APERIO

Solving Industrial Sensor Data Integrity with Aperio

Sensor data is everything – and its quality is crucial

Data is key to competitive advantage in industrial operations – but data volumes are growing exponentially, and sophisticated tools are required for success

Data is growing exponentially

90% of all industrial data was generated in the past 2 years

Unreliable real-time operational data…

20% of operational data estimated to be unreliable from source

… leads to financial losses, lost opportunities, and safety and security risk exposure for industrial operations

double-digit annual USDm losses from data quality issues

more than 95% of operational data not leveraged

over 10% of asset downtime directly due to sensor data issues

What is Aperio?

A **fully scalable** solution that ensures **sensor data integrity** unlimited across the entire OT environment

Key characteristics

Machine learning to measure and validate sensor signals.

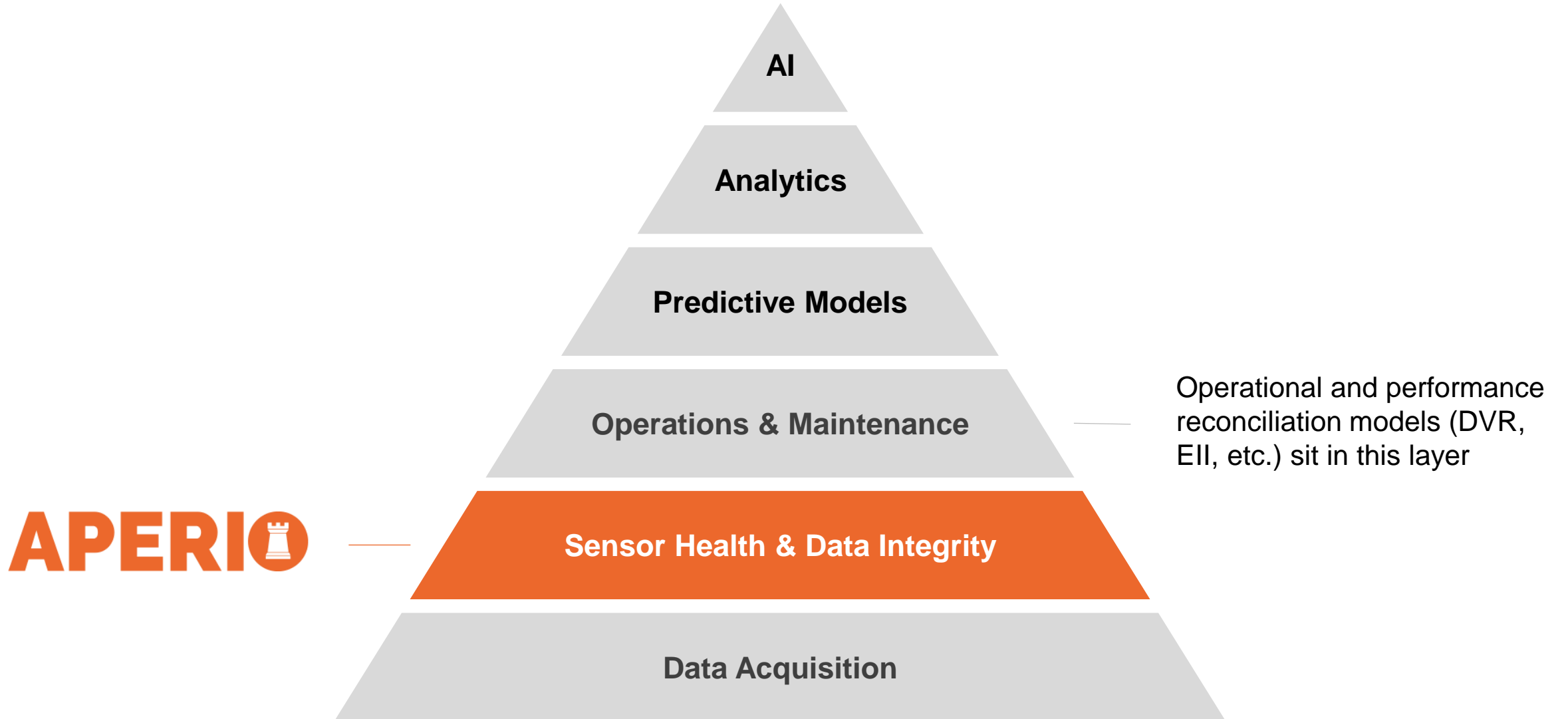Ensure validated, reliable, clean, and authentic sensor data.

