



OPERATIONAL  
TECHNOLOGIES

 **aspentech** | Partner

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# ADVANCED PROCESS CONTROL APC

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Maximise profitability  
by maintaining optimal  
operating conditions

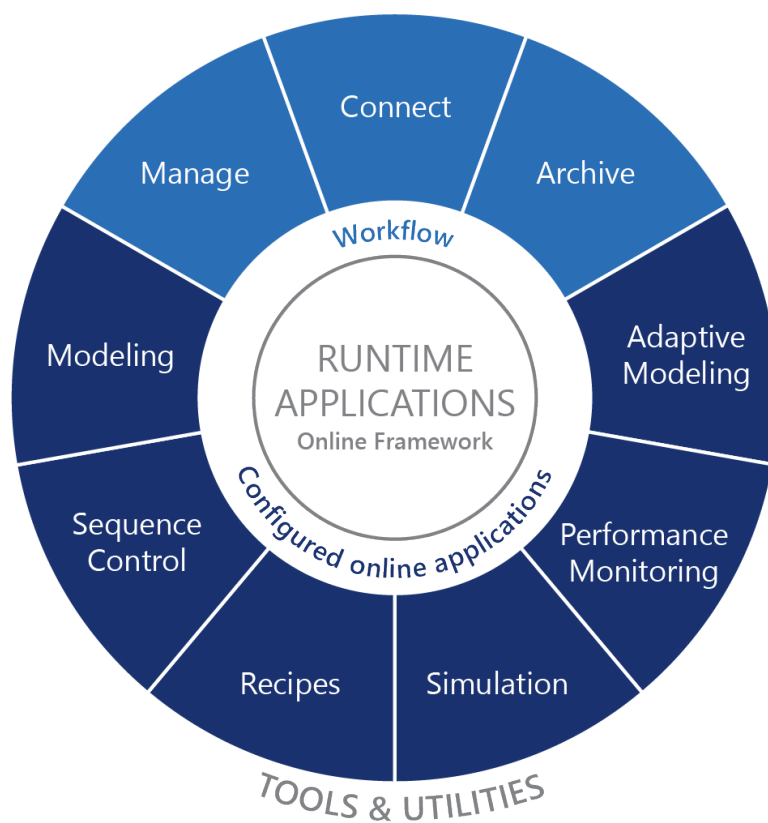
100%  
of the time

## ACHIEVE PRODUCTION EXCELLENCE WITH INDUSTRY-LEADING APC TECHNOLOGY.

Bring together the power of data to operate your plant more efficiently, with advanced control software that helps production, quality and process engineers remedy and avoid events that limit production profitability.

4Sight's Advanced Process Control has been on the forefront of Multivariable Model Predictive Control (MPC) projects since 2000 and a multitude of benefit-driven projects have been implemented across the world in both the Mining, Metals and Minerals sector as well as the Petrochemical sector.

With the Petrochemical sector traditionally being the early adopters of Advanced Process Control, 4Sight used their knowledge and experience gained there to apply APC in the Mining sector, with great success.



AspenTech Advanced Process Control provides a full set of integrated features for developing, deploying, and maintaining advanced control applications.

Increase production  
by up to

5%

Reduce energy  
usage by

10%

Improve  
yields by

3%

with Advanced Process Control

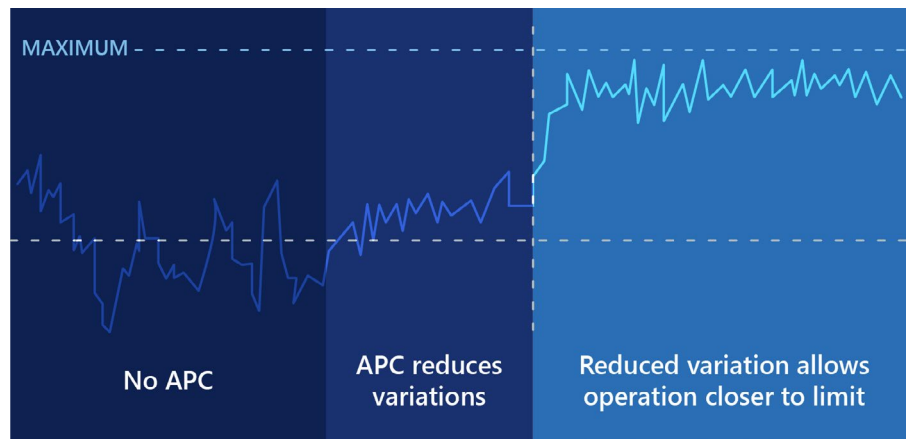
Advanced Process Control refers to a technology that is implemented within industrial process control systems, to address specific performance or economic improvement opportunities in the process.

Model Predictive Control (MPC) is the key component of an APC system, that enables optimal process operation, resulting in increased productivity.

MPC achieves this by predictive control using dynamic process models, which is proven to increase throughput, save energy, and reduce quality giveaway.

As the MPC control strategies vary, our experienced APC engineers work closely with experts alongside our customers to ensure successful and seamless implementation.

