Predictive Maintenance Use Cases

Universal Smart Monitoring Solution for Predictive Maintenance

ASYSTOM

SUMMARY OF CASE STUDIES

AsystomPredict solution has been installed across many industries since 2018. Customers are satisfied that the solution provides timely alerts and accurate issues identification resulting in increased productivity

SUMMARY OF CASE STUDIES

COMPANIES		INDUSTRY
Trimet	▶	Mining (Aluminum)
Ajinomoto Animal Feed	▶	Food Industry
AccelorMittal	▶	Mining (Steel)
Renault	▶	Automobile
Various	▶	Mining (Steel)
		Water Treatment
		Pharmaceutical
		Food Industries
		Industrial Mobile Vehicles

Full Remote Predictive Maintenance
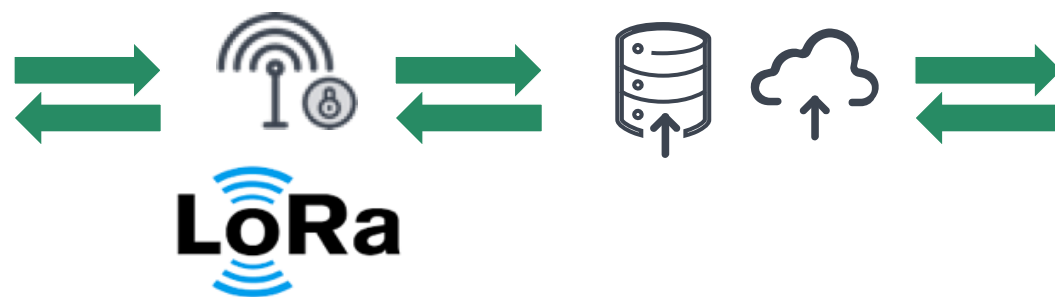
AsystomSentinel
multi-sensor device

Wireless

AsystomInfra
gateway, application & database

AsystomView
dashboard

Continuous real time, 24x7 monitoring and **integrated multi-sensors data** enables unparalleled failure prediction that's easily monitor remotely from any web-enabled device or alert via smartphone. **No more monthly plant walkabout to collect data!**
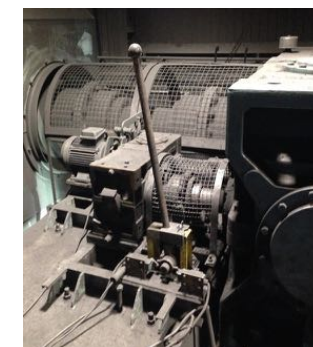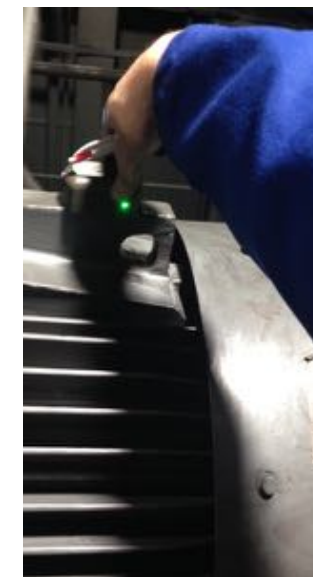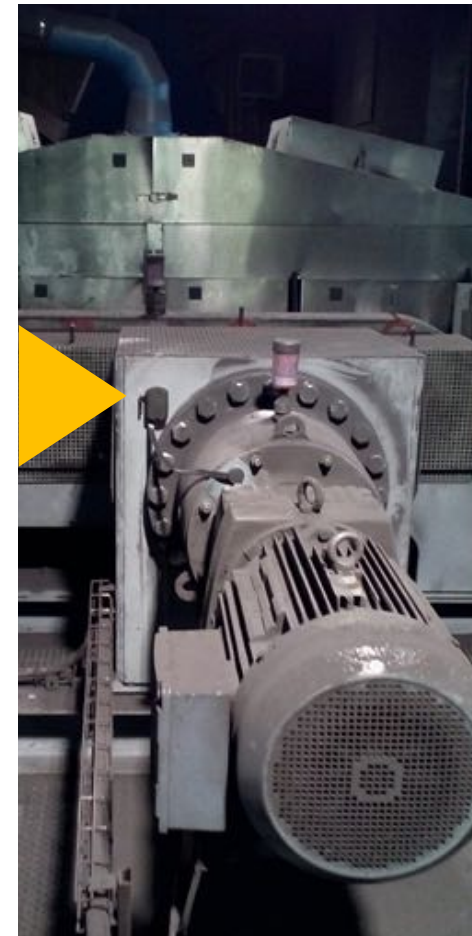
Trimet : Aluminum Industries

