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SOLUTIONS



Siemens PLM Software

# Requirements management

“Build-in” the voice of the customer by managing, linking and continuously verifying conformance throughout the product lifecycle

## Benefits

- Facilitate total quality improvement by providing your enterprise with a metrics-driven definition for determining whether the products you deliver comply with customer expectations
- Ensure marketplace success by making certain that your product lifecycle is rigorously and relentlessly driven by the requirements, needs and preferences of your target markets and customer base
- Accelerate time-to-market by allowing you to avoid unexpected problems that might otherwise arise late in your product lifecycle

## Summary

Teamcenter® software’s requirements management capabilities provide your enterprise with a systematic and repeatable solution for defining, capturing, engineering, managing and leveraging product requirements. By allowing you to understand each product in terms of its evolving customer requirements and compliance issues, Teamcenter enables you to build in the voice of the customer and continuously verify conformance to requirements throughout the product lifecycle – thereby facilitating requirements-driven design, systems engineering, design-to-cost and other highly valued business initiatives.

## Connecting requirements across your product lifecycle

By enabling you to understand and evaluate product requirements across every stage in your product lifecycle, Teamcenter allows you to:

- Understand what your target markets and customer wants in terms of documented expectations, preferences, standards and regulations from diverse sources.
- Supplement these requirements with quantifiable constraints that determine the success of your take-to-market programs in terms of their cost and delivery schedules, as well as their ability to satisfy established performance, ergonomic, safety, usability, reliability, maintainability, recycling/disposal and other compliance related metrics.
- Connect these requirements and constraints to fine-grain design elements that trace across the configurations and continually validate the product as it evolves across its various lifecycle states.

# Requirements management

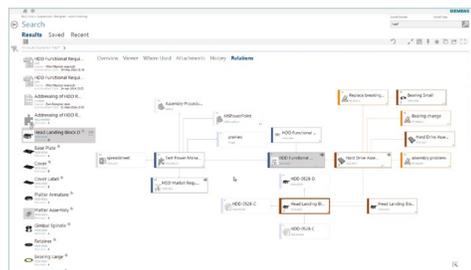
## Benefits *continued*

- Improve product quality by providing developers with immediate feedback when program constraints are in danger of being violated
- Increase cross-discipline collaboration by providing all of the participants in your product lifecycle with a common language for understanding a program's business objectives
- Facilitate lean design by providing product developers with fine-grain design definitions connected with product requirements and program constraints
- Facilitate commonization and re-use by enabling requirements to be copied and replicated across platforms, programs and projects

## Features

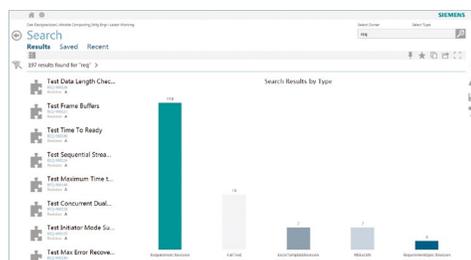
- Capture, manage and leverage disparate product requirements in the same single PLM environment that you use to manage your product definitions and product configurations
- Document import/export mechanism for requirements capture and generation using standard Word and Excel import/export
- Automatic document parsing and requirements identification
- Connect product requirements and program constraints to fine-grain design elements created by other Teamcenter users

- Establish closed loop processes that feed information to product developers and program managers when new requirements arise, when your program constraints are in danger of being violated or when review teams need to understand the requirements related impact of proposed design changes.



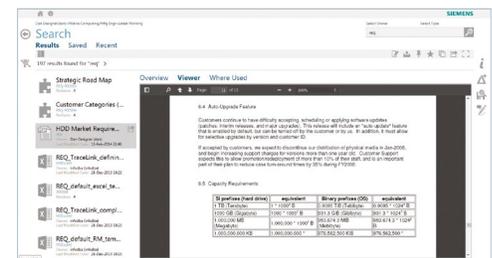
*The relationship browser provides an easy to understand graphical display to trace requirements and their relationship to other objects across the entire product lifecycle.*

Teamcenter enables you to capture and organize your product requirements in a shared environment that allows team members to collect, view and edit requirements from geographically dispersed and widely diverse sources using mobile devices and interfaces they're already familiar with. Teamcenter provides "live" Microsoft Office integrations that support viewing/editing through Microsoft Word and Excel – essentially elevating standalone Office applications to multi-user applications connected to an enterprise application. The Teamcenter environment ensures that the entitled users in your enterprise are working from the same set of requirements and product assumptions – while protecting the integrity of your requirements from unauthorized access.



