



## Evonik Degussa Employs aspenONE® Advanced Process Control to Achieve Improved Product Quality

Global specialty chemicals producer turns to aspenONE APC's linear state-space formulation features and single, unified desktop environment for enhanced flexibility and control.

A leader in specialty chemicals with annual sales in excess of €10 billion, Evonik manages more than 100 production facilities in 30 countries. Their diverse product portfolio serves automotive, construction, medical, electronics, food and beverage, agriculture, and other markets.

Evonik implemented a number of APC solutions using DCS-based APC with the Predictive Functional Control (PFC) algorithm. In 2006, they undertook a project to identify a standard for APC. They began with a survey of available technology and then implemented a pilot using AspenTech's new .NET Control Platform in which they adopted a linear state-space formulation for control.

The objective of the pilot was to improve quality and reformer temperature control of a high-purity distillation column. The process exhibited a long (approximately 72 hour) settling time for bottom quality. It was configured as cascaded columns and used intermediate measurements for product quality predictions. The process was subject to large input disturbances and involved a large recycle component.

*"AspenTech understands our requirements and uses our feedback in future applications. For example, the new advanced control platform in V7.1 will make it easier to apply process control benefits throughout our organization."*

— Kai Dadhe, APC Engineer, Evonik Degussa

### Customer Profile

**Evonik Degussa GmbH**  
Specialty Chemicals Producer

#### Challenge:

Improve quality on a high-purity distillation column

#### Solution:

Utilize aspenONE® Advanced Process Control for improved control of the column

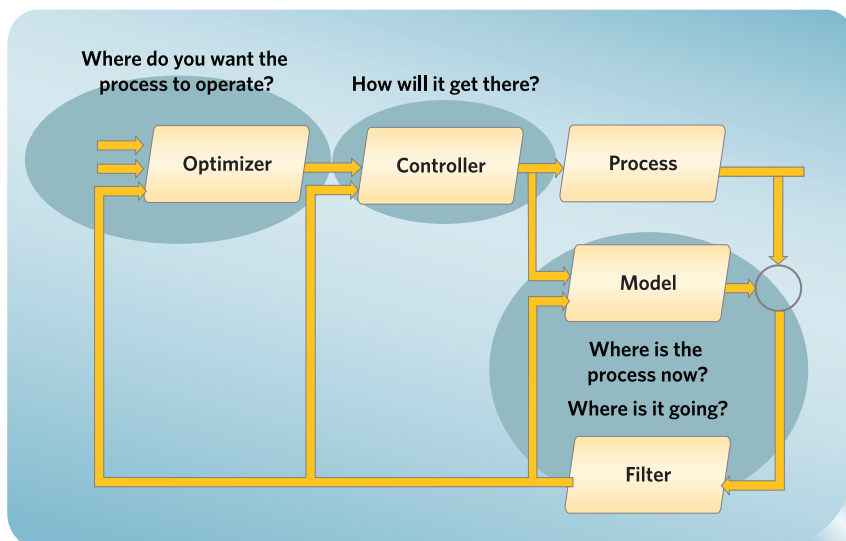
#### Benefits:

- Improve quality across a range of conditions
- Enable better disturbance handling for lower process variability
- Optimize resources and lower costs by creating, deploying, and managing APC applications from a single unified desktop environment



## A State-Space Control Approach

One of the features of AspenTech's new control platform is the ability to choose from three different control formulations in a single package. Evonik decided that they were particularly interested in AspenTech's linear state-space formulation for control.



Typical APC architecture

True multiple input/multiple output discrete time state-space models enable:

- Different process dynamics in one model
- Structured modeling with the use of intermediate unconstrained measurements

## Integrated Environment

Another aspect of aspenONE Advanced Process Control that caught Evonik's attention was the integrated nature of the product and the ability to create, deploy, and manage applications from a single unified desktop environment. In addition to flexibility in selecting an approach to control, AspenTech's new control platform architecture provides the ability to deploy both empirical and fundamental-model based inferentials.

After successfully completing the pilot project, Evonik developed and deployed an additional four controllers, with more controllers currently in the planning phase. The experience and results of these projects are being used by other business units at Evonik in evaluating aspenONE APC technology.

## About AspenTech

AspenTech is a leading supplier of software that optimizes process manufacturing — including oil and gas, petroleum, chemicals, pharmaceuticals and other industries that manufacture and produce products from a chemical process. With integrated aspenONE solutions, process manufacturers can implement best practices for optimizing their engineering, manufacturing and supply chain operations. As a result, AspenTech customers are better able to increase capacity, improve margins, reduce costs and become more energy efficient. To see how the world's leading process manufacturers rely on AspenTech to achieve their operational excellence goals, visit [www.aspentech.com](http://www.aspentech.com).



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