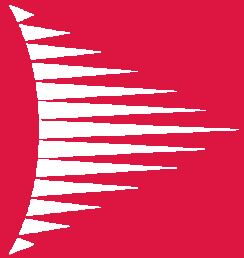


# Operating System independent Communication



**OLE for Process Control (OPC)**



## Possibilities of OPC communication

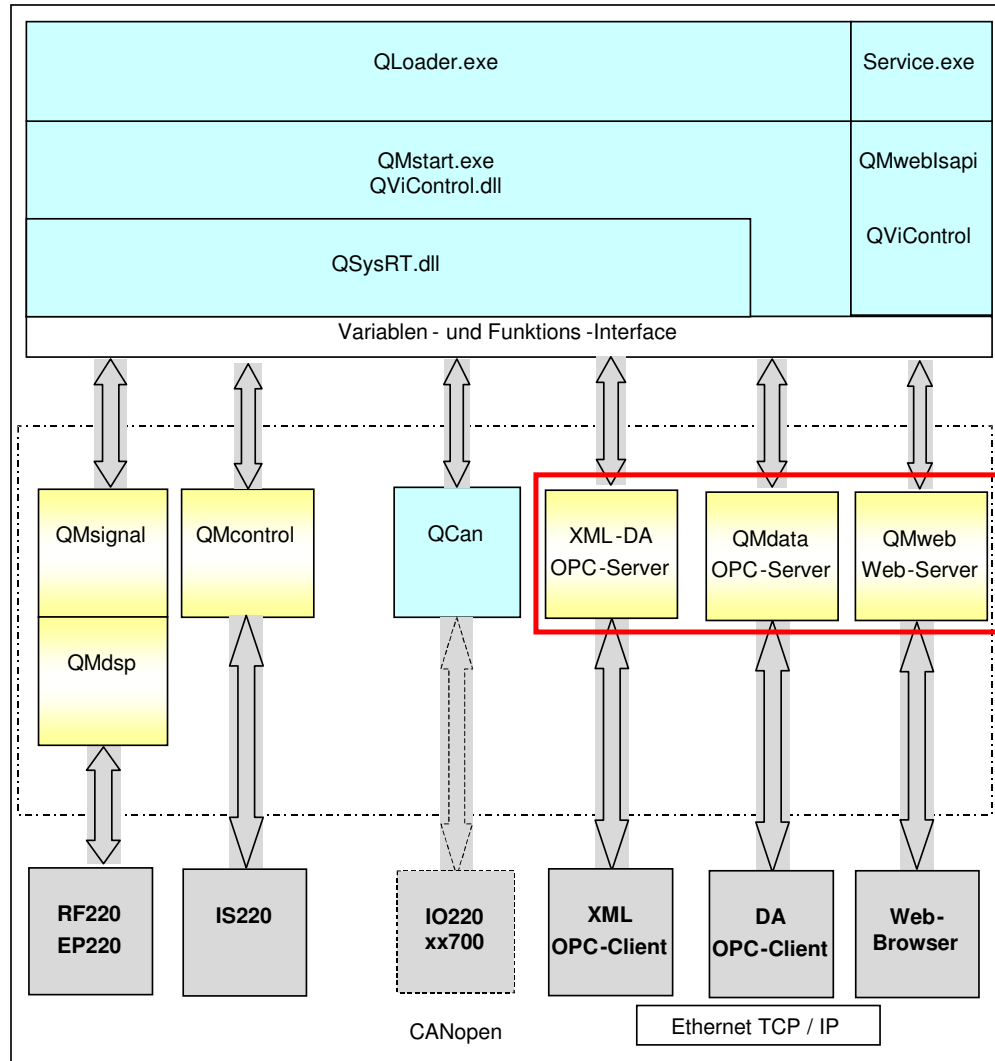
- **OLE for Process Control (OPC)**
- OPC nowadays is one of the standards for manufacturer-independent communication in machine automation
-



