



**BECKHOFF**

# OPC UA

Beckhoff Product Overview  
TwinCAT Measurement

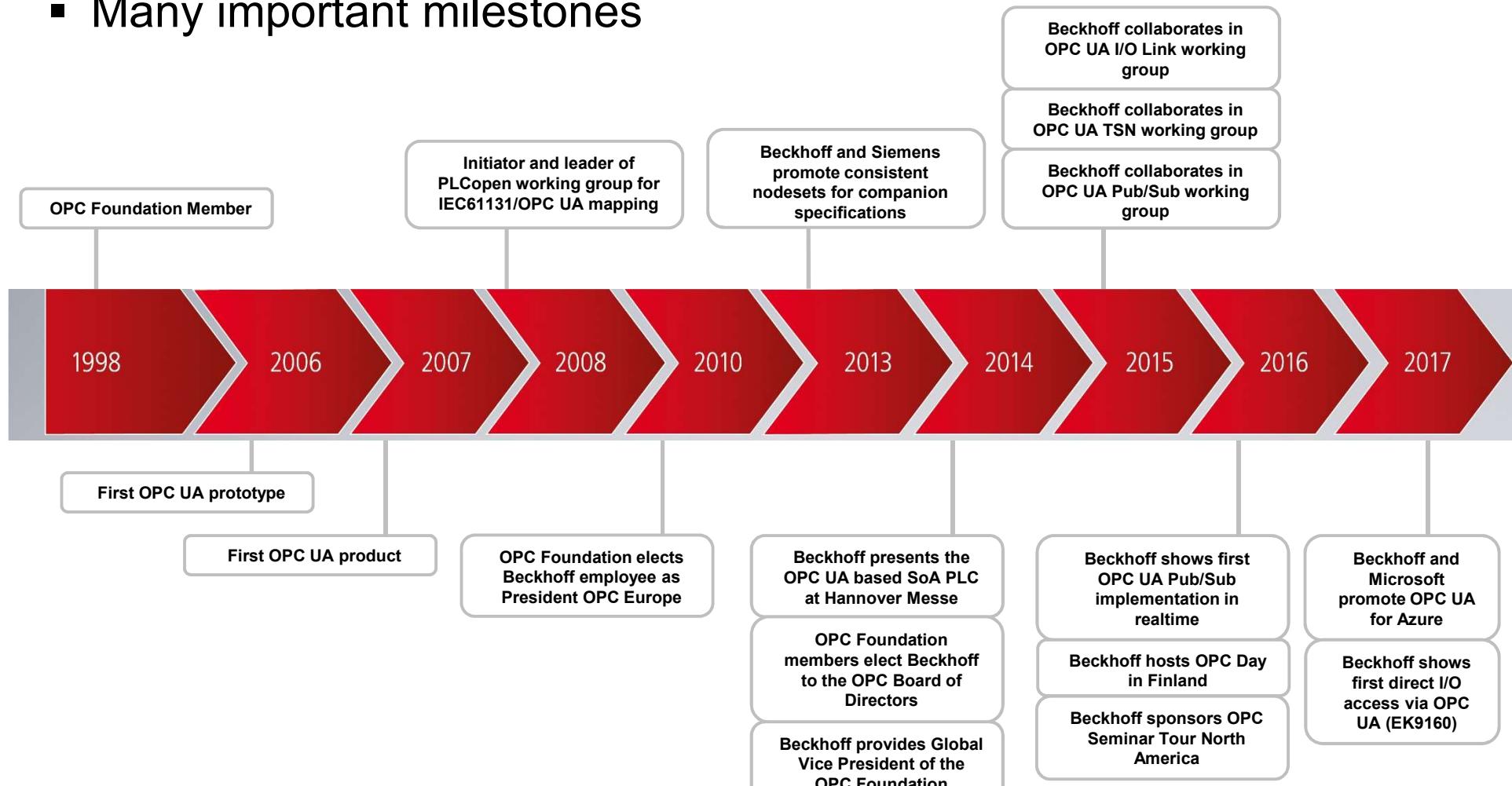


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- Beckhoff OPC UA Product overview
- Beckhoff Measurement
- Measurement Demo



- Beckhoff - long-term member of the OPC Foundation
- Many important milestones





Oldest OPC UA product suite, started in 2007



**IPC Diagnostics**



**TwinCAT Measurement**



**TwinCAT PLC Client**



**TwinCAT HMI**



**TwinCAT OPC UA Server**



**EK9160 IO Device**



**TwinCAT OPC UA Gateway**



**OPC UA Test Client**



**Legacy products**

(OPC COM DA Server, etc...)

