

PLC - Raspberry PI - Web Technology - The new way to automation

Simple, intuitive, flexible - web-based visualisation, observation and monitoring of machines and production plants.



XAPI WebXSolution connects your machines and production plants to a virtual world, with the goal to analyse processes online and in real time, to monitor all functions completely and continuously and to react immediately in case of problems.

COOPERATION IN REAL TIME

For a complete information management, **XAPI WebXSolution** displays all relevant information in a clear and concise way in the visualisation, which can be accessed via the Internet from anywhere in the world with a common Internet browser on a laptop, tablet or smartphone. The result is: interactive and fast action beyond the boundaries of the company is always guaranteed.

The figure shows the visualisation and monitoring of the silo states: process data and information are read out from the PLC and displayed almost live in the web application with a few seconds delay.

TRANSPARENCY AND ACTUALITY

Clear structuring, easy handling and operation are the most important criteria for a smooth production flow of modern production processes. The communication interface between man and machine is also of central importance. Different parts of the company must always be able to access data from the production process. It must be possible to view and evaluate process data flexibly and quickly. The traditional PC is becoming less and less important. Mobile devices are a means of reducing reaction times and ensuring permanent availability of information. Modern technologies, such as the use of a web browser, are sufficient to display, analyse and control a single machine or the entire production sequence on one user interface.

RASPBERRY PI

It is a mini-computer solution that can handle everyday tasks as well as unusual projects. As hardware, the Raspberry Pi is available as a new approach to the world of automation and is used as the basis for simple and fast implementation of automation solutions. The low power consumption, the manageable acquisition costs and yet an infinite number of possible uses creates completely new perspectives and freedom for the realisation of control concepts in automation technology. The mini computer in the size of a credit card is already successfully implemented in **XAPI** projects.

ARCHITECTURE

VISUALISE AND CONTROL

- The visualisation and evaluation of the production plants / machines is done with the Web Client. The latter is given access to the web server via the web browser and presents the user interface to each authorised employee in a platform-independent manner and optimally adapted to the existing screen resolution.

PROCESSING PROCESS DATA

- The **Raspberry Pi**, on which the individual server components are installed, serves as the communication centre between PLC and user. It makes optimum use of the available resources and processes even large amounts of data almost in real time.
- The web server is the heart of the communication to the outside world. It provides the user interface as a web runtime using JavaScript and HTML5 for any end device. The data is distributed to the visualisation clients without delay and with low network load.

PROVIDE PROCESS DATA

- **By connecting the PLC to the Raspberry Pi**, process data is read from the PLC via the network and displayed almost live in a web application with a few seconds delay.



PURPOSE / USE

- **Graphic overview** of the entire **plant** with **live Update**.
- **Location-independent access** to all production data for visualisation and monitoring.
- Data is available on different terminals and all functions can be monitored seamlessly and continuously.
- **Simple and intuitive analysis tool** and user-friendly operation: with 1-click operation, all process and machine data are visible and can be analysed online and in real-time.
- The **safety** and **productivity** of the plant as well as maintenance are increased in the long term.
- An **easy tool** for development, service, commissioning and permanent plant monitoring (maintenance).
- The module checks at all times whether server applications, communication channels and components of the overall system are working smoothly. Malfunctions become immediately visible (**alarm system**).

TECHNOLOGY

- The centralised infrastructure enables low hardware, installation, maintenance, support and licensing costs.
- No client installation: any device with a web browser can be a client (tablets, smartphones...) - without plug-ins.
- It is operated with standard browsers (without Java Applet).
- Software documents and data are located on the web server.

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