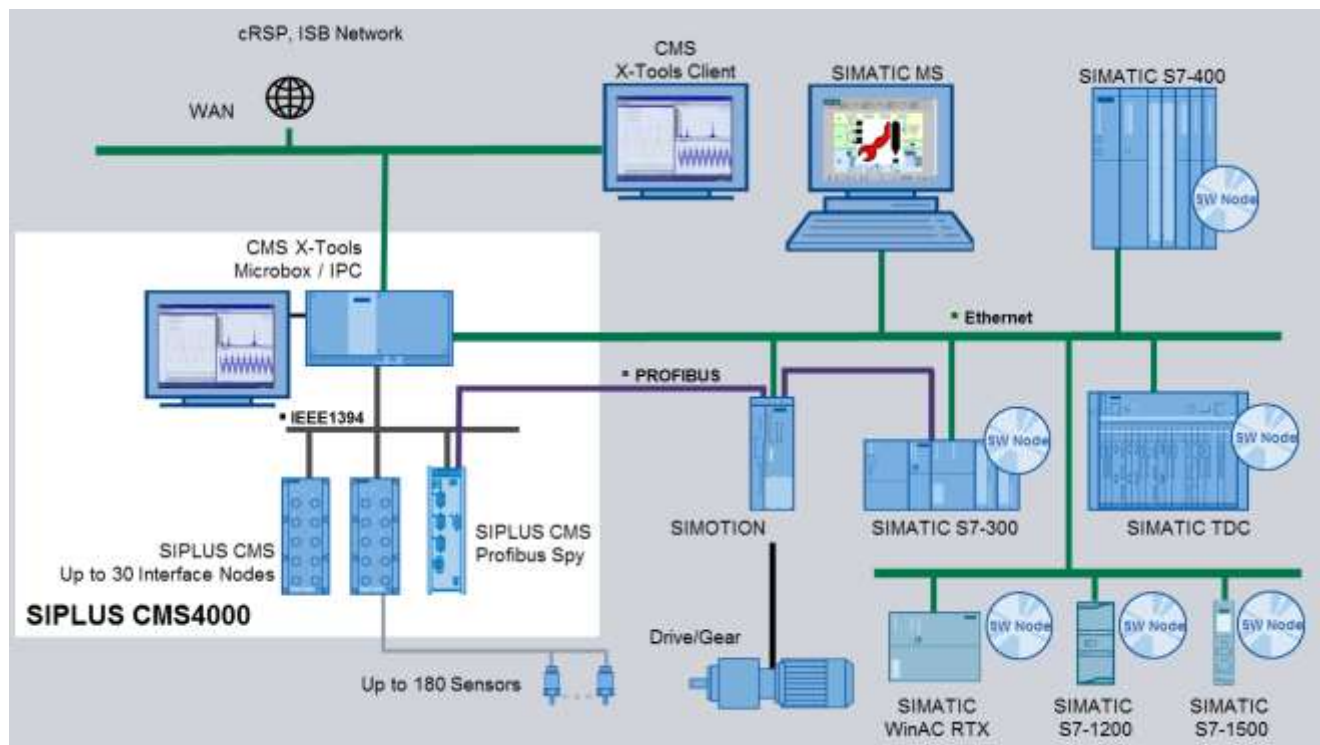**X-Tools** can be integrated into the TIA-Architecture:

*Figure 1: Overview of the Components of **X-Tools***

3.2   Introduction

The **ION SIMATIC S7-1200/1500** is used in order to acquire data from a SIMATIC S7 PN controller (S7-1200 or S7-1500) and to transmit the recorded data via Ethernet (TCP) to a superior industrial PC. After the engineering, the **ION SIMATIC S7-1200/1500** is used for the transmission of measurement data to **X-Tools**.

The usage of an **ION SIMATIC S7-1200/1500** allows transmitting up to 712 bytes of data per cycle time. The data is divided into 178 channels and each channel consists of 32 bit (DWORD), where several signals can be merged to a channel. In order to transmit more data, multiple **ION SIMATIC S7-1200/1500** can be engineered into the program of the controller.

The **ION SIMATIC S7-1200/1500** consists of a function block which must be engineered into a SIMATIC S7 PN controller with an integrated PROFINET interface.

3.3   Hard- and Software Requirements

Hardware

- PC
  - o the hardware demands of the PC are dependent to the used software
- SIMATIC Controller with integrated Ethernet / PROFINET interface

  - o CPU S7-1211C
  - o CPU S7-1212C
  - o CPU S7-1214C
  - o CPU S7-1215C
  - o CPU S7-1217C
  - o CPU S7-1511
  - o CPU S7-1513
  - o CPU S7-1516
  - o CPU S7-1517
  - o CPU S7-1518
- Ethernet connecting cables

Notice

Failsafe CPUs are not supported by the *ION SIMATIC S7-1200/1500*!

Software

- CMS X-Tools Professional (V 04.04 SP1 or higher)
- TIA PORTAL (V13 SP1 or higher)
  - o The following function blocks are available for certain versions of the CPU firmware and TIA:
    - CMS X-Tools - ION SIMATIC S7-1200 V 01.02_CPU FW V2.1 - 3.0_TIA V13SP1.zal13
    - CMS X-Tools - ION SIMATIC S7-1200 V 01.02_CPU FW V4.0_TIA V13SP1.zal13
    - CMS X-Tools - ION SIMATIC S7-1200 V 01.02_CPU FW V4.1 - x.x_TIA V13SP1.zal13
    - CMS X-Tools - ION SIMATIC S7-1200 V 01.03_CPU FW V4.2 - x.x_TIA V14.zal14
    - CMS X-Tools - ION SIMATIC S7-1200 V 01.11.EN.1500 (TIA V15).zal15
    - CMS X-Tools - ION SIMATIC S7-1200 V 01.11.EN.1501 (TIA V15.1).zal15_1
    - CMS X-Tools - ION SIMATIC S7-1500 V 01.02_CPU FW V1.0 - x.x_TIA V13SP1.zal13
    - CMS X-Tools - ION SIMATIC S7-1500 V 01.02_V13_SP1.zap13
    - CMS X-Tools - ION SIMATIC S7-1500 V 01.03_CPU FW V1.0 -2.1_TIA V14.zal14
    - CMS X-Tools - ION SIMATIC S7-1500 V 01.11.EN.1500 (TIA V15).zal15
    - CMS X-Tools - ION SIMATIC S7-1500 V 01.11.EN.1501 (TIA V15.1).zal15_1
  - o The following function blocks have been created without know how protection and can be used in combination with TIA V 15.1 and higher:
    - CMS X-Tools - ION SIMATIC S7-1200 V 01.12.EN.1501 (TIA V15.1 and higher).zal15_1
    - CMS X-Tools - ION SIMATIC S7-1500 V 01.12.EN.1501 (TIA V15.1 and higher).zal15_1

3.4   Order Numbers

Order information is obtained from your local Siemens office and from the homepage
http://www.siemens.com/siplus-cms.

4   Block Description

4.1   Function

The **ION SIMATIC S7-1200/1500** is used in order to acquire data from a SIMATIC S7 PN controller and to transmit the recorded data via Ethernet (TCP/IP) to a superior industrial PC. The **ION SIMATIC S7-1200/1500** consists of a function block (FB) which must be engineered into a SIMATIC S7 PN controller with an integrated PROFINET interface. The communication protocol is TCP/IP.

The FB is called in a cyclic interrupt (e.g. OB35) and allows transmission of up to 712 byte of data each cycle. The data is divided into 178 channels and each channel consists of 32 bit (DWORD). The channels are filled with data in the S7 program. It is possible to merge several signals into one channel (e.g. two WORD signals).

A relative timestamp is automatically added to the transmitted data. Two different ways for the internal timestamp generation are possible. These can be selected by the input TIME_BASE. When using the system clock-based timestamp generation, the timestamp is directly calculated by reading the clock of the S7-CPU. In contrast to that, the timestamp is calculated out of the cycle time CYCLE_T in case of the counter-based time base. For most applications, the counter-based timestamp (TIME_BASE = 1) should be the most suitable one. The counter-based timestamp also should ensure that multiple instances of the **ION SIMATIC S7-1200/1500** within one S7-CPU are able to deliver synchronized timestamps.

Whenever the clock of the S7-CPU is synchronized (e.g. by NTP), the counter-based time base is recommended to avoid errors in the time domain check of **X-Tools**.

