Aspen InfoPlus.21® for Downstream

aspentech

Data Goals for Oil and Gas

Oil and Gas companies invest billions of dollars year over year in infrastructure to improve site performance and to lower the carbon intensity of their overall operations. Asset health, availability and efficiency directly affect a company's ability to meet demand, maintain site safety, lower their environmental footprint and improve economic. Organizations must minimize risk, enhance performance and decrease costs across the enterprise to achieve operational excellence. In order to make data driven decisions, prioritize activities and allocate future investments, operational leaders need to have access to comprehensive and timely process insights.

Access to historical, real-time and predictive insights enables informed decisions on maintenance and turn-arounds strategies to prevent upsets and drive bottom-line results.

In addition to improving production performance, real-time and comprehensive data can also be leveraged to define the strategy around future investment opportunities, maximizing a return on investment.

What is Aspen IP.21?

Aspen InfoPlus.21® (IP.21) is an industrial process historian for collecting and storing large volumes of process data for analysis and reporting. With Aspen IP.21, you can drive performance improvements and optimize decision making through near real-time asset visibility, analysis and monitoring.

Unlock Data and Increase Profitability

Readily disseminate data into tailored records structures, permitting data-fueled decisions to improve production operations. Aspen IP.21 helps you use the industrial data being generated to improve decision making and streamline operations. With the data aggregated in one place, you gain access to high-value reports that provide a complete, reconciled view of how the plant performs regularly.

Aspen IP.21 incorporates the following features:

- aspenONE® Process Explorer™: **Visualization and analysis** with a modern, web and mobile environment

- Aspen Production Record Manager™: Aggregate **event and batch process data** for quality assurance and traceability

- Aspen Connect™: **Vendor-neutral connectivity** for end-to-end data collaboration

Why Aspen IP.21?

It's not about delivering bespoke solutions. It's about providing production-grade, scalable and sustainable data for AI and all end-use applications.

Data Science Methods Tuned for Process Engineers

Real-time monitoring of essential business metrics via dashboards, alerting and pattern matching provides insight into plant performance.

Data that is Comprehensive, Flexible and Scalable

Aspen IP.21 provides a consistent operation, monitoring and analysis environment agnostic in terms of historian or DCS infrastructure. High-performance connectivity for all assets, regardless of age or location.

A Robust Platform for Industrial Data Analysis

Get KPI management, OEE, alerts, analytics and pattern search in one web-based environment. Aspen IP.21 provides a foundation for advanced analytics that extends to maintenance and supply chain functions.
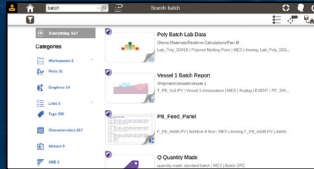
Inmation-Ready Integration

Seamless, bidirectional integration provides live and historical process data between IP.21 and Inmation automatic tag creation.
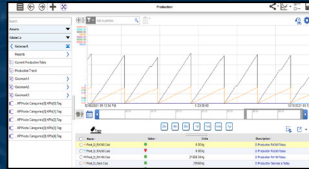

Plot any process variable or characteristic against any other process variable or characteristic with Aspen IP.21.
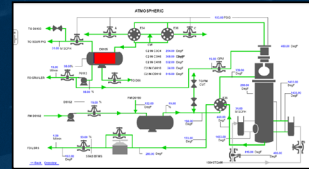
A Common Workflow

DISCOVER

Search for data and artifacts

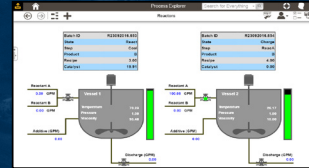Navigate by files or asset hierarchies

Browse the physical process

Find your important data and access it quickly with search and navigation that understand the manufacturing process.

VISUALIZE

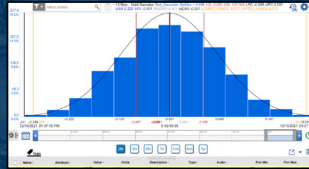Visualize data through trends and charts,

... tables

... and graphics

Visualize the data in the context that it is required — charts, table or graphic with comprehensive views that support more informed decision making.
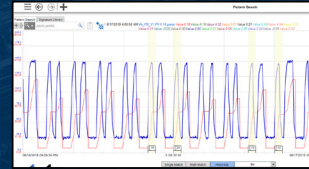
ANALYZE

Analyze process performance
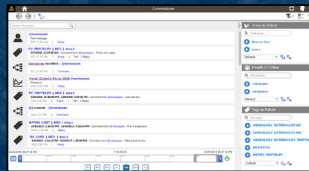

Determine whether the process is in control

Look for patterns in process behavior

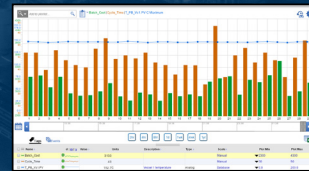Built-in analytical tools within a single application for fast problem identification and comporative analysis.

DOCUMENT

Attach observations to process data

Integrate conversations with process data

Share important analyses with others

Maintain an information audit trail and share best practices across the enterprise with discussions and actions tied to process data.

