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Siemens PLM Software

Teamcenter Manufacturing Process Planner

A collaborative solution for planning assembly manufacturing processes

Benefits

- Accelerate new product introductions
- Shorten time-to-production
- Quickly react to change at any stage of the design/build process
- Decrease operating costs
- Ensure overall product and process quality
- Allow engineers, designers and shop floor personnel to collaborate efficiently

Features

- Fully integrated product and manufacturing (process, resource, plant) data to concurrently build product and process plans

Summary

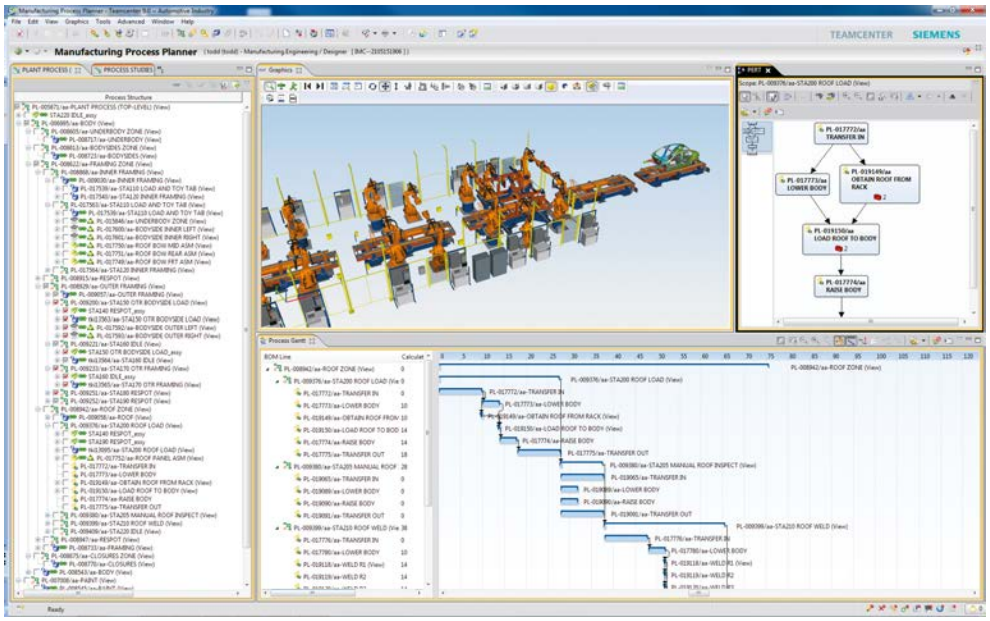
The need to get more customized, high quality products to market faster has driven manufacturers to distribute production over many (often geographically dispersed) plants and suppliers. This strategy to "plan anywhere, build anywhere" provides manufacturers the economy of scale and scope needed to gain competitive edge in this market. However, such a strategy brings enormous manufacturing planning and collaboration challenges. Leading manufacturers are looking for technologies and methodologies that allow them to efficiently author, simulate and manage manufacturing information throughout their organization and with external suppliers. Manufacturers want software tools that can align manufacturing plans quickly and intelligently based on changing product configurations.

Teamcenter® software's manufacturing process planner (MPP) application allows design and manufacturing engineers to concurrently develop product and manufacturing process definitions. This ensures that manufacturing constraints are reconciled during product design and vice versa. Using Teamcenter powerful change management capabilities, manufacturers can quickly react to changes originating at any point of the design/build lifecycle. By connecting all members of the design/build process – from design, engineering and manufacturing, to plants and suppliers – into one virtual enterprise, MPP helps manufacturers implement the best production strategies. It allows manufacturers to evaluate alternative manufacturing scenarios, maximize resource utilization and optimize throughput at the very early stages of concept planning.

