

Cooperation of OPC Foundation and PLCopen Interoperability of the new generation

→ OPC Foundation and PLCopen have combined their technologies to form one platform and manufacturer-independent information and communication architecture. The mix of OPC Unified Architecture (UA) and IEC 61131-3 is thus the future-safe basis for the realisation of automation tasks.

The objective is to increase the reusability of controller- and visualisation modules and their communication and thus to considerably increase efficiency in the engineering process.

OPC UA FOR IEC 61131-3 (PLCOPEN)

The IEC 61131-3 standard defines various programming languages and a software model for the programming of control systems. The implementation of this IEC61131-3 software model on

an OPC UA server address space is defined in the common specification adopted by both organisations.

Thus corresponding OPC UA object types are created from declarations of function blocks in the PLC and corresponding OPC UA objects from instances of the function blocks.

BENEFITS

This results in the advantage that a control program, regardless of the controller on which it is executed and the OPC UA server via which the data is accessed, is always implemented in the same structure of objects in the address area. For UA clients, this results in always identical UA access at the semantic level. ■

Open

- > 450 members
- Platform-neutral
- All areas of application
- All connections

Productivity

- Industry standard
- Manufacturer-independent
- Interoperability
- Reliability

Collaboration

- Device Integration
- IEC 61131-3 / PLCopen
- Analyzer Device Integration
- ISA-95, ISA-88
- MTConnect
- Smart Grid
- Field Device Integration
- EDDL and FDT

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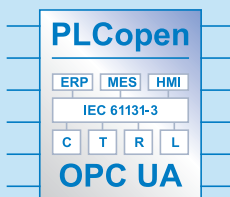


OPC UA – interoperability at the semantic level

COMPANIES PARTICIPATING IN THE SPECIFICATION



COMPANIES PARTICIPATING IN THE DEMO



Standardised communication “out of the controller-box”

Why OPC UA?

COOPERATION:

- PLCopen
- ISA
- MTCconnect
- FDT
- PNO
- HART
- FF

With Unified Architecture, the OPC Foundation provides the answers to the questions “How”:

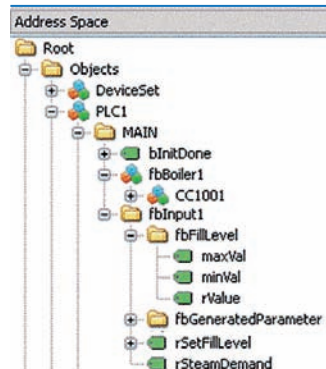
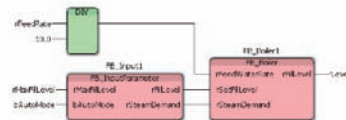
- How do you find your communication partner?
- How do you retrieve the information model from the communication partner, i.e. how can the available data, meta data and functions be determined?
- How do you carry out communication effectively, regardless of which operating system or programming language you are using?
- How can security aspects such as authentication, encryption and user-specific access control be ensured?

Unified Architecture offers the basis for universal and robust network communication, i.e. all necessary characteristics, such as the monitoring of timeouts and connection interruptions, encrypted communication and selectable communication protocols, are components of the OPC UA implementations.

Many additional organisations use UA as a modern, efficient transport layer. The PLCopen recognised the powerful possibilities very early on and describes the contents to be transported, i.e. “what” is to be exchanged: not only variables but, apart from methods, also the type descriptions and further meta data of the control logic ■

OPC UA – Standardised communication acc. to IEC 62541

```
FUNCTION_BLOCK FB_InputParameter
VAR_OUTPUT
    rFillLevel      : REAL;
    rSteamDemand   : REAL;
END_VAR
```



THE CONTENTS:

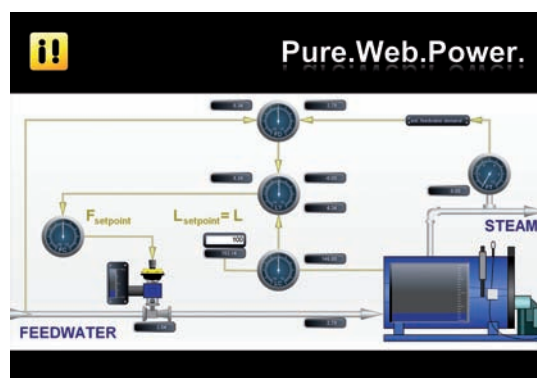
IEC 61131-3 PROJECT STRUCTURE WITH

- IEC61131-3 project with
- POU, FBs, structures
 - Tasks, resources
 - Variable names and values

THE TRANSPORT:

MAPPING IN THE OPC UA NAMESPACE

- UA server provides
- all IEC61131-3 information
 - List of the POU, FBs, structures etc.
 - FB declarations as UA object types
 - FB instances as UA objects



THE PRESENTATION:

TEMPLATES IN THE VISUALISATION

- Standardised access by UA
- Identical namespace
- Complete information model
- Reusable HMI templates
- Rapid, efficient engineering
- Transparent controller

MORE INFORMATION

- www.plcopen.org
- www.opcfoundation.org