

Requirements Management

“Building-in” the voice of the customer

fact sheet

► Summary

Teamcenter's Requirement 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 the voice of the customer directly into your product lifecycle – thereby facilitating requirements-driven design, Design for Six Sigma, systems engineering, built-in disposal/recycle-ability and other highly valued business initiatives.

Benefits

Facilitates total quality improvement by providing your enterprise with a metrics-driven definition for determining whether the products you deliver comply with customer expectations.

Ensures 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.

Accelerates time-to-market by allowing you to avoid unexpected problems that might otherwise arise late in your product lifecycle (e.g., providing product developers with immediate feedback when program constraints are in danger of being violated).

Improves cross-discipline collaboration by providing all of the participants in your product lifecycle with a common language for understanding a program's current business objectives.

Facilitates lean design by providing product developers with fine-grain design definitions connected with product requirements and program constraints, thereby enabling you to understand when a product is over-designed or under-designed or when the development cycle has been unnecessarily prolonged (e.g., by too much “tinkering”).

Connecting requirements across your product lifecycle

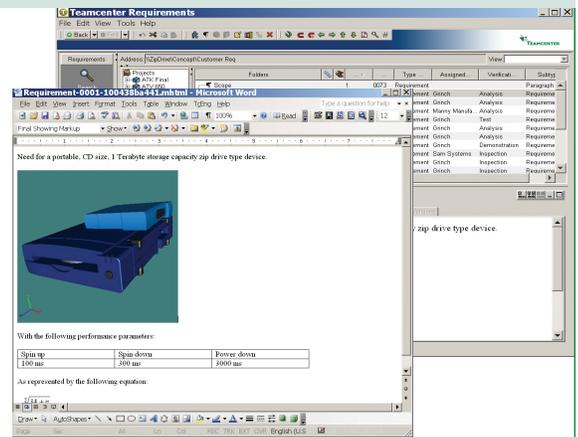
By enabling you to understand and evaluate product requirements across every stage in your product lifecycle, Teamcenter's Requirements Management capabilities allow you to:

- Understand what your target markets and customers want in terms of documented expectations, preferences, standards and regulations that you capture from diverse sources as *product requirements*.
- 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 you can trace across the configurations and product definitions that describe a product as it evolves across its various lifecycle states.
- 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.

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 interfaces they already employ. Teamcenter provides “live” Microsoft Office integrations that support viewing/editing through Microsoft Word, Excel and Visio – 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



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Users can employ the standard Microsoft Word interface to capture requirements and directly manipulate them in a multi-user database.



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Features

Ability to capture, manage and leverage disparate product requirements in the same single PLM environment that you can use to manage your product definitions and product configurations

Document import/export mechanism for requirements capture and generation using standard Microsoft Word import/export

Automatic document parsing and requirements identification

Ability to 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

Ability to connect product requirements and program constraints to fine-grain design elements created by other Teamcenter members

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 Excel, Word and Visio

Multi-user group environment that enables users to view and work on requirements concurrently in a controlled way (rather than serially passing requirements, which is typical in conventional Word environments)

Versioning/variant feature that supports a complete requirements-based configuration management capability, as well as change routing and approval internal or external to Teamcenter

“Lock-out” protections that prohibit users from accessing or modifying a given requirement when that requirement is already being accessed by someone else

of your requirements by “locking out” anyone who tries to access or modify a requirement that is already being accessed by somebody else.

Teamcenter’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 to product structures, 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.

Business issues

Traditionally, companies used many diverse sources of information to capture and manage their product requirements, including spreadsheets, custom-built databases, linked documents and document tracing tools.

Unfortunately, these approaches usually result in isolated requirements that end up in documents that never get read or databases 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 a single web-based environment that entitled users can subsequently access using tools they already understand.

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

Requirements Management can apply to numerous use case scenarios, including:

- Regulatory compliance
- Six Sigma

“Build-in” regulatory compliance. Teamcenter provides support for regulatory compliance. Regulations, such as the Congressional Battery Act and EEU Directives, stipulate that manufacturers pay for disposing/recycling their products. Teamcenter’s patented connected requirements capabilities let you link these regulations into your product design so that you can “build in” end-of-life recycling considerations across your product lifecycle – 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.

Design for Six Sigma. Similarly, many manufacturers have invested millions of dollars implementing Six Sigma quality initiatives only to discover they have “hit the wall” at 4-Sigma – the point at which the cost of quality improvement exceeds the benefit. This shortfall is largely attributable to the fact that quality initiatives cannot reach their full potential by only improving downstream lifecycle processes. Teamcenter enables you to connect Six Sigma goals into your product development cycle, thereby facilitating upstream Design for Six Sigma initiatives. Industry analysts estimate that a 2-Sigma improvement reduces the cost of quality by as much as 25 percent of product sales. With these kinds of results, Teamcenter-enabled Requirements Management brings the value of connected requirements directly to your bottom line.

► Contact UGS

Americas 800 498 5351
Europe 44 1276 705170
Asia-Pacific 852 2230 3333

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