



SIEMENS

Ingenuity for life

Analytics and Artificial
Intelligence Services

Advanced quality prediction enabled by the power of artificial intelligence

Closed Loop Analytics Services

Today's digitalization initiatives target risk reduction and optimization mainly from the availability perspective. Management and optimization of operations are a bottleneck in the production. Bringing asset performance to the next level needs to be ensured. With Closed Loop Analytics Services, you can increase the overall effectiveness of your plant – based on data analytics and artificial intelligence.

Convincing value-adds



Save time during test scenarios with the power of trained algorithms

Algorithms save time-consuming test scenarios, e.g. by introducing dynamic testing with the power to predict the quality for each produced item.



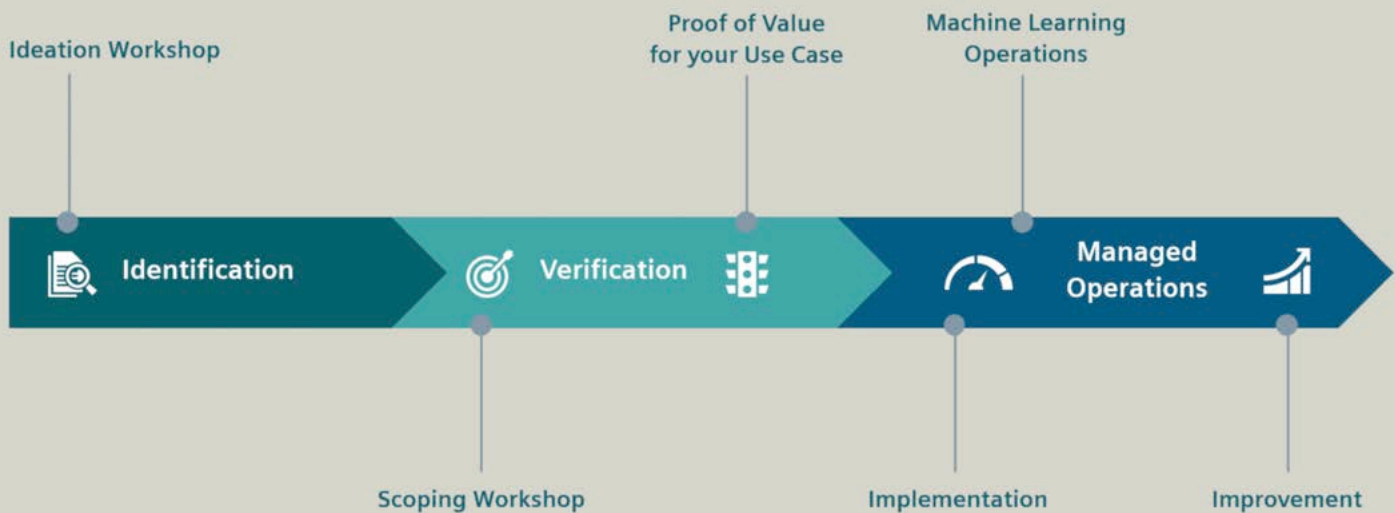
Increase throughput by improving the first pass yield

The first pass yield can be improved by increased transparency with artificial intelligence. Our AI solution can recommend production parameters corrections or predict false positive results to enhance your throughput.



Reduce your operational expenditure while staying flexible

The AI solution can reduce your running costs by introducing virtual testing. Existing manual test steps (e.g. visual inspection) can be automated and non-conformance costs can be avoided, e.g. by expanding test coverage where human testing is too expensive.



The power of artificial intelligence makes quality predictable

Service bundles to put your quality prediction onto next level:

Closed Loop Analytics Services is based on an AI solution to predict the quality of products using relevant production data. The solution is implemented with four steps. Each step is offered as an individual service bundle.

- **Ideation Workshop**
Understand customer's needs and shortlist opportunities. Form digitalization awareness to address requirements for production process.
- **Scoping Workshop**
Develop model matrix with AI relevant data sources and validate action fields for Proof of Value.
- **Proof of Value for your Use Case**
Realization of a feasibility study with customer-specific data incl. data engineering, data exploration, data visualization, recommendation of a machine learning model and roadmap.
- **Managed Operations**
Implementation of the required hardware, software and AI solution at the customer site. The whole AI solution is running on an Edge Device, can be monitored remotely and improved if necessary.

Reference: Siemens Electronics Works Amberg, Germany – Less testing, more efficiency

At the Siemens factory in Amberg, more than 16 million SIMATIC automation components are being produced every year. X-ray testing was a bottleneck, but necessary to ensure quality.



- An algorithm was developed to predict the likelihood of production defects to minimize the number of x-ray tests to only test when required.
- Continuously running algorithms are integrated into the production process on-site and are constantly re-trained.
- Facts that speak for themselves: Proposed test volume reduction up to 30 percent and savings of half a million euro investment costs.

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