



# Aspen InfoPlus.21® Family

*The process industry’s most comprehensive production management solution for unleashing innovation and creativity to improve profitability*

The *Aspen InfoPlus.21 Family* aggregates process, production, and business information into a context for understanding and improving performance. It is a foundation for integrating aspenONE® solutions and connecting plant control systems and the shop floor with business systems.

## Key Benefits

- Make data actionable
- Accelerate root cause analysis & corrective action
- Make faster and better business decisions
- Leverage skills and lower costs by delivering remote information to the experts
- Improve decision support, operating performance, cost efficiencies, and customer service
- Supports ISA-S95 work activities for data collection, analysis and tracking

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**Aspen InfoPlus.21** .....page 1  
Powerful application environment and information management system for unlocking knowledge and value in real-time manufacturing processes

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**Aspen Production Record Manager** .....page 4  
Organizes manufacturing process information into a production context to provide sophisticated monitoring and analysis to improve production and quality performance

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**Aspen KPI Builder** .....page 5  
KPI templating environment for creating and testing KPI definitions that align daily plant operational decisions with corporate and financial objectives

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**Aspen Real-Time Statistical Process Control Analyzer** .....page 6  
Performance management tool for continuous and batch operations which applies statistical process control techniques to process data in real time

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**Aspen Golden Batch Profiler** .....page 7  
Monitors actual progress of both batch and continuous processes against an ideal or target profile and alerts on deviation

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## ||||||| The Challenge: Adapting to Change while Maintaining Profitability

Every company has seen the dynamics of their business change in some significant way due to the economic downturn. Understanding where opportunity lies has become paramount for making sound, swift business decisions and taking action. Manufacturers struggle to achieve an integrated and holistic view that helps them understand the dynamics and how to respond.

## ||||||| The AspenTech® Solution: Providing Visibility and Making Data Actionable

The *Aspen InfoPlus.21 Family* equips the process industry with a leading set of production management tools to handle change swiftly and confidently, providing operational visibility and agility to sustain margins in an ever-changing environment. The suite supports creativity and innovation by enabling operations staff to apply specific applications to solve high value problems.



# Aspen InfoPlus.21® Family

## ||||| Scalable, Flexible Solution that Grows with You

An important feature of *Aspen InfoPlus.21 Family* is its role as the foundation for Manufacturing Operations Management (MOM) in accordance with the ISA-S95 and ISA-S88 work activities model.