Teamcenter Manufacturing Process Planner

Features *continued*

- Highly intuitive and user configurable user interface to optimize the process design and analysis steps
- Reconcile engineering and manufacturing bill of materials (BOM) quickly using powerful accountability check reports
- Comprehensive workflow and change management capabilities for both product and manufacturing engineering
- Process Gantt and Pert charts to accurately represent process sequence and associated information
- Visualization and management of operations, resources, variants and changes in a dynamic 3D environment
- Advanced time management capabilities to optimize value-added and nonvalue-added operation time
- Integrated with MES systems for direct shop floor delivery of dynamic work instructions and feedback



Single source of product and process knowledge

A single enterprise environment for performing product design and manufacturing planning allows for better collaboration, validation and optimization of product design and manufacturing plans. It provides better visibility to all available manufacturing resources and ensures maximum utilization. Manufacturers know that the volume and complexity of data generated at the manufacturing stages is many times that of the early design stages. In order to manage such a large volume of data, manufacturers need an enterprise environment which has a proven credibility in terms of large scale deployment.

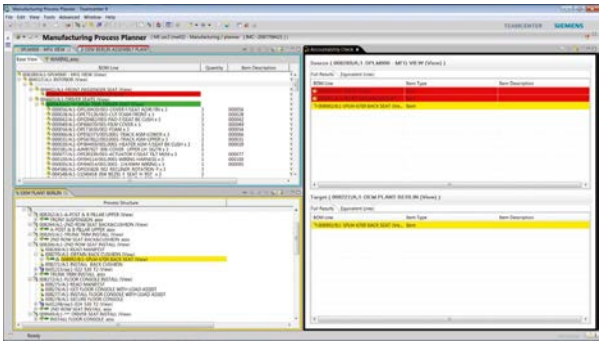
An intuitive user interface for performing the most complex assembly planning with ease

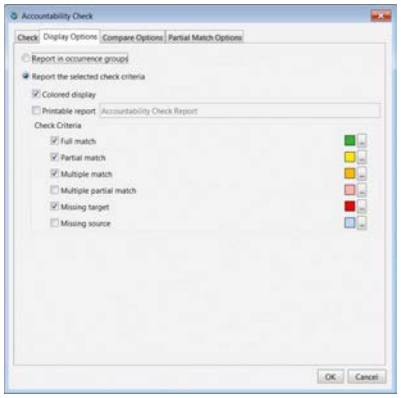
Teamcenter MPP user interface is highly intuitive and configurable so that manufacturing engineers can make the best possible decisions faster. The dynamic framework used in the interface design provides the ability to comprehensively visualize and analyze various planning decisions. Manufacturing planning tasks can be performed with minimal mouse clicks. This not only improves user productivity but also ensures that many unnecessary user entry errors are eliminated.

Engineering and manufacturing BOM reconciliation

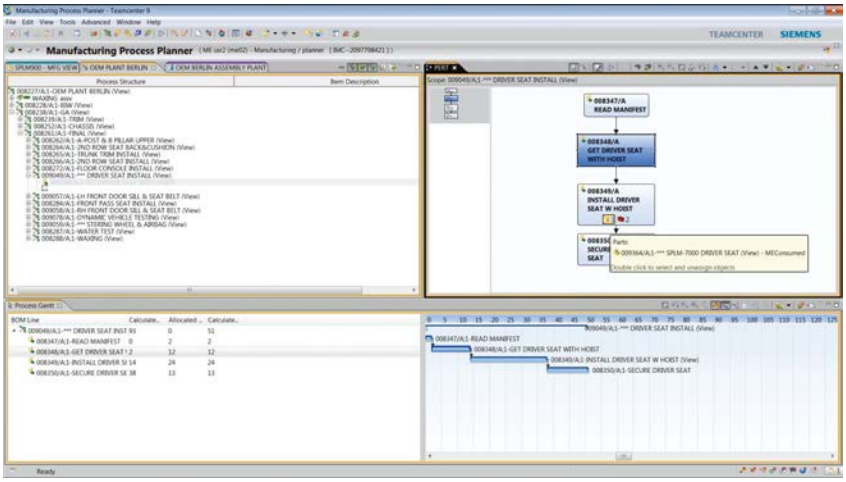
Traditionally manufacturers maintained their engineering and manufacturing BOM in disparate systems. Such practices can cause tremendous inefficiencies when product designs are frequently updated to meet market demands for newer product models while time to launch schedules are constantly squeezed. With an integrated product and process development platform in Teamcenter, manufacturing engineers can now quickly update process plans according to the design changes. Using a set of powerful BOM accountability check tools in Teamcenter, product and manufacturing engineering can quickly visualize and validate the impact of any product and

process changes avoiding expensive late-stage identification of issues in production.