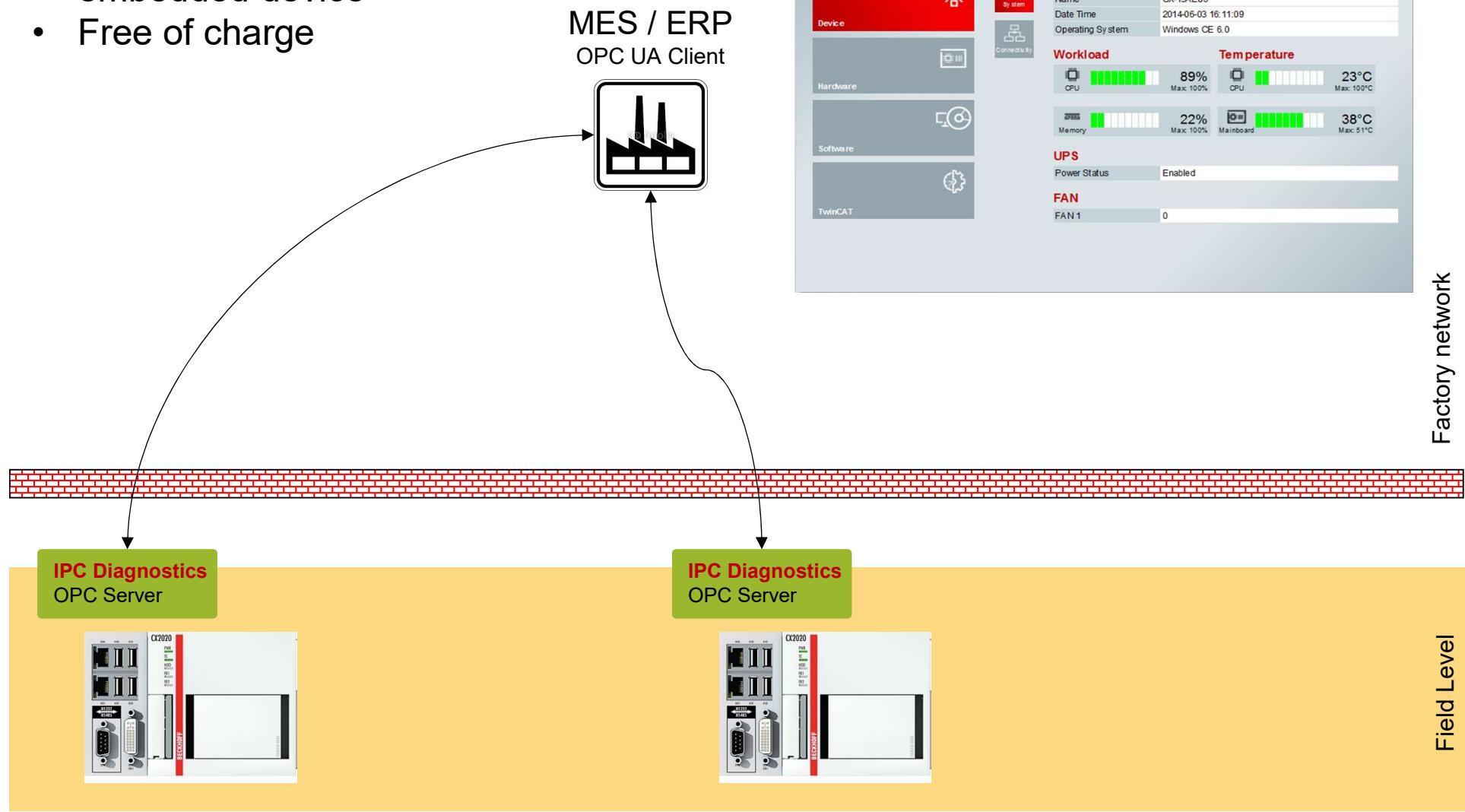


# OPC UA

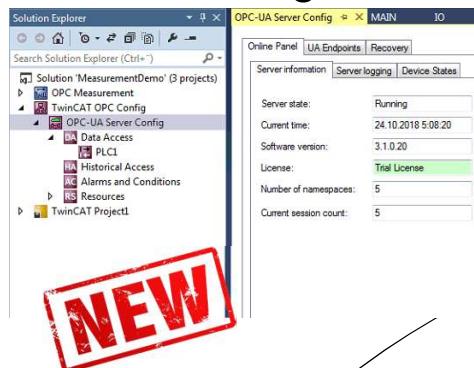
## Integrated OPC UA Server for diagnostics

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- Integrated in every Beckhoff embedded device
- Free of charge

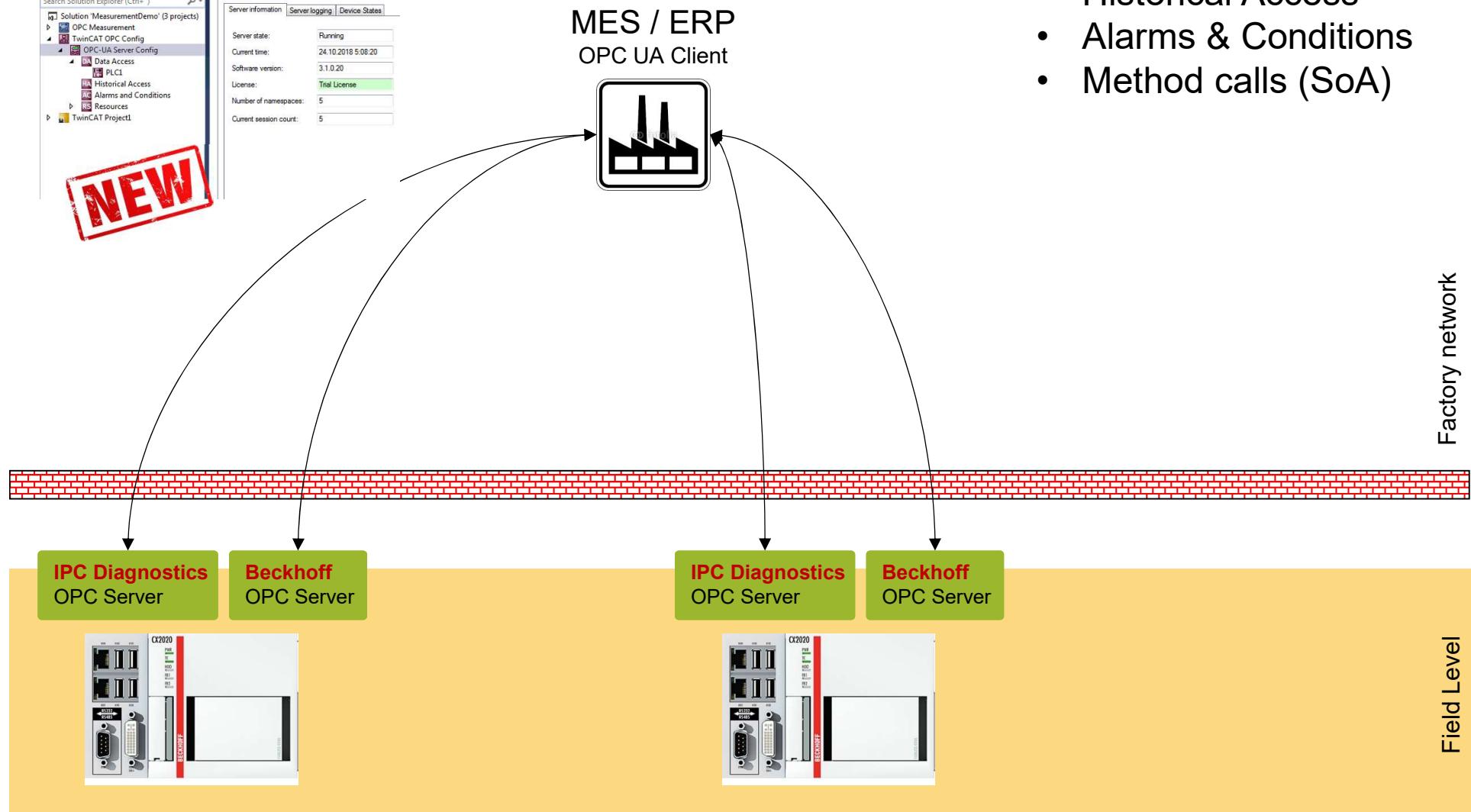


## Server Configurator



MES / ERP  
OPC UA Client

- Data Access
- Historical Access
- Alarms & Conditions
- Method calls (SoA)



# OPC UA

## TwinCAT OPC UA Server

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The screenshot displays the TwinCAT OPC UA Server configuration interface and a Target Browser window.

**Solution Explorer:** Shows the solution 'MeasurementDemo' containing three projects: OPC Measurement, TwinCAT OPC Config, and TwinCAT Project1. The TwinCAT OPC Config project is expanded, showing OPC-UA Server Config, Data Access, and PLC1. The PLC1 node under Data Access is selected.