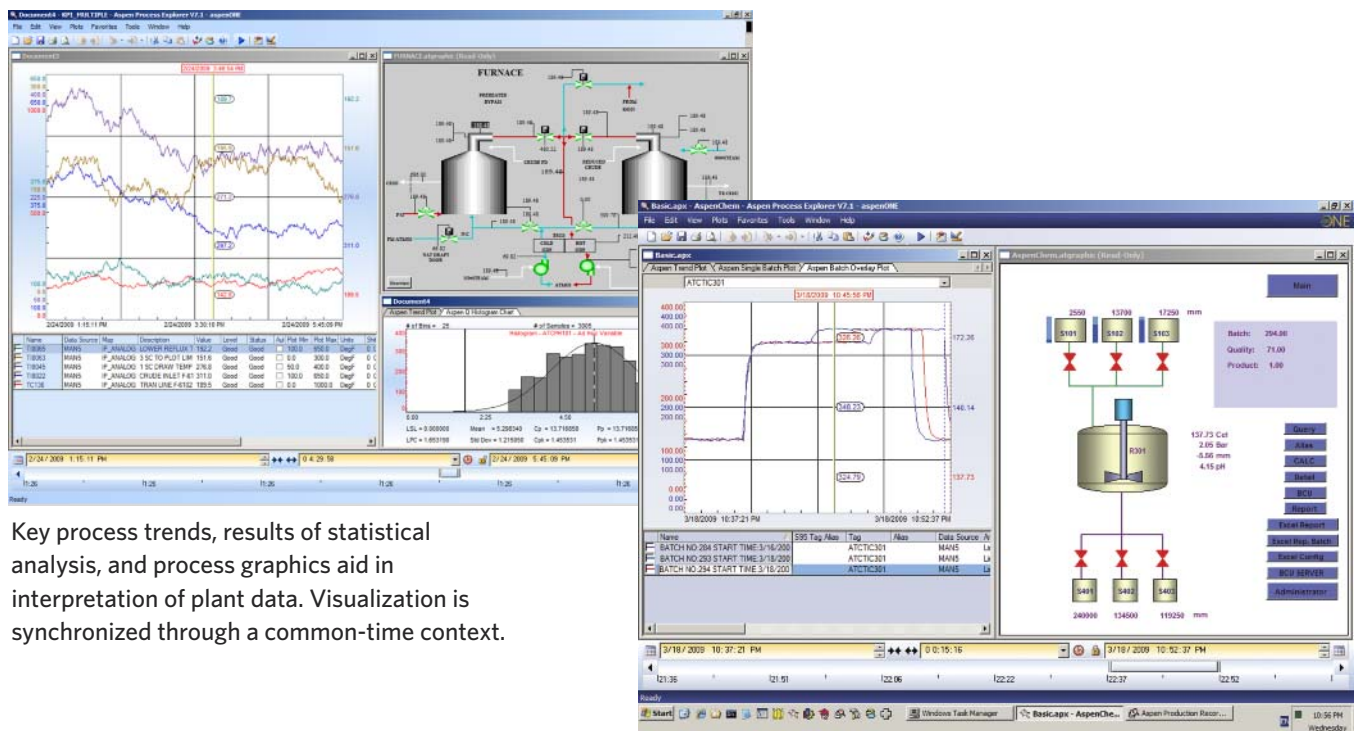
The solution is completely scalable, from a single process to enterprise-wide global deployments involving hundreds of locations. Performance may be compared across a fleet of assets to identify best practices and disseminate those to processes and sites needing improvement.

The *Aspen InfoPlus.21 Family* is built on an enterprise-ready architecture that supports ISA-S95 hierarchical navigation and access to a manufacturing master data model. Servers are able to share tag data on enterprise networks with any DCS.

Users are able to build their own applications to solve unique business problems. Within the solution is an embedded drag-and-drop calculation engine and SQL environment that eases reporting and queries. SOA-ready web services adapter for business intelligence applications are standard and can be used to move data where it is needed for business decisions. The flexibility of the *Aspen InfoPlus.21* product family allows for faster application development and lower support and upgrade costs.

In addition to its role in continuous improvement and operational excellence, companies deploying AspenTech's production management solutions gain improved performance and profitability through reduced operating costs, increased throughput and capacity, reductions in unscheduled downtime, improved and sustainable quality and significant improvement in personnel productivity.

The *Aspen InfoPlus.21 Family* consists of a suite of modular visualization, analysis, and integration products. This modularity supports multiple applications including advanced control and optimization, SPC, process modeling, batch analysis, quality assurance, and scheduling—across a wide range of industries, from consumer packaged goods to hydrocarbon processing.



Key process trends, results of statistical analysis, and process graphics aid in interpretation of plant data. Visualization is synchronized through a common-time context.

Aspen Production Record Manager makes extensive use of the industry leading Aspen Process Explorer visualization tool for monitoring production and undertaking root cause analysis.

# Aspen InfoPlus.21<sup>®</sup>

## |||||| Central Database for Real-Time Collection and Analysis

Designed as a flexible, modular, and scalable information management system, *Aspen InfoPlus.21* enables better and faster decisions aimed at optimizing your processes. When integrated with AspenTech's modeling tools, the solution provides operations the ability to compare actual with best possible performance, predict future performance, and create dynamic KPIs.

*Aspen InfoPlus.21* allows users to quickly pin-point the root cause of process problems by assessing current and past performance and predicting the future. Leveraging high-speed embedded statistical functions and easy-to-use ad hoc calculations, users are able to quickly collect and analyze data for real-time decision making and enable online execution of process models.