## Advantages of the OPC communication

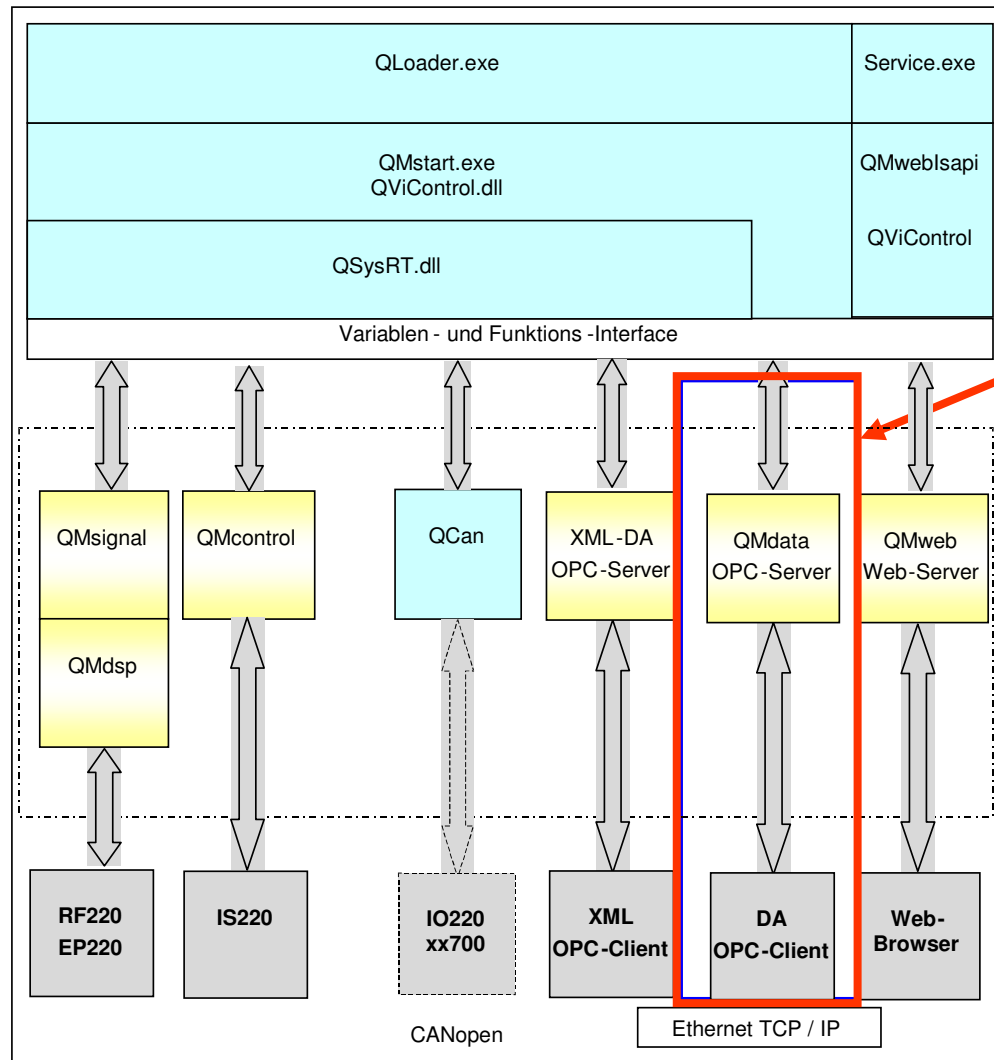
- **Independence from software manufacturer**
- **Plug & Play configuration for data exchange**
- **Multi-Client data access and data distribution**
- **Network, and Internet/ Intranet capability**
- **State of the Art**

# Firmware Overview



**Communication Servers**

# Firmware Overview



**For Windows based programs only as Quadera, LabView etc.**

**DCOM is necessary to use this communication port**

**DCOM: Distributed Component Object Model (proprietary Microsoft)**

# OPC Namespace as displayed by an OPC Client

The screenshot displays the 'Softing OPC Toolbox Demo Client' interface. The main window shows a tree view of an OPC namespace for the address 'opcda://10.6.60.10/QMG220-DA-00-50-C2-3B-81-83/{4841A238-5E78-48AB-A9ED-666AD68F4841}'. The tree includes folders like External, HardwareTesting, General, Security, Time, LanConfiguration, Cycle, Fan, DataPump, ErrorsWarnings, LoadSave, DeviceType, Hardware, Channels, Parameters, Mass, DigitalFIRWeigh, DwellSpeed, FirstMass, Width, Resolution, Threshold, Amplifier, General, Output, and Detector.

A 'Softing OPC Demo Client - Properties' dialog box is open, showing a table of properties. The dialog has 'OK', 'Apply', and 'Reset' buttons, and tabs for 'Properties' and 'Write'.

ID	Name	Value	Datatype	Description
4		10:49:06	DATE	Item Timestamp
5		read and write	I4	Item Access Rights
6		10	R4	Server Scan Rate
7		2	I4	Item EU Type
8		[0,5] (SAMP, SCAN-N, SCAN-F, SCAN-S, PEAK-L, PEAK-F)	BSTR AR...	Enumerated EU
5001		select	BSTR	Type

At the bottom of the main window, there are tabs for 'OPC Servers', 'DA Browse', 'DA Items', 'AE Browse', 'AE Events', 'AE Conditions', and 'Errors'. The status bar at the bottom left shows 'Ready'.

# OPC Namespace as displayed by an OPC Client

The screenshot shows the 'Softing OPC Toolbox Demo Client' interface. The main window displays a tree structure of OPC items under the path 'opcda://10.6.60.10/QMG220-DA-0-50-C2-3B-81-83/(4841A238-5E78-48AB-A9ED-666AD68F4841)'. A red box highlights this tree structure, with an arrow pointing to it from a text box that says 'Items in a tree-structure'. The tree includes folders like External, HardwareTesting, General, Security, Time, LanConfiguration, Cycle, Fan, DataPump, ErrorsWarnings, LoadSave, DeviceType, Hardware, Channels, Parameters, Mass, DigitalFIRWeight, DwellSpeed, FirstMass, Width, Resolution, Threshold, Amplifier, General, Output, and Detector. A 'Properties' dialog box is open in the foreground, showing a table of item properties.