01

Challenges Faced By Trimet

Issue 1: Equipment of different ages but working. Hard to capture reference

Issue 2: Harsh environment

Issue 3: Getting team members committed to the project

AsystomPredict is installed in various equipment including crusher, conveyor belts, lift and fan in June 2018

Timely Alert Ensure Smooth Production

Timely Alert

Alert on 15+ years old Crusher
Drift detected on 17 Jan 2019 (6 months after installation of solution)

1ˢᵗ Call to Action

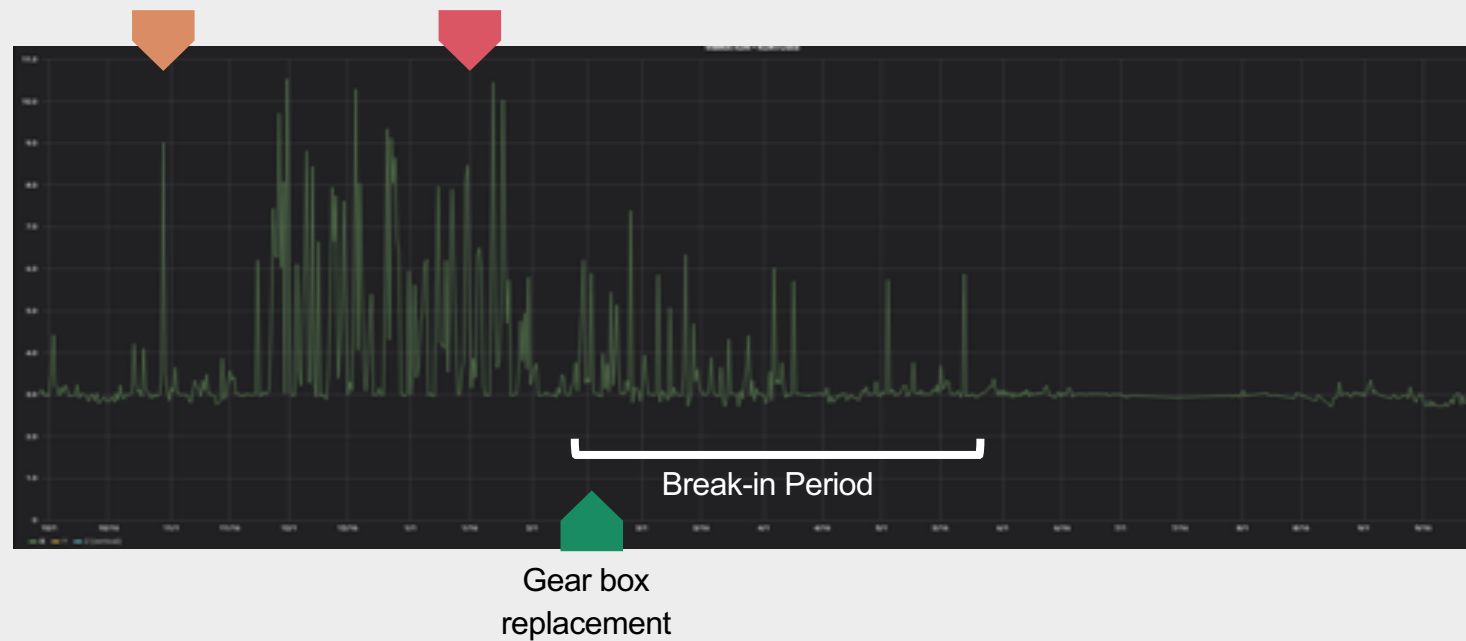## Detailed Analysis

30 Oct 2018
First anomaly detection

17 Jan 2019
Alert generate

Break-in Period

Gear box replacement

Asystom's Expert View Allow Sufficient Time To Plan For Gearbox Replacement

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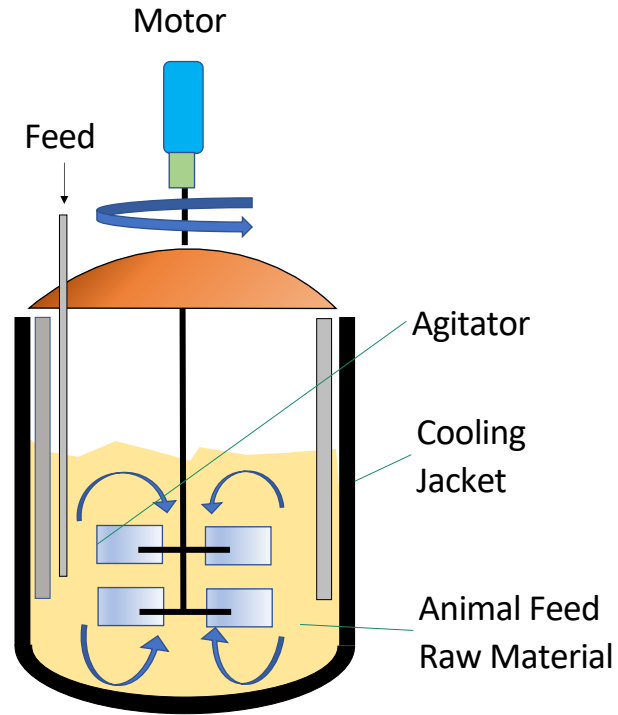Ajinomoto : Animal Nutrition

02

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Ajinomoto produces amino acids, intended for animal feed, through fermentation processes with an annual output of 120k tonnes

Application

Motor

Feed

Agitator

Cooling Jacket

Animal Feed Raw Material

Smooth running of the agitator in the fermentation process is critical in avoiding
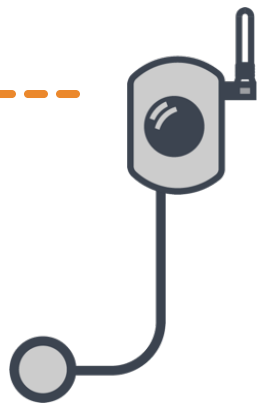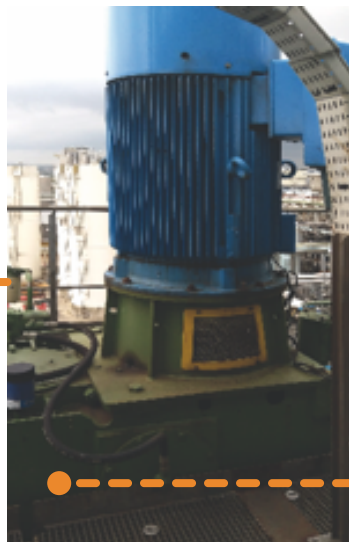raw material wastage and production downtime

Giant Fermentation Tank

Lubrication & Ultrason

Application

Appearance Of Defect

Filter Replacement. And No More Defects!

AsystomPredict was selected due to its versatile set of sensors in predicting various type of failures in rotating motors

Achievements

2-Days downtime avoided

Replacement of entire gearbox avoided

50m^3 raw materials saved