**OPC-UA Server Config:** The 'Online Panel' tab is active. It shows the following server information:

Server state:	Running	Current subscription count:	2
Current time:	24.10.2018 5:12:04	Amount of nodes:	1085
Software version:	3.1.0.20	Rejected requests count:	0
License:	Trial License	Rejected session count:	2
Number of namespaces:	5	Security rejected count:	0
Current session count:	7	Session timeout count:	0

**Target Browser:** The 'OpcUa' tab is selected. It lists the available OPC UA nodes:

- opc.tcp://AAPOV-NB2:4840 (Anonymous)
- opc.tcp://AAPOV-NB2:4840 [None:None] (User Mode)
- opc.tcp://KOUL-AVU10-5140:4840

For the selected node 'opc.tcp://AAPOV-NB2:4840', the following device details are shown:

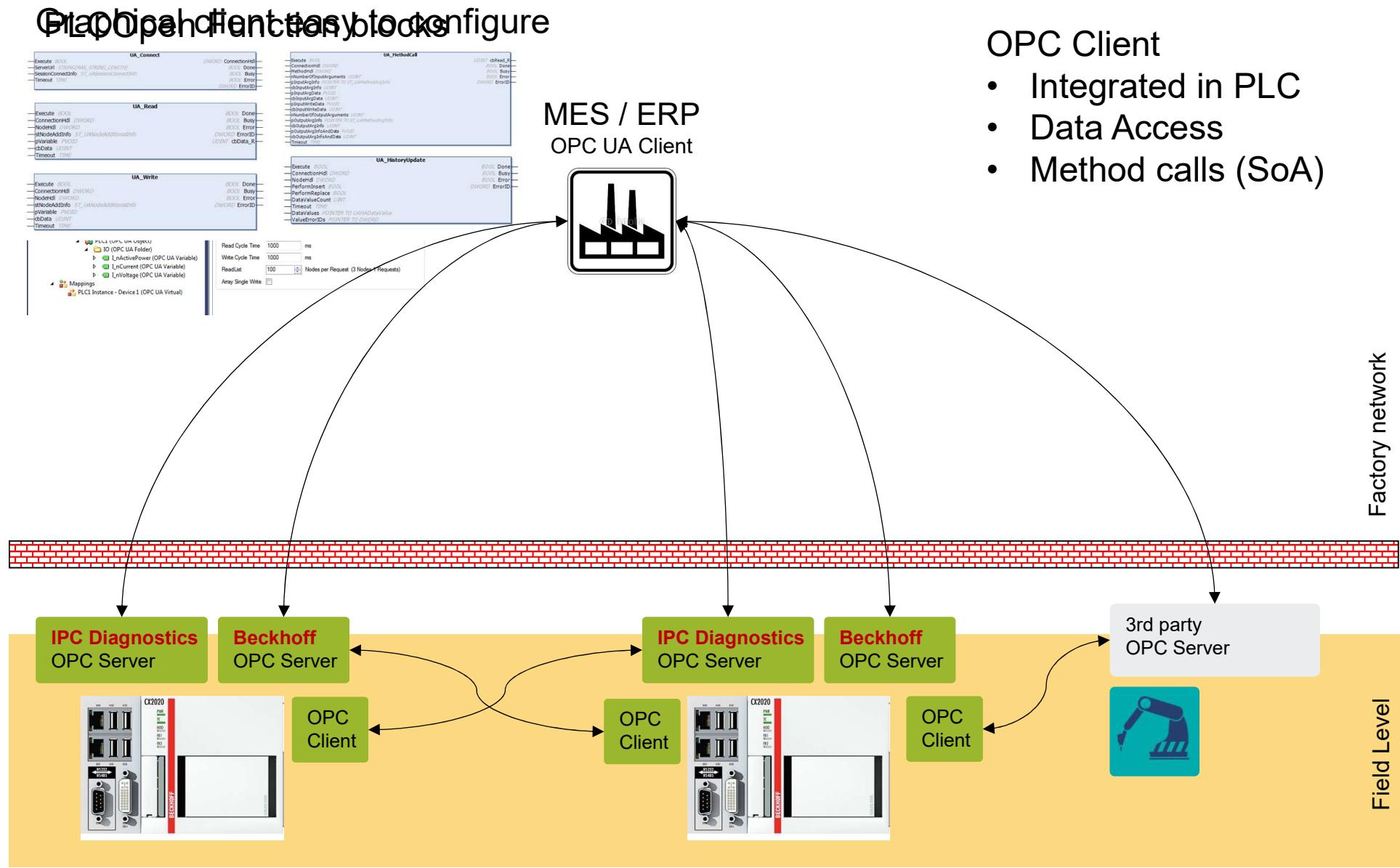
Name	Type
Views	0
Objects	0
Server	0
DeviceSet	0
Configuration	0
AlarmsConditions	0
HistoricalAccess	0
<b>PLC1</b>	0
DeviceManual	0
DeviceRevision	String
HardwareRevisic	String
Manufacturer	0
Model	LocalizedText
RevisionCounter	Int32
SerialNumber	String
SoftwareRevisor	String
Programs	0
Tasks	0
DeviceState	0
Types	0

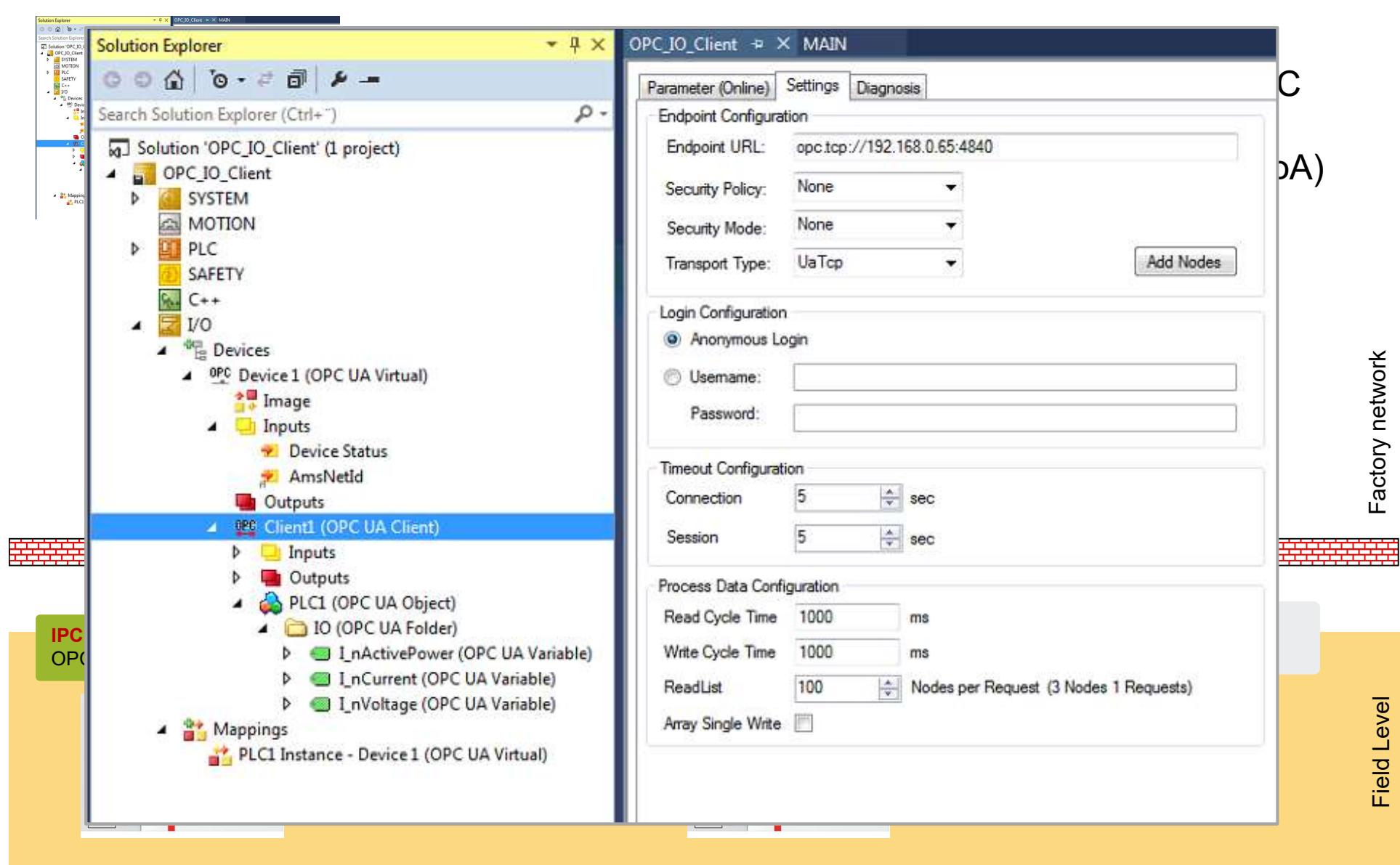
**Field Level:** At the bottom, two CX2020 modules are shown. The left module is labeled 'BECKHOFF' and the right one is also labeled 'BECKHOFF'.