ID	Name	Value	Datatype	Description
4		10:49:06	DATE	Item Timestamp
5		read and write	I4	Item Access Rights
6		10	R4	Server Scan Rate
7		2	I4	Item EU Type
8		[0.5] (SAMP, SCAN-N, SCAN-F, SCAN-S, PEAK-L, PEAK-F)	BSTR AR...	Enumerated EU
5001		select	BSTR	Type

# OPC Namespace as displayed by an OPC Client

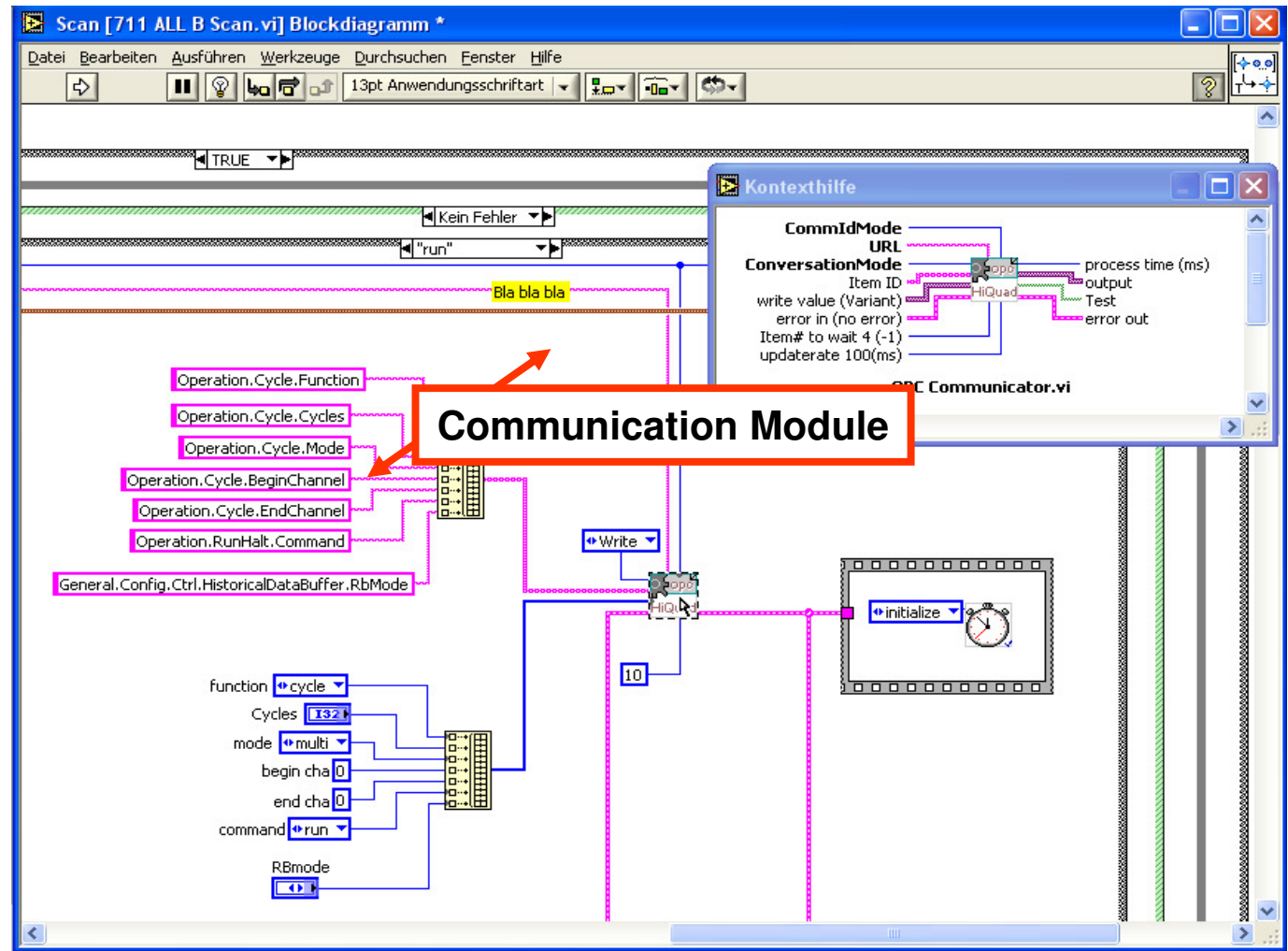
The screenshot shows the 'Softing OPC Toolbox Demo Client' interface. On the left, a tree view displays the OPC namespace structure. The 'Parameters' folder is expanded, and the 'MassMode' item is selected. A red box highlights 'MassMode' in the tree, with an arrow pointing to the 'Properties' dialog box. The dialog box, titled 'Softing OPC Demo Client - Properties', has a 'Write' tab selected. It contains a table with the following data:

ID	Name	Value	Datatype	Description
4		10:49:06	DATE	Item Timestamp
5		read and write	I4	Item Access Rights
6		10	R4	Server Scan Rate
7		2	I4	Item EU Type
8		[0,5] (SAMP, SCAN-N, SCAN-F, SCAN-S, PEAK-L, PEAK-F)	BSTR AR...	Enumerated EU
5001		select	BSTR	Type

At the top of the dialog box, there are buttons for 'OK', 'Apply', and 'Reset'. The 'Properties' tab is active, and the 'Write' sub-tab is selected. The 'MassMode' item in the tree is also highlighted with a red box.

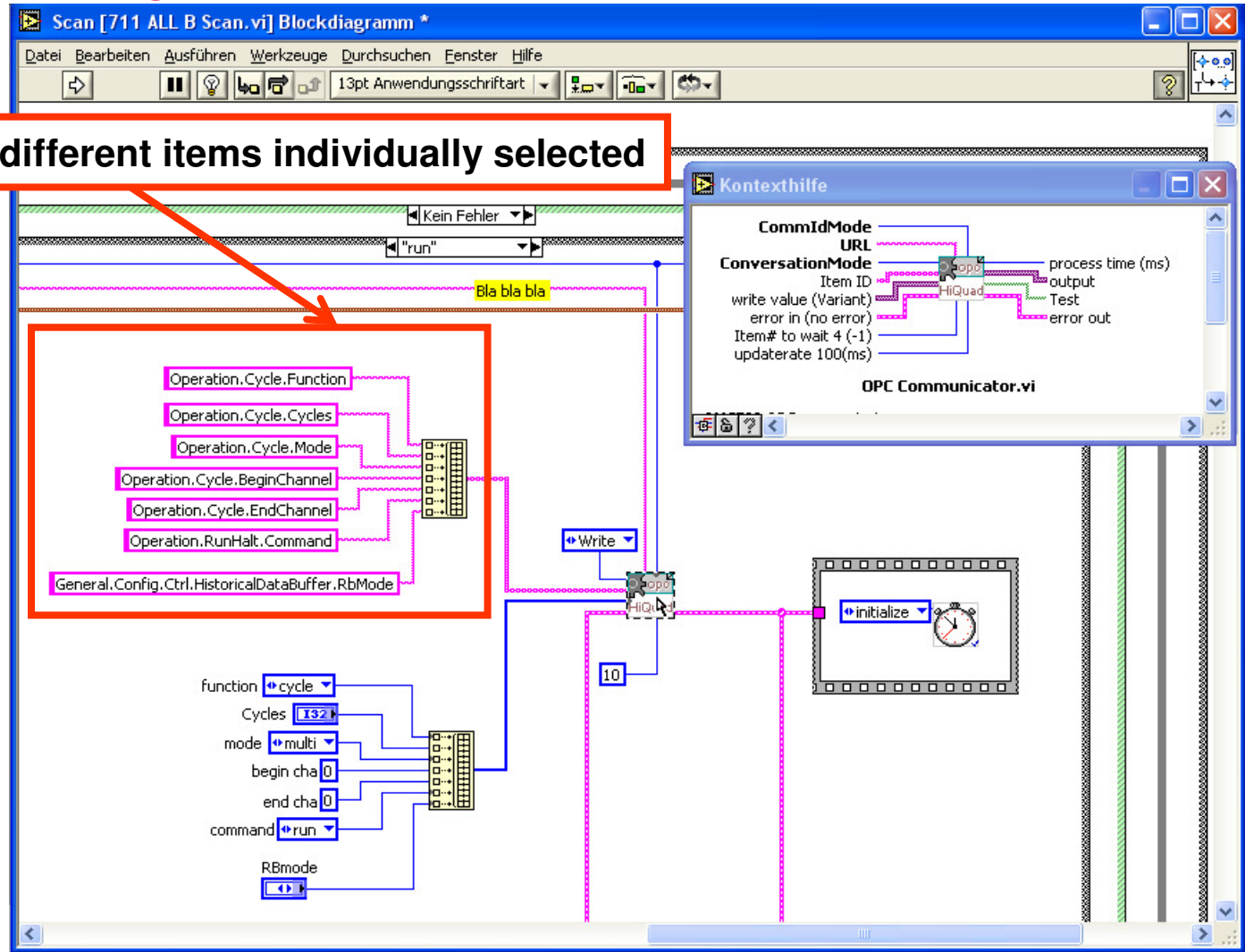


# LabView Blockdiagram

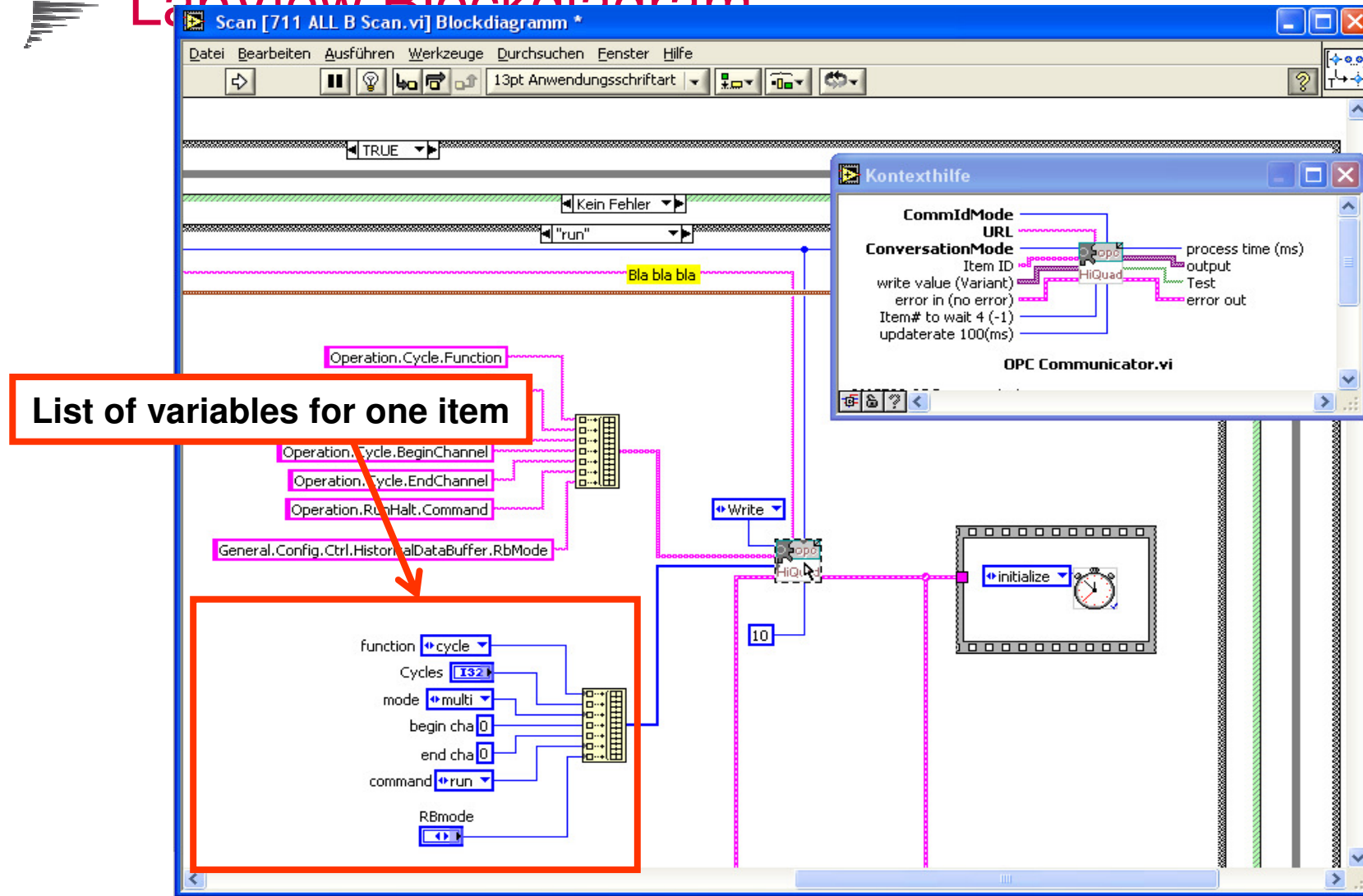


# LabView Blockdiagram

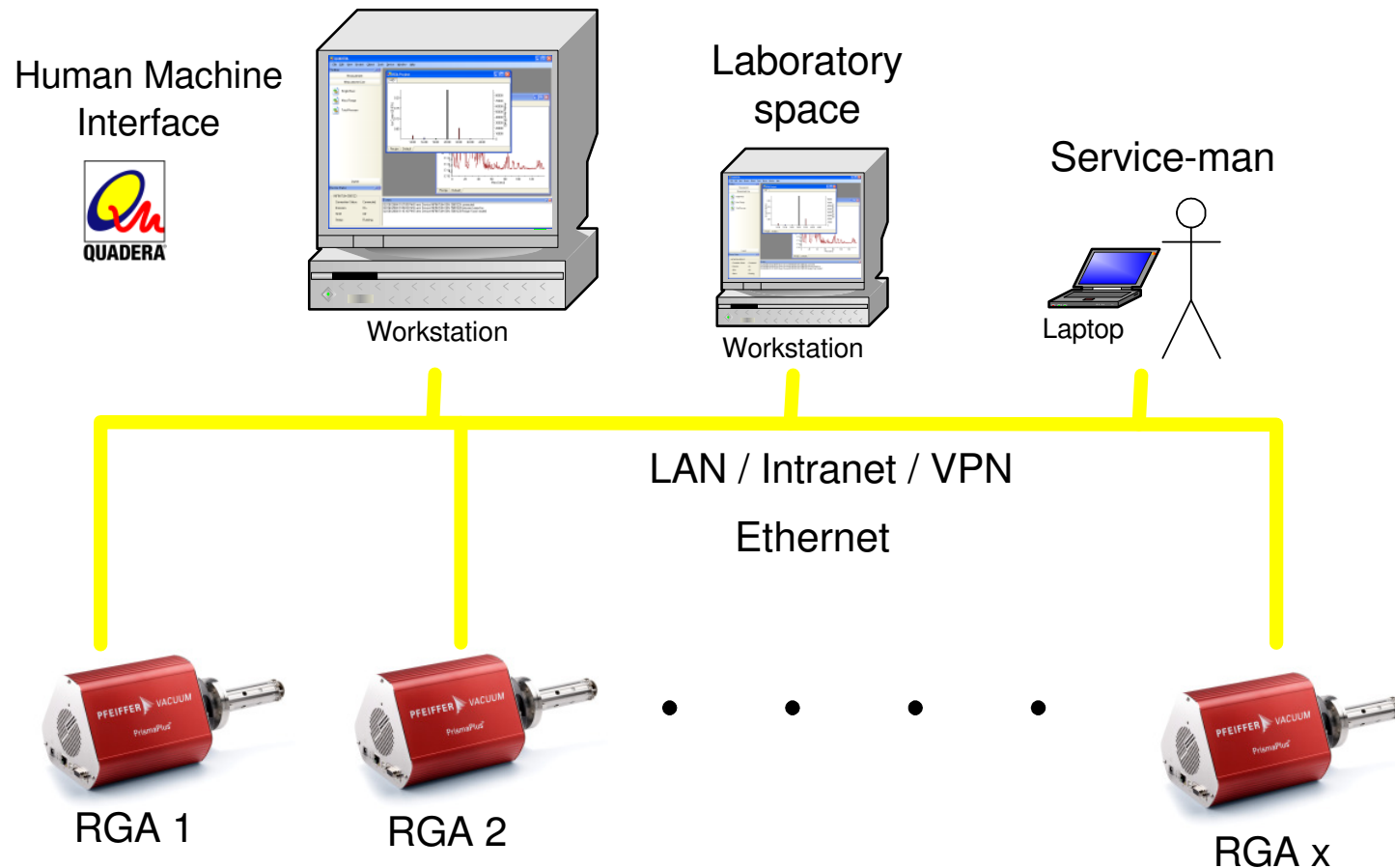
List of different items individually selected



