



USE CASE:

A gearbox manufacturer was surprised to learn that failures in the field far outpaced what was expected from modeled and test cell behavior.

Anomalous vibrations could have contributed to unexpected failures and downtime. Fortunately, each gearbox has real-time sensors feeding back large amounts of data to the data center.

A comprehensive data access solution identifies when and where these vibrations occurred. Predictive maintenance and design optimization on future iterations of the gearbox will greatly reduce gearbox failures.

SOLUTION: Any solution must ease the process of ingesting real-time data and prepare it for advanced analytics. Data preparation and transformation of streaming data sets occurs in a "data pipeline" so the data center can handle large-scale inbound data. The Peaxy Data Pipeline offers data scientists a graphical integrated development environment (IDE) to design the most efficient data flow.



1. CLEAN AND INGEST

Data is cleaned with built-in data transformations during ingest. Advanced scripting capabilities (Python, R and Groovy) help process data efficiently. Data flow is monitored on a dashboard that displays alerts when anomalies in sensor data are detected.



3. FINE-TUNE CONDITION INDICATORS

A Condition Indicator is a set of signal processing and statistical steps applied to the vibration data aimed at extracting a representative number — the indicator — used in monitoring.

Condition Indicators can be used to predict failures if enough vibration data is available across a comprehensive set of physical conditions.



5. CONDITION-BASED MAINTENANCE

Once the proper Condition Indicators are in place and the Data Pipeline is working efficiently, predictive maintenance regimes move from a "wish-we-had" feature to a "must-have" element in the manufacturing process. A manufacturer can now maximize the life of equipment, reduce unforeseen costs associated with failure and gain a competitive advantage.

ONE

TWO

THREE

FOUR

FIVE

2. ROTATING ANALYTICS BUNDLE

Peaxy's Rotating Analytics Bundle is a set of algorithms applied to the Data Pipeline that performs vibration data analysis. Prepackaged Condition Indicators are included that can predict failures.



4. SET WARNINGS ON ANOMALIES

Anomaly detection and real-time warnings on outliers can be set through data introspection, sampling, threshold rules and alerts.



Aureum is a scalable data access platform that aggregates and manages data, helps users find useful data, and preserves and protects that data far into the future. It is used across industries and markets because the enterprise's most important strategic advantage is the ability to make data-driven business decisions. Many businesses are looking for ways to make the best use of their unstructured data, often contained in crown-jewel data sets spread across many physical locations.