OPC UA

# Integrated OPC UA Client

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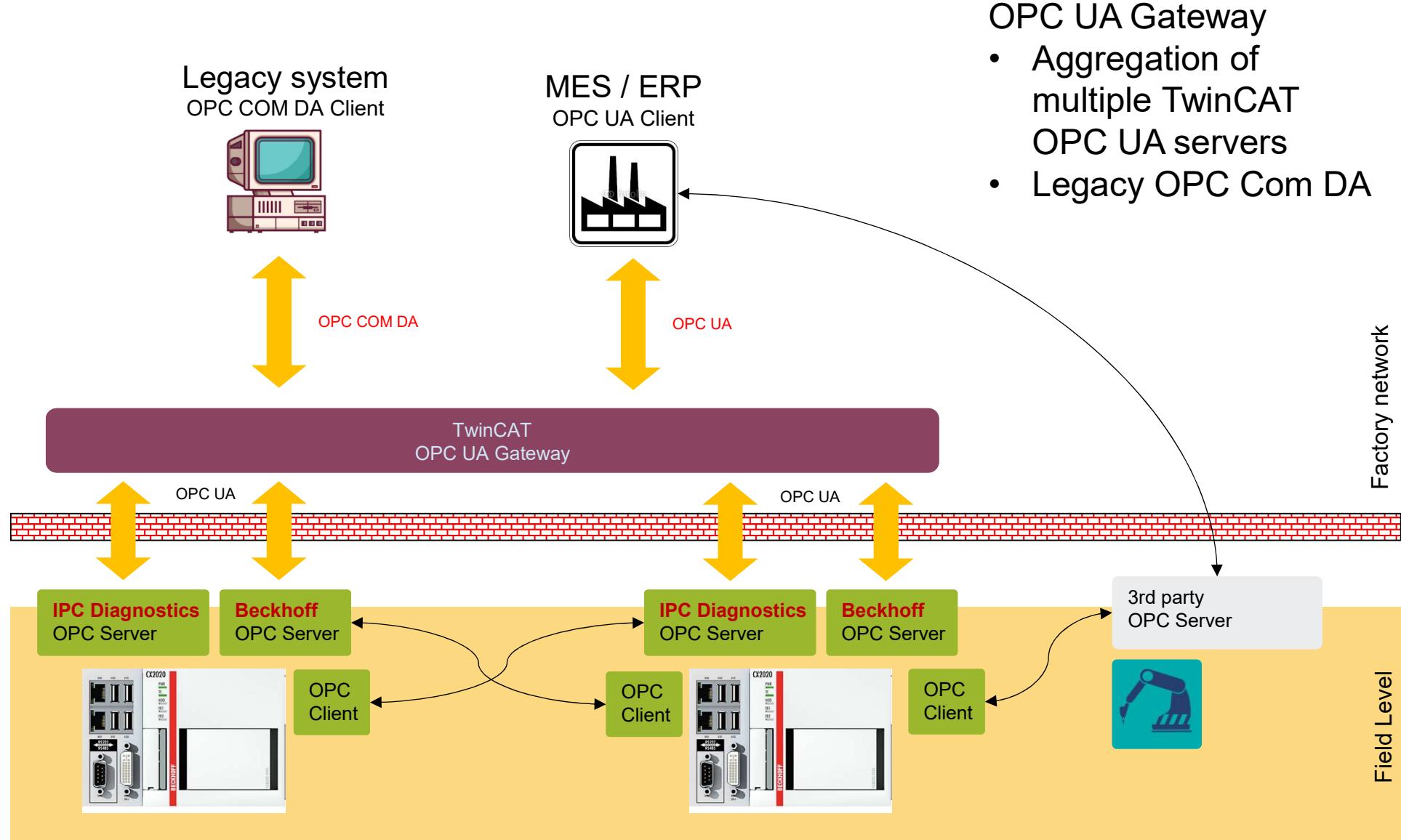