*Using Active Workspace users can quickly search, find and navigate product requirements.*

Teamcenter software's ability to digitally connect your requirements, program constraints and design elements is especially crucial when your enterprise is making time-critical design decisions. Because requirements are digitally connected across all product structures such as logical, physical, manufacturing and more, Teamcenter allows you to incorporate product requirements directly into the workflow-driven processes that drive your engineering, procurement, program execution management, change management, total quality and service/support initiatives.



*Using the rich text editing capability, or Word and Excel, "Live" users can edit documents and provide additional clarity to their requirements documents by inserting tables and images.*

## Business issues

Today, companies use many diverse sources of information to capture and manage their product requirements, including spreadsheets, custom-built data-bases, linked documents and document tracing tools.

Unfortunately, these approaches create isolated requirement islands that end up in documents that never get read or data-bases that cannot be linked or applications systems that have nothing to do with the product lifecycle.

Teamcenter changes the way you manage product requirements by enabling you to capture and organize multiple types of product requirements in an enterprise-wide environment that authorized users can subsequently access using tools they already understand.

Equally important, Teamcenter enables you to connect these requirements with the

### Features *continued*

- Define program-related constraints, including cost and scheduling controls, as well as compliance-related metrics that pertain to performance, maintainability, reliability, manufacturability, usability and ergonomics
- Integration with project management so you can consider requirements in the context of the project plan, giving you visibility to their impact on resources, cost and schedules that includes feedback from test to requirements compliance
- Familiar user interface that looks and acts like Windows Explorer/Outlook
- Short learning curves facilitated by Microsoft Office integrations that support “live” viewing/ editing through Microsoft Word and Excel
- Multi-user group environment that enables users to view and work on requirements concurrently in a controlled way
- Requirements versioning/ variant support
- Requirements-based configuration management, change processes and approval cycles
- “Lock-out” protections that prohibit users from accessing or modifying a requirement when that requirement is already being accessed by someone else

rest of intellectual capital that Teamcenter manages – such as the designs, documents, specifications, models and test results that comprise your product definitions. This connection is essential in allowing product requirements to directly influence the processes you use to make and execute design decisions.

### Use cases

Teamcenter software’s requirements management capabilities can apply to numerous use case scenarios, including regulatory compliance impact analysis, trade studies and the continuous validation of product requirements.

### “Build-in” regulatory compliance

Teamcenter provides support for regulatory compliance. Regulations, such as the Congressional Battery Act and EEU Directives, which stipulates that manufacturers pay for disposing/recycling their products. Using Teamcenter Requirements Management you can link these regulations into your product design, enabling you to “build in” end-of-life recycling considerations across the product life-cycle – thereby facilitating order of magnitude savings. For example, suppose an automotive manufacturer carries \$150 liability to cover the cost of vehicle disposal. If you can drive the cost of recycling/disposal from \$150 to \$50 and multiply that savings by millions of vehicles, it’s easy to see how companies can save hundreds of millions of dollars by adopting a comprehensive recycling initiative early in the product development cycle.

### Continuously validate requirements

The National Highway Traffic Safety Administration’s (NHTSA) vehicle recalls database reports there are more than 22 million product recalls. Most of these recalls are a direct effect of the failure to validate requirements as the product evolves. Using Teamcenter you can link and continuously validate requirements as the product and requirements evolve enabling everyone to more efficiently and cost effectively plan their work and make more informed decisions. At an average cost of \$100/vehicle companies can save hundreds of millions of dollars by using Teamcenter to continuously validate requirements across the entire product life-cycle, instead of discovering the problem after it’s in the customers driveway.

#### Contact

Siemens PLM Software

Americas +1 314 264 8499

Europe +44 (0) 1276 413200

Asia-Pacific +852 2230 3308

[www.siemens.com/plm](http://www.siemens.com/plm)

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844-GEO-SUPT  
support@geoplms.com  
geoplms.com