For Immediate Release:

New Production Scheduling Tool Tackles Problems Too Tough for ERP/MRP

Sewickley, PA. – 12 July 2012: Simio LLC today announces the availability of a new tool for production scheduling problems too hard for traditional ERP/MRP systems. The problem Simio solves stems from a class of production scheduling problems too hard to manage with traditional ERP/MRP production planning systems. Circumstances surrounding these scheduling problems include high penalties for late shipments, risk with customer loyalty or margin targets being missed because of excessive expediting costs. The most common solution in these circumstances is to place a high amount of in-house expertise on the job armed with Microsoft Excel spreadsheets and white boards.

Why don’t ERP/MRP planning and scheduling systems work in certain complex, dynamic manufacturing operations?

“ERP/MRP is algorithmic-based scheduling, “ according to Dr. Dennis Pegden, chief executive officer at Simio LLC. Pegden contends “they are best suited for long term supply chain planning applications, where large computation times are less of an issue, the environment is less dynamic, and the constraints are less complex to represent.” However selecting and implementing the best optimization algorithm for a given problem is non-trivial. Industry recognizes that for most of the practical problems of production scheduling no efficient algorithms are available. Conventional ERP/MRP-systems do not satisfy these requirements, however the crucial data ERP provides makes a practical alternative feasible.

An alternative is Simulation-based Scheduling. It is best suited in highly dynamic factory scheduling applications, where a fast response is required, and a detailed, realistic representation of complex constraints on equipment and operators must be modeled in order to generate a good schedule.
Other advantages of simulation based scheduling include easier implementations and you can account for process variation to see the risk and probability of achieving targets. In simulation-based scheduling the mathematical model is replaced by a simulation model SO THAT YOU HAVE AN ACCURATE REPRESENTATION OF THE RESOURCE CONSTRAINTS OF YOUR FACILITY, SO THAT WHEN THE UNEXPECTED OCCURS YOU CAN RE-RUN THE SCHEDULE FAST TO LOOK FOR ALTERNATIVES THAT FACTOR IN YOUR MOST IMPORTANT KPIs SUCH AS THROUGHPUT, DUE DATES AND MARGINS.

For example, figure 3 shows complex aircraft final assembly. When you need to re-run a schedule, it is executed in minutes with simulation based scheduling. Frequently, the complexity of practical problems of production control is too high to be solved by usual analytical methods. Heuristic optimization algorithms in connection with simulation systems are a suitable alternative in these cases. Until now this type of solution has been the domain of University Research Projects. Now a new approach called risk-based planning and scheduling (RPS) is being implemented. Simio is the first Commercial-off-the-Shelf risk-based planning & scheduling (RPS) tool for interfacing an ERP system with flexible SIMULATION models that account for process variation, predict probability for hitting key targets and provide a platform for generating good alternatives. This gives you a fast answer to what it will cost you to buy down risk in your schedule.

To provide this forward looking visibility of risk in your complex production operation at a level of detail that is optimized and actionable, RISK-BASED PLANNING & SCHEDULING (RPS) can supplement your current ERP system. # # #


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