ORYX
QP - SASOL joint venture
أوريكس لتحويل الغاز إلى سوائل المحدودة
ORYX GTL Limited

How Oryx Improves Process and Production with Aspen InfoPlus.21®

aspentech | Case Study

“Analytical tools allow for improving process and production by evaluating actual and historical data … aspenONE Process Explorer is considered one of the best tools on the market.”

Aadil Syed, M.E.S. Specialist, ORYX GTL Ltd.

CHALLENGE

- No centralized structure to collect, organize and evaluate operational data at the enterprise level from all diverse data sources
- Disruption or loss of data access and business continuity during unplanned incidents and downtime
- Lack of effective analytical tools to assess current and historical data at the management level

SOLUTION

Oryx GTL implemented Aspen InfoPlus.21 (IP.21) and aspenONE Process Explorer™ (A1PE) to:

- Aggregate large-scale operational data
- Automate proactive alerting
- Ensure high availability and reliability of data access
- Deploy a customizable, interactive interface for building dynamic reports, process graphics and dashboards

BENEFITS

IP.21 and A1PE delivered a real-time comprehensive view of production, resulting in:

- Improved asset utilization and productivity
- Accelerated disturbance detection and resolution
- Minimized data disruption and loss during planned or unplanned downtime
- Empowered teams with enhanced capabilities for visualizing and 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 revealed critical gaps in visibility that were adversely impacting operational costs, productivity and decision-making. Some of the key challenges included:

- **Lack of centralized production data:** In an always-changing environment, the absence of centrally available production data made it difficult to foster data-driven, collaborative decision-making.
- **Limited evaluation of historical and real-time data:** ORYX GTL lacked the analysis tools to evaluate actual and historical data. This limited the ability to drive continuous process improvement and optimize production.
- **Delayed issue detection:** Relying on traditional periodic business reports meant that by the time issues were identified, the moment to act had already passed. This lag hindered timely responses in a fast-paced process industry.
- **Insufficient 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 a necessity.

- **Risks to 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 capable of addressing these critical gaps to enable faster, more informed decision-making and provide a real-time view of production operations to swiftly detect and isolate disturbances.

Supporting Digitalization Customer Initiatives with AspenTech MES Solutions

Partnering with AspenTech, ORYX GTL deployed Aspen InfoPlus.21 historian and aspenONE Process Explorer (A1PE) to address these challenges and support the customer initiatives underpinning their digitalization journey. Aspen IP.21 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 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 separate domains: Business, DMZ and DCS. When implementing AspenTech's MES solutions, ORYX GTL was able to split the Aspen IP.21 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 Aspen IP.21's server redundancy resolve the data availability challenge, it also helps facilitate VPN access availability that made it possible to work remotely.

Integrating AspenTech's MES Solutions to Optimize Process Data and Improve Visibility

ORYX GTL integrated AspenTech's MES Solutions within their own MES portal to create a one-stop-shop for all MES-related applications, data, records and KPIs. The integration enabled:

- **Centralized collaboration** on the development of role-based navigation experiences tailored to specific user needs
- **Embedded A1PE-created graphics** for intuitive data visualization
- **Rapid report generation** on the user's platform of choice, improving reporting speed and efficiency
- **Streamlined dashboard creation**, enabling users to easily build rich, interactive dashboards that accelerate analysis, improve response times and enhance visibility for higher-level management

With these new capabilities, 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

Learn more about **Aspen InfoPlus.21**.

About AspenTech

Aspen Technology, now part of Emerson, 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 asset-intensive industries can run their assets safer, greener, longer and faster to improve their operational excellence.

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