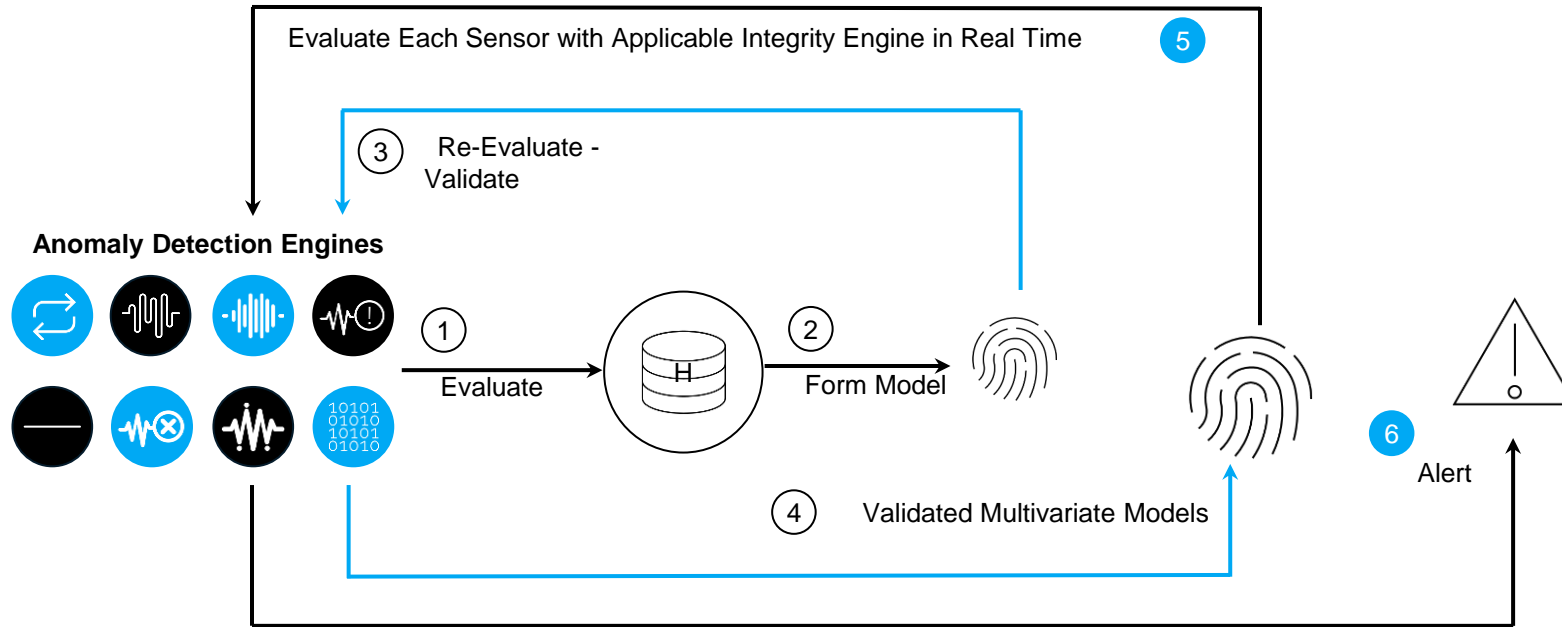Monitor sensor reliability and dramatically improve data quality.

Protects data against manipulation and tampering.

