



Aspen Plant Scheduler

A decision support system, which uses advanced heuristics and solvers to create an optimal short-term schedule of operations,

Optimize your Scheduling Activities

Scheduling is a near-term function that addresses the sequence, timing and volumes of manufacturing activities or movements to be executed. It is a dynamic process that involves reacting to perpetual changes in customer orders, demand forecast, material availability and production throughput.

Aspen Plant Scheduling Solution, powered by Aspen Plant Scheduler, a *decision support system which uses advanced heuristics and solvers to create an optimal short-term schedule of operations*, provides interactive tools to determine if a given sequence of activities is feasible with respect to both inventory and capacity. It dynamically determines activity timing requirements across multiple stages of production, linking inventories and production activities to customer orders and net forecast. It can suggest solutions to problems created by changes or upsets, as well as cost-saving improvements to a schedule that can be made by reducing changeover and inventory holding costs, or increasing effective capacity. The solution process can include:

- Creating new production activities
- Defining purchases
- Re-sequencing activities
- Changing start times
- Changing production volumes
- Providing feedback on schedule costs

Aspen Plant Scheduler positively impacts several key areas:

- Inventory, minimizing unwanted materials and enabling more just-in-time (JIT) manufacturing
- Sequencing, reducing schedule changes and improving product quality
- Capacity utilization, increasing production and decreasing operating costs

responsive supplier collaborate beyond the enterprise B2B
collaboration profitable-to-trade support supply chain execution management
support scalable connectivity supply chain execution efficiency digital marketplace
efficiency digital marketplace decision support available-to-promise speed
int decision support monitor analyze real time data = better decisions
gile trading partners collaborative workflow business process integration

- Manufacturing lead times, increasing flexibility to follow varying demands and improve JIT manufacturing
- Customer service, enabling instantaneous Available-to-Promise (ATP), reliable order commitments and an increased level of on-time deliveries

Aspen Plant Scheduler's functional mission is to create an optimal or near-optimal short-term schedule for unit production, consistent with the longer-term group production plan, to address the inevitable variability in actual customer orders vs planned. The solution is developed at the end item level (i.e. a shippable, billable item) scheduled by production work center by start and stop times, or shift, day, or other finite time period.

Perhaps the most important feature of the Aspen Plant Scheduler is its ability to help the customer reconcile the inevitable differences between production plans and reality. It reconciles planned customer orders with actual customer orders, planned receipts with actual receipts of raw materials, planned production activities with actual production activities. It reconciles high-level corporate production plans with actual events occurring on the shop floor and sends the information back to corporate HQ for consideration in global planning.

The Plant Scheduler's sophisticated user interface facilitates the intuitive grasp of the underlying operational model, greatly reducing both the time to deploy a solution, and the time required for new users to become proficient with the tool. Its pre-configured interfaces, functions and reports help to guide business process flow and further decrease implementation time.

Aspen Plant Scheduler is a member of the MIMI family of supply chain solutions. Since the Plant Scheduler is built on the Aspen MIMI framework, it is also easily extensible to incorporate the unique requirements of less common situations. The Plant Scheduler can easily integrate with the other components of the Aspen eSupply Chain Suite. This enables the customer to manage production schedule information consistently across the company's various planning and scheduling processes. The Plant Scheduler integrates closely with third party MES, ERP, and control systems, as well as the customer's own legacy systems. The integration with SAP comes pre-configured and tightly coupled.

Features and Benefits

- **Decision rules and heuristics** are used to speed creation of an efficient, executable schedule for large numbers of items sharing limited capacity. Users typically generate a schedule for a few days to a few weeks into the future, in user-defined buckets. Emphasis is on ability to rapidly reschedule to reflect quick turning points in demand.
- **Automatically generates a revised materials plan** to reflect changes in expected output. Reduces delays in communicating needs to suppliers, which cause service problems or excess expediting.

- **Process-efficient solution able to calculate large data volumes.** Absolutely critical for supporting ATP/CTP.
- **Solution integrated with the Aspen Available-to-Promise / Capable-to-Promise solution,** to enable rapid, confident response to customer requests for firm promise dates for new orders, make-to-order items, and new product formulations. Rapid response is frequently the difference between getting an order or a customer rejection.
- **Customizable reports** adaptable for each function and department.
- **Solution linked to Aspen Collaborative Forecasting and Collaborative Replenishment solutions** to link the Aspen client to both his suppliers and customers. This process removes wasteful and expensive lead time from the scheduling/execution process, reducing costs throughout the value chain.
- **Schedule analysis tools** makes it easy for the scheduler to quickly hone in on the problems the schedule and their causes.
- **Simple integration with Aspen Supply Planner** allows for seamless conversion of firm's annual plan to a more granular schedule used to organize final staging, testing, and product distribution.
- **Automated schedule generator** creates an initial solution and then uses heuristics to fine-tune the schedule.

Additional Benefits

- Debottlenecks the short-term schedule to support high service levels
- Solution fully supports Sales and Operations Planning to improve personal productivity for tactical managers
- Synchronizes production with true customer demand to prevent misallocation of scarce resources
- Reduces or eliminates rework in creating schedules, thus stabilizing operations
- Provides a framework for cost reduction, service improvement, or reduced effort
- Contributes to ongoing product quality programs by reducing changeovers which frequently take time to bring "under control"

Why AspenTech?

Using AspenTech's industry-leading supply chain and e-business solutions, process manufacturers can work more collaboratively with their trading partners to administer more accurate order commitments, make better decisions about what to buy and sell and improve the accuracy of their planning, forecasting and plant scheduling processes.

No other manufacturing software provider offers AspenTech's breadth of solutions and deep process knowledge. AspenTech is the only company to offer e-business solutions that bridge the gap between operations and finance from the plant floor to the boardroom -- enabling tight business process integration between global supply chain planning, manufacturing and ERP systems. AspenTech's e-Business solutions are the crucial connection linking value chains together and generating tremendous value for process manufacturers.



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