The FB is called in startup OB (OB100, OB101, OB102) for initialization. Therefore the parameter COM_RST is set to TRUE. During initialization the number of active channels is written, the cycle time is set and some other calculations for service are done.

Afterwards a phase begins, in which the FB runs along passive in the program. Only after **X-Tools** attempts to connect the FB is activated and it takes place data exchange with **X-Tools**. Details for engineering in **X-Tools** you can find in the user manual of **X-Tools**.

When data transmission is started the signals are transmitted to **X-Tools**. Therefore the signals are buffered in two buffers. Each buffer can store 712 bytes. With 178 active channels one buffer is transmission buffer and one is the buffer for the current data. The buffers are alternating written and transmitted. If not all channels are active more cycles can be buffered. With 89 active channels each buffer can buffer two measurement cycles, the transmission is initialized after each two cycles. The communication load can be reduced.

4.2   Parameters

Parameter	Declaration	Data type	Description
COM_RST	INPUT	BOOL	With ‚True' on this signal a reset of the FB is forced. During runtime it should be ‚False'. The FB remains in initializing routine as long as COM_RST is set to ‚True'.
CYCLE_T	INPUT	INT	Cycle time of calling alert in µs.
COMMAND_ID	INPUT	INT	ID for command connection (0x0001 … 0x0FFF).
DATA_ID	INPUT	INT	ID for data connection (0x0001 … 0x0FFF).
COMMAND_PORT	INPUT	WORD	Local UDP port for command connection (0x07D0 … 0x1388).
DATA_PORT	INPUT	WORD	Local UDP port for data connection (0x07D0 … 0x1388).
DEV_ID / INTERFACE_ID	INPUT	BYTE / HW_ANY	Identifier for CPU type (depends on version).
CURRENT_ CHANNELS	INPUT	INT	Number of channels which are transmitted to **X-Tools** each cycle (1 … 178).

Parameter	Declaration	Data type	Description
CHANNEL	INPUT	ARRAY[0.. 177] OF DWORD	Array, which defines the channels which shall be transmitted to *X-Tools*. A reading of peripherals is not possible.
UIK0..UIK7	INPUT	BYTE	UIK of the *ION SIMATIC S7-1200/1500*. See point 6.5 for details.
TIME_BASE	INPUT	BYTE	Time base for timestamp generation 0=system clock-based 1=counter-based
STATUS_CMD_TCON	OUTPUT	WORD	Status word of TCON function for command communication
STATUS_DATA_TCON	OUTPUT	WORD	Status word of TCON function for data communication

4.3   Conditions

During projecting of the *ION SIMATIC S7-1200/1500* the conditions of all used components have to be respected. The *ION SIMATIC S7-1200/1500* must not be called in OB1.

The minimum cycle time of the calling OB as the number of channels which can be transmitted properly in this time are specific for each project and hardly depending on SIMATIC CPU type and network usage. The used configuration has to be checked for stability and must not operate at the limit, because in case of errors (e.g. BUS errors) a higher CPU load must be expected.

The cyclic execution time of the *ION SIMATIC S7-1200/1500* is dependent on the CPU type, CPU version and count of active channels (INPUT: CURRENT_CHANNELS). The following table shows the typical cyclic execution time of different CPU types with a maximum count of active channels:

CPU Type	Typical Cyclic Execution Time
CPU 1511-1 PN	2 ms
CPU 1513-1 PN	2 ms
CPU 1515-2 PN	1 ms
CPU 1516-3 PN/DP	1 ms
CPU 1517-3 PN/DP	0,5 ms
CPU 1518-4 PN/DP	0,5 ms
CPU 1511C-1 PN	2 ms
CPU 1512C-1 PN	2 ms
CPU 1510SP-1 PN	3 ms
CPU 1512SP-1 PN	2 ms
CPU 1211C	25 ms
CPU 1212C	25 ms
CPU 1214C	25 ms
CPU 1215C	25 ms
CPU 1217C	25 ms

Notice

Wrong project engineering can lead to errors or stop of the CPU.

5   Installation

5.1   Installation of the Library

Chose the corresponding *ION SIMATIC S7-1200/1500* library which fits to the firmware version of your CPU out of the following selection tables. Note that further limitations may exist between the used version of TIA and the firmware version of your CPU.

Firmware Version of CPU 1200	ION SIMATIC S7-1200 Library	Version of Open User Communication Library	Version of LEN Instruction	Version of TIA
V2.1	CMS X-Tools - ION SIMATIC S7-1200 V 01.02_CPU FW V2.1 - 3.0_TIA V13SP1.zal13	V3.1	V1.1	V13 SP1
V2.2	CMS X-Tools - ION SIMATIC S7-1200 V 01.02_CPU FW V2.1 - 3.0_TIA V13SP1.zal13	V3.1	V1.1	V13 SP1
V3.0	CMS X-Tools - ION SIMATIC S7-1200 V 01.02_CPU FW V2.1 - 3.0_TIA V13SP1.zal13	V3.1	V1.1	V13 SP1
V4.0	CMS X-Tools - ION SIMATIC S7-1200 V 01.02_CPU FW V4.0_TIA V13SP1.zal13	V3.1	V1.1	V13 SP1
V4.1 or newer	CMS X-Tools - ION SIMATIC S7-1200 V 01.02_CPU FW V4.1 - x.x_TIA V13SP1.zal13	V4.0	V1.1	V13 SP1
V4.2 or newer	CMS X-Tools - ION SIMATIC S7-1200 V 01.03_CPU FW V4.2 - x.x_TIA V14.zal14	V4.1	V1.1	V14
V4.2 or newer	CMS X-Tools - ION SIMATIC S7-1200 V 01.11.EN.1500 (TIA V15).zal15	V4.1	V1.1	V15
V4.2 or newer	CMS X-Tools - ION SIMATIC S7-1200 V 01.11.EN.1501 (TIA V15.1).zal15_1	V4.1	V1.1	V15.1
V4.2 or newer	CMS X-Tools - ION SIMATIC S7-1200 V 01.12.EN.1501 (TIA V15.1).zal15_1	V4.1	V1.1	V15.1

Firmware Version of CPU 1500	ION SIMATIC S7-1500 Library	Version of Open User Communication Library	Version of LEN Instruction	Version of TIA
V1.0 or newer	CMS X-Tools - ION SIMATIC S7-1500 V 01.02_CPU FW V1.0 - x.x_TIA V13SP1.zal13	V3.1	V1.1	V13 SP1
V1.1 or newer	CMS X-Tools - ION SIMATIC S7-1500 V 01.02_V13_SP1.zap13	V3.1	V1.1	V13 SP1
V2.1 or newer	CMS X-Tools - ION SIMATIC S7-1500 V 01.03_CPU FW V1.0 -2.1_TIA V14.zal14	V5.0	V1.2	V14
V2.5 or newer	CMS X-Tools - ION SIMATIC S7-1500 V 01.11.EN.1500 (TIA V15).zal15	V5.1	V1.2	V15
V2.6 or newer	CMS X-Tools - ION SIMATIC S7-1500 V 01.11.EN.1501 (TIA V15.1).zal15_1	V6.0	V1.2	V15.1
V2.6 or newer	CMS X-Tools - ION SIMATIC S7-1500 V 01.12.EN.1501 (TIA V15.1).zal15_1	V6.0	V1.2	V15.1

Afterwards insert the product-CD "CMS X-Tools" into the drive of your PC or extract the .zip file which contains the **ION SIMATIC S7-1200/1500** library. Open TIA-Portal and select the project view. Select the entry "Global libraries" at the right side of the framework window. Open the context menu via clicking the right mouse button and select "Retrieve library…" as shown in *Figure 2*.
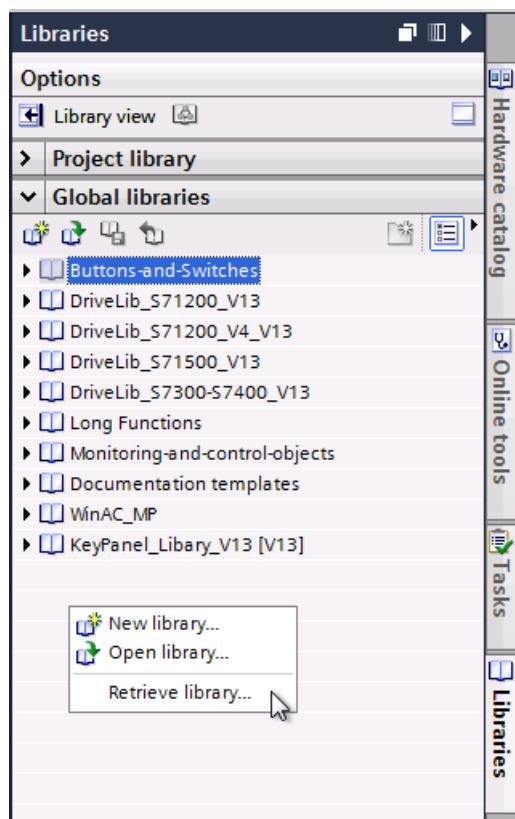
Figure 2: Retrieve library

