



APS

Advanced Planning & Scheduling



SYSPRO for Manufacturers & Distributors

APS: Making Sense of the Technology

SYSPRO offers a choice of APS modules to meet your specific business requirements and operational needs.

Factory Planning

The APS Factory Planner helps users plan workloads against available capacity. Capacity is derived from the number of available machines and their working hours. Demand load is calculated using the standard structures and routes provided by the SYSPRO ERP system.



The resulting load profiles may be viewed graphically for the entire factory, for an individual manufacturing cell or for a selected order. Confirmed loading can be compared with provisional loading, allowing an instant review of commitments versus expectations. All graphs are color coded to a user-set warning level, giving an immediate “feel” for the certainty of achieving the plan. The plan is constantly updated with progress as it is reported from the shop floor. This option provides order entry with true real-time available-to-promise based on current shop load, all possible within seconds.

Finite Capacity Scheduling

The APS Cell Scheduler allows each manufacturing cell to be scheduled independently with user-defined rules for optimizing and viewing “what-if” scenarios within the cell. The APS Gantt chart shows a time-based view of operations that are scheduled for the machines in the cell. Additional requirements for resources such as operators,

setters and tools are shown in parallel in the Gantt chart when calculating the schedule. The Gantt chart is “live” and available for the “drag-and-drop” of jobs in time and between compatible machines. Changes to demand for other resources are immediately reflected in the schedule. The schedules are updated in real-time with progress reported from the shop floor, so the supervisor can easily keep problems under control.

Progress Tracking

The APS Progress Tracker is a touch-screen compatible, graphical shop floor application that supplies operators with their current work-to list and, for each job, a list of necessary materials and any text or diagrams associated with the job. It can be used without a keyboard or a mouse, making it ideal for the technology shy! Using a simple, button-driven user interface, jobs may be started, stopped, completed (wholly or in part); scrap may be recorded and additional operators booked to jobs as necessary. The work-to list refreshes every few seconds to include new jobs or jobs that have become available from upstream processes.

Quality Monitoring

APS integrates the recording of quality parameters with the recording of progress data. Quality data items to be recorded are user-defined and may be related to a machine, a product, a customer or collected upon manual selection. The collected data is stored in a database, which can be queried directly or brought into an analysis tool.

APS provides instant checks for trends and “blips” in the collected data and can be configured to send warnings to other users when processes are going out of tolerance.

SYSPRO APS provides a simple and efficient means of coordinating your supply chain through better advanced planning, scheduling and visibility over your own production. SYSPRO APS can improve your margins while still providing more flexibility and better lead-times for your most cost-sensitive customers. Advanced scheduling helps improve your throughput, reduce costs and provides a tool to better utilize your resources now and for forward planning. Stop reacting, and be pro-active with the leading Advanced Planning and Scheduling System, SYSPRO APS.

APS: Global Planning, Scheduling, Execution & Quality

Manufacturers have been trying for years to tame the shop floor with only moderate success. The problem is the state of flux and unpredictability of a real-time manufacturing operation. Scheduling, data capture, monitoring and quality systems are widely available, yet the factory manager can never be certain of exerting total control without having a complete, real-time picture of what's happening on the shop floor.

Traditional enterprise software companies have mainly concentrated on creating solutions, such as ERP, which deal with more easily-defined problems in accounting, distribution and manufacturing. Now, for the first time, a sophisticated set of techniques has emerged to control advanced planning, scheduling and execution requirements. The SYSPRO APS system together with SYSPRO ERP functionality enable manufacturers to better manage the shop floor.



APS: Defined

SYSPRO APS merges the benefits of an Advanced Planning and Scheduling (APS) system with a Manufacturing Execution System (MES), extending and expanding the world of ERP. Traditional ERP offers a sophisticated method for handling complex planning, scheduling and sequencing scenarios. It does not consider the real-time changing capacity of plant resources. ERP assumes that orders are always accurate, that machines are reliable and that people are infallible. APS takes the ideal of ERP and compares it with the situation on the shop floor. An APS system can “see” the shop floor in real-time, because it is linked with data capture tools at the point of manufacture. In this way, APS provides an achievable schedule, anticipating and solving problems on the shop floor rather than just reacting to them.

APS: Detail

In an industry taken with acronyms, APS could be construed as merely the next in a long line of “miracle” solutions such as MRP, MRPII and ERP. True, some companies could be accused of jumping on the bandwagon by repackaging their ERP offerings overnight to fit the APS agenda. But only a handful of manufacturing control specialists has delivered genuine APS benefits. In this area, SYSPRO is a leader.

ERP	VS	APS
<ul style="list-style-type: none">• Enterprise-wide• Many users• Transaction based• Plan, control, execute• Control based• Identifies problems• Integrated• Administrative		<ul style="list-style-type: none">• Enterprise-wide• Few users• Scenario based• Optimize the plan• Decision based• Highlights problems• Integrating• Driving

APS: Benefits

- Increases production efficiencies of material, machines and personnel
- Improves lead-times by increasing throughput
- Accurate lead-time calculations result in on time deliveries
- Reduces non-productive time and overtime
- Highlights slipping deadlines to allow proactive contingency planning
- Produces realistic finite capacity schedules
- Provides greater real-time visibility over the enterprise

APS: What is it?

