Integration Maintenance-Software

ICS fit® PCS

PROJECT STORY

CUSTOMER PROFILE

The customer is a Swiss producer of vegetable oil and textured vegetable proteins.

STARTING POSITION

The customer has been using an ICS process control system in combination with a number of Siemens PLCs for years. In addition to the production control, the system also covers topics such as traceability, ERP connection, data acquisition and infrastructure. Thanks to the high flexibility of the system, additional plant components, tools and third-party equipment are continuously being integrated or connected via interface.

One of these extensions is the integration and connection of a maintenance software. In order to organize periodic maintenance and service activities, a web-based maintenance tool was evaluated by the customer. For its introduction, all control elements installed in the field must now be recorded and categorized in the tool. In order to reuse existing data, simplify future updates and define a uniform entry point, an interface between the ICS process control system and the maintenance software should be created.

Furthermore, the customer has requested an integration of the maintenance tool into the ICS process control system for the following reasons:
- reuse of the existing data such as element description, element numbers, I/O configuration, etc.
- central entry point for maintenance team via process visualization with advantages like:
  - search function for location of elements
  - ticket generation directly from the element dialog
  - direct link to the maintenance software
  - traceability thanks to messaging/audit trail
- extended production data acquisition

CONCEPT/SOLUTION

The maintenance software is connected via a REST API. The data content is serialized as JSON. For the implementation of the service the following interfaces and functions were implemented:

Creation and updating of elements
The process control system reads all elements connected to the system at startup. The elements, along with their associated symbols and descriptions, are transmitted to the maintenance software. If any changes are made, the element is sent again, and the description is automatically updated.

Creation and display of tickets
Via process visualization, tickets can be created and described for integrated elements. Upon confirmation, the ID and entered description are sent as a notification to the maintenance software. Additionally, the maintenance software can be opened via an embedded web browser, where further details can be added or assigned to someone for processing.

Central entry point
Thanks to the integration into the process visualization, the maintenance software can now be reached on every operating station of the plant. Additionally, the element search function makes it easier to find the desired element.


ICS
ACS

PROJECT PROCEDURE

In a first step, the interfaces were checked with a software for API tests. In this way, the basic functionality could be tested. The next step was to test the creation of individual elements from the customer test system in order to check the communication and data transfer between the ICS process control system and the maintenance software. Finally, the creation of tickets was switched to the productive system in order to work with live data. After successful completion of this test phase, all remaining elements were finally created.

Main challenges:
· time frame for implementation and commissioning
· interface definition with perspective on further extensions
· creation of the appropriate data structure
· interface testing with the productive system of the maintenance tool
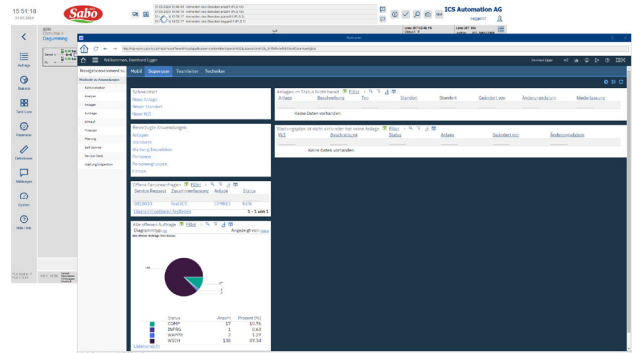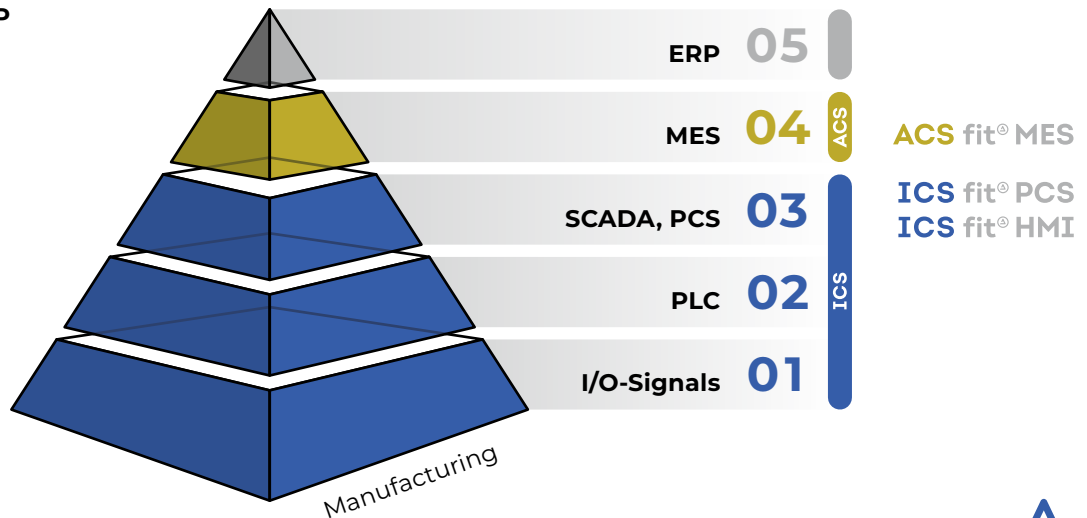· preparation of master data
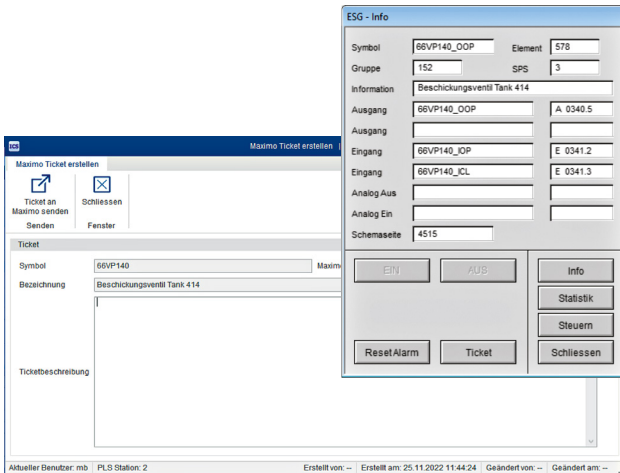
CUSTOMER BENEFITS

Thanks to the connection between the ICS process control system and the maintenance software, the customer now benefits from the following advantages:
· reuse of existing data
· automatic update of modified element descriptions and properties
· easy and automatic import of new elements during modifications/extensions
· creation of tickets via visualization
· easy operation and navigation
· audit trail/traceability

ONE-STOP-SHOP

ERP	05
MES	04 ACS fit® MES
SCADA, PCS	03 ICS fit® PCS ICS fit® HMI
PLC	02
I/O-Signals	01

Manufacturing

ICS Automation

+41 71 955 04 50 | info@ics-automation.com | ics-automation.com

ICS
ACS