- Reduced process variability
- Push profitable constraints
- Reduce product quality variability



AspenTech Advanced Process Control enables companies to increase throughput, improve product quality, reduce energy and raw material usage, and increase overall operational efficiency while keeping the process between safe limits of reliable operation.

Additional benefits include standardisation of processes and consistent use of best practices, ensuring higher operational stability and reduced maintenance requirements, therefore sustaining long-term value.

# SOLUTIONS ADDRESSING INDUSTRY CHALLENGES



## Adapt and Optimise Simultaneously

Improve ROI with rapid controller deployment, continuous model improvement and simplified work flows to enable more engineers to implement and maintain APC systems.



## Simplify Tuning and Optimisation

Streamline controller tuning with a step-by-step configuration wizard to directly specify objectives.



## Improve Performance with Robust Control

Increase controller uptime by making controllers more resilient to model quality issues and process disturbances.



## Monitor with Real-Time Diagnostics

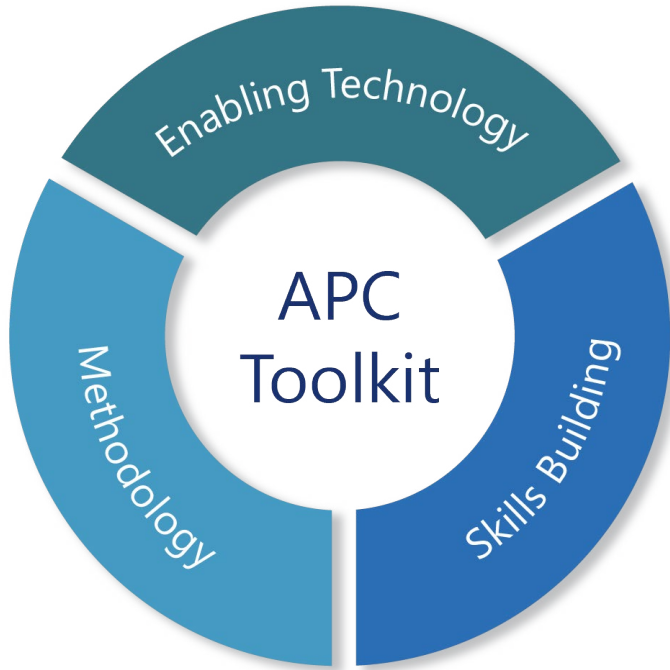
Visualise, analyse, monitor and access real-time controller KPIs to gain key insights into controller performance.



# SOLUTION ELEMENTS

The benefits of one integrated solution for optimising linear and non-linear processes:

- Increase Throughput
- Save Energy
- Improve Quality



## ENABLING TECHNOLOGIES

Modular Tool set that supports the implementation methodology and allows for rapid development and deployment of Advanced Control strategies.

AspenTech DMC3 Builder application covers all phases of an APC Project workflow.

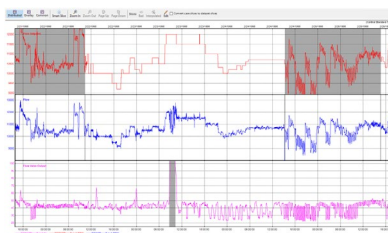


## Model Building

- Optimisation Analytics
- Model Definitions

## Controller Life Cycle

- Build Controller
- Commission
- Sustain and improve



## METHODOLOGY

Proven methodology aimed at maximising the benefits of implementing new technologies.

### Quantify

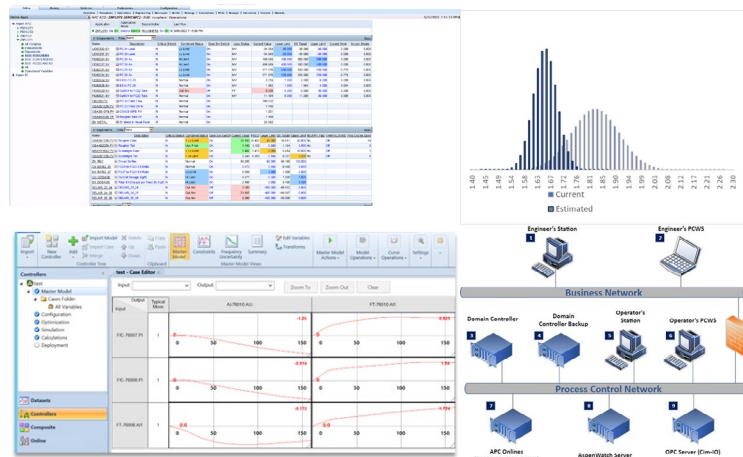
Quantification of economic and production opportunities

### Develop

Development of Advanced Control Models

### Deploy

Online deployment



## SKILLS BUILDING

Ensuring a sustainable solution through an efficient skills transfer program.

- Training
- Mentoring

# THE ASPENTECH® SOLUTION

## A Single, Flexible Platform that Delivers Sustained Value

AspenTech Advanced Process Control provides a unified environment for AspenTech's three industry-leading control formulations within an architecture that provides the ultimate flexibility and usability.