Choose the path to your installation location (CD drive or extracted .zip) and select the fitting version from the available files (see the tables above):
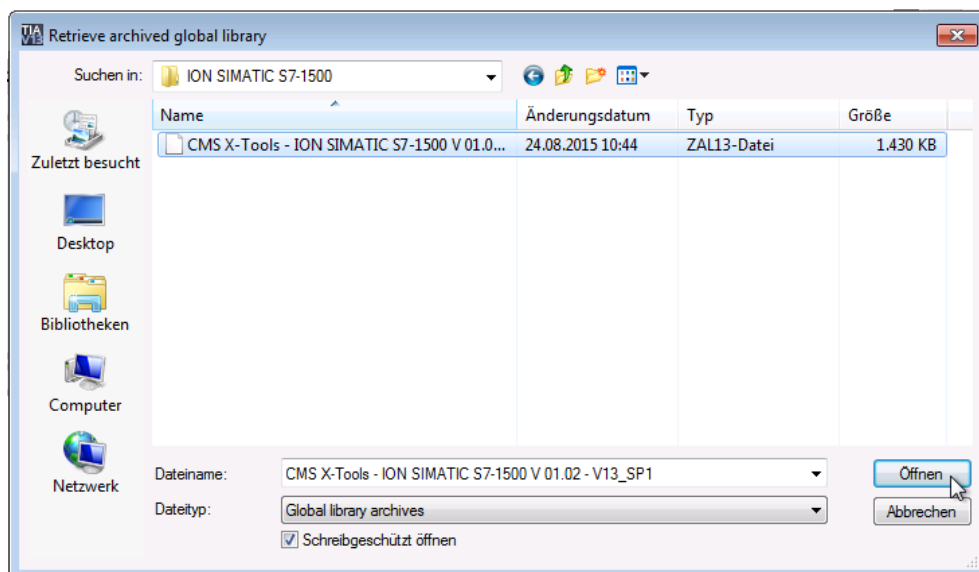

Figure 3: Retrieve CMS X-Tools - ION SIMATIC S7-1500 Library

Finally choose the target directory and the storage path for the **ION SIMATIC S7-1200/1500** library and apply to the "OK" button. The library is installed properly when it appears in "Global libraries" as shown in *Figure 4*.
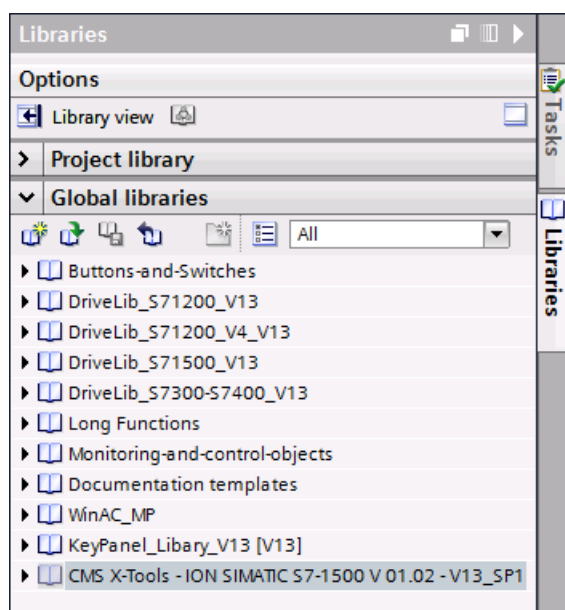

Figure 4: Installed Global Library

After opening your TIA-Portal project or creating a new project, the engineering can begin.

6 Engineering in TIA Portal

6.1 Copying the necessary SW Components

Copy the function block ION TIA PN 1500 from global libraries to the program blocks of your project as shown in *Figure 5*
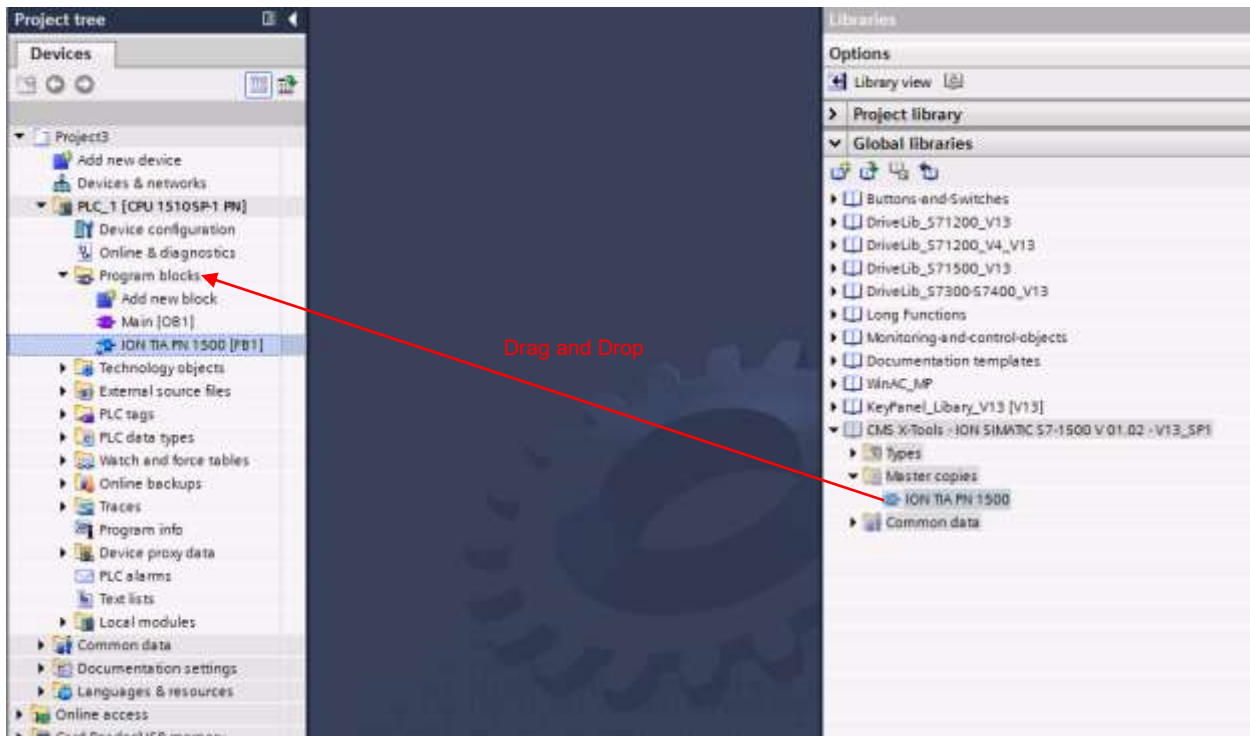
Figure 5: Copy the ION TIA PN function block