SYSPRO APS is a dedicated factory floor solution that gives managers comprehensive, real-time control in a dynamic manufacturing environment. Its aim is to provide live, current information at the closest point to manufacture, not after the event.

Managers can determine actual lead times, instantly answer “what-if” questions and feed an order into the production schedule in seconds by viewing real-time representations of the shop floor. Extremely flexible and agile, APS represents an outstanding proposition for today’s manufacturing environment. It allows enterprises to operate with renewed confidence in an environment where customers demand greater choice, better service and more frequent deliveries.

System Highlights

APS:

- Provides full cellular manufacturing support
- Ensures production planning to finite capacity
- Models factory resources accurately
- Enhances SYSPRO ERP functionality
- Configures to model the physical factory
- Gives real-time progress tracking

APS: How it Works

Although most factories have similar functions, considerable differences exist when determining the layout, movement of people, materials and tools and the production techniques involved. Consequently, each enterprise approaches the capture and presentation of data quite differently.

APS can embrace the shop floor’s existing scheduling, shop floor data collection (SFDC), monitoring and quality tracking methods within a single, integrated control environment.

A wide array of interfaces allows users to capture both process and progress data in a way that reflects their own particular working methods. Interfaces include shop floor data collection devices, barcode readers, scanners and printers. APS, on a suitable terminal, can display text and images alongside work-to lists.

APS Core Modules

- Factory Planning
- Finite Capacity Scheduling
- Progress Tracking
- Quality Monitoring
- Lot Tracing

APS: Taming the Shop Floor

APS: Where it Fits

APS is deployed to enhance and effectively close the loop between ERP business functions and the shop floor. In this way, APS addresses the primary weakness of contemporary manufacturing management systems and their inability to give managers useful, real-time information on current shop floor activities.

Companies can use SYSPRO ERP to control sales and marketing, manage the supply chain and balance batch efficiencies. Companies can enhance this functionality by using the rapid scheduling and order tracking power of APS to cope with volatile changes in demand and pinpoint individual customer preferences in the production schedule.



Achievable order loading, advanced planning and scheduling and real-time shop floor data capture combine in SYSPRO APS to create the ultimate progress chaser - a total factory management system that optimizes workflow and adapts to the enterprise.

APS: Major Features

Finite Capacity Planning

- Answers “How soon can I have?” questions
- Highlights the need for overtime or sub-contracting
- Gives early warning of slipping delivery dates

Finite Cell Scheduling

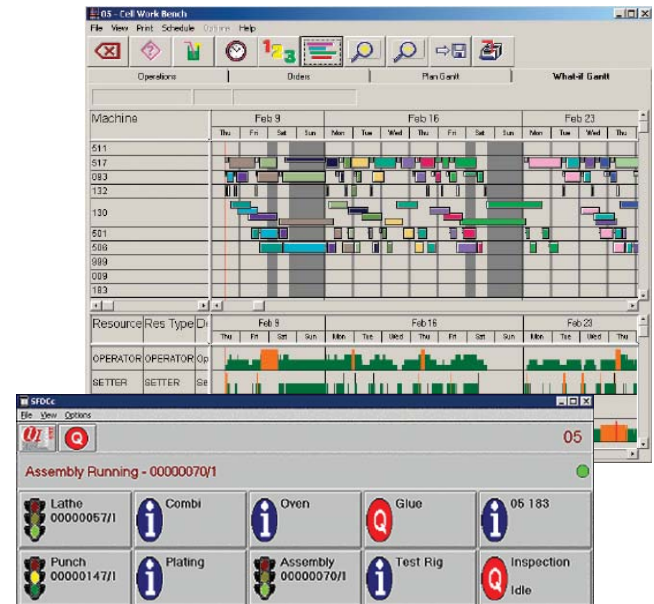
- Optimizes cellular manufacturing operations
- Allows optimum utilization of resources: labor, machines and tools
- Creates achievable work-to lists
- Schedules always reflect “real world” events
- Optimizes factory operations

Progress Tracking

- Facilitates accurate progress recording
- Gives immediate comparison of planned and actual process times and costs
- Provides a collection mechanism configured to suit the application environment
- Maintains a real-time schedule
- Accurately records resource utilization

Quality Monitoring

- Real-time tracking, recording and execution
- Pre-defined conditional, automated alerts
- Lot Tracing



*Graphic Scheduler (Top)
Shop Floor Tracking (Bottom)*

APS: A Modular Solution



Shop Floor Capacity Planning

By creating a “live picture” of the shop floor, the APS system allows the factory manager to determine actual lead times, answer “what-if” questions instantly and feed an order into the production schedule in seconds.

SYSPRO APS offers a variety of options to control the way work is released to the factory. A concise, tactical overview of production schedules and workloads by work center, day and job enables managers to more easily identify potential problem areas and schedule jobs in accordance with available resources and promised delivery dates. It accurately schedules work orders and sequences them to provide the optimum throughput in each cell.

The APS system provides extensive built-in reporting functionality which includes: manufacturing route details, bill of material details, cell and work center details and resource usage, as well as a work-to list for each machine on the factory floor. The APS system gives management control over a dynamic environment by providing live, relevant information at the point of manufacture, as it happens – not after the event.



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