"The online Asystom solution allows us to monitor our entire plant remotely without any human intervention. The system together with its alert setup is easy to use with its modular, ergonomic design and allows us to track a wide range of parameters. The approach is different from traditional vibration implementation but it gives very relevant outcomes" – Simon Boone, Ajinomoto Engineering Manager

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AccelorMittal

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ArcelorMittal XXXXX

ArcelorMittal R&D constantly evaluates and recommends innovative solution to the different entities within their group to drive their Smarter Steels mantra of efficiency, using less energy and emit less carbon

Application

Critical Process:
Cooling of Molten Steel Alloys

Smooth running of cooling tower is vital for steel manufacturing processes such as
cooling down molten steel alloys

Failure is Not An Option

Critical Component:
Primary and Secondary Pumps

Customer would like to monitor the pumps to identify their drift and variations in operation, to prevent possible failure

AsystomPredict is the perfect fit to AccelorMittal operation and in many aspects of the Smarter Steels production process

Gains from Predictive Maintenance

Achievements

ArcelorMittal

Effective Alerting

Greater Insights on State of Machine

Facilitate Production Management

Antoine BRIDET, Measurement & Control / Engineer
"Prevention is better than cure as all mechanical or hydraulic machines suffers wear and tear from operation. The ubiquity of these devices in the industrial environment and the criticality of their proper functioning make Asystom technology a game changer in terms of reliability and productivity"

Automotive Industry : Renault

04

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Renault's Cleon Plant Leads The Way

