ISO Software Systeme
Trust in IT-Engineers

Success Story

Siemens Industrial Edge

Paradigm shift in Automation Engineering

In the age of big data, future on demand software will come to the data and not the other way around. ISO Software Systeme developed a publisher for industrial edge Apps, i.e. a tool that helps App developers to bring their software to the shopfloor easily and securely.

The Siemens Factory Automation division has collaborated for many years on topics such as digital factory, virtualization or hosting with their software development partner ISO Software Systeme. Siemens commissioned the ISO Software Systeme to create a concept for the development and virtualization of automation solutions at their location in Fürth. These solutions were to be developed and sold via a generic platform for Edge computing.
An open source prototype for data mining was developed in the Scrum process by an agile ISO team across three locations, and convinced Siemens that this project should be continued to create a mature product.

The Edge platform brings software to data

Thousands of sensors, switches or operation panels within a modern industrial production produce a huge amount of data. An optimal analysis of this data promises tremendous potential for improvement in product development. “Predictive Analytics” is used, which is a subdiscipline of data mining that focuses on predicting future developments. In the context of big data, this method has become indispensable because it is a tried and tested technique to analyze large data quantities and produce relevant conclusions. By using different variables, very exact predictions can be made about future incidents.

A run-of-the-mill software for plant control cannot evaluate such large amounts of data; this is exactly where the paradigm shift takes place.

The applications for the operation of industrial plants are virtualized and outsorced to the Edge platform, a decentralized node with high computing power. The advantage: The Edge platform ensures that software services for plant and machinery are made available at factory level precisely when needed. For example, software for scheduled maintenance.

Responsibility in the early stages of the project

ISO Software Systeme was responsible for staffing the roles of Scrum Master and the Product Owner (PO) for the development of the Edge platform in the early stages of the project. With the transition to product development, project management changed over from ISO Software Systeme to Siemens. Besides the Scrum Master and the PO role, seven additional ISO employees, with end-to-end responsibility, were part of the project. In the meantime, this shared project has been completed. Siemens has since taken over the further Edge technology development and it has been adapted to App Publishing.

Contact

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The Project Industrial Edge

The goal of the project was a proof of concept for the virtualization of automation solutions to develop a generic platform for Edge computing in factory automation.

Project Phases

Architecture – demo – implementation/ integration at the customer with several Scrum iterations to ensure continuous reassessment of the project

Project Management

Both on-site and off-site (daily meetings, in-house development, demos and rollout performed on premise)

Frameworks/Technologies

Siemens MindSphere
Java/Python/Go
Docker
Enterprise Architect
NodeRed
Mosquitto
Jenkins

Project Team

One architect in the planning phase
Three developers in the prototype phase
Six developers off-site
One Scrum Master for the implementation phase
Cooperation with multicultural teams (ISO: Germany and Poland; Siemens: Germany, Turkey and India)

Project Methodology

Agile service contract (daily stand-up, retrospective), Scrum Master provided by ISO, project management done by the customer