SIEMENS

GEOMETRIC SOLUTIONS

Siemens PLM Software

Teamcenter advanced assembly planning

Standardize and re-use assembly processes across multiple plants and balance production lines

Benefits

- Standardize and re-use a generic bill-of-process (BOP) to quickly suit the needs of a new product's assembly processes
- Quickly analyze the impact of a design change on existing plant processes
- Manage the propagation of design changes to every plant location in a controlled way
- Balance production lines during early stages of assembly planning
- Achieve Takt time goals while optimizing utilization of existing lines

Summary

To save costs, today's manufacturers are trying to rationalize their product platforms and, whenever possible, build products the same way around the world. However, plants located in multiple geographies have their unique characteristics. To cost-effec - tively meet global market demands, manufacturers have to not only look for opportunities to standardize their manufac - turing processes, but they also have to do so by taking into consideration the unique situations presented by each plant.

In addition, manufacturers must ensure that production lines are balanced and opti - mized and are fully utilizing the available capacity at each plant. Manufactures want to analyze workloads in each and every sta - tion, eliminate bottlenecks and ensure that they can meet their cycle time requirements.

Teamcenter® software's Advanced Assembly Planning application allows you to configure the product bill-of-process and the plant bill-of-process (BOP) independent of each other. A product BOP contains com - ponents and subassemblies and the recipe of operations and resources needed to build the product. A plant BOP consists of stations and cells with the list of operations that can be performed at a particular sta - tion. The Advanced Assembly Planning application bridges the connection between the prod uct centric view of build - ing a product – the product BOP – and the plant centric view of building a product – the plant BOP.

Another feature of this application is the line balancing tool, which allows you to review and optimize production flow on the line. Using the line balancing feature, stations are flagged when they exceed the

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Benefits *continued*

- Balance production lines while maintaining integrity of existing process constraints

Features

- Plant-specific bill-of-process consisting of lines, stations, operations and activities
- Generic product bill-of-process that defines a standard template to build products
- Logical part designator defines standard search criteria to help build a product bill-of-process quickly
- A smart propagate command controls the reconciliation of change from product BOP to plant BOP
- Line balancing using an intuitive and highly dynamic user interface
- Precedence constraints between operations using simple drag-and-drop feature

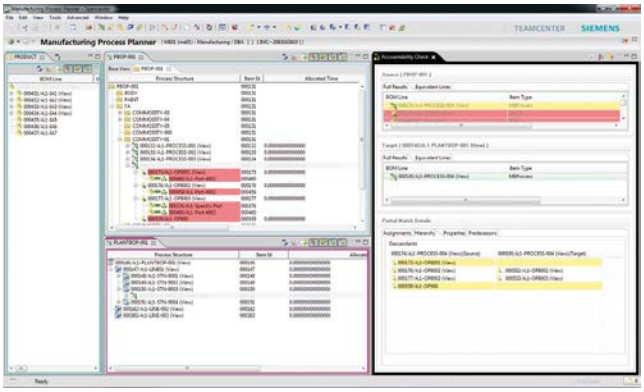
defined Takt time goals. Operations can be quickly reassigned between stations to ensure that the lines are balanced and resources are efficiently utilized.

Standardize and re-use existing BOPs to quickly define the build sequence of a new product

You can quickly configure the assembly processes of a new product by inheriting the standard build sequence from a generic product BOP. Using existing rules and templates, you can automatically allocate parts to the processes. This significantly reduces the time it takes to create process sequences for new products, ensures standardization between product platforms and facilitates traceability of parts and processes. The assignment rules, or the logical part definitions, are intelligent criteria that define a set of conditions that must be met for a part to be consumed in a process. Once the rules and conditions are satisfied, parts can automatically be allocated to their processes by a simple command.

Full traceability of how a design change to a single product can impact existing plant processes

With the Advanced Assembly Planning tools you can validate how a design change to a product will impact production processes at every plant where the product is made. If you are a global manufacturer that builds products in plants across many locations, you can quickly visualize and analyze how a product change will affect the existing processes of all plants, so that you can take any necessary corrective actions.



