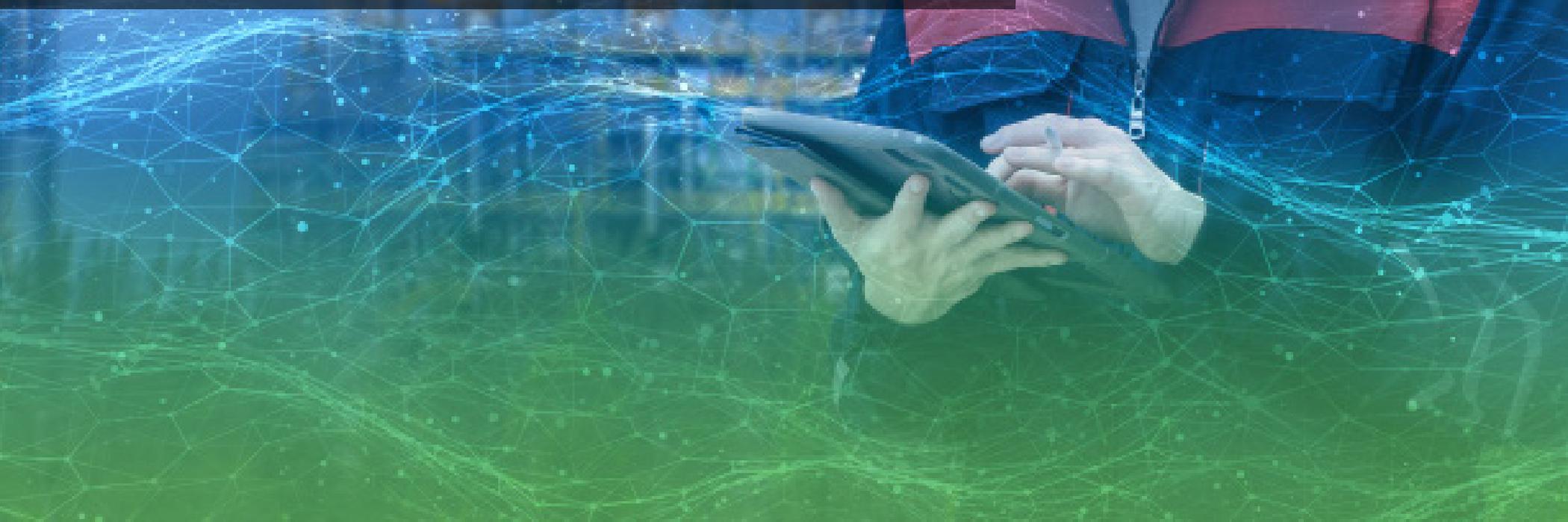




Brochure

# Aspen InfoPlus.21<sup>®</sup> for Downstream



# 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.

Aspen IP.21 is part of AspenTech DataWorks. AspenTech has a long history of innovation, with 40 years of experience in recording and capturing large amounts of data with our process historian products. AspenTech DataWorks, the latest in our long history of innovation, combines the power of Aspen IP.21 with AspenTech Inmation™, our solution for the industrial data hub. This combination is a zero-compromise industrial data solution designed for the needs of OT and IT by the asset optimization experts.

## 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 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. It ensures 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.



*Plot any process variable or characteristic against any other process variable or characteristic with Aspen IP.21.*

# A Common Workflow

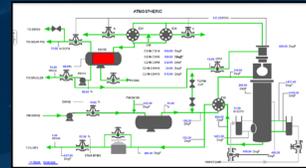
## DISCOVER



Search for data and artifacts



Navigate by files or asset hierarchies



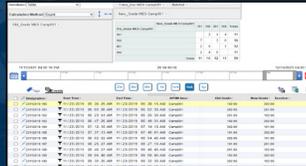
Browse the physical process

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

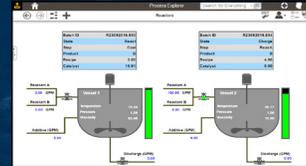
## VISUALIZE



Visualize data through trends and charts,



... tables



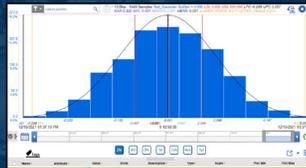
... and graphics

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

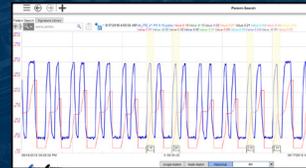
## ANALYZE



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 comparative 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.

