SAEAUT UNIVERSAL OPC Server™

SAE – Automation, s.r.o., Nová Dubnica
Solid **A**nd **E**ffective partner for development
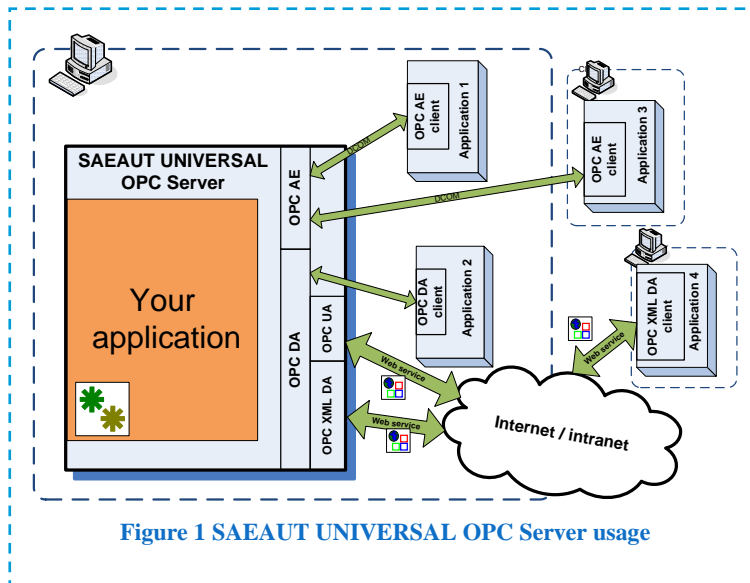of your products and industry automation

Interoperability for your applications

Figure 1 SAEAUT UNIVERSAL OPC Server usage

What stands for OPC software technology

- A way to **standardize not only a data transfer but also a data processing** – e.g. handling of alarms and events.
- **Software bus providing** an interoperability of different devices and software applications.
- A way to provide a communication of different devices with your software **according to standards and effectively**.
- A way **to spare on development** of communication drivers for your applications.
- Software using **client/server** architecture.

Why and when to use the SAEAUT UNIVERSAL OPC Server™

- If you need create an own application with OPC interface without detailed OPC standards knowledge.

- OPC servers wrapping different communication drivers are offered by many vendors. But, not always, it is possible to gain OPC server just for your device with acceptable costs.
- Training to OPC server applications development requires a considerable previous software development experience, much time and so also high costs even if you use one of conventional OPC server SDK's. SAEAUT UNIVERSAL OPC Server makes it much easier.
- SAEAUT UNIVERSAL OPC Server offers, from the point of view of OPC DA, AE, OPC XML DA a OPC UA standards readymade OPC server. You can add to that your own application (for example a device communication driver) by configuring and programming using standard software development tools.
- It removes a need to develop own configuring application for your OPC server.

To whom is it dedicated

- Software vendors who would like to add OPC DA, OPC AE, OPC XML DA, OPC UA, communication interfaces or the create special OPC servers without deeper knowledge of the OPC technology.
- Integrator companies providing different applications for data collecting, processing and visualisation from different devices.

How it functions

OPC server intermediates access to data from some data sources over OPC items

placed in its **address space to OPC client applications**. An application integrator uses a configuration application for defining of name, data type and other information for OPC data items and places them within a tree structure of the address space. Saved configuration of the address space uses **runtime application of the OPC server.** OPC client has possibility to browse address space for OPC items and choose some for its needs. In the SAEAUT UNIVERSAL OPC Server, data which are accessible as OPC items are provided by **your application**. It saves them to a non-structured shared memory of so-called **memory operands.** Operations above memory operands can be configured using configuration application of the SAEAUT UNIVERSAL OPC Server (Figure 2), eventually, their values can be affected from your program modules which are connected to the SAEAUT UNIVERSAL OPC Server runtime as dynamically linked libraries (**dll**). Your application is usually created as **combination of the programmed and configured functionality.** For easier applications, it is the whole application functionality can be only configured. If you create own dynamically linked libraries according to the defined rules, they can be used also in future as **configurable modules of the system**. As the configuring is usually less laborious than programming, **the productivity of new application creation is higher.**

SAEAUT UNIVERSAL OPC Servera components

- **Configuring application with user interface** to create, debug eventually to monitor of the running application.
- **Runtime application** without user interface providing configured and programmed functionality