6.2   Chose necessary Version of Instruction Libraries

Open a block of your device (e.g. OB1) and select the entry "Instructions" at the right side of the framework window. Select the corresponding version of "LEN" and "Open User Communication" (see the point 3.1):
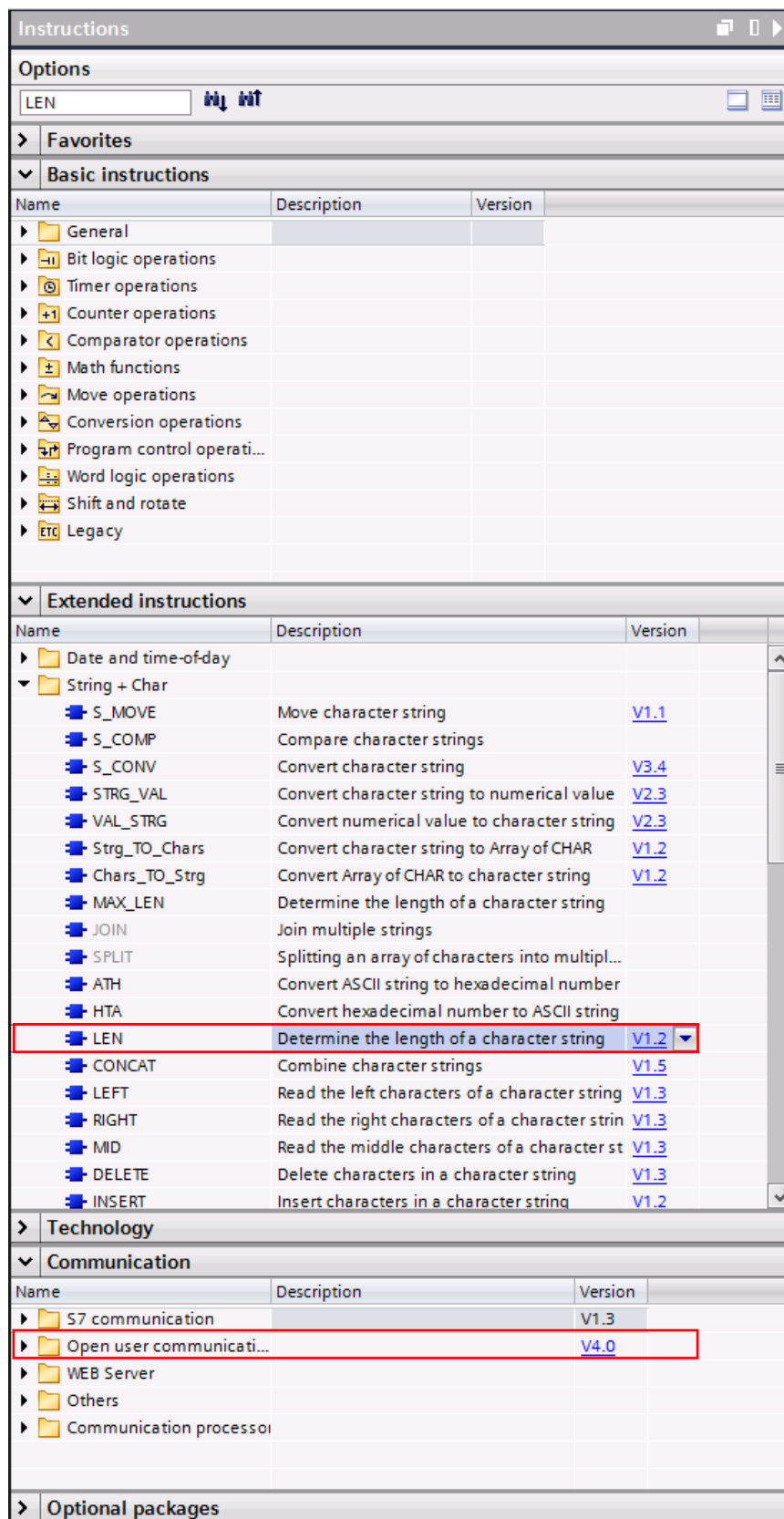
Figure 6: Chose necessary Version of Instruction Libraries

6.3   Calling the Function Block - Startup OBs (OB100, OB101 and OB102)

Description

The component *ION SIMATIC S7-1200/1500* must be connected in the Startup OBs, to allow a system restart when the CPU initiates the restart.

The following table shows the available Startup OB types:

Type of Startup	Corresponding OB
Hot restart	OB 101
Warm restart	OB 100
Cold restart	OB 102

Check which Startup OBs are used by your CPU and which Startup OBs your application needs for proper initialization in all states. Maybe you need to implement more than one Startup OB. In the following part the implementation of OB100 is shown as example.

Function Block OB100 "Startup" call

If the OB100 is not available jet you must insert it into your program. For this select **Add new block** and select **Organization Block**.

Open the OB100 via a double click and add a call of FB1 as shown in *Figure 7*.
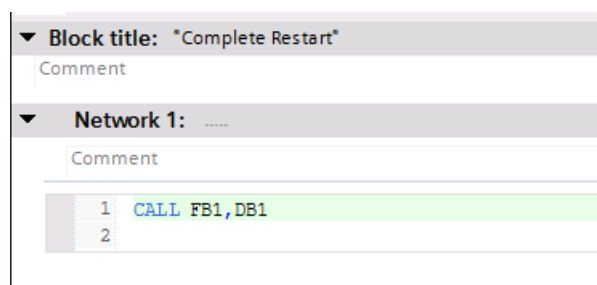
Figure 7: Call of ION TIA PN function block in OB100

Place the FB *ION TIA PN 1200/1500* into the OB100 and assigned an instance database e.g. *ION SIMATIC S7-1500_DB* as shown in *Figure 8*.
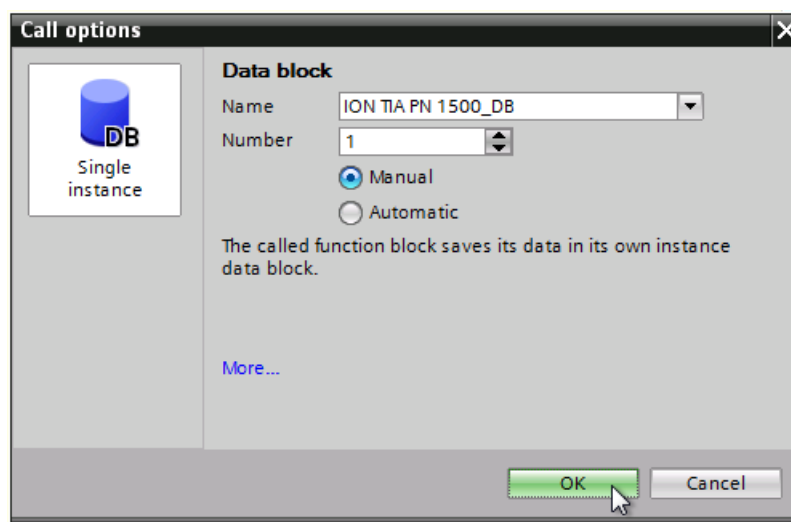

Figure 8: Select Instance DB

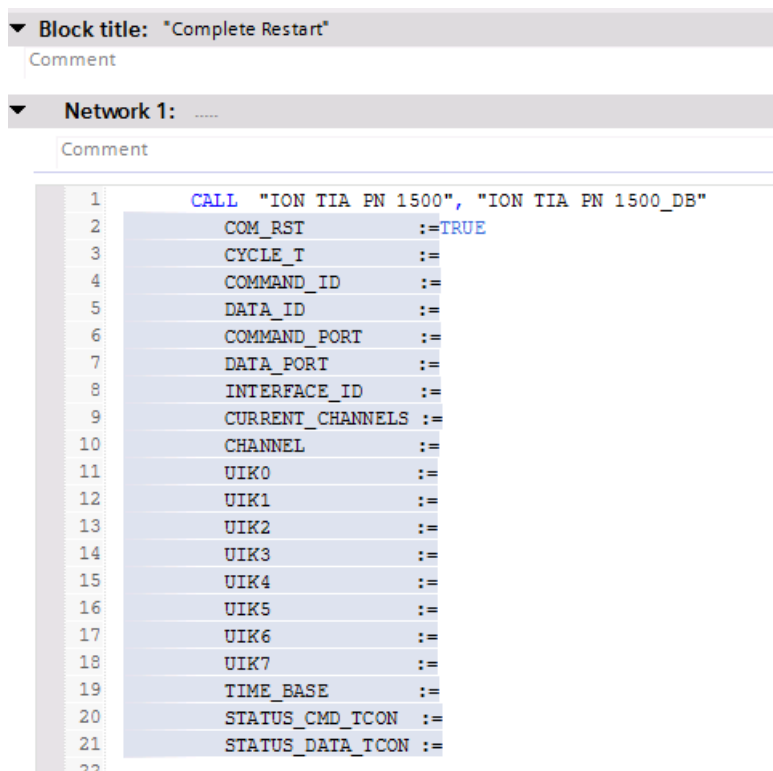Now you must set the parameter COM_RST with TRUE to initialize the *ION SIMATIC S7-1200/1500*.

Figure 9: Initialization of function block ION TIA PN in OB100

Afterwards save and close the component.

