

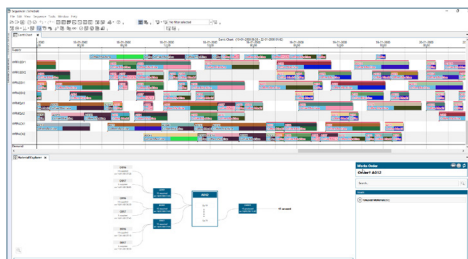
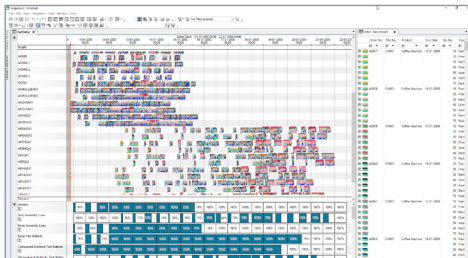
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Siemens Digital Industries Software

## Opcenter APS

Applications in the electronics sector

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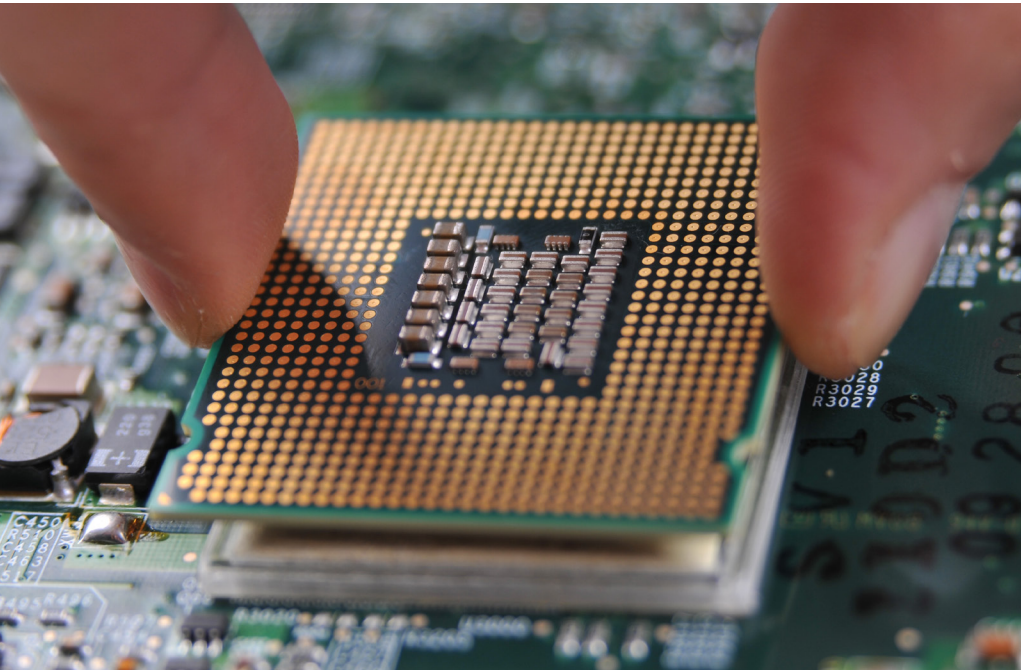


The electrical equipment and electronics sector faces a set of unique demands that result in an environment that is particularly challenging for planning and scheduling, sometimes with a mix of production modes, Make-to-Order and Make-To-Stock.

Among the challenges facing electronics companies are:

- Variation in product – Changes in product attributes, such as material type or component mix, result in lengthy changeover times. The planner needs the ability to group the orders by the relevant attribute while scheduling. It is important to minimize the time lost to changeovers while ensuring that the orders are delivered on time
- Constraints – The availability of appropriately skilled staff and tooling has an effect on which orders can be run in parallel on different resources. Also component material can limit the resources that can be used. Therefore it is essential to take these constraints into account during the scheduling process
- Variability of demand – This is common in an environment that produces many of its products for export and depends on the performance of the world economy to guide its strategies
- Complex subassemblies – Often in electronics companies, finished goods are comprised of a set of subassemblies that are produced within different areas of the factory, on entirely different sites or by external suppliers. Therefore, companies must consider the production and availability of these subassemblies

The Opcenter APS product range of Advanced Planning and Scheduling software is ideally suited to meet these demands.



## Challenges addressed by Opcenter Planning

**Variation in product** – The raw data that the Opcenter 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** – Opcenter 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.

## Opcenter capabilities

Opcenter is a holistic portfolio of manufacturing operations management (MOM) capabilities for advanced planning and scheduling, manufacturing execution, quality management, manufacturing intelligence and performance, and laboratory and formulation management. The portfolio serves major players in industries such as aerospace and defense, automotive, industrial machinery, heavy equipment, chemicals, consumer packed goods, food and beverage, life sciences, electronics, semiconductor and medical devices.

## Opcenter Scheduling

Opcenter 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, technicians, 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.

## Opcenter Scheduling

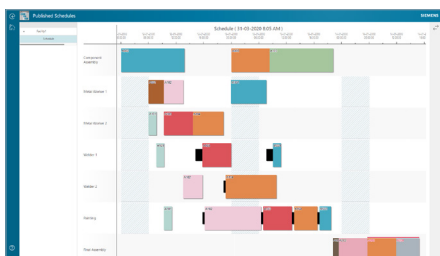
**Variation in product and demand** – Opcenter Scheduling has built-in scheduling algorithms that can take into account multiple product attributes and use them to group like operations in order to minimize changeover times. By also taking into account the due dates of the orders, these algorithms can be adjusted by the planner to reach a balance between minimizing changeover times and achieving on-time delivery.

**Constraints** – As a multi-constraint scheduling tool Opcenter Scheduling can take into account the availability of materials, tooling and labor in order to produce a feasible schedule. This gives the planner the confidence to know that the work to-do lists that are being sent to the shop floor will be achievable.

**Complex subassemblies** – With Opcenter Scheduling it is possible to consider the production and availability of subassemblies, whether they are produced in an area under the control of the planner or elsewhere. By linking these subassemblies to the production of the finished goods, the planner can guarantee an achievable schedule, flag up, and solve any material availability issues early on.

## Opcenter Planning

Opcenter Planning is a strategic decision support tool, that 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 each SKU should be produced in order to satisfy the demand. The software can take into account constraints, such as material requirements, and can load balanced production requirements across multiple planning resources.



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[siemens.com/software](https://www.siemens.com/software)

Americas +1 314 264 8499  
 Europe +44 (0) 1276 413200  
 Asia-Pacific +852 2230 3333