Quality Whisperer

Britta Hilt

Self-learning Artificial Intelligence improves production quality in complex variant production:

Despite all quality checks during production, there are negative end of line tests. Even a small percentage is too much if you consider 11,000 products / day. Therefore, self-learning Artificial Intelligence discovers complex root cause in high variant production process. Thus, workers can stop disturbing factors, responsible for minor quality. Especially in 24 / 7 production, it is crucial to quickly discover and remove root cause for minor product quality.

Initial Situation

An international automotive supplier produces 11,000 car components daily in one plant, having 700 product variants. Each product which can consist of up to 600 parts is 100% tested in every technical detail before shipment. Although critical production process steps are checked again and again, and only those components continue following production line processing, which meet specification, there are test failures at end of line testing.

Project Description

The international automotive supplier´s intention with this digitalization approach is to deliver fast information to people who are responsible for decision processes to keep a plant in an optimal output with high quality products.

Solution

Self-learning Artificial Intelligence solution Predictive Intelligence discovers root cause for minor quality in a reliable and fast way. Speed is important because production runs 24 hours / 7 days a week. The sooner the real reasons for mal-functions are discovered, the sooner activities can be implemented to avoid bad quality. This saves a lot of time and reduces significant waste. The target is to reduce waste in certain manufacturing domains by 20%. The key success factor is the fast detection mechanism within the production chain delivered by Artificial Intelligence.

Complex root-cause findings can be reduced from several days to hours.
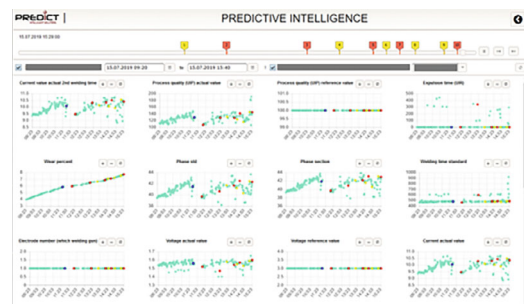
Figure 1: Self-learning Artificial Intelligence: Predictive Intelligence

Industry 4.0 –Aspects

End to end production process data is available in a data lake. This traceability is used by self-learning Artificial Intelligence algorithms to discover root cause for minor quality or waste. Continuous learning ensures that AI solution continues to be reliable, even though, production processes are changed.

Standardization Approach

Thanks to self-learning algorithms, which are realized by Artificial Intelligence, this is a highly scalable solution, even for other complex production processes with high variations.

Britta Hilt

Britta Hilt started at 1995 at IDS Scheer as international consultant. She worked for IDS Scheer until 2010, first as Core Service Manager for ARIS Software Trainings, then, as Senior Manager for ARIS Product Consulting and Solution Manager for ARIS Solution with top sales turnover. Then, Ms Hilt took over responsibility in Product Management for ARIS Platform products with top sales turnover and as Director in Product Management and Solution Marketing at IDS Scheer / Software AG. In 2011, she became co-founder of IS Predict and since then, has been Managing Director, being responsible for Marketing and Sales.