VirtECS™ Scheduler

Effective Daily Scheduling & Strategic Planning

VirtECS delivers unprecedented power and flexibility for solving challenging scheduling problems

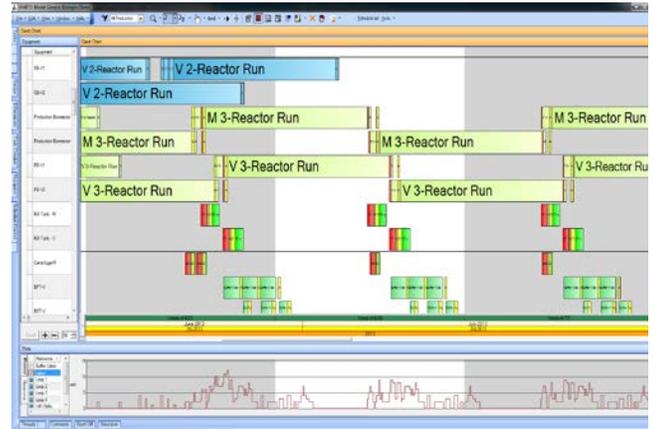*The comprehensive, integrated solution for scheduling.*

Powerful Scheduling Engine for Fully Automated Schedules

Interactive Gantt Chart for Manual Schedules

Capacity Planning and Process Improvement

Simulation and Optimization

What's different about VirtECS?

Real Schedules

VirtECS creates only "real world feasible" schedules. Generating a schedule for a process is not really all that difficult but generating a schedule that is feasible and that meets business volume forecasts and customer delivery requirements that can be executed by your operations personnel is another matter entirely. The approach taken by most systems is to generate a schedule which is "directionally correct" using simple rules or simplified constraints; they leave the details of creating a real world schedule to individual planners. The problem is that when there are real constraints on the system, the suggested schedule may not be executable, causing tremendous re-work and sub-optimization.

Real Constraints

VirtECS differs from other scheduling software in that it handles material storage correctly and explicitly. Any system which does not account for the intermediate material in the system risks generating infeasible schedules – ones that cannot be executed in the plant. VirtECS knows where each and every pound of material is stored at all times over the entire scheduling horizon. This allows VirtECS to automatically enforce a broad range of process constraints including: limited storage for intermediate products, shared storage, limited shelf-life for materials, and even sequence-dependent minimum run lengths. VirtECS will generate a schedule for your facility that reflects reality. *We believe our capabilities to handle such constraints to be unique in the industry.*

Real Analysis

VirtECS gives you flexibility in setting the production scheduling strategy. If your objective is to achieve maximum customer service while minimizing overall schedule cost and keeping low finished goods inventory, VirtECS can provide schedules that help you choose the best balance between these objectives. The automated scheduling capabilities also provide VirtECS with unparalleled power for what-if scenario analysis that can answer specific questions important to your business.

Real Value

Best of all, the powerful capabilities pro-vided by the VirtECS scheduling solution typically requires far less time and cost for customization and installation. The underlying approach is designed to handle constraints automatically, and not by an extended trial-and-error modeling approach that takes other scheduling sys-tems months or years to install. Reducing the deployment costs not only lowers your total cost of ownership substantially, but risk is also significantly reduced. Rapid configuration also allows VirtECS to *let you respond quickly to change.*

We're confident that we can improve your scheduling of complex operations and increase the value of your business. Let Advanced Process Combinatorics help you take your operation to the next level.

Fully Automated Schedule Generation
Users can have as much or as little automation of schedule generation as they desire. The ability to fully automate generation of realistic schedules means that plans can be updated *quickly.*

Data Integration VirtECS has been designed to take data feeds from existing company systems, such as SAP and Excel. VirtECS has been successfully used with virtually every type of data source.