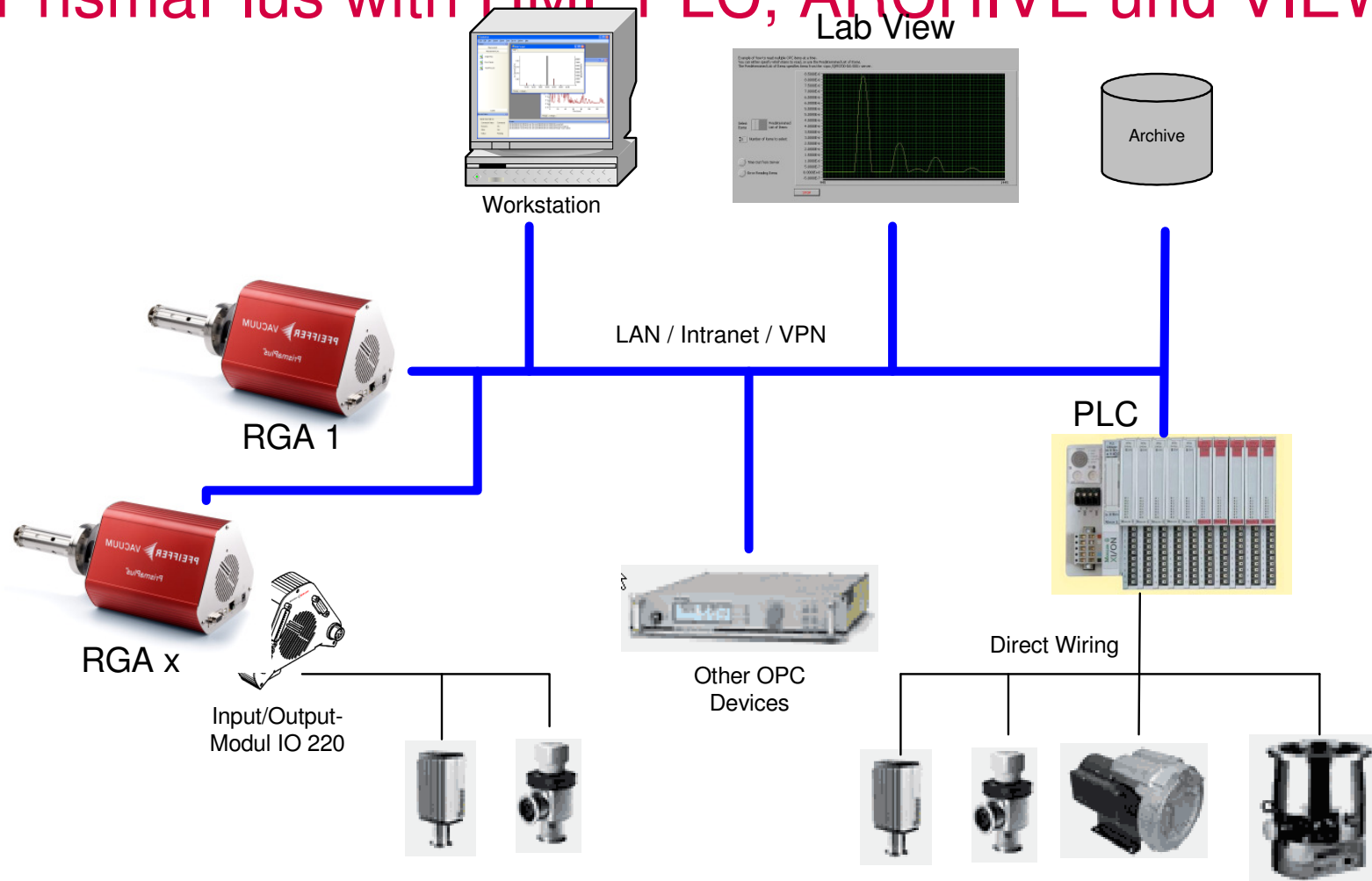
# LabView Blockdiagram