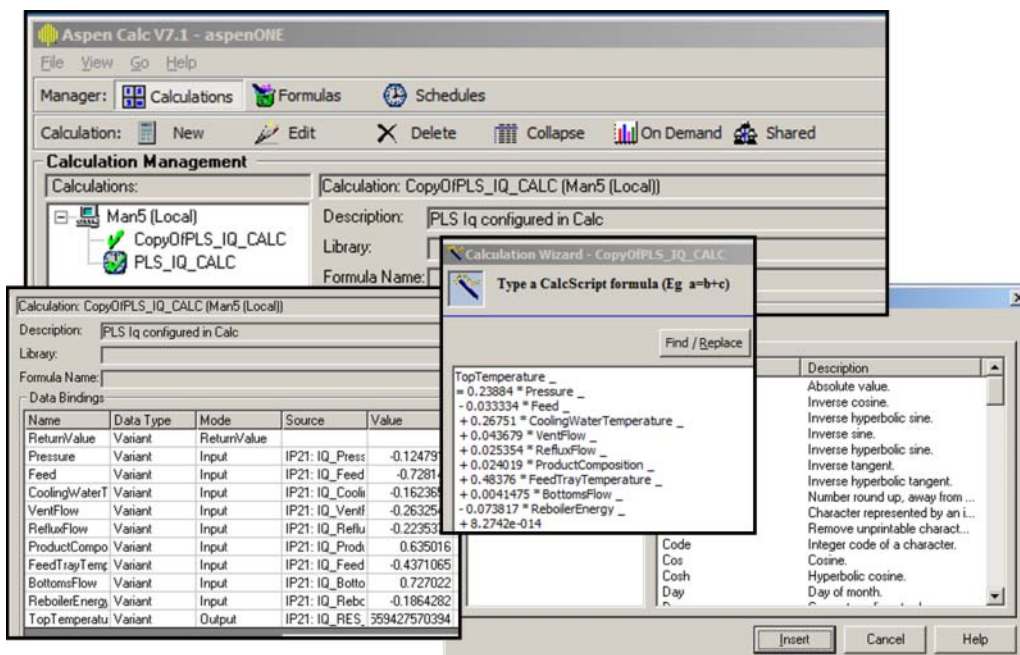
Underpinning *Aspen InfoPlus.21* is a flexible real-time database with multiple, configurable history repositories and an event-driven applications engine. Custom records can be created to put business information into context to solve unique problems that an enterprise can use across multiple servers and sites.

### Feature

- Large volumes of process data can be collected and stored in multiple data repositories
- Drag-and-drop calculation engine
- Events and notifications trigger automatically in real time
- Metrics can be shared and compared across enterprise networks
- Process models execute online with real-time data

### Benefit

- Adaptable data model results in solutions optimized to application requirements
- Simple to complex calculations are readily available
- Directs attention to highest priorities, enabling immediate action
- Availability of online models improves and predicts performance



Aspen Calc is a wizard-driven, scalable calculation engine that aids users in building calculations without the need for programming languages. Calculations may be defined and stored for routine use; ad hoc calculations aid root cause analysis. A library of pre-defined functions is provided.

# Aspen Production Record Manager

## ||||| Keys to Improve Profitability and Quality

Aspen Production Record Manager provides a unique and highly detailed view of production. The solution dynamically compiles real-time production characteristics and puts these into a meaningful context. Production records may be organized into any sequence that has a defined beginning and end. Batches are the most obvious context; other examples include shifts, crude runs, raw material lots, or operating phases. Given this business-specific contextualized view of your operations, our extensive suite of analytical tools provides the ability to quickly assess the root cause of production problems.