The choice of three control formulations provides superior control performance, execution

efficiency and exceptional constraint handling to maximise asset utilisation regardless of the control challenges.

Major benefits are realised through reduced variability, increased throughput and increased yields of more valuable products.



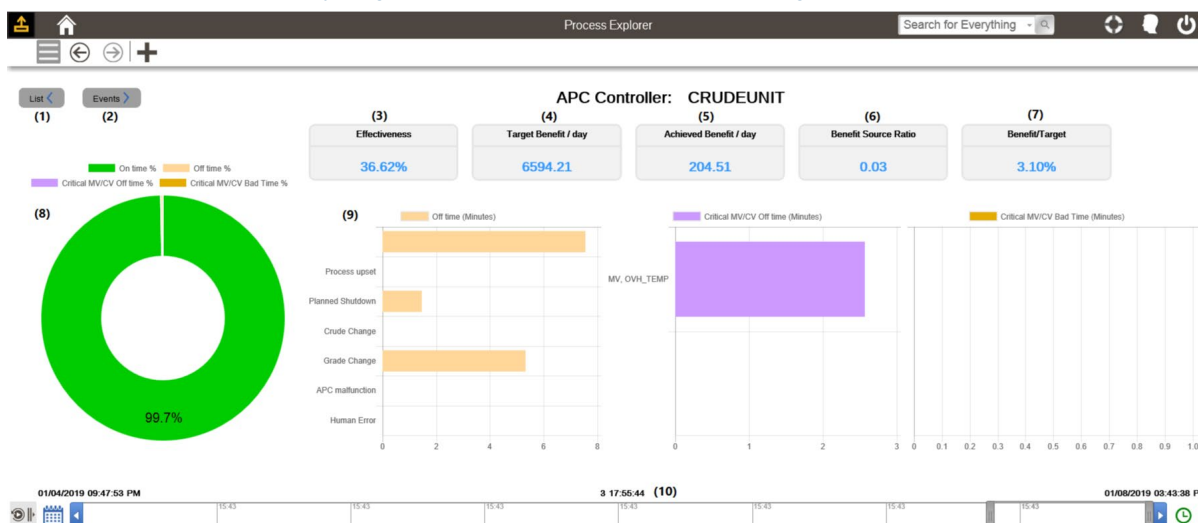
## SUSTAINABILITY

Many APC solutions suffer from degrading benefits. Process changes, equipment aging and changing economic conditions are but a few of the factors that drive the need to maintain controller models.

While many competitors offer basic performance monitoring capabilities, AspenTech Advanced Process Control goes beyond simple Key Performance Indicators (KPIs) by providing detection, diagnostics and corrective action features.

These features work together to rapidly detect, isolate and correct problems with APC applications without increasing the burden on your staff.

The Sustainability features of AspenTech Advanced Process Control help to quickly identify diagnose and correct problems with eroding performance.

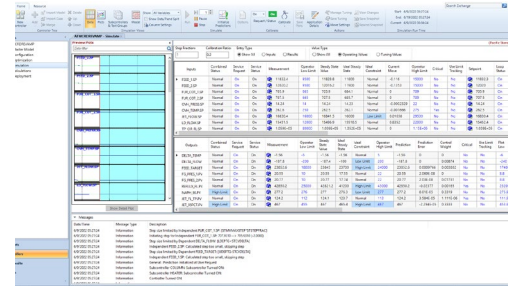


# APC SOLUTIONS

AspenTech Advanced Process Control provides four different controller formulations in a single package.

- Enable rapid APC deployments and sustain optimal performance with adaptive process control including deep learning technology incorporating process safeguards with Aspen DMC3™

- Aggressively chase profits and deliver more value with the most profit hungry controller on the market, Aspen DMCplus®
- Automate operating procedures including startups and shutdowns as well as complex non-linear transitions with the Aspen Nonlinear Controller™
- Improve product quality and yield, and lower cycle times by predicting end-of-batch quality attributes at key decision points along the batch process, with Aspen Batch APC™.



AspenTech APC delivers multiple control formulations in a single package. These formulations share a common workflow for rapid development and consistent implementation.

## Customer References



## Industries we serve

We work with leading companies in various industries to drive profitability and maximise return on investment.

Our competent, industry-experienced engineers are well versed in helping customers to push the boundaries of what is possible across engineering, operations and performance.

- Oil and Gas
- Manufacturing
- Power and Utilities
- Chemicals
- Rail Transport
- Mining
- Logistics
- Ports and Terminals



# CONTACT US:

Incorporated in 2017, 4Sight is a JSE AltX (ticker: 4SI) listed, multi-national, diversified technology group. Our purpose is to leverage our extensive product and services portfolio, focused on 4IR technologies, people and data-focused solutions to design, develop, deploy and grow solutions for our partners (customers and vendors).

The company's mission is to empower our partners to future proof their businesses through digital transformation to make better and more informed decisions in the modern digital economy.

4Sight's business model enables its partners to take advantage of products and solutions within its group of companies, which will allow them to enjoy turnkey digital transformation solutions across industry verticals.

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