



# Bill-of-materials management

## Know your BOM, know your product

### Benefits

- Ensure accuracy with a complete BOM definition
- Provide clarity with BOM analysis capabilities
- Improve success with product configuration capabilities
- Reduce risk with digital validation of product configurations in context
- Reduce errors with automated data synchronization across product views
- Improve productivity and collaboration with work-in-context capabilities
- Eliminate rework and reduce costs by sharing your BOM downstream

### Summary

Teamcenter® software delivers bill-of-materials (BOM) management capabilities that enable you to know your product; whether it consists of 10 parts in a single configuration managed with basic processes and tools, or it is a highly-complex product with millions of parts in thousands of configurations, requiring more advanced tools, flexibility and scalability.

### Managing increasing complexity

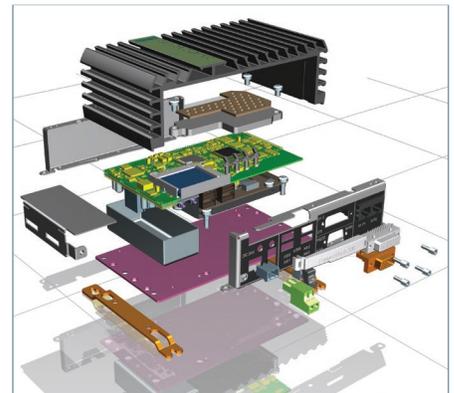
With increasingly complex products, organizations, product lifecycles and supply chains, companies struggle to maintain an accurate product definition for all stakeholders. Many companies find different parts of the enterprise maintaining their own representation of the BOM. It is very difficult to keep the representations in sync, leading to costly mistakes, rework and delays. Users and groups waste time focusing on out-of-scope, incorrect, or out-of-date information.

The manual movement of complete BOM information between key business processes and related systems is a time-consuming and error-prone process. These enterprise systems include, but are not limited to, product lifecycle

management (PLM), customer relationship management (CRM), requirements management, supply chain management (SCM), manufacturing execution systems (MES), enterprise resource planning (ERP), supplier relationship management (SRM), manufacturing resource planning (MRP) and enterprise asset management systems. Companies struggle to keep all this data in sync and accurate without driving up costs.

### Defining Teamcenter BOM capabilities

Using Teamcenter enables you to address these issues by helping manage your complete BOM definition across the entire lifecycle in a single environment: from simple computer-aided design (CAD) structures to complex product definitions that include advanced effectivity configuration or platform-based products with a diverse range of options. This single source of information enables you to flexibly configure your product and manage families of products instead of creating copies of discrete product variants. This



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## Features

- Provide a definitive source of BOM information and the tools needed to analyze them
- Support rigorous management of product content and variability
- Work-in-context capabilities provide tailored visibility to the BOM
- Extend BOM support to include the entire lifecycle
- Integrate mission-critical enterprise applications to facilitate synchronization and collaboration

approach lets you bring a broader range of products to the market with minimal additional effort. It also facilitates increased re-use and end-of-line planning of design solutions, which improves BOM accuracy and reduces cycle time and ultimately minimizes your development costs.

More specifically, Teamcenter provides key BOM capabilities to help you:

- Define and configure
- Work in context
- Extend lifecycle support

## Define and configure

Today's markets demand increasingly more advanced and varied product offerings. Companies need to deliver products that satisfy customer demands for more variety without driving up development costs. They must also be able to quickly refresh products with new technology and features.

Using Teamcenter enables you to establish a single, complete product definition that reflects all of a product's components across all domains (mechanical, electrical, software, etc.), regardless of the complexity of your products. This definition is intuitively presented to the user, including a visual 3D representation of the product exactly as it is configured. Key elements, such as alternate and substitute parts as well as configurable revision and effectivity (effective date or unit number for unit effectivity) information, are included as part of this complete definition. These capabilities are particularly valuable because they enable you to ensure the accuracy and completeness of your product BOM and its related deliverables.

The product configurator in Teamcenter allows companies to leverage commonality across a product suite to consolidate a whole range of products into a single structure. Teamcenter provides configuration rules to specify the conditions in which different pieces of product data are valid. It is easy to

use the BOM viewing functionality to see these valid configurations.

In addition, Teamcenter enables companies to capture marketing and customer input, and drive product design to address that input.

Using Teamcenter facilitates BOM analysis, including the ability to request BOM rollups, compare different BOM versions, support BOM grading and where-used tools. Teamcenter enables multiple users to collaboratively contribute markups to a BOM. These markups visually display suggestions for potential changes, enabling stakeholders to review and approve these changes before they are finalized. Taken together, these analysis capabilities provide visual feedback that you can leverage to understand factors, such as the cost and weight of your product, the product's history and the impact of specific changes.

## Work in context

The amount of information that must be managed for a complete product definition in all of its variations across the entire life of the product can be overwhelming. To improve the productivity of all stakeholders that interact with the BOM, companies want to minimize the time users spend dealing with information that is not relevant to their work tasks.

With this in mind, using Teamcenter enables you to establish multiple product structure views of a single BOM that reflect the context needed for different disciplines to execute their tasks. In addition, using Teamcenter allows individual users to personalize their own view, or context, of data that is relevant to the task at hand based on maturity, a specified point in time, a set of selected product features, etc. These ad hoc contexts can be easily created on the fly and shared with other users or groups to facilitate and streamline collaboration.

These work-in-context capabilities of Teamcenter enable you to drive improved collaboration and productivity, regardless of the size or complexity of the product. These capabilities are especially critical for successful management of large, complex assemblies. You can manage a product with millions of parts, but still rely on optimized user interaction with contexts that are easy to set up and re-use.

#### Extended lifecycle support

Product engineering and production BOM information are often disconnected. This lack of linkage between what is designed and what is actually built leads to costly errors and delays as product development and manufacturing fail to align their respective processes.

Using Teamcenter extends BOM management through procurement and delivery to encompass the entire lifecycle of your products. With support for prototype-build configurations, operations release, production order forecasting and as-built BOM management, you can dramatically reduce errors, scrap, rework and warranty costs. Only Siemens PLM Software delivers an integrated product definition that ties the details of CAD design with the BOM, enabling BOM-driven digital mockups (DMU) and high-performance BOM solves.



Teamcenter provides several out-of-the-box system interfaces as well as an open integration framework to help you integrate various enterprise systems that can eliminate manual movement of product BOM information. Any operational group can share, coordinate and synchronize their activities using an updated and accurate BOM along with other associated product and process knowledge. These capabilities are especially valuable for aligning multiple business processes across today's enterprise software systems.

Siemens PLM Software  
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