Aperio is uniquely positioned in the industrial data value chain – enabling and adding value to other products in the ecosystem
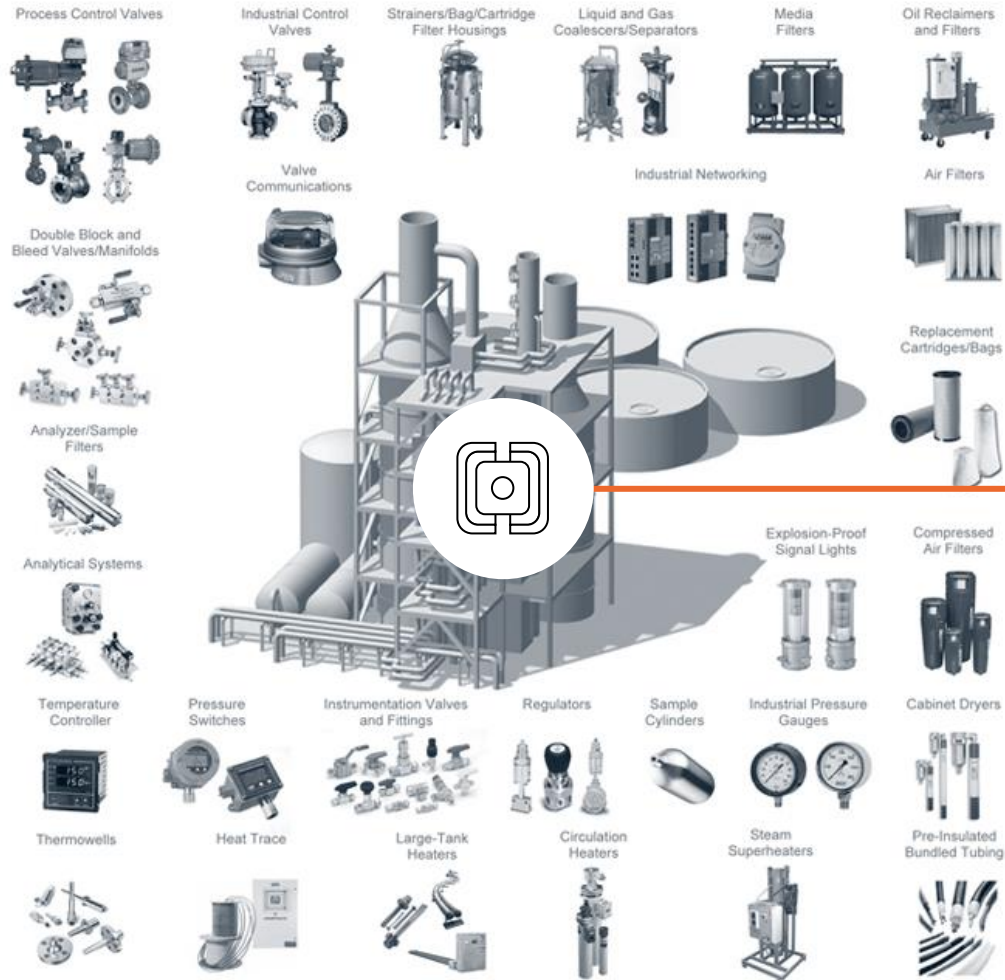
AI

Analytics

Predictive Models

Operations & Maintenance

Sensor Health & Data Integrity

Data Acquisition

APERIO

Operational and performance reconciliation models (DVR, EII, etc.) sit in this layer