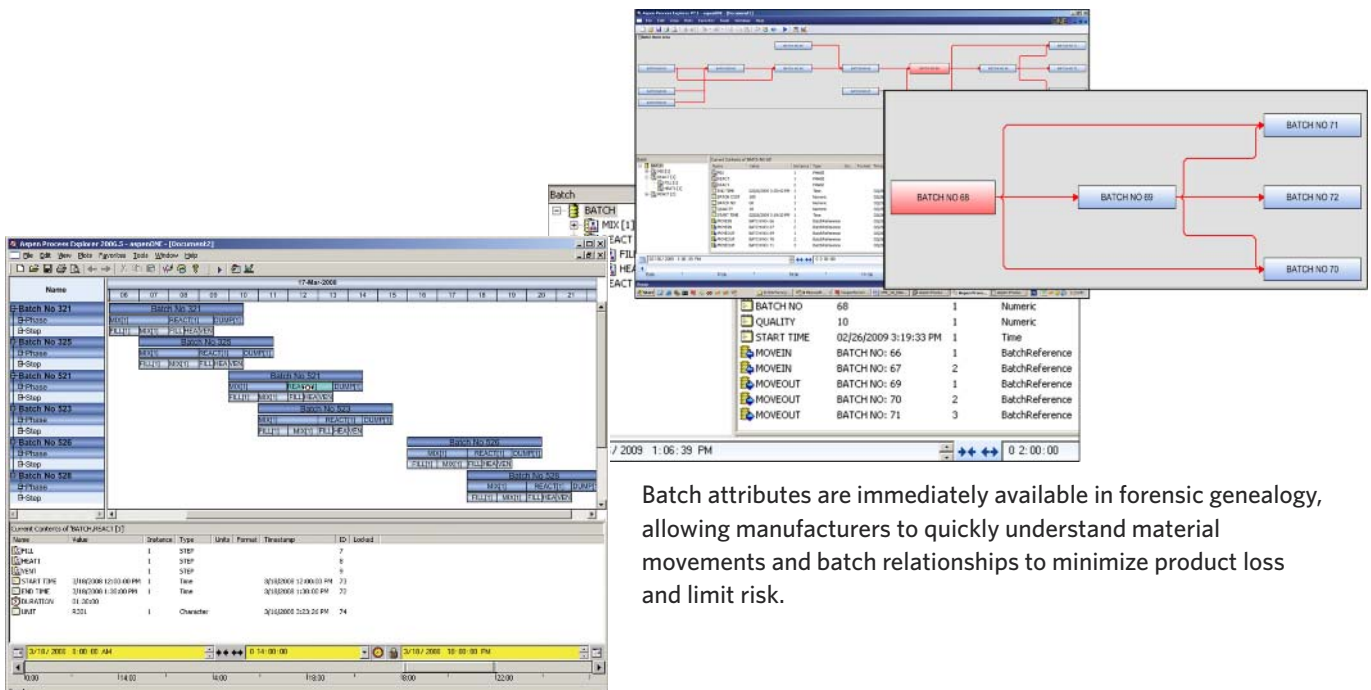
Aspen Production Record Manager is a relational database that is integrated with the Aspen InfoPlus.21 real-time process database. In addition to generating records dynamically, the solution can also generate production records from history and any batch execution system, providing a more complete understanding of production. Forensic genealogy is supported by quickly identifying all products impacted by a defect or quality issue, while attribute level tracing enables identification of specific production components which limits liability and product loss. These capabilities are not found anywhere else in the market.

### Feature

- Provide a complete actual and historical view of production
- Automatic triggering of calculations on recording of new characteristics
- Native genealogy with immediate access to batch attributes
- Search specific batches and production runs based on conditions of interest

### Benefit

- Efficient root cause analysis
- Improves product quality
- Minimizes product loss and helps avoid liability risk
- Easily find specific batches, campaigns or lots based on process data, equipment used or other production specific data



Gantt charting allows operations to visualize batch operations, including batch phases, steps and equipment details. Batch reports are easily generated from operator screens.

Batch attributes are immediately available in forensic genealogy, allowing manufacturers to quickly understand material movements and batch relationships to minimize product loss and limit risk.

# Aspen KPI Builder

## ||||| Key Performance Indicators

Today many companies base operational decisions on a limited set of process data rather than an aggregated, multi-site dataset which includes financial measures. Often there is no clear visibility of performance and its connection to business financial objectives.