Capacity Analysis VirtECS can be used to answer a wide range of engineering and capacity analysis questions, such as: What is the value of new equipment and current equipment utilization? What is the effect of labor shift changes? How can I reduce the effects of downtime cleanings? How much inventory should be held? How should the process be improved? Customers have used VirtECS to answer hundreds of different types of questions to improve their processes and grow their businesses.
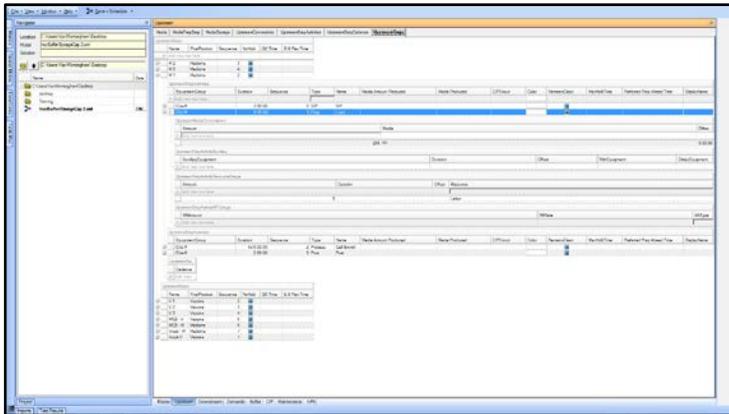
VirtECS Suite of applications goes beyond scheduling – design, supply, chain, portfolio optimization, simulation, all of which integrate seamlessly with Scheduler. Our component-based approach allows for rapid solutions as well.

Daily Scheduling VirtECS has extra features to facilitate routine scheduling, because today's schedule depends on the execution of the previous schedule. VirtECS allows users to act on new business conditions as soon as they are known or respond quickly to opportunities.

Strategic Planning VirtECS can also support sophisticated business strategies including "capable-to-promise", "build-to-order", "marginal value maximization", and "dynamic right-sizing of inventory".

Rich Feature Set The VirtECS Scheduler is a mature application now on its eighth major release, and includes all the standard features you would expect in a sophisticated scheduling tool: including data import and export, *ad hoc* reporting, online help, flexible schedule rearrangement, and database integration.

Outstanding Support Advanced Process Combinatorics, Inc. is committed to complete customer satisfaction, providing a complete range of support options through the web, email, or telephone; integration with legacy systems; and consulting services including custom development.

Build-to-Order with VirtECS
If your business involves (or if it is considering) "build to order" operations, VirtECS Scheduler definitely deserves strong consideration. The critical factors which make build-to-order so difficult are precisely the distinctive elements which VirtECS addresses. It requires fully automated scheduling, careful handling of complex constraints, consideration of business rules and policies– and the system must be exceedingly fast. Can your current scheduling system create a new schedule in response to ever changing production caused by unplanned down time and urgent customer orders in minutes? To be able to respond quickly in a competitive environment, your scheduling system must be powerful, robust, and automated – these are the key virtues of the VirtECS engine.

VirtECS Solver Technology
VirtECS is short for "Virtually Exhaustive Combinatorial System" and is built on mathematical principles that allow your production process to be described as a collection of variables and equations form-ulated from your data and business logic. Typical business operations routinely face scenarios that involve making hundreds or thousands of decisions. When the decisions are accounted for mathematically, the sheer number of possible combinations makes the process 'combinatorially complex.' VirtECS is built upon an engine specifically designed to solve very large systems of equations involving these variables. **VirtECS users never worry about, or even see, the mathematics, but quickly solving these equation systems making it an easy-to-use scheduling system that is a unique advantage to using VirtECS.**

WHO IS USING VirtECS?
Our clients include medium-to-large and Fortune 500 companies in fields such as:
Pharmaceutical Manufacturing
Chemical Process Industry
Specialty Chemicals
Project Management
Food and Beverage
Consumer Goods
Pilot Plants

Advanced Process Combinatorics

3000 Kent Ave. West Lafayette, IN 47906
Tel: (765) 497-9969 FAX: (765) 463-5126
E-mail: info@combination.com
Website: http://www.combination.com