Sensor signal fingerprints and alerts

Evaluate Each Sensor with Applicable Integrity Engine in Real Time ⑤

③ Re-Evaluate - Validate

Anomaly Detection Engines

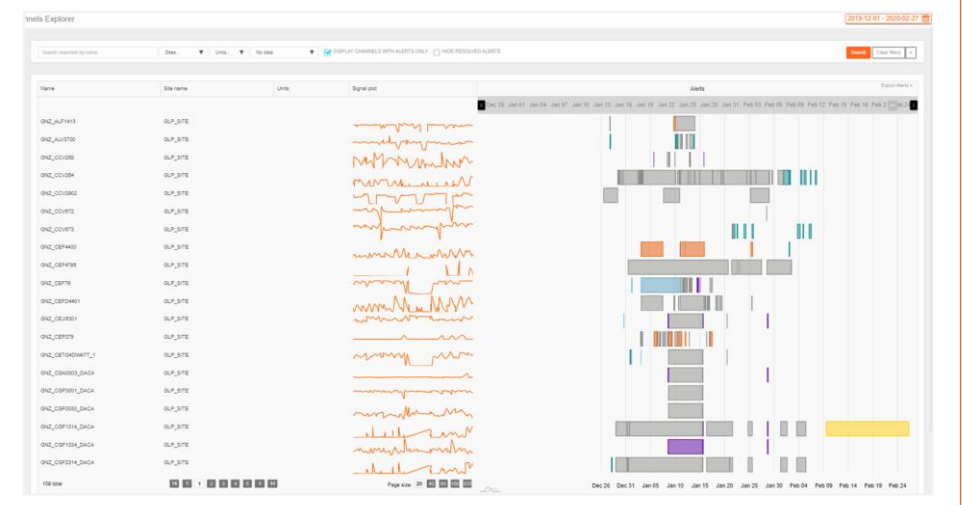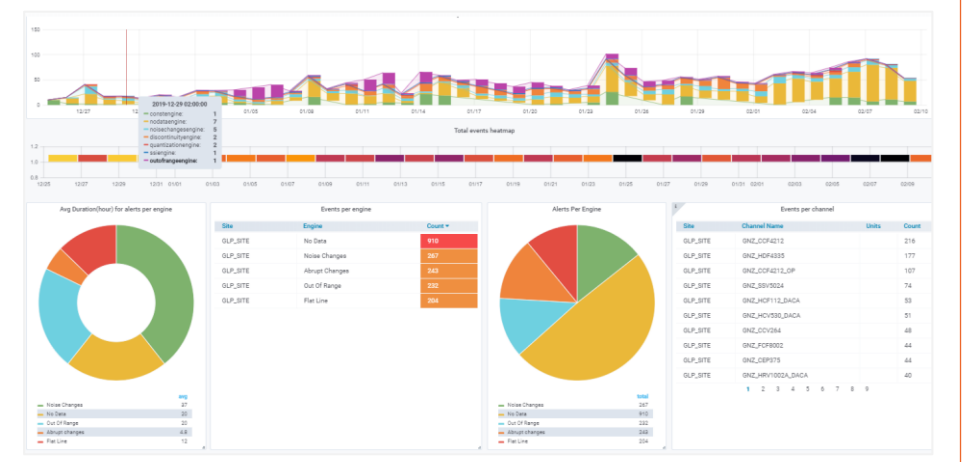① Evaluate

② Form Model

④ Validated Multivariate Models

⑥ Alert

Evaluate Sensor Signal Data ①
Form Multivariate Models - Fingerprints ②
Re-Evaluate and Validate Fingerprints ③
Establish Active Fingerprint ④
Evaluate Each Sensor with Applicable Integrity Engine - In Real Time ⑤
Alert on Faulty Sensors and Data Anomalies - in Real Time ⑥
Integrity Engines Retrain Every Few Weeks ⑴*⑴