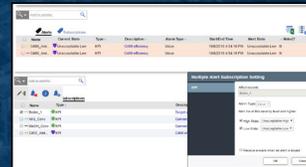
## MONITOR



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.

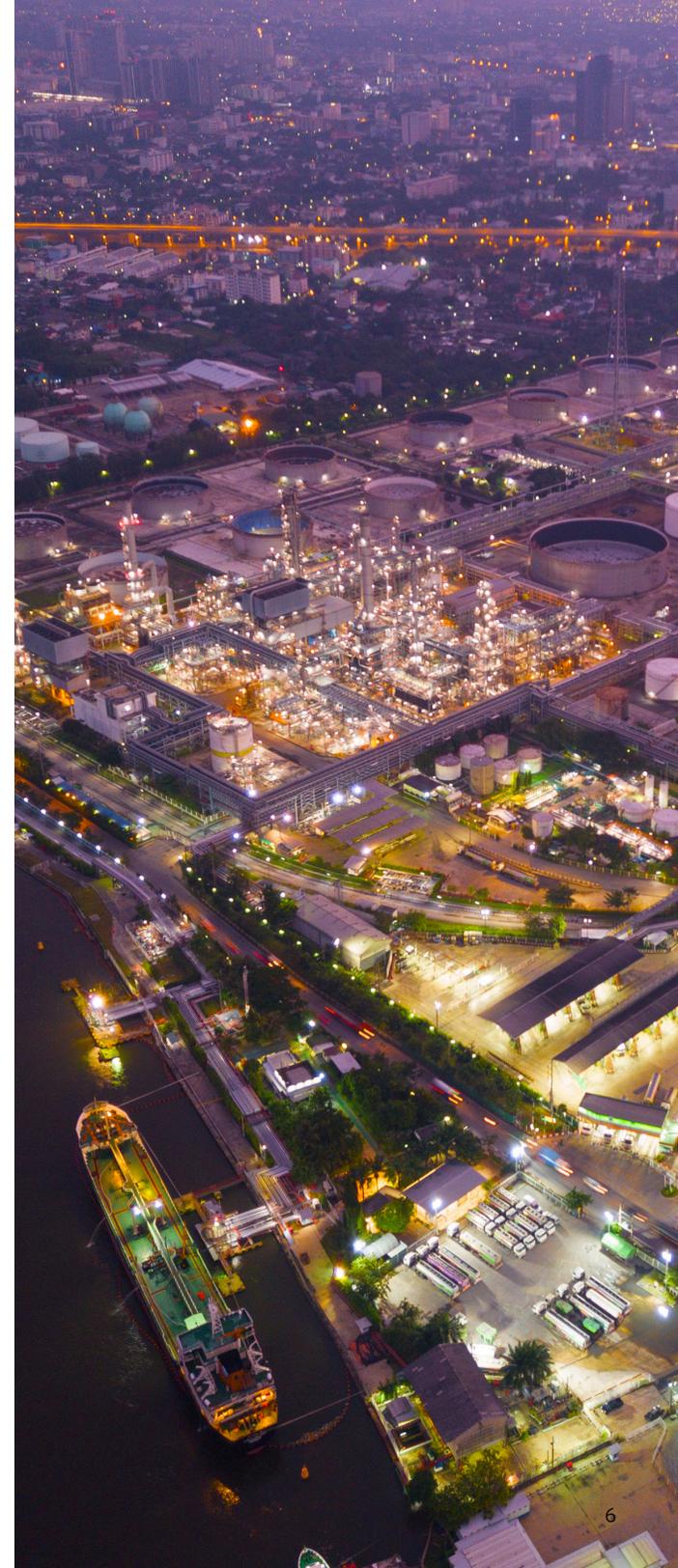
# Key Features

## 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.
- Track key metrics across the organization: Configure daily workflows quickly and easily, enabling enterprise visibility into asset performance with clear and succinct notifications.

## 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 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.

ORYX 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<sub>2</sub>, NO<sub>x</sub>, CO, SO<sub>2</sub> 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.

[aspentech.com](https://www.aspentech.com)

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