# OPC UA

## TwinCAT OPC UA Gateway

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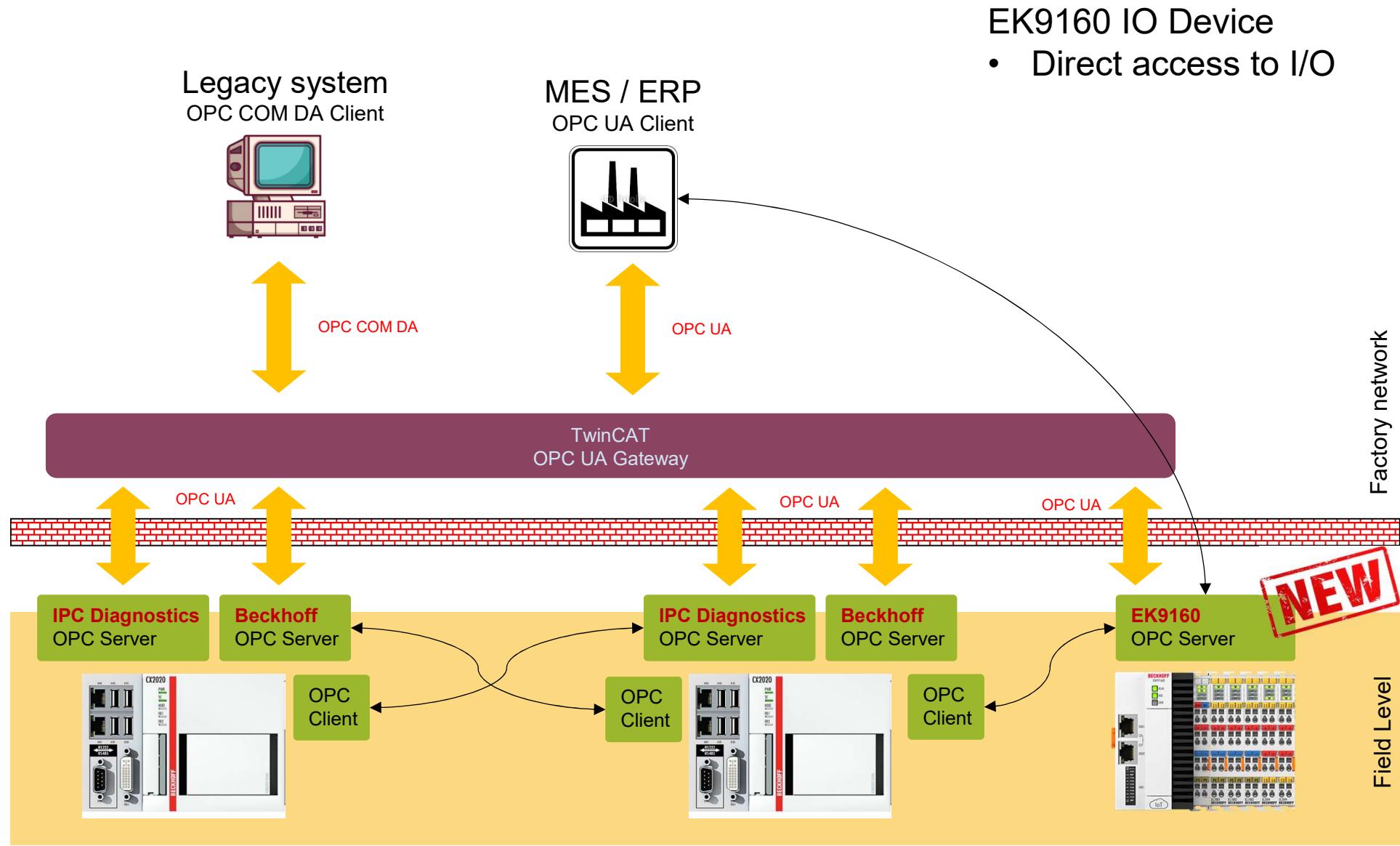




# OPC UA

## OPC UA IO Device

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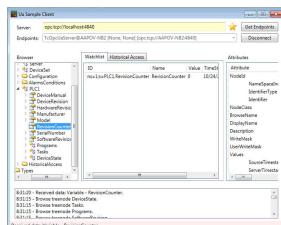


# OPC UA

## OPC UA Engineering Software

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Beckhoff  
Test Client

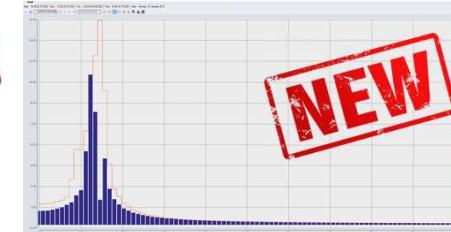


TwinCAT IoT  
Data Agent

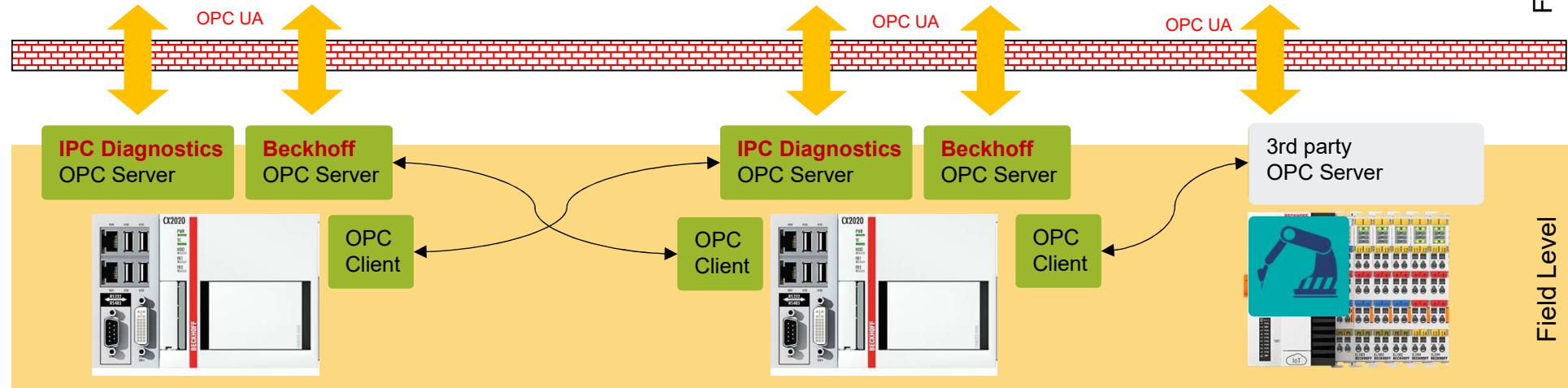
Beckhoff  
HMI



Beckhoff  
Measurement



TwinCAT  
OPC UA Gateway



- Beckhoff OPC UA Product overview
- **Beckhoff Measurement**
- Measurement Demo



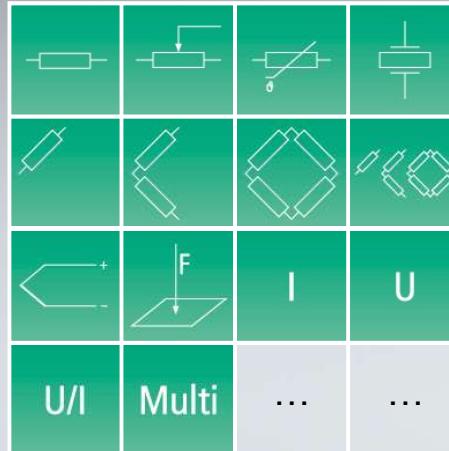


OPC UA

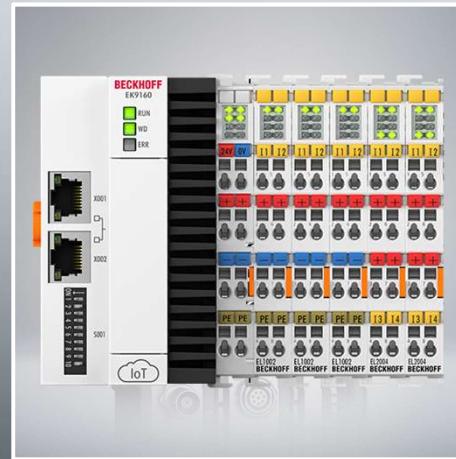
# Measurement chain from data acquisition to analysis