Usage examples

1. OPC DDE server

Although OPC is thought of more powerful communication technology, the DDE communication is still used as well. It can be used for example for communication with the application MS Excel. Using SAEAUT UNIVERSAL OPC Server, you can create O*PC DDE Server* functioning as gateway between applications with DDE and OPC communication. DDE communication driver will be placed within your dll. Functions from this dll will be called from the SAEAUT UNIVERSAL OPC Server runtime core using configurable commands *Call.* The sequence of the function calls can be controlled by configured status automat.
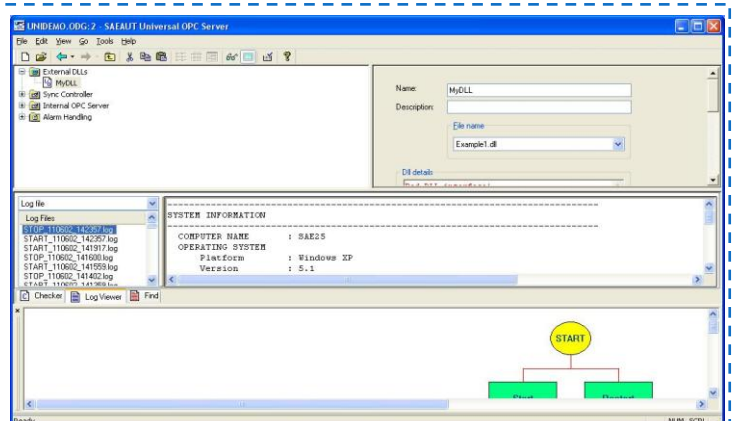

Figure 2 Configuration application of the SAEAUT UNIVERSAL OPC Server

2. I/O OPC Server

Vendors of the I/O modules for PC delivers often a communication ActiveX or dll to their modules. Using this software within your enhancing dll, you can create OPC server for this module easily. A communication with this module will be then possible trough OPC XML DA or OPC UA also over Internet. Except of this, data from this module can be processed on different ways, for example to filter, evaluate, generate events and alarms, to create parameterised messages containing actual values, or to start external

applications depending on actual values of the variable from I/O module. If relatively stable communication functionality will be placed within enhancing dll and the functionality of a next data processing will be configured, you can gain very flexible and easily configurable system working with data from the I/O module. You can use many configurable functions, The writing of actual values to log-files within parameterised messages is one of them.

Configuration application usage

Configuration application enables not only configuring of your specialised OPC server but also a verification of created configuration, browsing and editing of application using graphical editor and debugging of the application functionality. Runtime application has built-in logging of own functionality to log-files. Log-files can be browsed directly in the configuration application. Internal functionality of the runtime can be monitored over OPC interface using predefined system OPC items. Configuration application has a built-in OPC client which enables monitoring of the system as well as all other OPC items which have you configured.

Likeness with OpcDbGateway

Those who already worked with our application OpcDbGateway will be immediately able to work also with the SAEAUT UNIVERSAL OPC Server. From the point of view of configuration and integration there is difference that OPC UNIVERSAL Server does not contain internal OPC client and none functionality related to process databases. The functionality to connect external dll's has been slightly enhanced. New function to access the memory operands area and functionality to notify start and ending of the runtime application has been added.

Support

- Training for programming of your applications based on the SAEAUT UNIVERSAL OPC Server
- Creation of applications according to your layout.

SAEAUT UNIVERSAL OPC Server features

- **OPC DA** (Data Access) **3.0, 2.05, 1.0 a OPC AE** (Alarm and Events) **1.10** specifications implemented
- Installation package is enhanced with **OPC UA 1.01 wrapper**, enabling possibility to access data from OPC server according to the newest **OPC Unified Architecture** (UA) standard using web services or binary data over TCP/IP.
- Installation package is enhanced with **OPC XML-DA 1.01 wrapper** enabling communication over web services
- Your configuration can be created by user friendly configuration application containing:
  - built-in OPC DA client,
  - built-in graphical browser (editor) of the configuration
  - browser of the system log-files
  - built-in configuration verifier with context dependant finding of an error
  - installation package contains easy immediately running **demo**
  - runtime application enables logging of server functionality with definable depth
  - runtime application enables monitoring of actual status using system variables over OPC DA interface

- The „Find" function enabling looking for text expressions in an actual configuration by user friendly way.