6.4   Calling the Function Block - OB3x Cyclic Interrupts

Description

The acquisition and transmission of measurement data is done via a function call in a cyclic interrupt (OB3x). The sample time matches the cycle time of this OB. It can be configured in HW Config. It is recommended to use a cycle time between 10ms and 100ms. It is possible to run *ION SIMATIC S7-1200/1500* in a 10ms cycle but then it is depend of the CPU free capacity.

Write data into the Transmission Channel

Insert new cyclic interrupt-OB into your program, or work on an existing one in your program. In the following example OB35 is used.
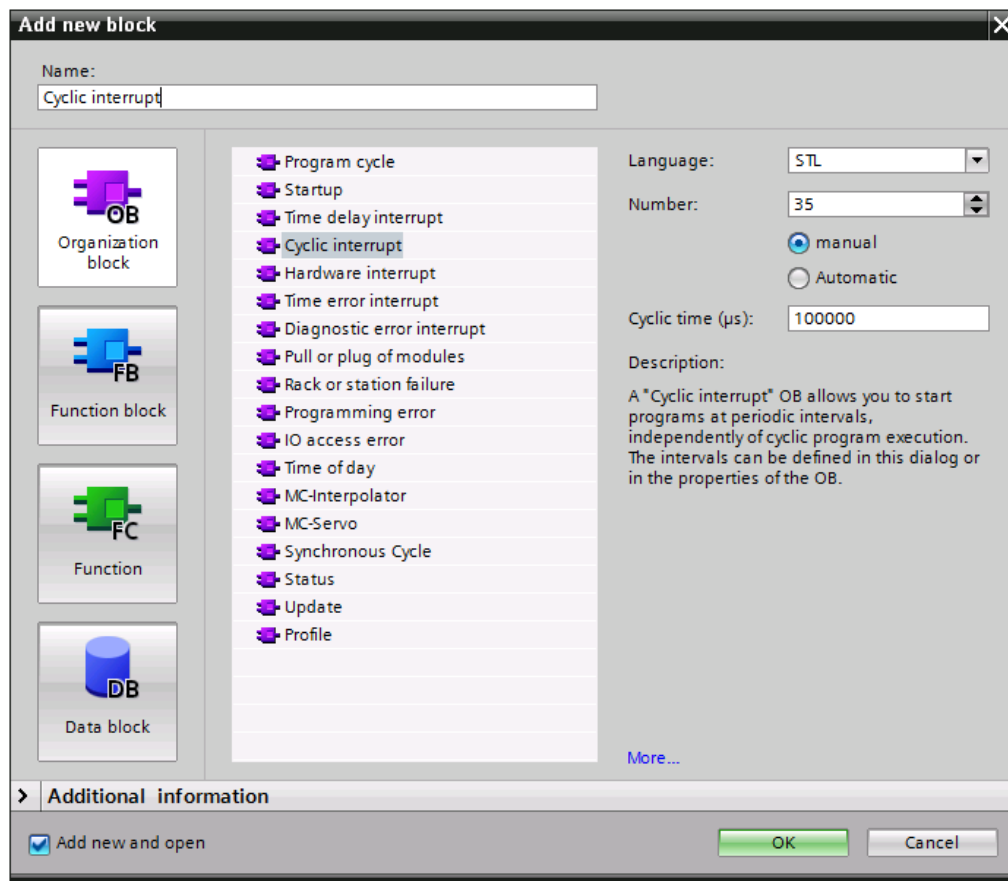
Figure 10: Insert a new Organization Block (Cyclic Interrupt)

The channels which can be observed will be supplied. There exists of up to 178 channels each having 4 bytes per channel for a total of 712 bytes. The up to 178 channels are sent cyclically to the PC after **X-Tools** has connected with the **ION SIMATIC S7-1200/1500**. The current measuring data is determined by the configuration of these up to 178 channels. For the beginning you must fill the data block. Therefore you have two options:

   a) Load the data and transfer it directly into the destination channel in the DB. The editor produces the database addresses automatically via input of the channel numbering in the format "DB1.CHANNEL [*index*].

   b) All data can be written into an array which can be set to the input CHANNEL of the FB1 during block call.

Write Data into the Transmission Channel

When the channels are filled with data you can add an additional network and project your **ION SIMATIC S7-1200/1500** as follows:

Figure 11: Call of function block ION TIA PN in OB35

In the cyclic interrupt COM_RST must be set to FALSE during runtime of the block. Enter for the parameter CYCLE_T the temporary component variable OB3x_EXC_FREQ or the fix number. This setting defines the cycle time of the interrupt OB3x.

For the communication you need to specify connection IDs and port numbers. Enter for the parameter COMMAND_ID a connection ID for the command connection (0x0001…0x0FFF) and for the parameter DATA_ID a connection ID for the data link (0x0001…0x0FFF). Enter for the parameter COMMAND_PORT a TCP port for the command connection (0x07D0…0x1388). As in the example port 2004 (07D4) which can be selected freely. Enter for the parameter DATA_PORT a TCP port for the data link (0x07D0…0x1388). As in the example port 2005 (07D5) which can be selected freely.

Enter for the parameter DEV_ID the identifier for the local PN/IE interface.

Enter for the parameter CURRENT_CHANNELS the channels to be transmitted per cycle (1…178). Attention, also empty channels are transmitted.

For the parameter CHANNEL it is optional to enter a field which contains the measurement data. This is valid only for 178 channels.

For the last inputs you have to configure the UIK of the **ION SIMATIC S7-1200/1500**. Regard the following chapter for details.

6.5   UIK

Description

Each **ION SIMATIC S7-1200/1500** must possess a unique number, the UIK. The UIK is used by **X-Tools** for the clear identification of the **ION SIMATIC S7-1200/1500**. The device name, which is shown by default in **X-Tools**, consists of the device type and the UIK. Example:

- ION SIMATIC S7-1200 (010201-04-00000001)

- ION SIMATIC S7-1500 (010501-03-00000001).

The user can defined is own unique rule.

Example of Assigning the UIK

It is formed via the MAC address of the hardware (6 bytes) and 2 user-defined bytes.

The parameters UIK0 and UIK1 can contain a zero byte (B#16#0) in case there shall be only one **ION SIMATIC S7-1200/1500** under the specified MAC address. Enter the MAC address (must be in hexadecimal representation) for UIK2 … UIK7. In the following example the MAC address 08-00-06-01-00-00 is used.

Figure 12: Assignment of the UIK

If multiple **ION SIMATIC S7-1200/1500** are to be operated on a single hardware unit (over the same MAC address), it must be ensured that each UIK is unique. Therefore, the 2 user-defined bytes can be used in order to give different values to each operated instances.

6.6   Loading of Components

When you have finished you implementation select the **Program blocks** folder and with right click select in the menu **Compile/Software**. At least you download the program into the PLC: select menu **Online > Download to the device**so that the components could be loaded into the CPU. Then the CPU must be restarted (STOP →RUN) to initialize the **ION SIMATIC S7-1200/1500**. Now the connection to **X-Tools** can be initiated.

7   Tips and Tricks

7.1   Reset the Function Block

The **ION SIMATIC S7-1200/1500** can be reset by COM_RST. This input can be connected to a bit memory which makes it possible to reset the **ION SIMATIC S7-1200/1500** at any moment easily.

7.2   Engineering during Runtime

Because of the possibility to initialize the **ION SIMATIC S7-1200/1500** via input COM_RST you can add it to you project during runtime. There is no STOP → RUN of the CPU necessary.

7.3   Multi-Instancing of the ION SIMATIC S7-1200/1500

It is possible to call multiple instances of the **ION SIMATIC S7-1200/1500** in one SIMATIC CPU. This is necessary when the required amount of data is more than 712 Byte per cycle.

Each instance of the **ION SIMATIC S7-1200/1500** must be called in OB100 with COM_RST = TRUE to initialize the FB. For each instance a separate data block and a dedicated connection pair (command and data connection) is required. The connections are identified by COMMAND_ID, DATA_ID, COMMAND_PORT und DATA_PORT. The parameters COMMAND_ID and DATA_ID can be taken from 0x0001 to 0x0FFF. Each ID must be used for one connection only.

The UIK must be unique for each **ION SIMATIC S7-1200/1500**. The bytes UIK2...UIK7 shall be set to the MAC address of the used PROFINET interface. To keep unique UIKs for each **ION SIMATIC S7-1200/1500** the bytes UIK0 and UIK1 can be numbered sequential.

