



CASE STUDY

# Petrochemicals

Optimizing facility operations with  
ABB Ability™ Asset Suite eSOMS

## The client

One of the world's top producers of olefins and polyolefins, and a leading supplier of aromatics, alpha olefins, styrenics, specialty chemicals, piping, and proprietary plastics. With approximately 5,000 employees worldwide, the company produces chemical products that are essential to manufacturing over 70,000 consumer and industrial products.

## The challenge

A renowned petrochemical company had a critical need to improve communications across its plant operations. Struggling with errors and a lack of consistency, the company's leadership believed that streamlining routine duties and making knowledge and processes accessible and transparent to all levels of staff (from operations and maintenance to engineering) was imperative for optimal plant operations. In addition, there were manual processes that differed from plant to plant, as well as human error issues related to paper-based documentation.

This lack of consistency and transparency created problems around accountability, equipment monitoring and compliance. In turn, knowledge transfer to new employees was difficult and spotty.

The company began evaluating solutions that would help them achieve their goal of improved plant communications. Management outlined several key goals to help drive the selection process, including:

- Improving communication across teams in a plant
- Ability for bidirectional data feeds (push/pull data between the field and control room)
- Mobile/wireless capabilities for immediate data input and transference
- Scalability and integration capabilities, allowing for multiple departments to make use of the data

## The solution

ABB Ability™ Asset Suite eSOMS was chosen over the field of competition because it delivers on the promise of providing a digital record, even down to user-level accountability, as well as the ability to improve both reactive maintenance and planned operator rounds. Functionality that was selected for the initial rollout included:

- **Narrative Logs** for electronic journaling
- **Operator Rounds** for process automation, data acquisition and analysis
- **Notice of Change** for change management and interdepartmental messaging
- **Mobility** to enable wireless user capabilities

eSOMS was rolled out across eight plants in North America in 2006. In addition, two international sites were added in 2008 and additional plants are continuously being added.

During the deployment phase, eight plants shared their existing operational processes and strengths. Now all plants operate under a set of agreed-upon best practices, which encompass:

- Standardized routine equipment checks
- Checklists for proper safety and compliance
- Automated routine duties
- Reporting and historical analysis



Another integral part of implementation included the consolidation of environmental regulations and internal parameters into a single system. All plants are now able to view limits, ranges and alerts on each piece of equipment relative to pressures, temperatures, etc. This ultimately enables staff to have critical information on hand (versus in their memory), prevents noncompliance issues and enables long-term planning around equipment maintenance.

In addition to providing a data window of real-time information, eSOMS offers seamless knowledge transfer in the event of workforce turnover.

---

“[eSOMS] works great. I can run all my [environmental compliance] reports in a minute. We’re much more prepared for inspections than if we used the previous paper-based systems.”

---

## The result

With the introduction of electronic logs, data is now available for the benefit of any user (e.g., operators, management, supervisors, engineering and training). Operator field data feeds the yield program, which provides an up-to-date record of product inventories. Also, through the use of mobile devices, manual input and instances of transcription error are removed.

The Notice of Change (NOC) and Alert System ensures people get information before going to the field. This data actually helps operators and engineers plan their daily workload.

In addition, a “requirement” setting can be triggered whereby the user must acknowledge receipt of a message before being permitted to enter the full system. This has helped eliminate costly errors relative to equipment maintenance. In one example, prior to the eSOMS deployment, an Operations Excellence Audit resulted in a fine – these are now avoided with access to electronic information and regular NOCs.

Another critical area of success is the ability to integrate with data historians. By using the data collected by operators and stored in the data historian, various engineering groups can analyze the lifecycle of various equipment and decide to modify practices to extend equipment life.

Benefits include:

- Ability to extend the life of multi-million dollar furnaces due to information availability
- Ability to identify trends and more easily predict maintenance cycles

ABB’s eSOMS solution provides a “single source” database that serves as the foundation for efficient plant operations.

---

“[eSOMS is] an integral part of what we do every day in operations. We haven’t even begun to scratch the surface yet on how eSOMS can benefit us.”





—  
[abb.com/enterprise-software](http://abb.com/enterprise-software)  
[info.pges@abb.com](mailto:info.pges@abb.com)