Aperio's solution provides a strong data integrity foundation which enables real-time data-driven operations and decision making in industrial environments
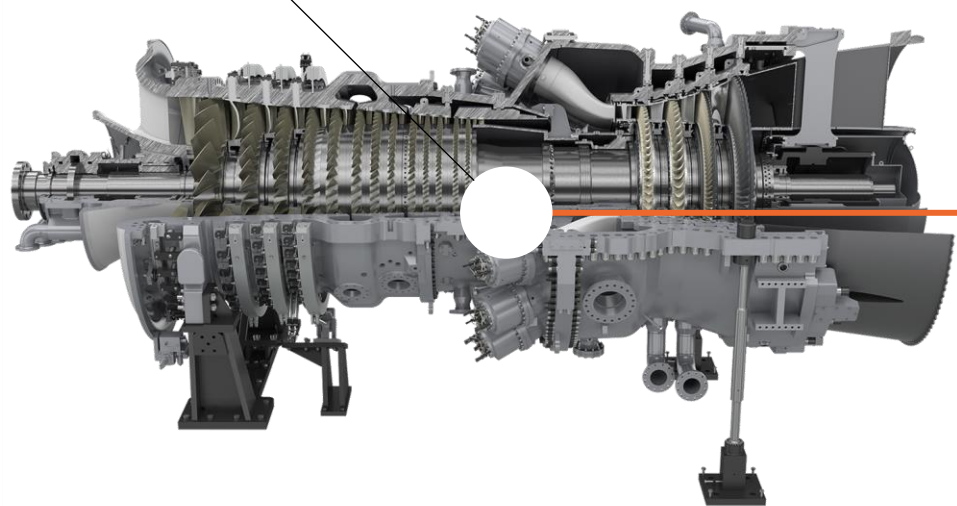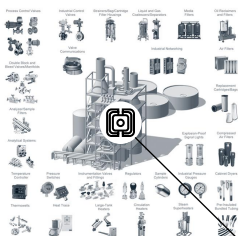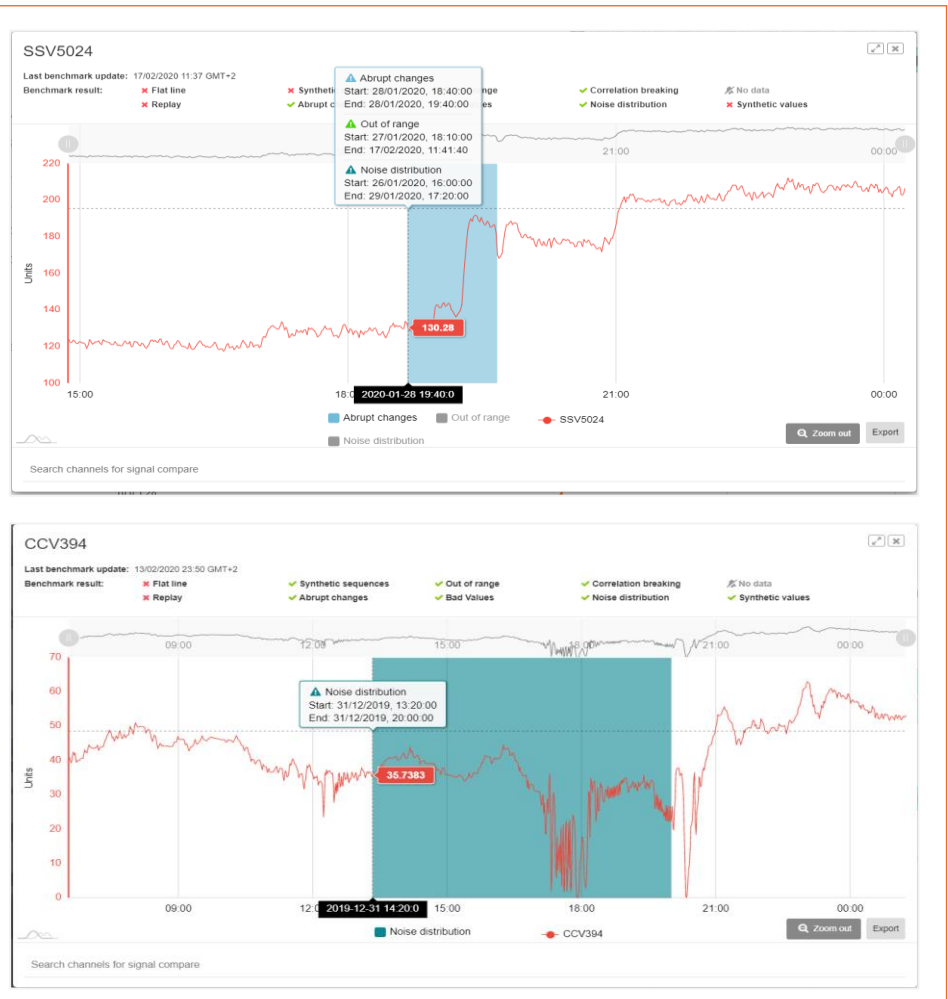
Users can drill down in the asset framework of sites, equipment and components, and focus on individual or grouped sensor anomalies for further investigation
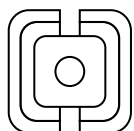
Customer roadmap to ROI delivered by Aperio

