

# Aspen Fidelis Reliability: Providing Confidence to the Process Industries

Eliminate the guesswork with reliability modeling that quantifies risk

Petrochemical  
Oil & Gas Production  
Refining  
Aerospace  
Power  
Mining



Make more profitable life-cycle cost decisions with Aspen Fidelis Reliability.

## The Challenge: Untangling the Complex Web of Maintenance and Reliability

Billions of dollars each year are lost in unplanned downtime and off-spec production due to poor asset availability and reliability. How can you maintain optimal availability and mitigate risks to meet target production levels? There are considerable challenges in optimizing maintenance cycles, duration and activities. It's nearly impossible to quantify the change in plant performance with changes in design, capacity, operations and logistics because of the interdependence and complexity of these systems. Understanding the losses or benefits of making such changes drives decisions in spending limited available capital in the right places for the highest return.

## Why Choose Aspen Fidelis Reliability for Your RAM Analysis Needs?

Aspen Fidelis Reliability has demonstrated the ability to reduce CAPEX for new projects by well over 5% and/or increase production by well over 3% by giving insight into availability.

Aspen Fidelis Reliability is a reliability modeling tool that enables owner operators and EPCs to **determine probable outcomes—spanning design, capacity, operations, maintenance, logistics and market dynamics—and quantify the financial impact** on any asset, unit or site.

Companies can use Aspen Fidelis Reliability to:

- Achieve upfront design optimization by incorporating reliability analysis into the conceptual design feed phase, when improvements are most impactful and least expensive.
- Optimize design redundancy and buffering to support availability and maximize Return on Capital (ROC).
- Determine the optimum number of spares needed with confidence.

Aspen Fidelis Reliability is a process reliability analysis tool uniquely designed to:

- Understand process flows and the level of impact potential failures will have on overall plant operations and revenue.
- Quickly and confidently validate model logic and results using flexible, open platform technology.

**Aspen Fidelis Reliability** has demonstrated the ability to reduce CAPEX for new projects by more than 5% and/or increase production by more than 3% by giving insight into availability.

## The AspenTech Solution for Engineering and Procurement Companies

For EPC companies whose priority is to win jobs and find more service opportunities, Aspen Fidelis Reliability can help you differentiate your design and services. You can create more business opportunities by offering services spanning RAM (reliability, availability, and maintainability) analysis, dock optimization, buffer tank optimization and others to an array of industries including oil and gas, chemicals, power, and more.

## The AspenTech Solution for the Process Industries

Managers in any industry (oil & gas, petrochemical, power, etc.) that are concerned about spending their budgets wisely will more easily and more accurately be able to calculate an ROI. For large capital investments, Aspen Fidelis Reliability will predict and calculate a confidence in asset performance and the resulting profitability of the investment over the lifecycle of the process/plant/site/complex. For project managers, Aspen Fidelis Reliability can quantify the benefit of capital improvement projects at the complex/site/plant, to help you determine which projects to prioritize.



## The AspenTech Solution for Maintenance & Reliability Engineers

Engineers will benefit from being able to predict the future performance of equipment and systems with a known degree of confidence. Your Aspen Fidelis Reliability model will give you an accurate, comprehensive bad-actor list, quantified by lost revenue and production not just by maintenance. Effectively perform life-cycle analyses on assets including asset utilization, overall equipment effectiveness, and other parameters that define operating conditions, reliability and costs of assets. You will have the ability to quantify your successes.

## Product Overview

Why limit your analysis to only individual equipment when you can also analyze an entire system? With Aspen Fidelis Reliability, decision makers can maximize the economics of business decisions by going beyond the equipment level and accurately predicting future asset performance of the whole system.

Aspen Fidelis Reliability is a discrete event simulation modeling tool, utilizing Monte Carlo simulation to model all of the probable future performance metrics of complex, large-scale asset systems. Aspen Fidelis Reliability is unique among stochastic or dynamic

## Industries served include:

Petrochemical

Oil & Gas Production

Refining

Power

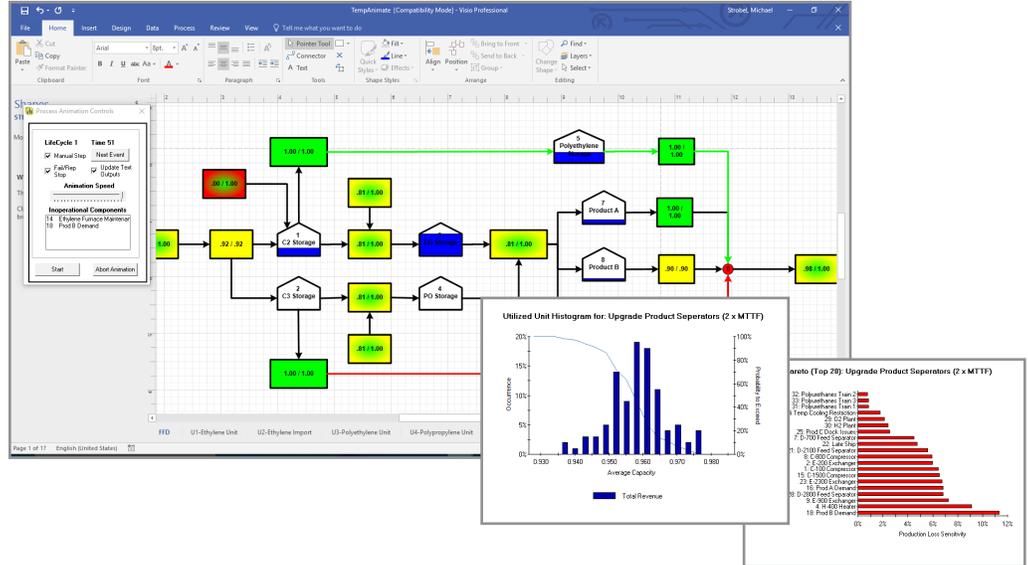
Aerospace

Mining

Marine

Military

simulation software tools in its ability to handle any complexity. This eliminates uncontrolled assumptions, which compromise the accuracy of results. These complexities are typically an inherent part of systems, and are easily modeled by Aspen Fidelis Reliability, generating outputs that support more profitable decision making.



## Features of Aspen Fidelis Reliability

- State-of-the-art platform - Latest Microsoft technologies, SQL / XML compatible
- Multiple-state modeling - handles reduced capacities and over-capacities
- Implicit standby redundancy
- Rigorous component aging
- Rigorous product storage modeling
- State-of-the-art graphical outputs
  - Time dependent graphs
  - Histograms
  - Event-related graphs
  - Capacity sensitivity charts
- Fully customizable and exportable graphs
- Tabular outputs
- Capability to paste directly into Microsoft applications (.doc, .xls, .ppt, etc.)
- Simulation queue: allows for “hands free” running of multiple cases
- Convergence charts: Eliminates the guess work on how many life cycles are enough, user can halt simulation at any time and preserve outputs
- Animated simulation: Graphical tracking of storage levels, flows, and equipment status allows for quick and easy model validation and troubleshooting
- Microsoft VBA: Allows for complete control over simulation via logic statements and makes Aspen Fidelis Reliability fully customizable to fit unique requirements

**Provides accurate predictions of the future performance and cost of complex systems, allowing for more profitable equipment-related decisions.**