CASE STUDY

Predictive Maintenance
RapidMiner reduces failures, downtime, and cost

Lufthansa Industry Solutions

Customer
Lufthansa Industry Solutions

Location
Germany

Industry
Aviation

RapidMiner’s Predictive Analytics Platform makes maintenance and repair services more effective & efficient.

The Company
Lufthansa Industry Solutions, Germany’s largest service provider for aviation, logistics, and transportation are focused on the maintenance and repairs of airplanes for Lufthansa, Eurowings, and other airlines.

The Challenge
In the area of aircraft maintenance, it is vital to be able to predict airplane component or equipment failures and maintenance needs in order to reduce costly downtime, avoid unplanned out of service times, and to optimize service crew schedules. With over 1,000 airplanes to be maintained, Lufthansa had hundreds of thousands of log entries, sensor data, error messages, and maintenance reports that needed to be evaluated in order to accurately predict & prevent failures.

The Solution
Lufthansa acquired the RapidMiner Predictive Analytics Platform to offer advanced analytics services to their customers. Using RapidMiner’s real-time analytics of time series data, feature extraction, machine learning for regression, classification, and frequent item set mining, on the available airplane and service data, they were able to develop accurate models for predicting when maintenance should be performed.

The Outcome
Using RapidMiner to predict when a component or device would fail gave Lufthansa the information they needed to conduct more precise and efficient maintenance to make the most effective & efficient use of the service crews. The predictive models created in RapidMiner not only reveal where problems were likely to occur, but also identified the root cause. As a result, within the first two months of testing, total downtime was reduced by more than 20% and device failures and their subsequent costs were also reduced.