GROUPE RENAULT

RENAULT NISSAN MITSUBISHI

The factory produces engines (electric and internal combustion) and gearboxes for the Renault range. It also supplies components to Dacia, Renault, Samsung Motors and Nissan in the framework of the Alliance, and to Fiat and Daimler
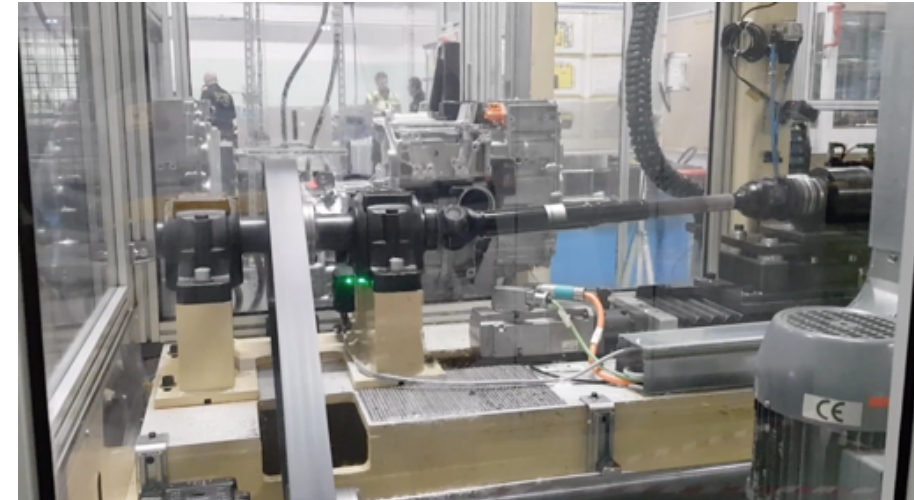
one of the pilot sites for Industry 4.0. AsystomPredict is chosen to ensure reliability of the engines produced in the plant

A challenging Application: Ensuring Zoe's Engine Reliability

All Engines Are Subjected To Rigorous Testing Before They Are Allowed On The Roads

Zoe's electric engines are tested on the test benches in the Cleon plant

Ensuring test benches in operation, in compliance and are repeatable is a crucial process to verify the durability and reliability of motor engines

AsystomPredict in Action

From Smart Triggering In Test Bench

AsystomPredict's wake up event feature is used to collect real time data on the test bench condition

To Monitoring Usage in Multiple Equipment and Processes

Gain insights into the state of equipment across the plant

Gains from Predictive Maintenance

Achievements

100% Fault Detected

In 6 months 6 Major Breakdowns Detected

Multiple Processes Under Control

GROUPE RENAULT

Other Use Cases
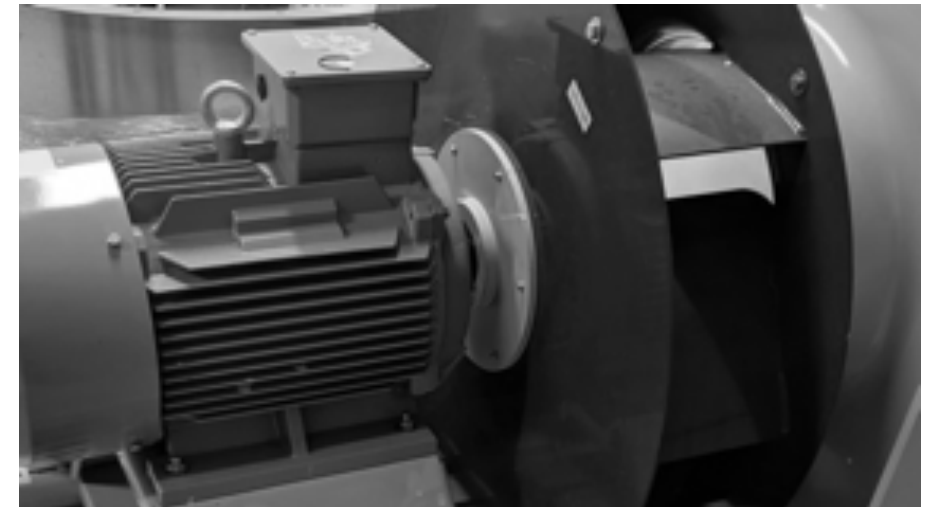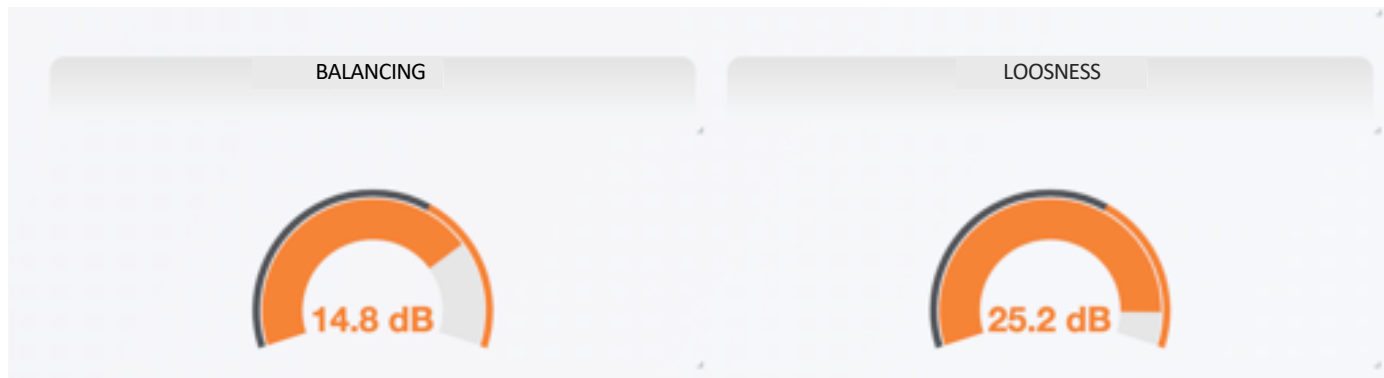
05