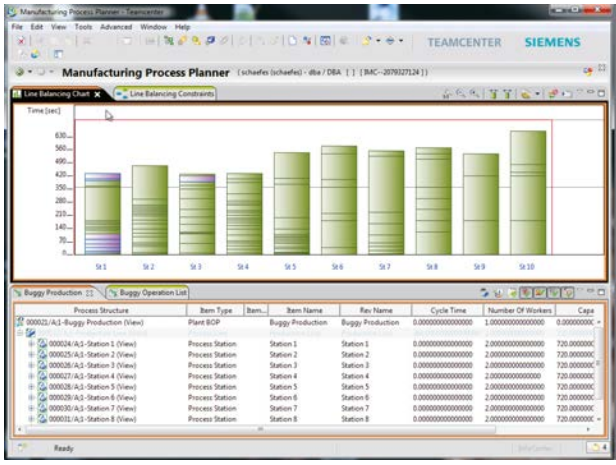
Conversely, if you have flexible production lines capable of building multiple products simultaneously, you can analyze how a product change will impact the production of other existing products that utilize the same line.

Flexibility to control the propagation of a change affecting multiple plants

When a change affects multiple plants, you have the full flexibility and control of how you propagate the changes to each and every plant. The plant updates can be performed independent of each other, reflecting a phased approach to implementing change. You can update one plant that reflects the new product change and choose to maintain the status quo in another plant until later. This level of flexibility in terms of how you can implement product changes to production lines ensures that you prevent production stoppages due to a sudden mid-cycle design change.

Perform line balancing during the early stages of manufacturing planning

With the help of Teamcenter, you can easily optimize the distribution of workloads to assembly stations. You can ensure that the lines are balanced, resources are efficiently utilized and that you cost-effectively meet your go-to-market goals. Using an interactive chart, you can clearly visualize stations



Features continued

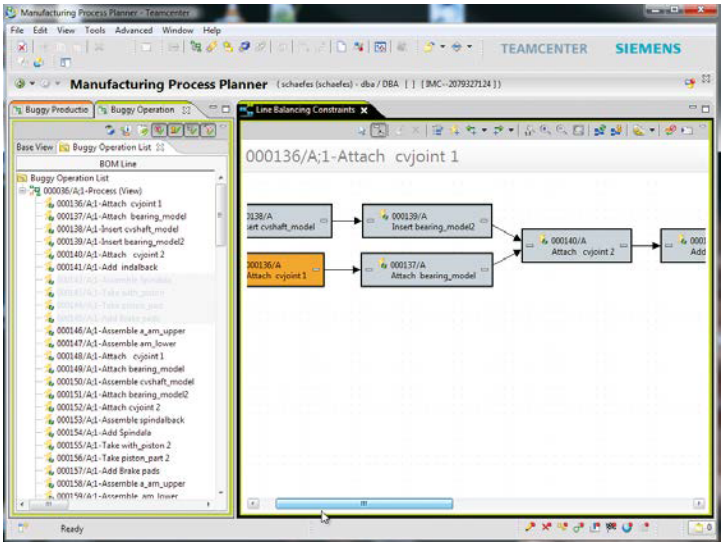
- Check for constraints violation and ensure that lines are balanced by taking into consideration existing process constraints
- Use line balancing reports for deeper level cycle time and workload analysis of each station

that are overburdened and are exceeding the Takt time requirement. You can distrib - ute the operations from one station to another using a simple drag-and-drop func - tion and quickly achieve a balanced production line.

Visualize and analyze advanced assembly processes with an intuitive user interface

Using a highly dynamic and intuitive user interface you can easily navigate between product BOP and plant BOP. With the selec - tion synchronization feature you will know the exact context of your tasks so that you can make faster decisions. You can visual - ize and resolve conflicts between your product BOP and plant BOP using the pow - erful accountability check tool.

To perform line balancing efficiently, you can use the interactive user interface to easily establish precedence constraints between operations and visually navigate between stations. This application also pro - vides a constraints violation check feature that allows you to graphically display pro - duction flow violations. You will be prompted to take necessary steps to correct the errors.



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