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Siemens PLM Software

SIMATIC IT Preactor APS

Applications in the pharmaceutical sector

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The Pharmaceutical, Life Science and Cosmetics sectors face a set of unique demands that, result in an environment that is particularly challenging for planning and scheduling.

Challenges include:

- Variation in demand – Seasonality, market trends and epidemics can all cause large variations in demand. The planner needs to be in a position to plan for many eventualities and respond easily to the current situation
- Short time-to-market and shelf life – It is essential to optimize the timing of production to avoid waste
- Complex quality and traceability requirements – Regulatory agencies limit the time between the production processes and require full batch traceability
- Complexity of setup times and production processes – A mixture of discrete and process production modes can result in complex planning and scheduling requirements, often with contradicting goals for different parts of the process. Production campaigns are important to minimize setup times, but the planner must be alert to avoid stockouts

The SIMATIC IT Preactor product range of Advanced Planning and Scheduling software is ideally suited to meet these demands.

SIMATIC IT Preactor Advanced Scheduling

SIMATIC IT Preactor Advanced Scheduling is a finite capacity scheduling tool based on a detailed model of the plant. It takes into account the actual availability of resources and other constraints, such as tooling and materials, to produce a feasible schedule. From this starting point the software can be used to increase throughput, decrease WIP and inventory, and increase resource utilization.

Challenges addressed by SIMATIC IT Preactor Advanced Scheduling

Short shelf life – Even with careful long-term planning, it is still possible to run into issues with production of short shelf life products if your short-term scheduling is not also set up to be aware of shelf life considerations. SIMATIC IT Preactor Advanced Scheduling can produce schedules that prioritize short shelf life products and also flag potential shelf life issues for the planner.

Variation in raw materials – SIMATIC IT Preactor Advanced Scheduling products consider the availability of materials when creating the production schedule. In addition to this, it is possible to define rules within the software that control the way that materials are consumed. This means that regardless of whether there are sudden changes in material availability or complex rules about the usage of different materials, those changes and rules can be modeled to ensure that the scheduled production reflects your needs. The process of reassigning materials and creating a new schedule to reflect the changes can be carried out in minutes.

Complex quality control requirements – SIMATIC IT Preactor Advanced Scheduling products can be modeled as a hierarchical scheduling application to handle both production and complex quality control processes when it is required. The production scheduling application can be used to define a time span when the quality control process is required. It can then pass this information to the quality control process application to handle the detailed scheduling before updating the production scheduling with the feedback.

Complexity of setup times – In the current competitive environment it is essential to streamline the production process to minimize setup times. SIMATIC IT Preactor Advanced Scheduling can help achieve these goals by using complex scheduling algorithms and giving the planner the visibility to identify and react to issues. Whatever the scheduling pain points are, be they costly changeover times, high inventory or poor due date compliance, SIMATIC IT Preactor Advanced Scheduling can be set up to minimize them.

Complexity of the production process – SIMATIC IT Preactor Advanced Scheduling software can model complex manufacturing processes and, due to its flexibility, be set up to produce a schedule based on the reality of your production environment. It doesn't matter if the complexity is in the process routes of products or the constraints on the manufacturing process; SIMATIC IT Preactor Advanced Scheduling has the functionality to deal with it.

SIMATIC IT Preactor Advanced Planning

SIMATIC IT Preactor Advanced Planning is a strategic decision-support tool, which combines forecasting and long-term orders with target stock levels and bucketed resource capacities, to ensure that future demand is met. It does this by creating a master production schedule, detailing when and how much of each SKU should be produced in order to satisfy the demand. The software can take into account constraints such as shelf life and material requirements, and can balance the load of production requirements across multiple planning resources.

Challenges addressed by SIMATIC IT Preactor Advanced Planning

Short shelf life – SIMATIC IT Preactor Advanced Planning can take shelf life into account when planning production. The planner can be sure that the results that are being generated when creating a master production schedule will be tailored to minimize waste from goods exceeding their shelf life and spoilage.

Variation in demand – The raw data that the SIMATIC IT Preactor Advanced Planning system uses to create the master production schedule is long-term orders and forecasts. This means

that in environments with variable demand, this information is there from the start of the process. Once the system has calculated the production required, the planner can easily visualize and interact with the result to see how the varying demand should be reflected in plans for production capacity.

Complexity of Production Process – SIMATIC IT Preactor Advanced Planning software can support the generation of production information at multiple levels of the Bill of Materials, and can work for both Make-to-Stock and Make-to-Order environments. This means it is possible to plan production for complex mixed mode processes.



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