Monitoring of air handling units

Issues | Monitoring of drifts of the whole system: variable cycle motor,, bearing wear, unbalance

What Customers says
- Ease of installation and data access.
- Adaptation of the interface
- Autonomy of use
- no drilling and wiring required

BALANCING	LOOSNESS
14.8 dB	25.2 dB

Primary & Secondary pumps
cold-rolling mill

Issues

Various instrument model or age
Harsh condition

Benefits

- Fast installation
- Autonomy
- Immediate access to monitoring & alert

Lift screw Bearing monitoring

Lift screw gear box monitoring

Transport bearing monitoring

Transport's Motor–gearbox monitoring

Palletizers
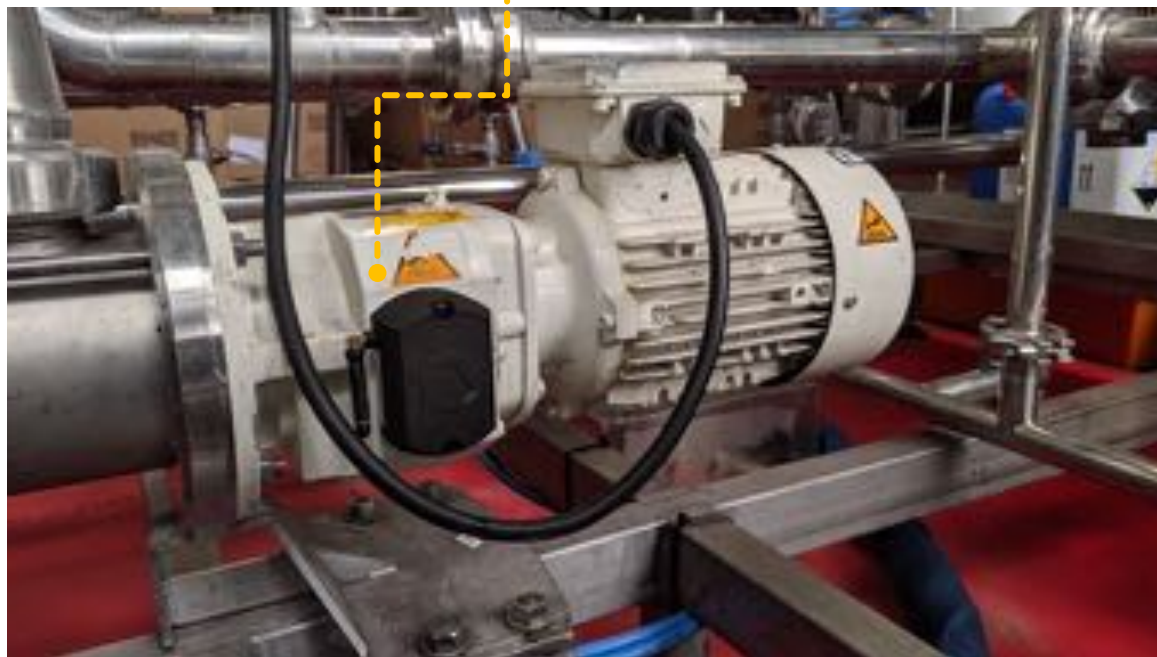
Injection pump assembly line

Asystom Monitoring on :

-Tamping machine

-Gear box

-Heat-engine

-Wheels/axle

Smart Monitoring on Industrial Engines

Multi sensor + Intelligence at the edge + Self learning Machine state