Top 20 Global Chemicals Company

APERIO enables a Global Chemical Manufacturer to Prevent Unplanned Outages and Saves Millions of Dollars with APERIO DataWise ™

A large, top 20 global chemicals manufacturer, with 30 production sites in Europe, Asia, and the United States, puts innovation and sustainability behind the continuous development of their products, processes and facilities. To maintain their position as market leader, the company is always looking for advanced technologies to improve their Overall Equipment Effectiveness (OEE), ensure product quality, and enable safe and continuous processing.

Problem: Unplanned outages and below satisfactory OEE

Following a series of asset breakdowns and production line outages produced significant financial losses, the company made it a key priority to trace the cause and minimize the risk of such incidents. The main cause for unplanned downtime? It wasn't insufficient or incapable operational systems and tools, but rather it was due to their inability to properly leverage their operational data. More specifically, they suspected possible sensor drift among redundant, critical sensors, as well as, analyzer inaccuracies.

Upon interviewing their operators, they found they were very hesitant to trust the operational data because of:

- Lack of visibility to make decisions with confidence

- Manually monitoring endless data without efficient prioritization

- Overlooking valuable data

- Too many false negatives

As a result, operators found it difficult to trust sensor data, and instead, relied on experience.

Scope
- 30 assets
- 1.6m tags
- 3 Historians

Challenges
- Unplanned outages from sensor issues
- Reduced Overall Equipment Effectiveness
- Production ($$) losses

Solution
- Detect data anomalies, such as, correlation breaks and flat lines
- Quickly identify & remediate faulty sensors
- Easy to deploy and scale, zero manual configuration

Results
- Improve OEE, saving up to $60M annually
- Reduce the risk of unplanned outages
- Leverage existing predictive maintenance and advanced analytics tools

Strategy: Avoid asset breakdowns with timely and accurate detection of sensor data issues

The company set out to get their OEE up to 90%+ consistently and to cut losses. To do so, they knew they had to eliminate the risk of unplanned downtime and ensure the integrity of their operational data.

Often, operators were looking at processes that appeared to be working correctly and missing the data-based indicators to avoid asset breakdowns. The company decided to implement APERIO DataWise™ to monitor the accuracy and quality of sensor data, to identify anomalies in the data, and thus, ensuring its reliability.

> *"Data health is THE most important aspect of what we are doing. Operators ignore alarms thinking the data is bad. APERIO can inform the operator to what's really happening."*
>
> — SVP, Process Technology

Using its AI machine learning (ML) engines, APERIO revealed issues that were missed when only looking for process anomalies. Noting that while the process may appear to be running smoothly, if the data integrity is poor, the process will have issues.

Once deployed, APERIO DataWise's auto-identified several types of sensor data issues that were typically overlooked or not detected, including:

- Correlation changes among redundant signals
- Error samples and changes in noise distribution
- Flat lines, spikes, and out of range signals

APERIO DataWise alerts the operators at the exact point in time when an anomaly occurs, where it occurs, and the suggested actionable steps to take to resolve it. For example, when correlation breaks or drifts occur, an alert is sent, enabling operators to quickly identify and remediate faulty sensors, and ultimately avoid asset breakdowns.
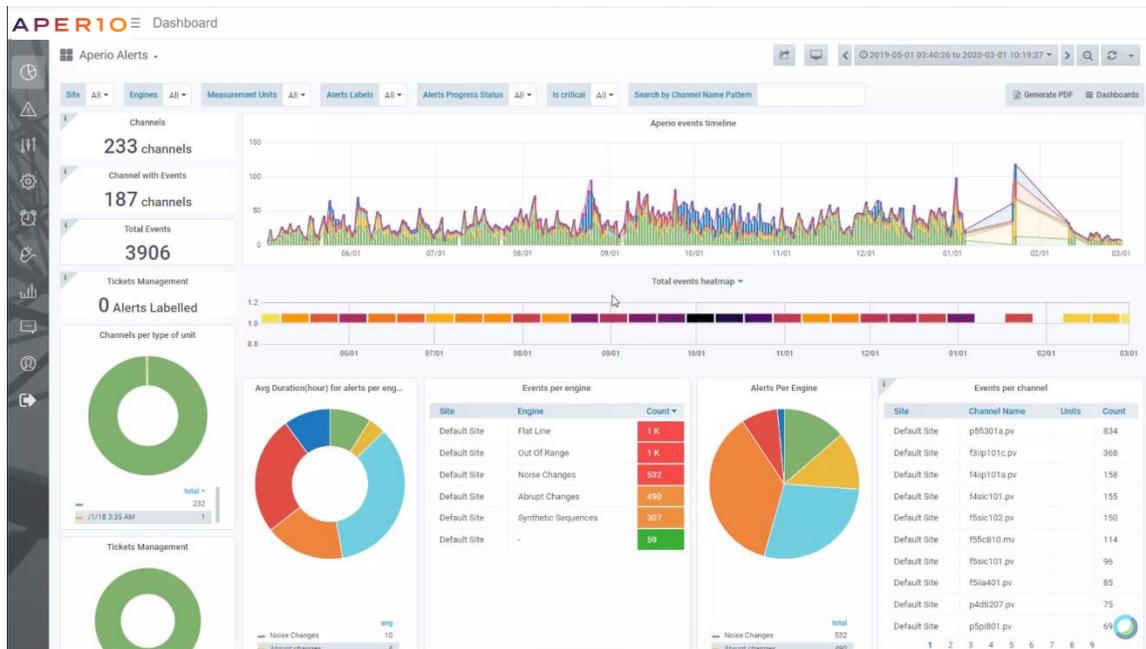
APER1O

Figure: In APERIO's top Dashboard view, see events timeline and heatmap, events and alerts per engine, and average duration for alerts per engine, for select channels at a given site.

Outcome: Prevent $$ losses, improve OEE, and leverage existing investment in digitalization

By leveraging their sensor data integrity and trusting the data that runs their processes, the chemical manufacturer gained better collaboration between teams, make better data-driven decisions, and improve the use of their resources. With the guarantee of accurate data, every function that uses this data—from the control room to the board room—adds value to its operational and/or business systems. By ensuring its reliability, APERIO added further value through the company's existing data-intensive solutions, like advanced data analytics and predictive maintenance tools.

> "We were struggling to get our OEE up. With APERIO DataWise, we see things we were blind to before, and we know we can trust the data behind the alerts. Within a short time, we were able to improve our OEE and to reduce the number of unplanned outages. In the industrial world, this translates into a lot of dollars saved."
>
> — SVP, Process Technology

After implementing APERIO DataWise, this global chemical manufacturer is now on track to improve OEE and save up to US$60M annually.

APERIO
Superior Data

aperio.ai