*Aspen KPI Builder* is a templating environment for creating and testing KPI definitions that align daily plant operational decisions with corporate and financial objectives.

KPIs can be defined which merge data from AspenTech's manufacturing data management solutions with key operational and financial goals and other applications such as process models or scheduling. As a result, the real-time view allows everyone to see the cost impact of their decisions, reduces variability and costs, and increases product quality and equipment availability.



The core of Aspen KPI Builder is the templating environment, which is wizard-based and allows KPIs to be easily defined. KPIs may then be easily incorporated into a status summary plot or other displays to give attention to top priority process issues.

### Feature

- Quick and easy setup of operational KPIs using the built-in KPI Creation Wizard
- Calculates a performance score and the real-time cost of deviation from target
- Immediate drill-back to calculations and other source data to accelerate root-cause analysis
- Track performance of any plant variable against up to three sets of high and low user-specified limits

### Benefit

- Integrates with Aspen InfoPlus.21, other historian systems and any OPC-compliant system for real-time access to plant data
- Tracks and communicates operational KPIs such as feed rates, yields, reactor efficiencies, utility usage, and material losses for continuous and batch processes
- Accelerates progress on corporate initiatives such as reducing variability, controlling costs, increasing product quality, and advancing best practices

# Aspen Real-time Statistical Process Control Analyzer

## Statistical Process Control

Statistical Process Control is a well known technique for improving manufacturing processes. However, SPC capabilities are often not integrated with all of the necessary information for making the best decisions, leading to delays in recognizing, notifying and correcting problems.

*Aspen Real-Time Statistical Process Control Analyzer* is a performance management tool for continuous and batch operations, applying statistical process control techniques to process data in real time.

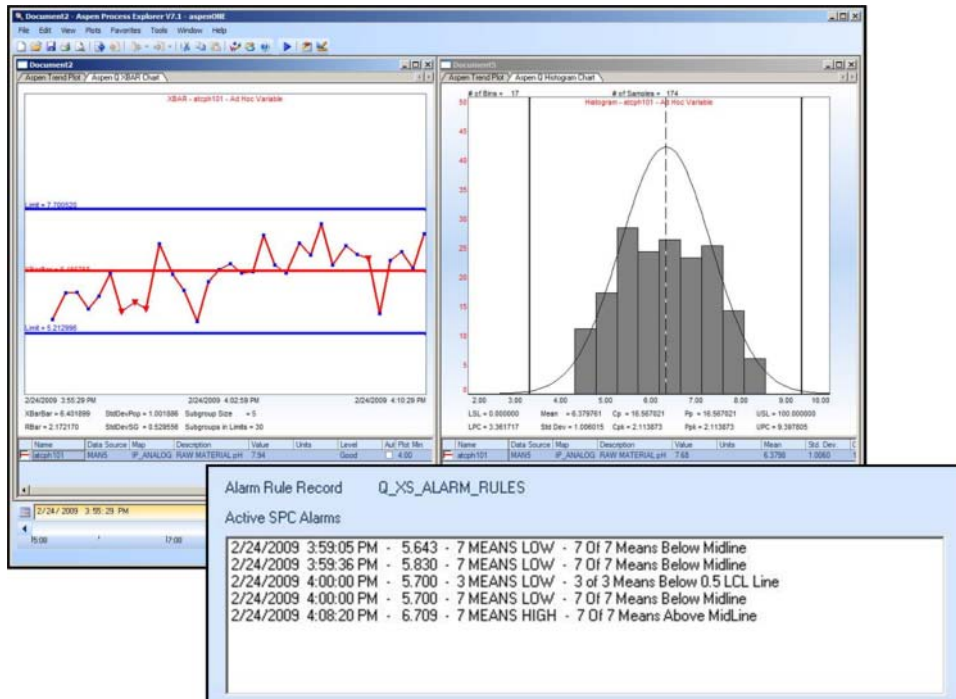
*Aspen Real-Time Statistical Process Control Analyzer* works in conjunction with *Aspen InfoPlus.21* and *Aspen Production Record Manager* to perform SPC monitoring, analysis and alarming of operating data. Histograms, Pareto charts and a wide variety SPC charts and other graphic displays are provided. Alarms are automatically generated in real-time from user-defined control chart alarm rules. Users have the capability to dynamically recalculate process control limits and SPC values based on changes in process values. The end result is improved product quality and reduced manufacturing costs for continuous and batch SPC operations.