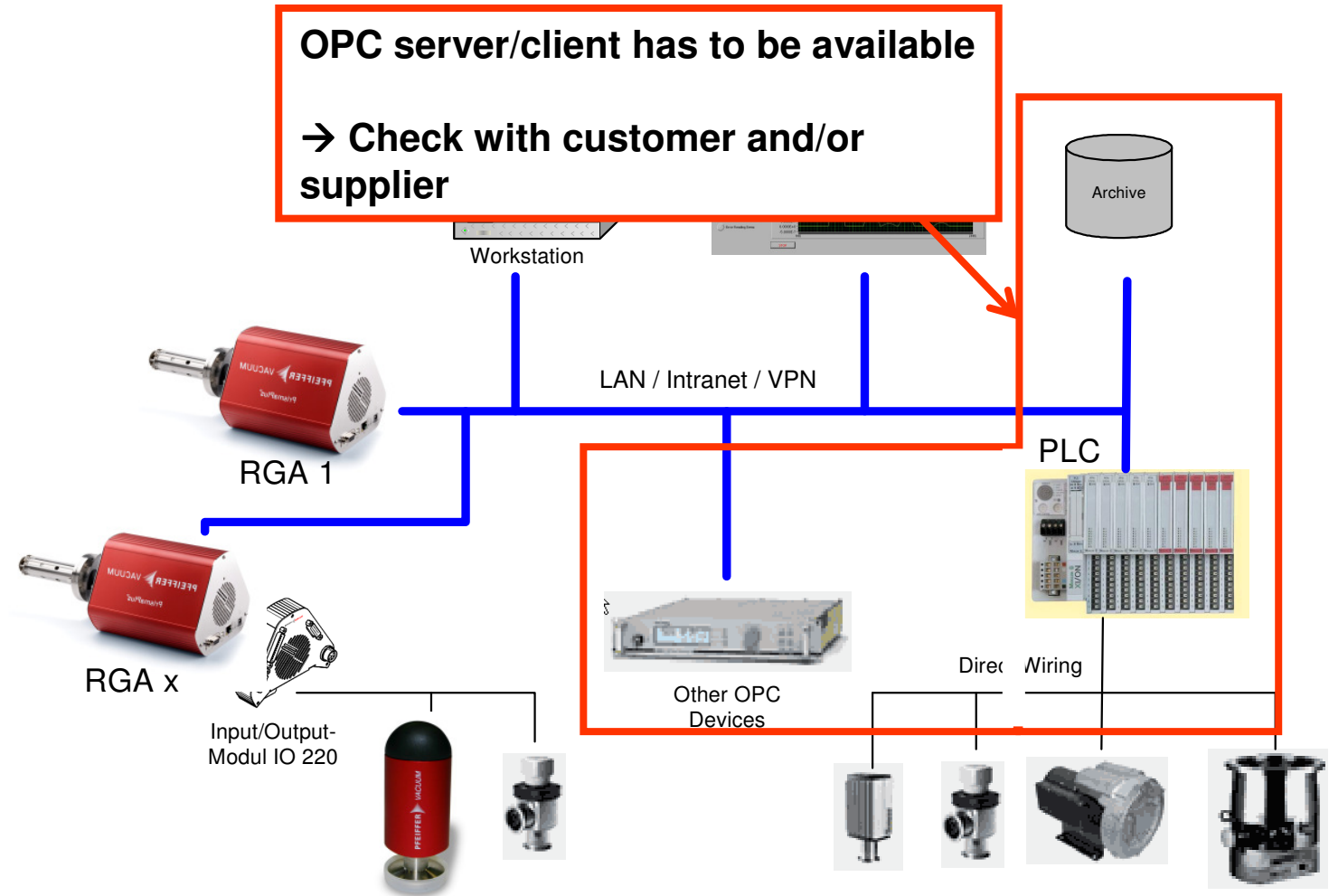
# PrismaPlus with Human Machine Interface (HMI)