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Sensors



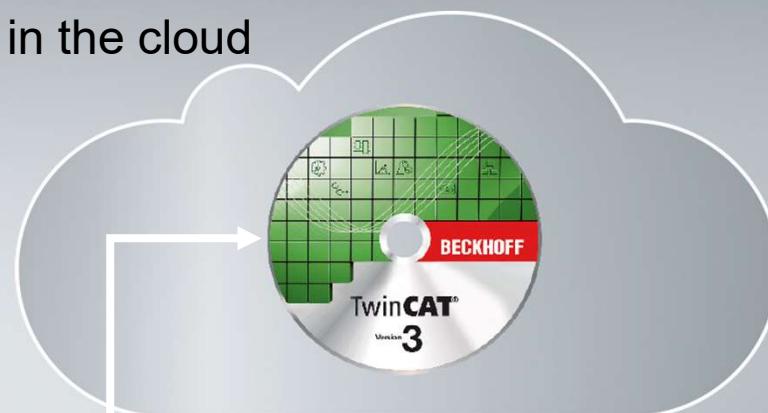
Measurement modules



Measurement technology bus



Measurement software  
in the cloud



Measurement software  
on premise

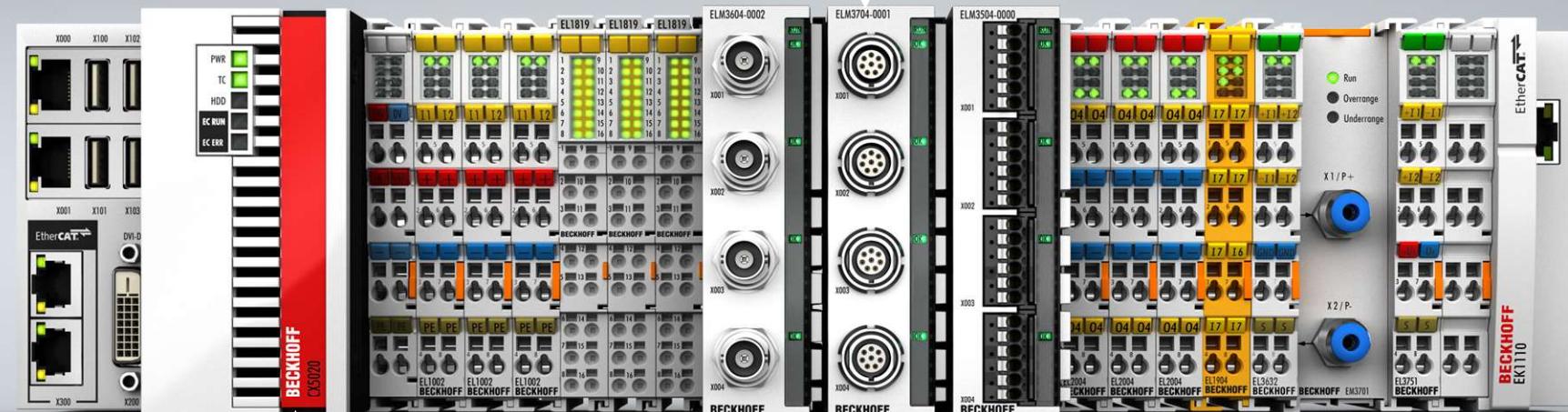




