ORYX GTL

QP - SASOL joint venture

أوريكس لتحويل الغاز إلى سوائل المحدودة

ORYX GTL Limited

How ORYX GTL Improves Process and Production with the Aspen AIoT Hub™

> *"Analytical tools allow for improving process and production by evaluating actual and historical data… aspenONE® Process Explorer™ (part of the Aspen AIoT Hub) is considered one of the best tools on the market."*
>
> **Aadil Syed, M.E.S. Specialist, ORYX GTL Ltd.**
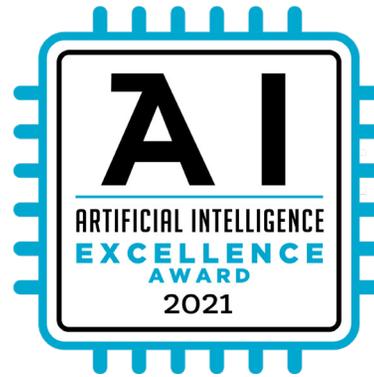
The Aspen AIoT Hub has earned a 2021 AI Award from the Business Intelligence Group as a top Intelligent Control product.

CHALLENGES

- No centralized structure to collect, organize and evaluate operational data at the enterprise level from all diverse data sources.
- Disrupted, or loss of, data access and business continuity during unexpected situations and downtime.
- No analytical tools for evaluating actual and historical data useful at the management level.

SOLUTIONS

- Aspen InfoPlus.21®
- aspenONE Process Explorer

Both products are part of the Aspen AIoT Hub

BENEFITS

- Enterprise-level aggregation of data on a large scale provides current view of productions to quickly identify and isolate disturbances, evaluate performance, decrease problem reaction times, increase asset utilization and productivity, and automate proactive alerting.
- High availability data access prevents disruptions or data loss during downtime and eliminates ripple effects of data loss.
- New customizable, interactive interface creates and monitors reports, process graphics and dashboards, giving management new capacity for analyzing relevant data.

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.

In conjunction with AspenTech, ORYX GTL embarked on a three-part digitalization journey that would utilize the Industrial Internet of Things (IIoT), machine learning (ML) and artificial intelligence (AI) to address some longstanding challenges. These included: leveraging Big Data and ML to improve process data efficiency and reliability; using data mining to support critical decision-making at plants; and using AI for early detection of issues like gas leakage, oil spillage and pipeline corrosion.

ORYX GTL partnered with AspenTech to implement a Manufacturing Execution System (MES) that would generate meaningful insights and inform better decision-making and problem-solving, to execute on ORYX GTL's digitalization vision and support their customer initiatives.

A Lack of Visibility

ORYX GTL's digitalization journey turned up a number of areas where the company was lacking visibility, negatively affecting operation costs, productivity and decision-making. Some of the key challenges ORYX GTL identified included:

- **Lack of centralized production data:** In an always-changing environment, having production data available centrally to be evaluated and discussed with colleagues is key to fostering improved, collaborative decision-making.

- **Evaluation of historical and actual data:** Analysis tools were needed to evaluate actual and historical data in order to continuously improve and optimize production and site processes.

- **Issue detection:** The current practice of reviewing traditional periodical business reports was way behind the curve in dealing with the pace of changes in today's process industry environments. By the time an issue is identified in one of these reports, it's already ancient history.

- **Production tracking and compliance monitoring:** Production tracking requirements have become more stringent over the last several years, due to stricter safety and environmental compliance standards. For process industry sites like refineries and steam crackers, having the ability to track production information, product quality and regulation compliance is of absolute necessity.

- **Business continuity:** Unexpected situations, like outages or downtime, would lead to either a disruption or outright loss of data access and business continuity.

ORYX GTL needed an MES implementation that could address these needs and blind spots, to support faster and better decision-making and conduct a current view of production operations that could more quickly identify and isolate disturbances.

Supporting Digitalization Customer Initiatives with Aspen MES Solutions

Partnering with AspenTech, ORYX GTL deployed two Aspen MES AIoT Hub solutions—Aspen IP.21 Historian (IP21) and AspenONE Process Explorer (A1PE)—to address these challenges and support the customer initiatives underpinning their digitalization journey. IP21 was deployed to collect datasets across multiple sources, including DCS system process data, LIMS lab data, safety data, weather data and asset monitoring data. A1PE was deployed to visualize this data, generating monitor reports, process graphics and dashboards, with zero footprint viewer.

Ensuring Business Continuity

As part of a broader cybersecurity strategy, ORYX GTL set up a highly secure and redundant infrastructure, with two firewalls and three separated domains: Business, DMZ and DCS. When implementing the Aspen MES solutions, ORYX GTL was able to split the IP21 server into a main server and a shadow server. The main server is located close to the company's DTX network server, to ensure minimum data loss and robust security. The shadow server ensures data remains available to users on the business network, with high levels of redundancy to provide business continuity during any potential disruptions. Not only does IP21's server redundancy resolve the data availability challenge, it also helps facilitate VPN access availability that made it possible to work from home during the pandemic.

Integrating Aspen MES Solutions to Optimize Process Data and Improve Visibility

ORYX GTL was able to integrate Aspen's MES Solutions within their own MES portal to create a one-stop-shop for all MES-related applications, data, records and KPIs. This made it easier to centralize and collaborate on creating role-based navigation user experiences, with embedded A1PE-created graphics for visualizing data; generating reports quickly and on a platform of the user's choosing in a short period of time, to make reporting faster and more efficient; and building rich, complex dashboards in an easy manner, to ensure faster response times and analysis, and publish process data to higher management levels.

As a result of these Aspen MES applications, ORYX GTL was able to:

- Optimize the value of its data, through refined process data collection, organization and distribution workflows.

- Improve consistency and reduce errors in its automated workflows, order tracking and production tracking.

- Lower operating costs and increase yields, capacity and product quality, thanks to new analytical data, alert, notification and visualization capabilities.

- Support a broader organization-wide digital transformation by converting existing paper trails and copies, that were too cumbersome and difficult to track, into digital copies that lent themselves to easier tracking and auditing.

Visit our **AIoT solutions page** on aspentech.com to learn more.

About Aspen Technology

Aspen Technology (AspenTech) is a leading software supplier for optimizing asset performance. Our products thrive in complex, industrial environments where it is critical to optimize the asset design, operation and maintenance lifecycle. AspenTech uniquely combines decades of process modeling expertise with machine learning. Our purpose-built software platform automates knowledge work and builds sustainable competitive advantage by delivering high returns over the entire asset lifecycle. As a result, companies in capital-intensive industries can maximize uptime and push the limits of performance, running their assets safer, greener, longer and faster.

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