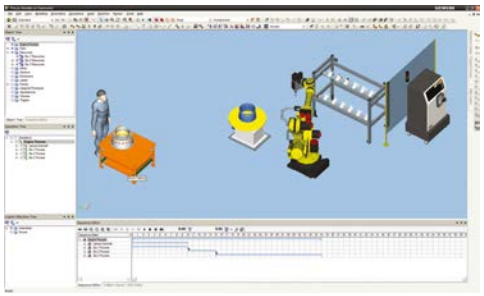




Graphical process layout and sequencing
The latest release of manufacturing process planner expands the functionality for graphical layout and sequencing of operations. The Process Gantt Chart is an intuitive way to do early layout planning showing the dependencies and constraints while the latest enhancements to the Pert Chart capabilities further refine the synchronization between processes and the parts/assemblies tied to specific operations. Now parts, resources and manufacturing features are directly tied to the Pert Chart components which streamline the sequencing of operations and improve change management with intuitive visual cues in a single window.

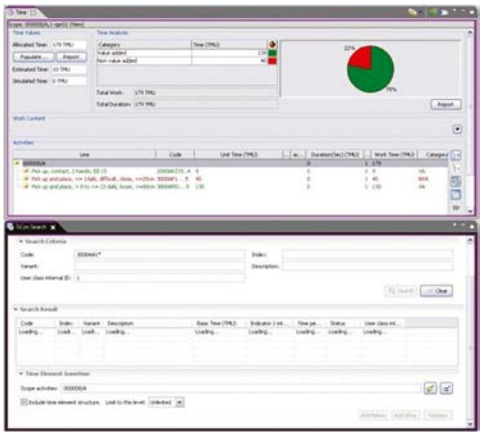


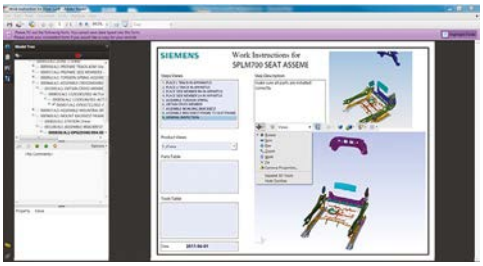
Advanced 3D manufacturing process simulation and validation
Process Simulate on Teamcenter software provides manufacturing engineers a sophisticated 3D simulation tool to validate the feasibility of assembly processes. It allows simulation of assembly processes, human operations and automation systems. Once the manufacturing processes are defined in Teamcenter, then using Process Simulate one can validate that the sequence of operations are optimized to avoid collisions, ensure safety and reduce cycle time. This minimizes downstream production risks by providing the capability to virtually analyze multiple manufacturing scenarios.



Manufacturing process time management and analysis
Teamcenter MPP also provides a comprehensive set of time management solutions. It supports lean initiatives by ensuring a clear visibility to value-added and non-value-added activities. Using charts and reports process planners can analyze and validate activity time at various levels of the process structure and roll up time

estimates and different levels of process hierarchy. Teamcenter MPP is also integrated with time management standards such as TiCon so that activity time standards are directly integrated with Teamcenter.





Visual and highly dynamic work instructions

Teamcenter MPP can generate highly dynamic 3D work instructions which can clearly and accurately communicate assembly instructions and reduce shop floor errors. Visualize a fully animated sequence of assembly steps generated directly from the manufacturing process plan defined in Teamcenter. The 3D PDF work instruction can be easily distributed to the shop floor users. Using Adobe Reader, shop floor users will have full access to essential 3D tools such as pan, zoom, rotate and more.

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