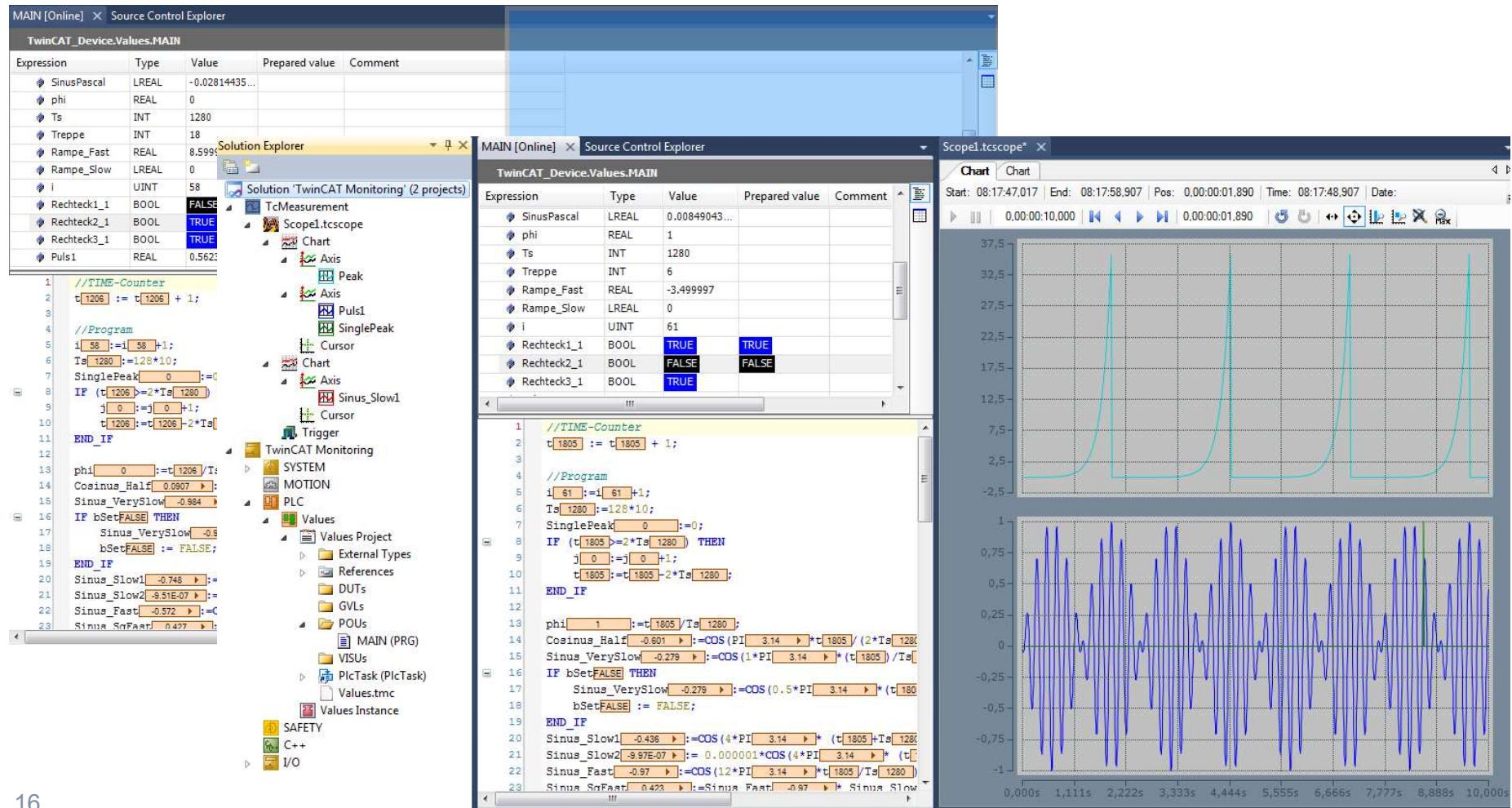
OPC UA

Measurement extends the control system

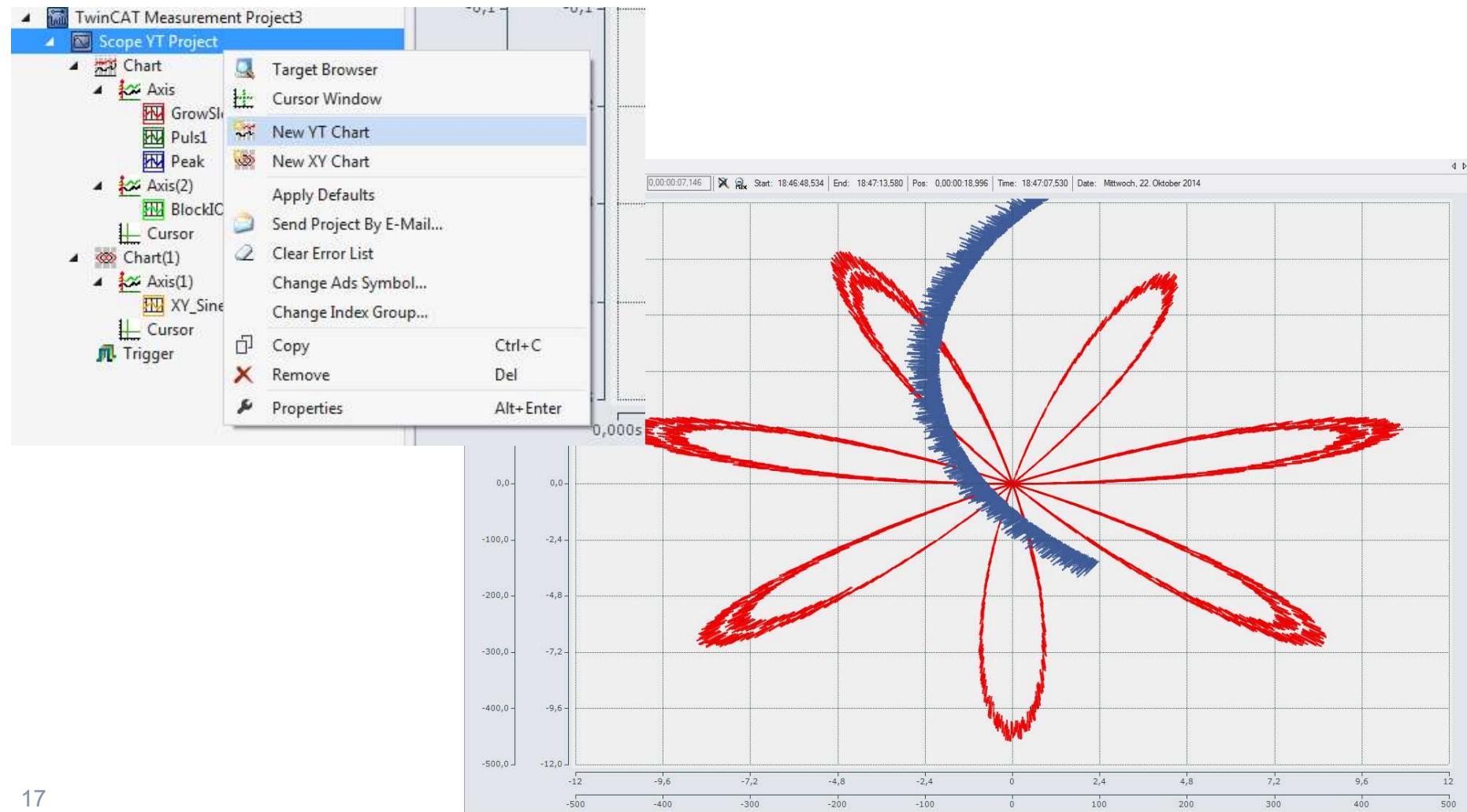
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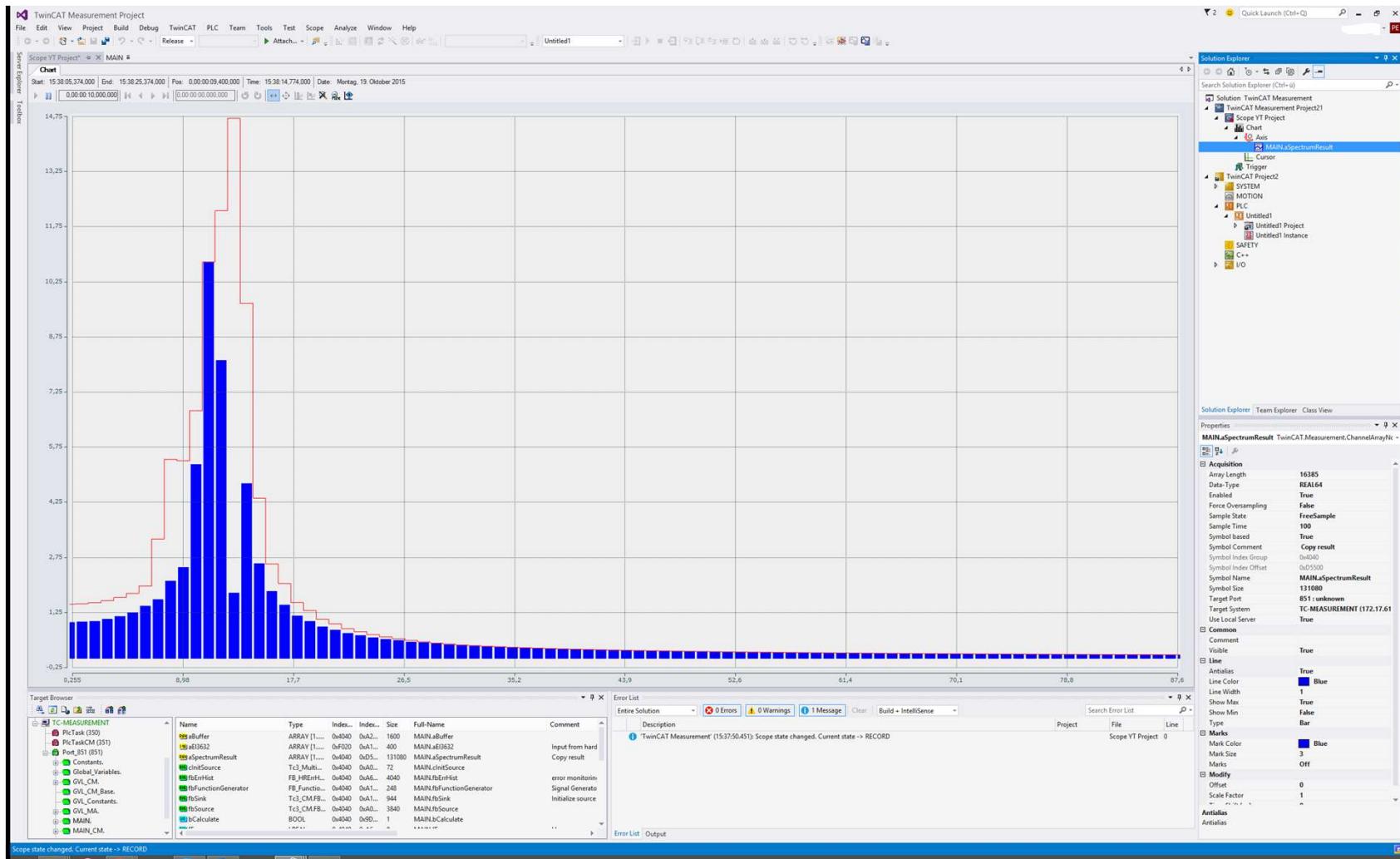
# Easy Engineering because of Docking-Windows