### Feature

- Configuration of background processes to test for alarm conditions and recalculate SPC limits and values as data is collected
- User-defined control chart alarm rules

### Benefit

- Identify process trends
- Reduce variability in the process
- Improve product quality
- Reduce manufacturing costs



Statistical process control techniques applied to real-time data reduce variability and keep processes on track. User-defined alarm rules trigger alerts, resulting in improved product quality and reduced manufacturing costs.

# Aspen Golden Batch Profiler

## Track Planned vs. Actual Production Profiles

Manufacturers cannot attain the quality or performance levels possible due to variability in their processes and in batch cycle times. *Aspen Golden Batch Profiler* monitors progress of continuous and batch production against an ideal profile and provides structured workflow for continuous quality improvement.

*Aspen Golden Batch Profiler* provides real-time monitoring of process variables within a pre-configured envelope for a given production or batch context. Records can be organized into any sequence that has a defined beginning and end and may be statistically analyzed to determine the envelope. The tool provides an environment for building simple, heuristic models representing “ideal or golden profiles”. Process variables can then be monitored against the ideal profile from a variety of client applications.

When out of control conditions occur, alarm notifications are generated, initiating root cause analysis, corrective actions and recording of steps taken to facilitate continuous improvement.

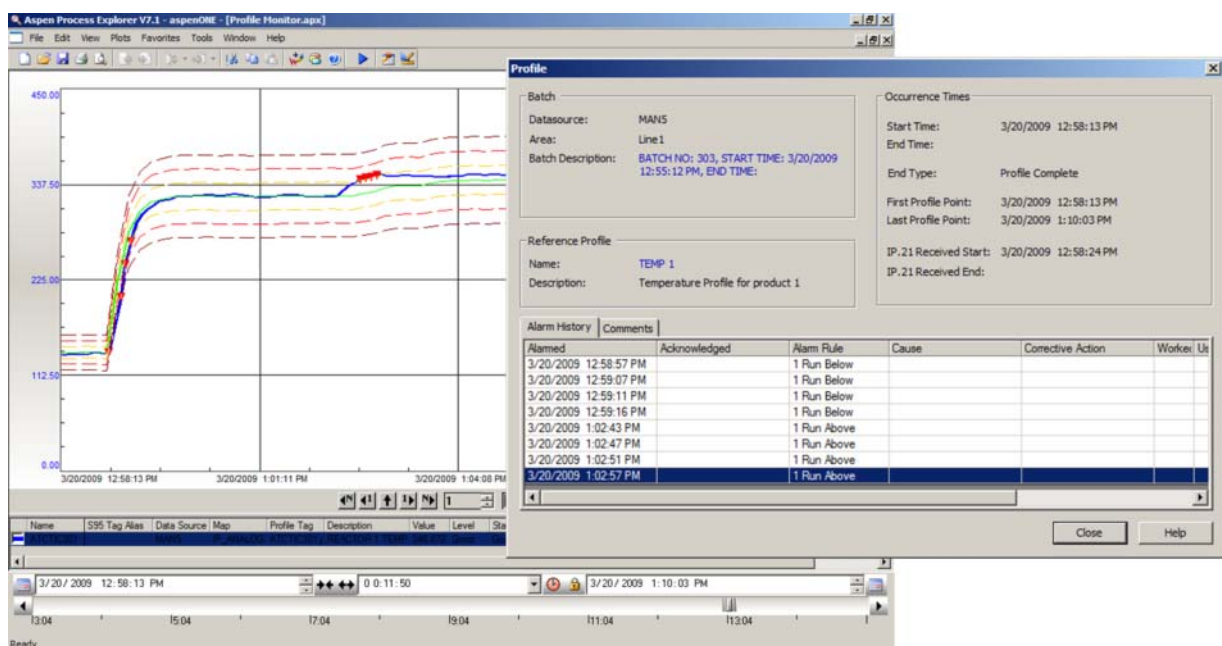
*Aspen Golden Batch Profiler* improves batch quality, identifies excursions from optimal profiles early in the manufacturing cycle and provides a mechanism for sustaining the gains from continuous improvement.