The number of usable instances is limited by the capacity of the CPU. If multiple instances are called in one controller the memory usage and cycle time of the CPU have to be checked.

7.4   Error code from TCON

If the communication is not set up the output called STATUS_CMD_TCON / STATUS_DATA_TCON from ION PN TIA 1200/1500 FB give back the error code from TCON block.

- STATUS_CMD_TCON is used in order to set up the communication between **X-Tools** and the PLC in both directions. (Declaration, exchange of command)

- STATUS_DATA_TCON is used in order to send the data from PLC to **X-Tools**.

For diagnostic refer to online help from TCON (Standard Library\Communication\Open user communication\ others) in order to get the meaning of the error code.

7.5   Configuration of the Windows Firewall

If the firewall does not allow *X-Tools* then the communication can not start between the automation system and *X-Tools*. Please verify the configuration as follow.

If it is not possible to allow "X-Tools Server.exe" through Windows Firewall (e.g. due to windows account settings) as shown in point 7.5.1, try the procedure shown in point 7.5.2.

7.5.1   Recommended Configuration Procedure

- Open „Allow a program through Windows Firewall" from the "Control Panel\System and Security" window.
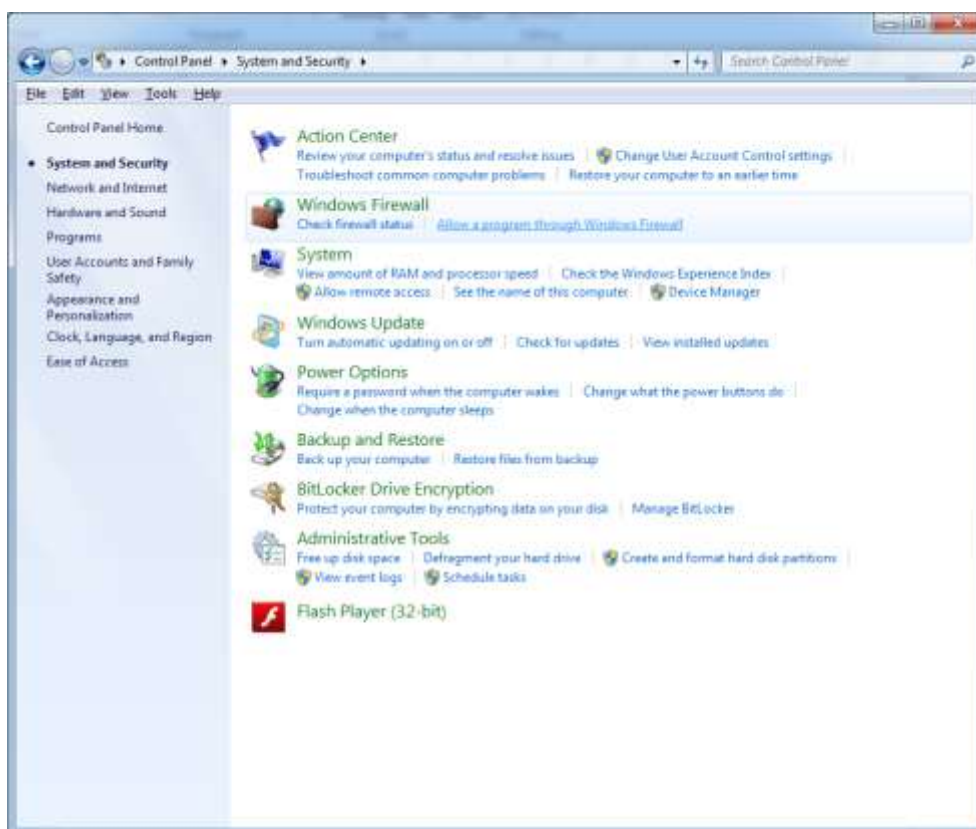
Figure 13: Control Panel - System and Security

- Allow a program through Windows Firewall
    - ○ Add "X-Tools Server.exe" in the list of exception in order to allow *X-Tools* through Windows Firewall for public and Home/Work(Private) Networks
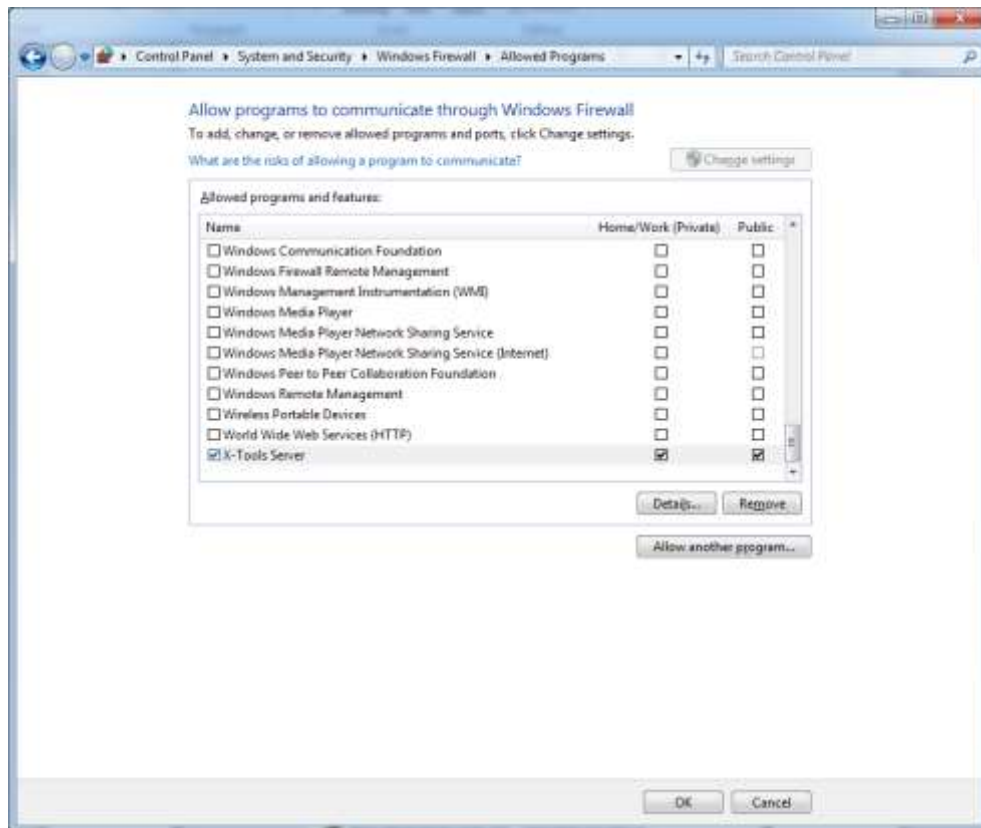
*Figure 14: Allow **X-Tools** to communicate through Windows Firewall*

7.5.2   Advanced Configuration Procedure

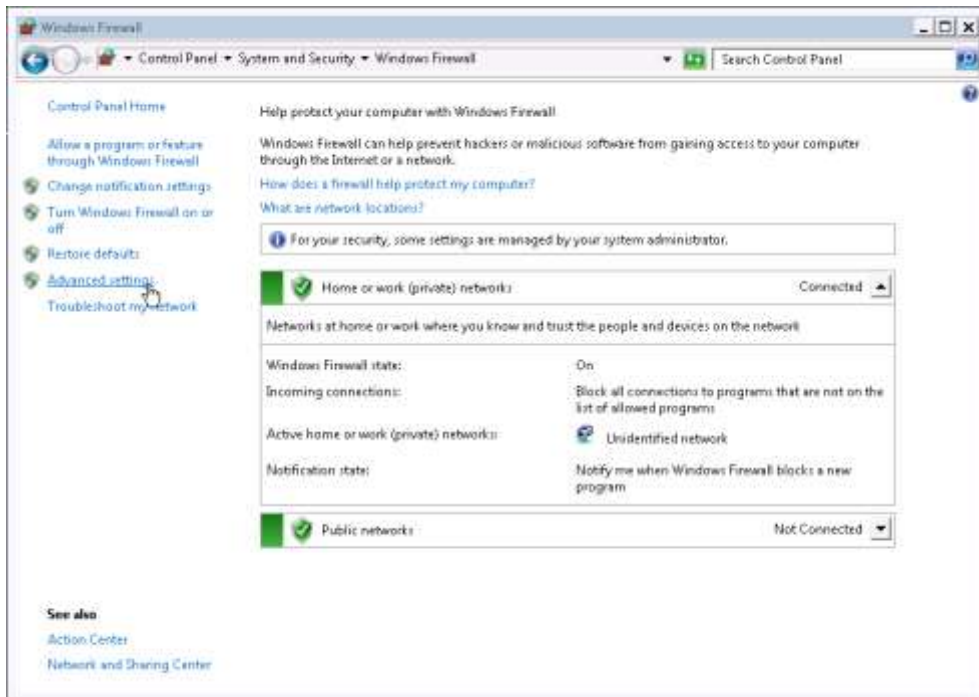- Open "Advanced settings" in "Control Panel\System and Security\Windows Firewall".

