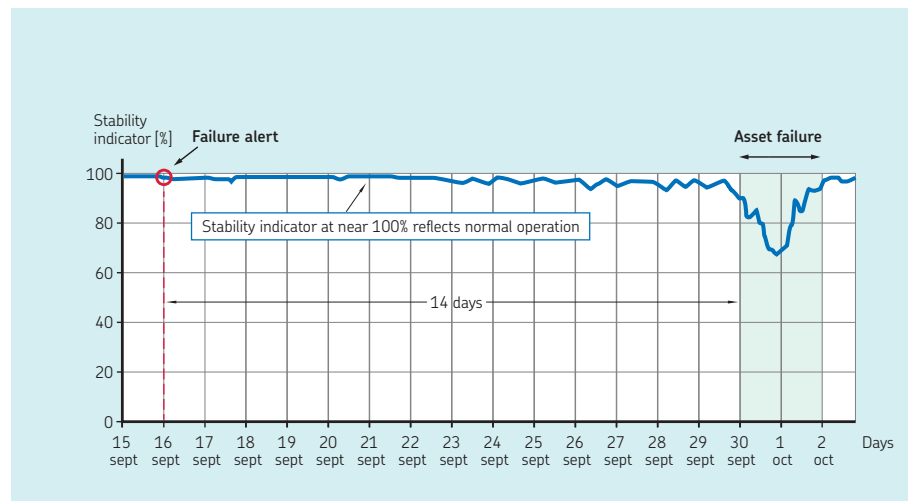# SKF Enlight AI

Improve uptime, efficiency and reliability with AI-driven industrial analytics

SKF Enlight AI is an AI-driven industrial analytics solution for the process industry that lets you detect evolving asset failure. It uses Automated Machine Learning (AutoML) to analyse data from hundreds and thousands of connected sensors to give you early warnings and root cause insights. Information that helps maintenance teams work proactively. With time to troubleshoot, plan repairs, order inventory and schedule downtime, you can avoid unplanned stops. SKF Enlight AI is also an integral part of SKF's Rotating Equipment Performance bundle.

Automated Machine Learning: Illustration of the SKF Enlight AI failure prediction dashboard.

Shifting maintenance work from unscheduled to planned improves uptime, yield and OEE while preventing expenses associated with overtime and emergency stock procurement.

AutoML for early anomalous behaviour detection

Real-time asset data is streamed to SKF Enlight AI cloud and is subsequently analysed by Automated Machine Learning and deep learning algorithms. These algorithms are designed to detect abnormal patterns in the data, automatically correlate them and eventually to flag these anomalies to the end user.

In the event of evolving failure identification, technicians are alerted via email, SMS or SKF Enlight AI's easy-to-use dashboard. The alert includes information about the suspicious pattern detected, which can contribute to the root cause analysis.

Benefits of AutoML

Powered by Automated Machine Learning algorithms, SKF Enlight AI is easily deployed at scale and is sensor, software, hardware and asset age agnostic.

SKF Enlight AI's solution is based on automating the manual and cumbersome tasks of human data scientists. The Machine Learning models are auto-selected out of a pool of dozens of different modeling algorithms and later, auto-calibrated and optimised for best performance. Post deployment, continuous auto-validation processes verify that the high accuracy and performance of the models is preserved while working in production analysing real-time data.

The automation of these processes results in model training time of minutes or seconds as opposed to hours and even days in manual Machine Learning. This improves the quality and deployment speed and enables a scalable solution.
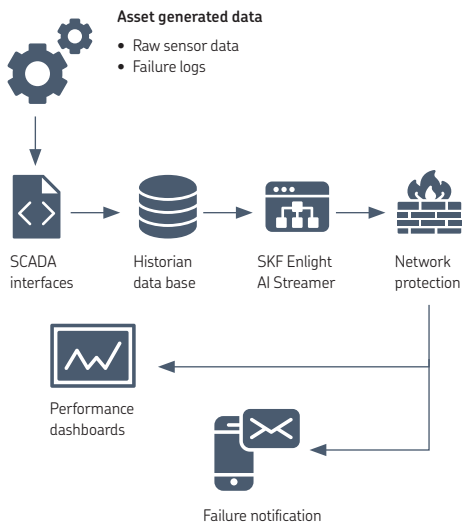
Industry compatibility

SKF Enlight AI is designed to best serve the process industries, including but not limited to:
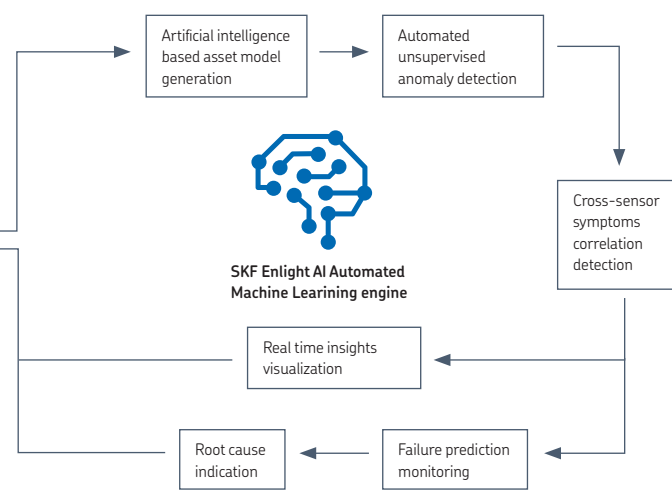
- Cement
- Chemical
- Metals and mining
- Oil and gas
- Pulp and paper
- Wind

System architecture

Customer facility

SKF Enlight AI, predictive maintenance service

Asset generated data
- Raw sensor data
- Failure logs

SCADA interfaces → Historian data base → SKF Enlight AI Streamer → Network protection

Performance dashboards

Failure notification

Artificial intelligence based asset model generation → Automated unsupervised anomaly detection → Cross-sensor symptoms correlation detection

SKF Enlight AI Automated Machine Learining engine

Real time insights visualization

Root cause indication ← Failure prediction monitoring

Features:

Big data analysis

- Capable of processing big data from thousands of sensors
- Interfaces and draws process data from Historians and SCADA systems
- Analyses both process data and condition indicators extracted from vibration data
- Cloud based SaaS

Machine Learning

- Automated Machine Learning (AutoML) that accelerates model training and deployment
- Anomaly detection and abnormal events correlation
- Continuous validation and maintenance of models without engineers or data scientists in the loop
- Agnostic to machine, software, hardware or asset age

End-user deliverables and visualisation

- Real-time failure predictions
- Correlated sensor abnormalities for root cause failure identification and events contextualisation
- Easy-to-use dashboards present clear visualisation of asset health
- Alarms sent via email, SMS or dashboard