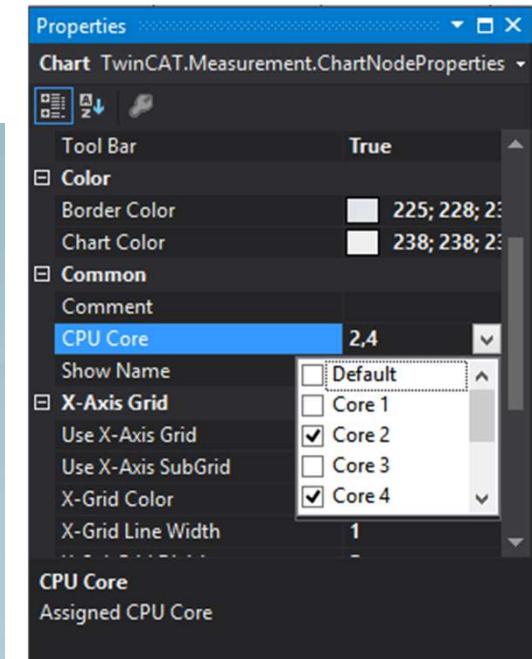
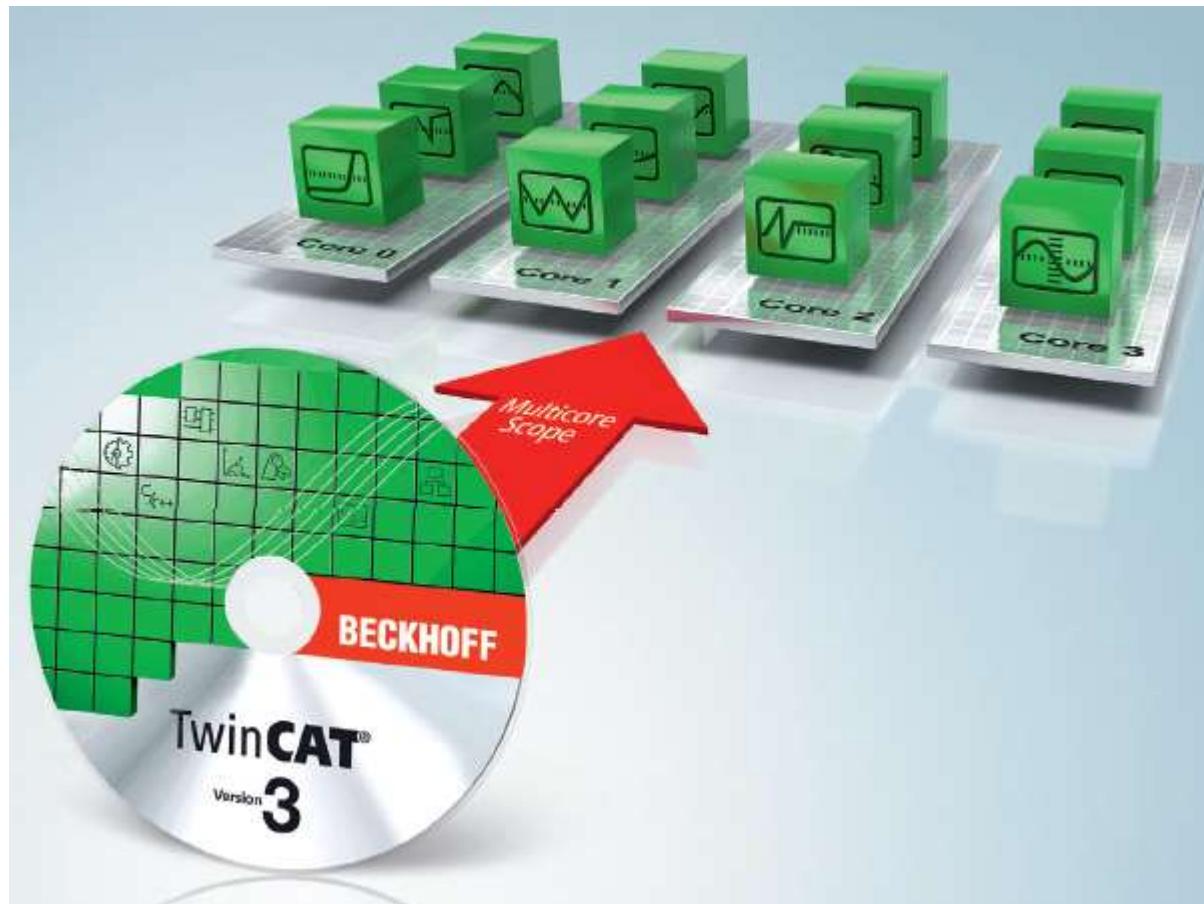
## Different Chart types - YT and XY Charts



## Different Chart types - Array Bar Chart ⇒ Condition Monitoring



Complex charting needs performance – Multicore Support and DirectX



- Beckhoff OPC UA Product overview
- Beckhoff Measurement
- **Measurement Demo**



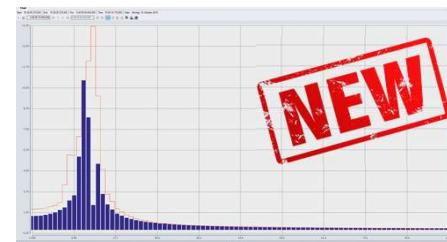


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## Demo: OPC UA Measurement

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Beckhoff  
Measurement



OPC UA

Beckhoff  
OPC Server





OPC UA

Questions? Contact us!

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## Beckhoff Automation Oy

[www.beckhoff.fi](http://www.beckhoff.fi)

**Its free! Its Open!**

- OPC UA is available to all Beckhoff devices
  - OPC UA popularity is growing
- keep in mind when choosing your Automation components