MONITOR
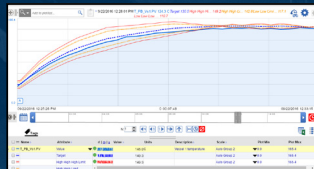
Track real-time batch performance
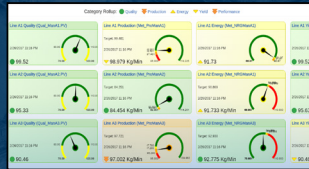
Track important KPIs across the enterprise

Be alerted to process excursions

Alerts and notifications of problematic situations enable timely resolutions. Track material progress through batch processes and ensure consistency, on spec and on target.

Accelerate Performance Improvements

Embedded real-time computation engines support performance management and analysis across an enterprise to reduce operational expenses.

Gain key insights and drive performance improvements with dashboards and rich visualizations that deliver plant operations data in real time. Actively monitor and analyze key metrics, getting alerts for exceptions and alarms. Aspen IP.21 helps you stay ahead of performance issues and improve asset operations using alerts and pattern matching.

Improve Collaboration

Create better work practices with a powerful, flexible, secure infrastructure that scales to various users, enabling company-wide benchmarking. Aspen IP.21 helps improve work practices and reduce downtime by providing a comprehensive view of productivity and efficiency across the plant. With real-time traceability from multiple sources, you can identify bottlenecks or inefficiencies and take action to improve. Having a complete picture of production operations leads to operational excellence and strengthens collaboration.

Time series trending of Aspen IP.21 data with many functions: zoom, annotations, comments, time shifting, control of pens and more.

Key Features

aspenONE® Process Explorer

- Identify unique patterns in process history: Analyze an event using powerful pattern recognition and discovery tools, automatically matching and discovering patterns in data.

- Leverage analysis tools for corrective action: Track performance and evaluate trends in real time with up-to-date processes and production graphics.

- Quickly identify causes of downtime: Rapidly identify potential problems via alarms and events that notify operators of deviations from acceptable process conditions.

- aspenONE Process Explorer provides enterprise level real-time data visualization, applications, reporting and analysis on Inmation, extending A1PE's trusted site-level capabilities.

Aspen Production Record Manager

- Analyze with greater efficiency: Collect, build, and store process data from historians or any ODBC data source for analysis and reporting by events.

- Comply with industry standards: Aggregate process data into an event-based context within a fully ISA-88 compliant tool for batch control and definition.

- Data visualization in batch operations: Fast query and trending of the structured data for reporting, analysis and visualization across multiple sites.

Aspen Connect

- Cloud-ready solution: Transfer historical data or stream live-data from Aspen IP.21 or third-party sources into AspenTech products, data lakes or third-party endpoints in the cloud or on-premises.

- Flexible connectivity: Premium connectivity for stream-processing, data lakes, cloud providers for big data analytics and reporting with a diverse library of connectors.

- Integrated security: Active directory integration controls access for overall system configuration and the highest available, continually updated security options for each protocol or endpoint.

- Simplified workflows: Configure servers, manage tags and create data transfers using routes with multiple options for data conditioning and scheduling with an embedded web-based toolkit.

Aspen InfoPlus.21 for Downstream Success Stories

ORYX GTL used Aspen IP.21 to implement a Manufacturing Execution System (MES) to generate meaningful insights and inform better decision making.

Established in 2003 as a joint venture between Qatar Petroleum (Qatar), Sasol Middle East and India Limited, ORYX GTL is a second-generation gas-to-liquids (GTL) facility that converts natural gas to liquid products. Prior to embarking on this digital journey, ORYX GTL didn't have a centralized structure or platform to collect, organize and evaluate operational data from diverse data sources at the enterprise level.

GTYX GTL leveraged Aspen IP.21 to collect data sets across multiple sources, including DCS system process data, LIMS lab data, safety data, weather data and asset monitoring data, and AspenONE Process Explorer to visualize this data and generate monitoring reports. This ultimately empowered the customer with improved visibility into their operations and the ability to quickly identify and isolate disturbances, evaluate performance, decrease reaction times, increase asset utilization and productivity, and automate proactive alerting.

Bharat Petroleum Corporation Limited (BPCL), an Indian refining and petrochemical company, used IP.21 to develop a 'Digital Twin Refinery Emission Model' for its Kochi Refinery.

BPCL, India's second largest Oil company, has three major refineries in the country including the Bina, Mumbai and Kochi refineries which have a total refining capacity of 259.5 million barrels per year. The company was interested in a digital dashboard to provide enhanced visibility of sustainability metrics to enabled better transparency to outside stakeholders and meet increasingly stringent statutory emissions limits. BPCL aggregated data from various sources and then created steady state emissions prediction models using Aspen HYSYS. The models were validated and connected to Aspen IP.21 for online real-time data collection, and then used to create customized visualization dashboards to monitor CO_2, NOx, CO, SO_2 and other pollutant emissions.

The solution contributed to increased refinery margins by leveraging the insights from the emissions monitoring dashboard to take advantage of opportunity crudes and cost-effective fuels.

About Aspen Technology

Aspen Technology, Inc. (NASDAQ: AZPN) is a global software leader helping industries at the forefront of the world's dual challenge meet the increasing demand for resources from a rapidly growing population in a profitable and sustainable manner. AspenTech solutions address complex environments where it is critical to optimize the asset design, operation and maintenance lifecycle. Through our unique combination of deep domain expertise and innovation, customers in capital-intensive industries can run their assets safer, greener, longer and faster to improve their operational excellence.

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