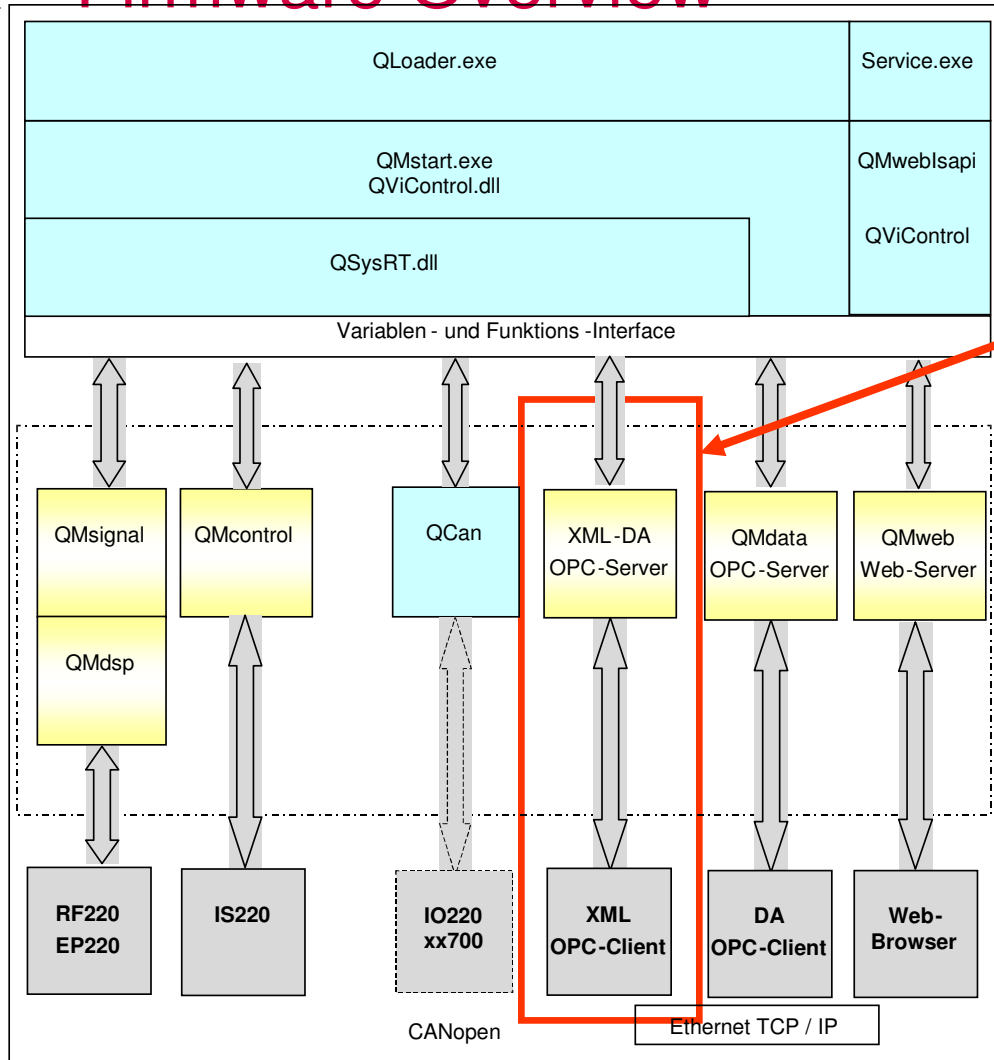
# PrismaPlus with HMI, PLC, ARCHIVE und VIEW



# PrismaPlus with HMI, PLC, ARCHIVE und VIEW



# Firmware Overview



**For operation systems platforms other than Windows, e.g. Linux**

- **Necessity of an OPC-client for the specific platform in use**
- **Softing AG is currently setting up a Linux-OPC-client, most important components officially available in Q3/2008**



## Weblinks

- OPC Programmers' Connection mit "free stuff"-and useful information  
<http://www.opcconnect.com/>
- OPC Foundation  
<http://www.opcfoundation.org/>
- MatrikonOPC  
<http://www.matrikonopc.com/>
- Softing AG  
<http://www.softing.com/OPC/>  
Supplier of OPC clients

We, INFICON, did work with Softing OPC Server and Client software

- CERN  
<http://itcofe.web.cern.ch/itcofe/Services/OPC/RecommendedTools/welcome.html>