

# Virtual Production Engine



## Link operational planning and execution in real time and synchronize order fulfillment activities

How do you decide which jobs to run and when? Where are your capacity bottlenecks? Which orders will be late? More importantly, how do you manage these issues without sacrificing revenue, cost, profitability, throughput and on-time delivery goals? You can make these decisions—and many more—with confidence if you use the right software.

Graphical modeling makes it easy to define manufacturing operations, routings, resource needs and material requirements at any level of detail; define necessary specifications, approvals, tools and programs and other support resources; and communicate resource requirements to procurement, engineering, transportation and other support areas.

The SynQuest Virtual Production Engine links operational planning and execution in real time as it concurrently synchronizes order fulfillment activities and resources. Its reality-based planning, dynamic synchronization, real-time execution and continuous feedback give you control at every level of your manufacturing operations. Reality-based manufacturing planning can solve many diverse problems: use our three-dimensional graphical process modeling and integrated discrete-event simulation to solve master planning, load and line balancing, resource allocation and production scheduling problems.

### *Uses flexible, realistic simulation and optimization for improved decision making*

The SynQuest simulation and optimization engines use the latest decision-support technology to show how various scenarios will impact cost and profit—before you commit resources and capital. You can create "what if" scenarios for improved decision-making, decisions about cost, profit, cycle time and throughput objectives. You can also use integrated planning and execution as a real-time early warning system for operational issues.

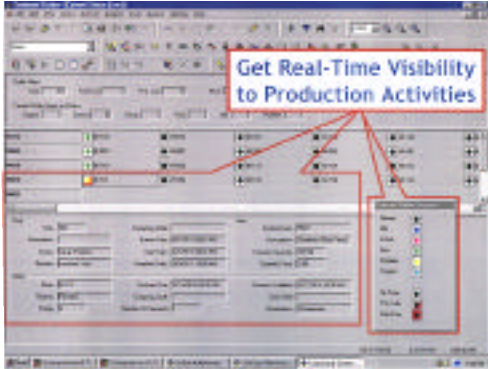
### *Define goals easily with 3-D graphical process modeling*

The heart of the system is its ability to graphically model virtually any manufacturing process. Simply define your goals and use the software to optimize the plan based on your specific cost, revenue, cycle time and on-time delivery objectives.



*Imagine always knowing exactly which jobs to run, at any given instant, to provide your company with the optimal cost, profit, throughput and delivery goals.*

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The SynQuest Virtual Production Engine's current status screen displays all activities on the manufacturing floor.

## *Improve production management with an intuitive command center*

With the command center's flexible, graphical interface you can define business objectives, monitor results against plans, resolve issues and respond to customer requests. Use the performance monitor to compare plans with actual results in terms of costs, on-time delivery, cycle time and other criteria. Color coding makes it quick and easy to spot potential problems while there's still time to do something about them.

### *Features:*

- Dynamic manufacturing synchronization keeps orders on track - zero in on order status and provide real-time feedback for critical mid-course correction and much more. Features include bill of process modeling, dynamic finite scheduling, manufacturing execution and full integration with ERP/MRP systems. Translate an optimized plan into the details you need to execute orders and generate online dispatch lists.
- Bill of process - enable direct delivery of materials to the right operation, in the right quantity, at the right time. Using graphical process modeling, you can create a bill of process that lets you define and depict all resources, activities and policies needed to fulfill customer orders. It includes materials, capacity constrained resources (such as machines, tools and labor) as well as drawings, tool delivery, approvals and other support resources.
- Dynamic finite scheduling - translate optimized plans into the detail needed to execute orders and generate on-line dispatch lists with up-to-the-minute requirements for parts, labor, machines, documentation and support activities. The scheduler incorporates user-defined dispatching rules by operation, continuously evaluating actual status versus projected status. It identifies variances to plan and their impact as they occur so that you'll immediately know if you'll be able to fulfill the customer's demand on time.
- Manufacturing execution - have real-time, decision making power based on current work orders, activities and resources. The system monitors shop floor activity, analyzes job status and communicates it throughout the organization. Production operators receive dispatched orders and, in turn, can update the system with status reports and any problems encountered. SynQuest also provides operators with the detail they require, from on-line documents to destinations for completed work. It supports two-way communication between operators and support centers instructing them with specific action items to support the production schedule and allowing them to respond.
- Order promising - always know whether the product can be made and if you'll be able to satisfy your customer needs on schedule. With integrated real-time order status and alert tracking, this system helps assure that delivery promises are met, which will enhance your company's reliability, customer response and profitability.
- Automation integration - link shop floor activity with the Virtual Production Engine and provide accurate work order and production reporting. This engine includes an automation integration database and tools plus an operator view, reducing the need for operator reporting by enabling direct transactions from machines, hand held devices, etc.

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