Aperio's data integrity solution is easy to deploy and scale, requires zero manual configuration and creates immediate tangible value

Operations profile:
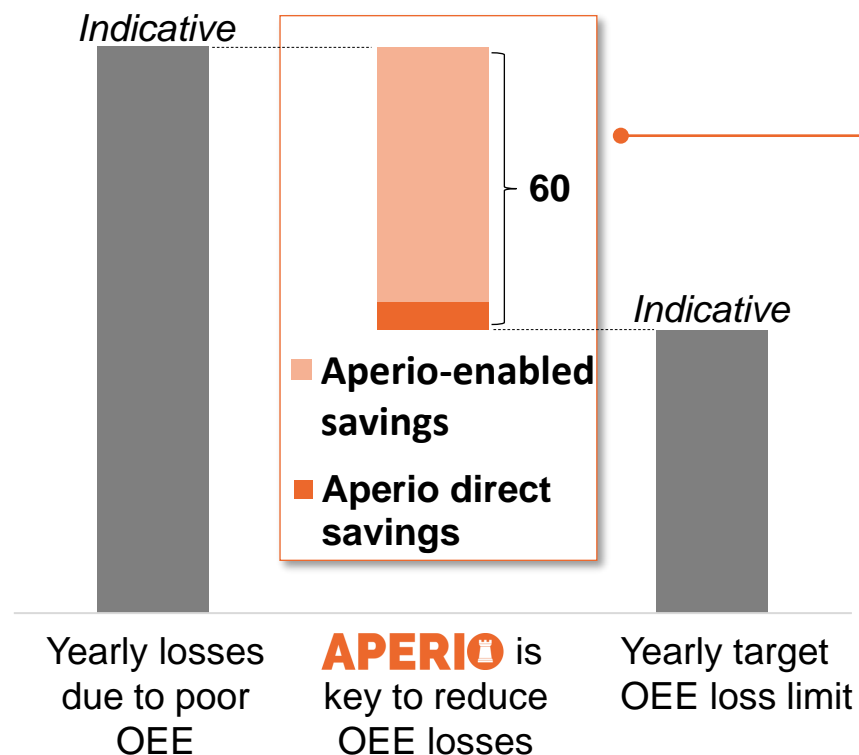Global process manufacturing

30 assets

1.6m tags

3 Historians

Case: Unplanned outages from sensor issues reducing Overall Equipment Effectiveness (OEE)

EBITDA losses stacking up, USDm

Indicative

60

■ **Aperio-enabled savings**

■ **Aperio direct savings**

Indicative

Yearly losses due to poor OEE

APERIO is key to reduce OEE losses

Yearly target OEE loss limit

Customer overall project ROI expected to be above 5x, with Aperio delivering significantly above this benchmark

Aperio's solution delivers foundational data integrity to improve Overall Equipment Effectiveness

- **direct impact** and savings through sensor health monitoring and anomaly detection

- **indirect impact** and savings through real time data quality improvements enabling much better predictive maintenance and advanced analytics results