

Connection of ZF Control System to the New Control of the Electric Monorail System

"With the successful implementation of construction stage 1 – Renewal and optimization of ECS – the foundation stone has been laid for all further construction stages."

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ZF Friedrichshafen AG
Passau

Platform:
Angular 5.0, ZF Stako, Web services, Active Message Queue

Project:
Renewing of the communication between the ZF IT systems and the ECS control system

Kontron AIS services:
Consulting, project management, specification, implementation, commissioning



Goals

- Connection of ZF control system after replacement of the ECS control system
- Replacement of old visualizations by up-to-date Web GUIs
- Use of ZF IT standards



Challenge

- Very tight schedule
- Final commissioning during two-week operating break
- Coordination of the physical construction work with the IT changeover



Result

- Timely completion of visualizations and services
- Improved reliability through the use of high-availability servers and current technologies

The existing electric monorail system (EMS) of ZF Friedrichshafen AG at the Passau plant 2 was modernized in several stages. In addition to the structural conversion work, this also entailed changes in the IT landscape and data communication. The communication between the ZF IT systems and the EMS control system had to be renewed as the existing control system was replaced. In the course of this conversion, the historically grown IT applications were also updated to the ZF standard IT architecture.

Successful completion phase 1

The existing application structure in the EMS environment was gradually be replaced by ZF standard structures. The replacement takes place in several steps, parallel to the physical construction phases. The focus here is on guaranteeing the functionality of the individual applications so that production is not impaired.

In Phase 1, which has already been implemented, the connection to the EMS-PLC was implemented on the basis of the ZF standard connector. The ZF standard connector is an application that allows messages to be exchanged between pieces of equipment and IT systems using Apache ActiveMQ. The data required for the exchange with the ZF IT world was defined together with the supplier of the EMS PLC (Siemens AG) and the necessary messages were implemented. In addition, web-based visualizations were implemented using Angular 5.0. They instruct the operator, for example, which paint color is to be used for an aggregate or display packaging instructions. Services monitor the arrival and departure of the aggregates at certain positions and fill existing displays for capacity planning at the end of the conveyor system.

The commissioning of the changes could be carried out successfully in the narrow time window of the summer production break and thus without obstructions of the production.

The next expansion stages will require further changes in the IT landscape. Other outdated applications will be replaced by standard technologies. ZF, Siemens and Kontron AIS will jointly define the new use cases and implement them again successfully, on schedule and with minimal impact on the production.

About ZF Friedrichshafen AG (Passau site)

ZF Friedrichshafen AG, headquartered in Friedrichshafen, is one of the largest automotive suppliers and one of the world's leading companies in the field of driveline and chassis technology. More than 4,000 employees work at the Passau site, from where the Industrial Technology Division is coordinated. This includes the development and production of transmissions and axles for agricultural and construction machinery as well as drive technology for forklifts, rail and special vehicles.

For more information please visit: www.zf.com

About Kontron AIS GmbH

We set the benchmark in industrial software – for more than 30 years and with an experienced team of over 200 employees. Our proven software products and customized digitalization solutions enable machine and equipment builders as well as factory operators to break new ground in automation and secure long-term competitive advantages. Together with our customers we implement worldwide cross-industry, intelligent digitalization strategies and solutions for the smart manufacturing of tomorrow.

As a subsidiary of the Kontron AG, we offer integrated, end-to-end IoT concepts consisting of hardware and software as well as worldwide project management, service, and support thanks to a global network.

For more information please visit: www.kontron-ais.com