ARC VIEW

JULY 5, 2012

ICONICS Software Solutions Can Help Oil & Gas Businesses Meet Today's Challenges

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Keywords

Oil & Gas, ICONICS, Asset Management, Analytics, Historian, Enterprise Manufacturing Intelligence, EMI

Summary

The global oil & gas industry continues to endure a period of unprecedented price volatility, demand uncertainty, and other major challenges. Offshore gas reserves are getting harder to reach and develop. Efforts to develop more accessible land-based gas reserves in many countries have sparked a proliferation of new environmental regulations that strive to protect both air and water. Key stakeholder programs, including both corporate social responsibility and corporate risk management, now drive the need for faster decision making and vast improvements in the way organizations can collect, collate, and contextualize maintenance and production data across many complicated supply chains. ARC Advisory Group is seeing a lot of investment in manufacturing and asset intelligence solutions for oil & gas exploration and production, because both are asset- and data-intensive operations.

To meet today's challenges, owner-operators in the upstream oil & gas industry need to be able to provide employees at all levels the organization with effective data visualization, appropriate analytics, and other real-time decision support tools.

To manage their E&P operations effectively, owner-operators must be able to view information from multiple assets, typically spread over a large geographical area. High asset utilization requirements and a multitude of dissimilar pieces of equipment are two reasons why oil & gas companies have invested so heavily in both enterprise manufacturing intelligence (EMI) and asset management solutions.

Gary Kohrt, Vice President of Marketing and Product Marketing at ICONICS, a highly regarded provider of web-enabled, industrial visualization and analytics software for Microsoft Windows operating systems, recently

briefed ARC Advisory Group about the company's visualization, analytics, and other enterprise manufacturing intelligence (EMI) solutions for the oil & gas industry. These include *GENESIS64 Fault Detection and Diagnostics (FDD), BizViz Analytics, AssetWorX*, and the company's *Hyper Historian*.

Real-time, Predictive Analytics for Assets

Due to the asset-intensive nature of the upstream oil & gas industry and large number of different assets involved, it's important for operations and maintenance staffs to be able to identify and resolve equipment-related faults before they can impact production, safety, or the environment. According to Mr. Kohrt, ICONICS' GENESIS64 Fault Detection and Diagnostics (FDD) solution can help address these issues.

The solution connects to a wide variety of data sources, including OPC DA, OPC A&E, OPC UA, Modbus, SQL, ODBC, and Web Services, providing the ability to contextualize millions of asset-related tags into customizable asset views that align with a particular class of asset. The solution provides equipment fault detection and diagnostic capabilities in real time, identifying individual faults and employing a rules engine to determine probable causes. This type of predictive asset diagnostic support is far more useful to operations and maintenance personnel than just alarms. GENESIS64 FDD also provides appropriate individuals with instant notification at any time from any platform, mobile or otherwise.

Real-time Asset Monitoring

The AssetWorX technology included in the company's GENESIS64 platform integrates assets from different systems into a single hierarchical view, with standardized asset classes that define visualization, trending, fault analysis, commanding and workflow. For example, the Asset Navigator can provide instant access to equipment as well as immediate summary roll-ups to any operational level.

ICONICS Integrated Data and Mobility

Building Intelligence into the Business

According to ICONICS, the company's BizViz Analytics Suite enables users to make better asset- and operational-related decisions "faster with real-time information." It

enables users to build standards for classes of objects, equipment, instruments or tags to help organize the information and visualize it in appropriate context so that users can quickly and easily determine overall equipment efficiencies.

While OEE is only a small part of an overall enterprise manufacturing intelligence (EMI) solution, in the oil & gas industry the solution can add immediate benefit, particularly when it comes to improving downtime.

The software layers can include information from calculations and analysis tools. For example, statistics about well sites can be built into the intelligence. Pipelines, distribution, well fields, temperature storage, and tank farms are examples of a few of the assets that companies are incorporating into the software for intelligence.

According to ICONICS, this solution can help users integrate data from, field equipment, manufacturing execution systems, and corporate IT systems to achieve enterprise-wide visibility. This can provide owner-operators with the ability to incorporate business objectives into the real-time decision-making process.

Industrial-Strength Historian

A typical upstream oil & gas operation can involve millions of different data tags. This will only increase as owner-operators collect more and more operational and asset data from more sites. At the same time, a smaller number of individuals are responsible for managing this growing volume of data and information.

Data can include as much as six million real-time tags with such information as temperature, pressure and flow. Data from subsea, topsides, wellhead, compression and other systems are also collected. All this data and information need to be monitored from one central control room. Manufacturing plants need to be able to manage the data and assets better and turn the data into actionable information quickly.

Typical Oil & Gas Applications

ICONICS software solutions have been well proven in a number of demanding oil & gas industry applications. These include the Transneft

Russian Pipeline, where ICONICS software is used to monitor and control 400 pumping stations and 1,000 tanks in 100 different tank farms located along the extensive pipeline. The pipeline system supplies 35 refineries.

According to the company, ICONICS' software solutions are appropriate for a wide variety of demanding oil & gas industry applications. These include:

- Tank farms
- Custody transfer
- Oil and gas pipelines
- Pipeline leak detection
- Drilling operations equipment monitoring
- Well automation (on-shore and off-shore)

Conclusion

ARC believes that ICONICS' software provides key enterprise manufacturing intelligence functionalities. The ability to combine data, intelligence, and analytics can provide owner-operators with the ability to transform the large volumes of asset, operational, and business data and information involved in oil & gas industry operations into real-time business intelligence.

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