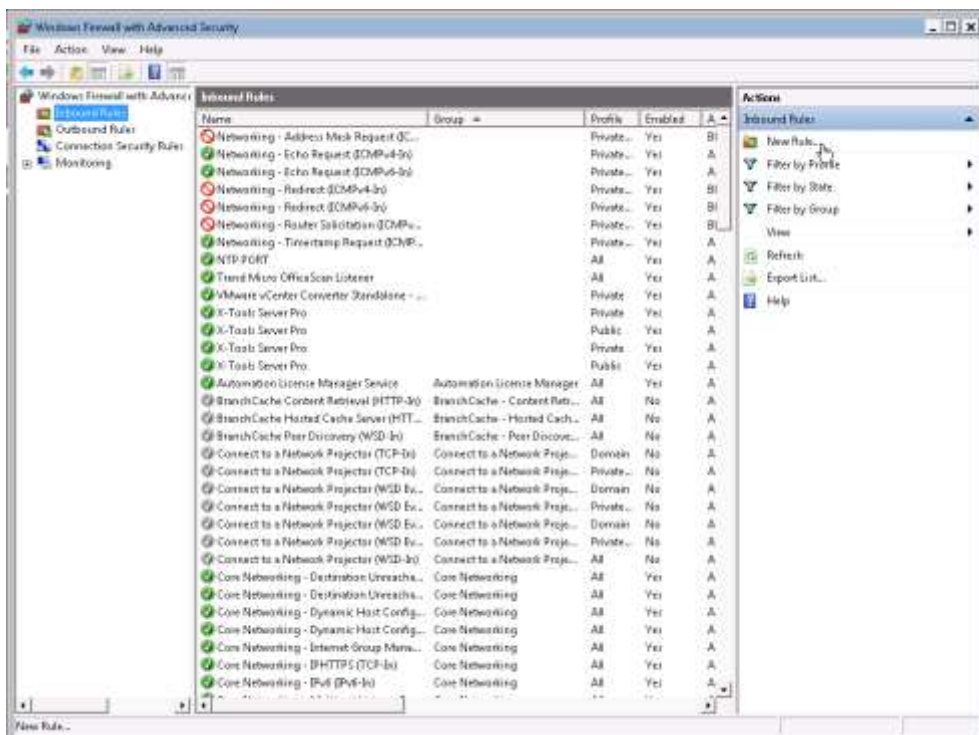*Figure 15: Open Advanced Firewall Settings*

- Create a new inbound Rule.

Figure 16: Windows Firewall with Advanced Security
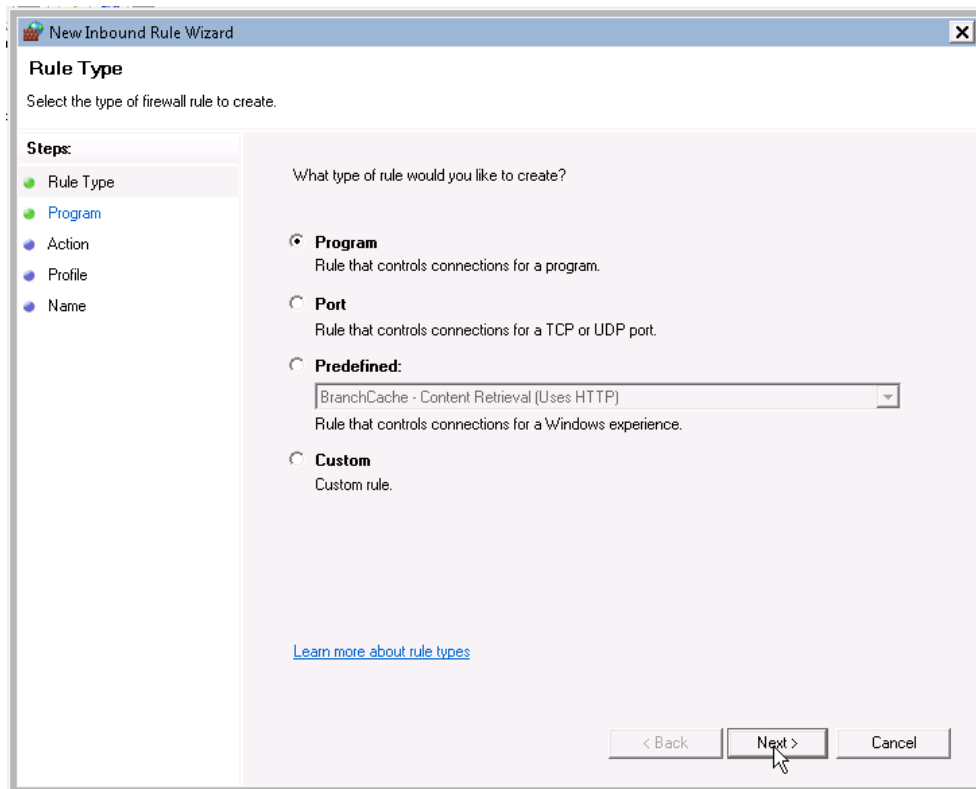
- Select Rule Type "Program" and click "Next".

Figure 17: Select Rule Type

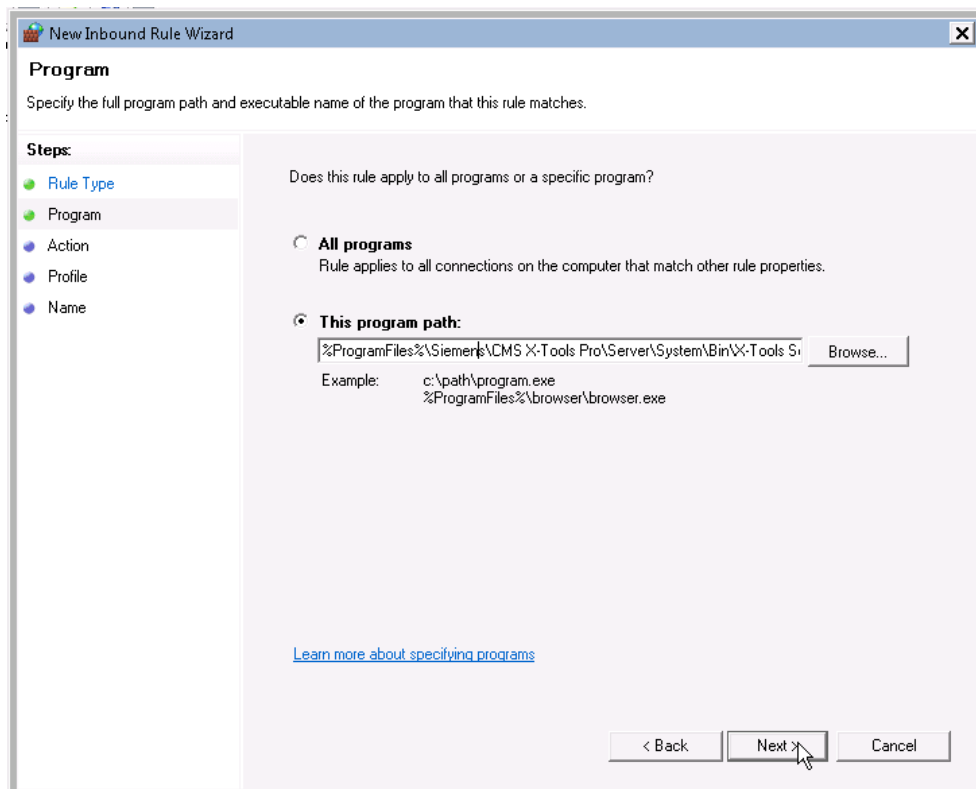- Select "This program path" and enter the the path to "X-Tools Server.exe" according to your installation directory.

