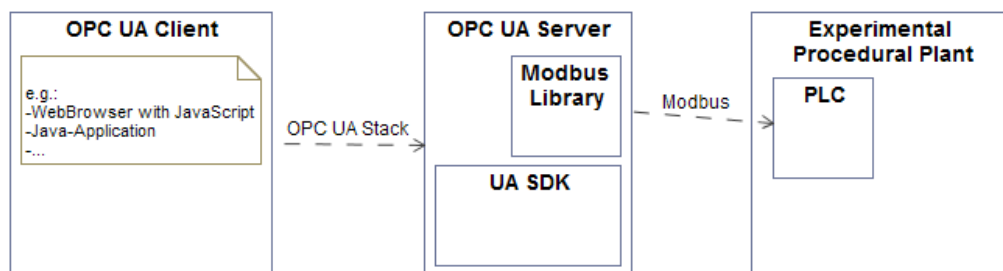


Design and Implementation of an OPC UA Server

The use of web-enabled mobile devices in automation becomes evermore important. Similarly, requirements on speed and security increase, when transferring process values.

At the Institute of Automation of the Technical University Dresden an experimental process plant is being operated, which can be monitored and controlled by using an XML DA server. XML DA allows controlling the plant over the Internet, but at the expense of speed. Furthermore, a safety concept is not implemented. The new UA standard aims to overcome these disadvantages.

For this reason, the objective of this student research thesis is the development of a UA server to monitor and control the plant, based on a Java SDK.



The implemented solution includes accessing the plant and providing process values for clients. It also includes a history of process values and access control for user groups. In addition, interfaces have been implemented to increase functionality.

Furthermore, it is shown that faster provision of process values for clients is possible by using optimized access methods to the plant. In addition, compared to the existing XML DA solution, an improvement in communication speed between client and server is shown.

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