

## DATA-DRIVEN PRODUCTION

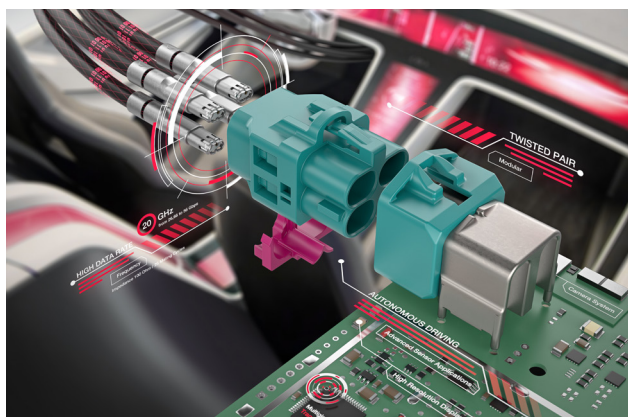
Improving quality with real-time data and anomaly detection



**Challenge:** Rosenberger, a leading international manufacturer of high-frequency technology, aimed to maximize product quality. To identify parameters responsible for quality deviations, real-time production data needed to be linked with operational processes. This required capturing, integrating, and virtualizing up to 120 data types per production line. Initially, data was transferred in batches to the cloud once a day to train machine learning models for anomaly detection. However, timely intervention in production and inventory processes demanded continuous monitoring via near real-time data streaming.

**Solution:** To enable the required real-time insights, Rosenberger implemented a modern data architecture. Production data is transmitted to the cloud via streaming ingestion, where it is permanently stored and made available for analysis. Live data visualization provides transparency into ad-hoc production issues. Simultaneously, the data is continuously analyzed in machine learning models to detect anomalies. This data-driven approach allowed Rosenberger to identify quality issues early, which previously went undetected during manual inspections, while also enabling the company to gain near real-time insights into production and process data, significantly reducing scrap.

**Work packages:** Integration of production systems; Use of Softing DataFEED Server to provide system data via an MQTT broker; Preprocessing and harmonization of data at the edge; Streaming of data to the Rosenberger Azure Cloud; Routing the data stream to a Databricks cluster where machine learning models are deployed.



An example from an innovative portfolio: Rosenberger's high-speed data connector systems, used in driver assistance systems and autonomous driving applications, are applied in components such as cameras and displays.

(Source: Rosenberger)

### About Rosenberger

Rosenberger is a globally active provider of connection solutions in high-frequency, fiber optics, and high-voltage technology. Its solutions ensure reliable transmission of signals, data, and energy in demanding technical applications – ranging from telecommunications and automotive to medical, industrial, and aerospace technology.

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