Figure 18: Select Program Path
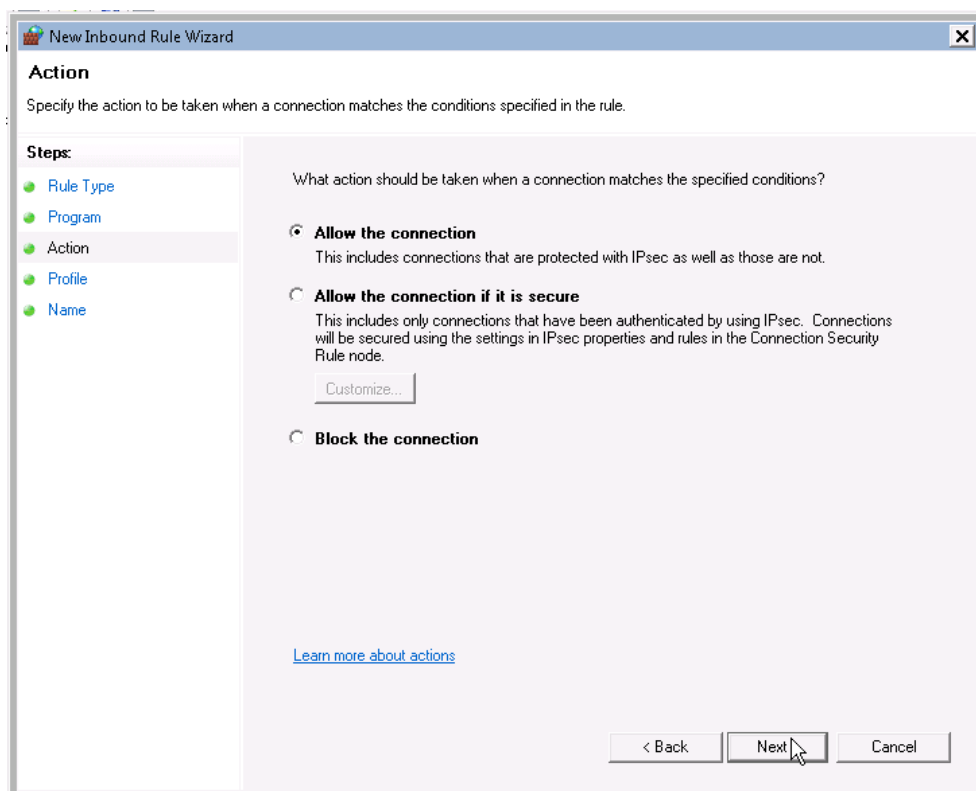
- Select "Allow the connection" and click "Next".

Figure 19: Allow Connection

- *Select "Domain", "Private" and/or "Public" according to your network location.*
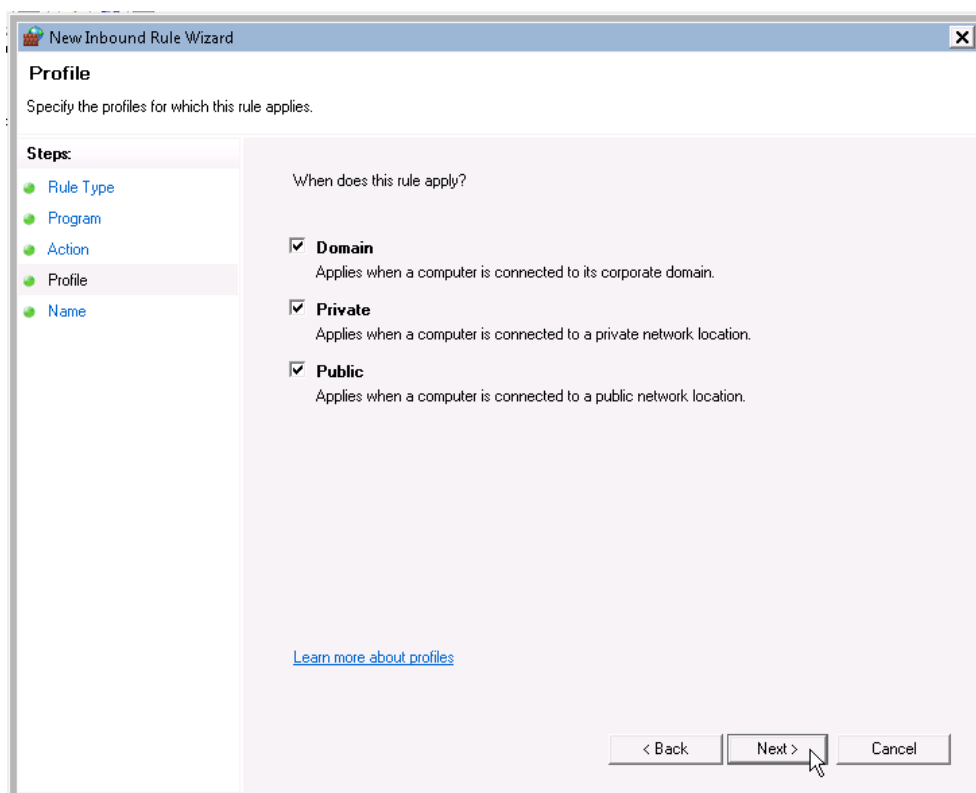

Figure 20: Select Network Location

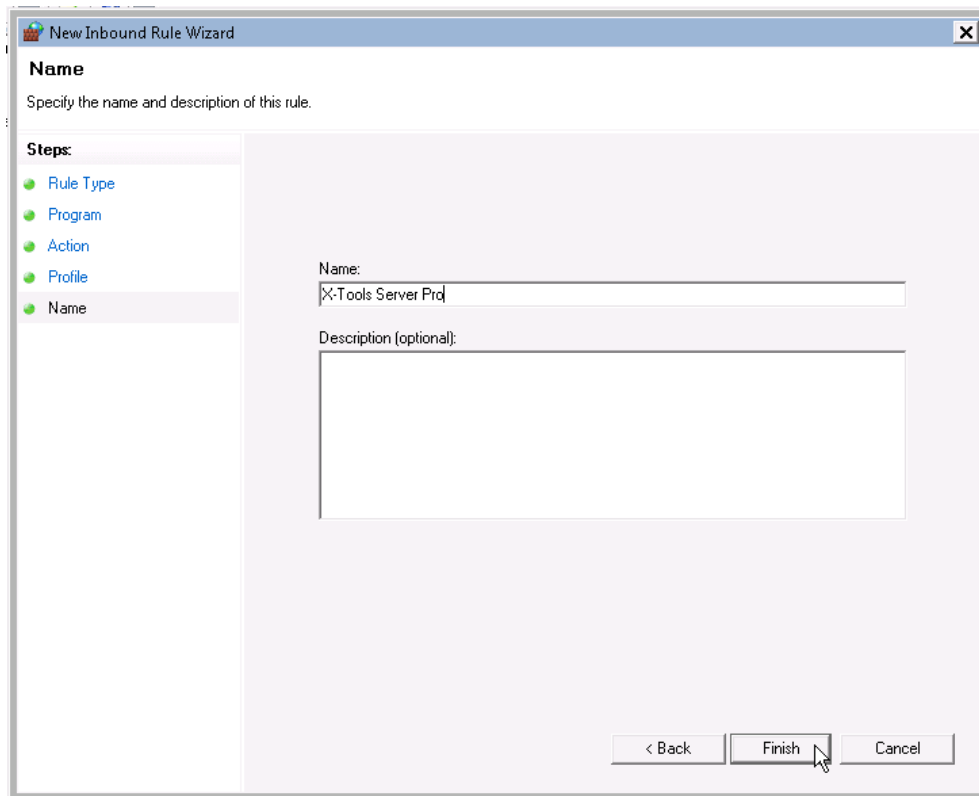- Enter a name for the new *inbound* rule and click "Finish".

Figure 21: Enter Rule Name

- Repeat the above steps and create a new outbound rule.

8 References

8.1 Other Documentation

- CMS X-Tools - User Manual

- http://www.siemens.com/siplus-cms

9 Contact Information

Should you have any questions concerning the software application, please refer to the Industry Sector Technical Support.

Department

Siemens AG

Industry Sector

Internet

https://support.industry.siemens.com

Thank you for using one of the above mentioned contacts to ensure your inquiry is registered and can be processed.