### Feature

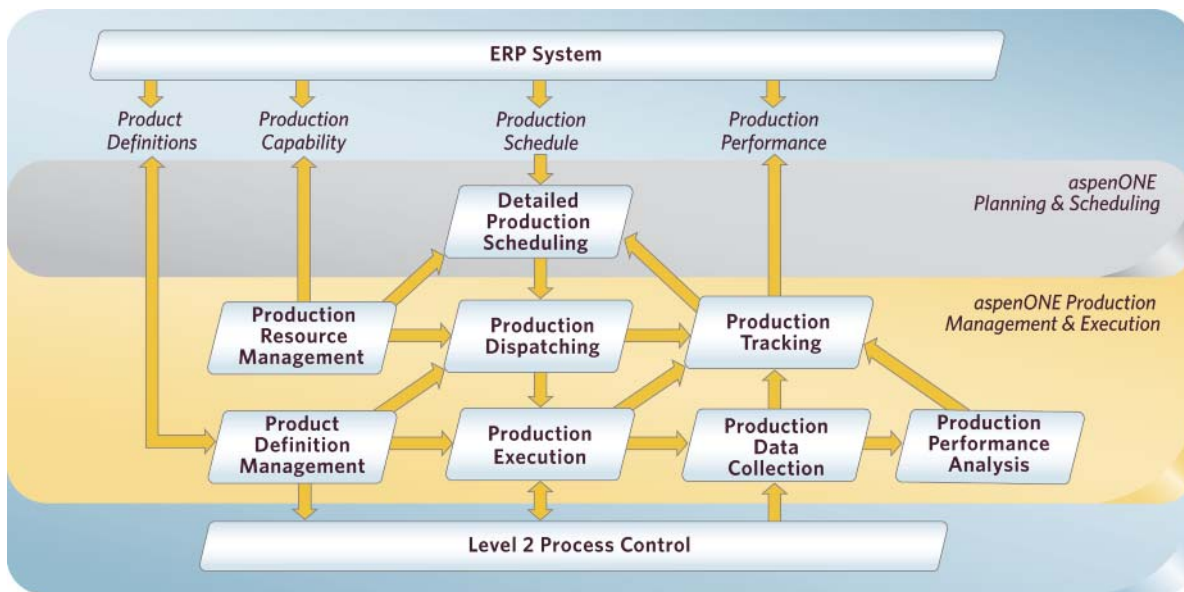
- Profiles may be based on time or process values
- Flexible profiling: vs. target or limits; phases, operation, or entire batch—system automatically selects correct profile to use
- Captures results of root cause analysis and remediation action taken

### Benefit

- Identifies excursions from optimal profiles early in the manufacturing cycle
- Improves problem response to reduce variability
- Reduces cycle times and improves batch quality
- Reduces number of bad batches



Aspen Golden Batch Profiler monitors a process variable against an ideal profile envelope in real-time. Causes and corrective actions for alarms are tracked through the alarm history. Multiple statistical control limits, multiple alarm rules and automatic notifications drive continuous improvement to help sustain quality.



AspenTech's Coverage of the ISA-95 Activity Model



#### ||||||| aspenONE® Production Management & Execution

Aspen InfoPlus.21 Family is a key component of AspenTech's integrated aspenONE solutions for Production Management & Execution. aspenONE Production Management & Execution solutions help manufacturers drive operational excellence through improved monitoring, control and analysis of their manufacturing operations, enabling better and faster decisions across the enterprise.

#### ||||||| 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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