Classification and re-use

Facilitating product and process re-use using the Teamcenter classification and re-use capabilities

Benefits
- Lets designers focus their energies on a product's most marketable innovations by enabling them to quickly locate definition data for its derivative elements
- Provides web-native mechanism for incorporating supplier-provided product definitions into your design environment
- Encourages use of standardized design elements and methods for reducing inventory
- Saves time otherwise lost searching for widely dispersed product definitions
- Facilitates easier preparation of shop floor documentation, including tooling setup sheets
- Eliminates duplication of definition data in multiple systems
- Improves utilization of your manufacturing assets

Summary
Teamcenter® software's classification and re-use capabilities enable companies to manage previously created product definition data in digital libraries that design engineers can subsequently use in new product initiatives or continuous improvement programs. Manufacturing engineers can also use these capabilities to evaluate alternative and substitute parts before finalizing their designs. By providing product developers with rapid access to validated and/or standardized design definitions, Teamcenter facilitates component and supplier management (CSM) and its related advantages.

Enabling part and tool re-use
By allowing you to manage previously designed, validated and approved product and tool definition data, the Teamcenter classification and re-use capabilities expedite product development, reduce its cost and build design intent and lessons learned into your new product initiatives.

Most new product offerings – and all continuous improvement programs – include numerous design elements that have already been used in earlier products. Typically, these re-usable elements constitute up to 85 percent of the new offering's design content. Teamcenter enables manufacturing engineers to re-use existing tools instead of creating new tooling every time.

Create digital libraries comprised of previously created design definition data Teamcenter lets you manage a wide variety of product definition data in a digital library including information about your design elements (components, subassemblies, assemblies), documents, manufacturing tools (machine tools, cutting tools, gages, robots, welding guns), manufacturing templates, work instructions, company policies, process definitions, standardized forms and industry/government regulations.
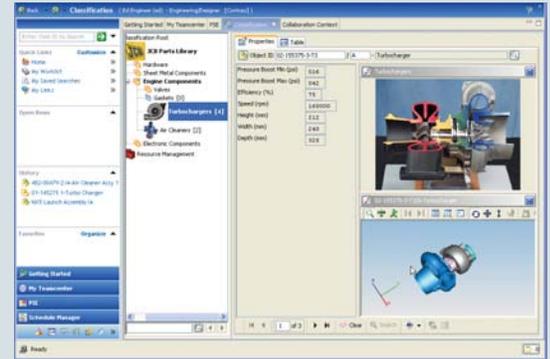
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Classification and re-use

Features
- Comprehensive user-definable classification structures
- Highly flexible search engine enabling the use of all defined attributes, Boolean operations, wilde cards and ranges
- Ability to build/classify assemblies and subassemblies
- Ability to reference standard commercially available libraries and subscription services
- Parametric search engine
- Integrated 2D/3D viewer based on JT™ file format

Teamcenter enables you to build hierarchies, classes, attributes and valid attribute values into your class definitions so that design engineers can quickly search your library when they want to locate a particular design element and re-use its related product and process data in a new project or program.

Integrate digital libraries into your design automation tools
While Teamcenter classification and re-use capabilities are tightly integrated with NX™ software, you can easily integrate these capabilities into your existing applications. As a result, application users can search your library for a part/component and bring its associated 3D models, 2D designs, specifications, tooling, part files and documentation into their sessions without leaving their application interface or desktop.

Building your library/facilitating user searches
Teamcenter provides a variety of classification and resource management tools that enable you to quickly build a digital library. Teamcenter lets you categorize your definition data on the basis of hierarchical classifications. You can establish attributes for each class, including physical characteristics (such as height, weight, density, color and material) that designers can use when searching your library.

You can also classify definition data by accounting for product-related intentions. For example, to enable designers to quickly locate design information about the fasteners in your library, you could describe each fastener in terms of:
- Its level of quality
- Available suppliers and approved vendor list
- Locations where the fastener can be assembled into a full product
- Whether the fastener being described has been approved for prototype or high-production use

You can establish rules, user identifiers and role definitions to make certain that individual users only access library information that they are entitled to employ.

Use case scenarios

Web-accessible catalogs
Teamcenter enables you to create catalogs (i.e., libraries) that design engineers can access and interrogate via the web. Catalogs are especially useful for retaining preferred or optimal part, assembly, and tool data, as well as lessons learned (e.g., process-oriented templates that earlier development teams used to resolve particular issues).

Design engineers can access online catalogs when searching for designs, parts or tools that match user-supplied criteria – or that fit a desired range of parameters. By taking advantage of Teamcenter full revision control, users can find the right versions of your most highly intuitive data definitions, including 3D visualizations of individual design elements.

Template-based design
In this scenario, you can build design intent, lessons learned, re-usable product structures, generic design elements and substitutable real life parts into the process you use when executing new programs. Template-based processes enable you to take advantage of cataloged design rules, design requirements and approved design elements.

For example, an automotive company might use Teamcenter to create a template that first defines the assemblies (e.g., engines, braking systems, chassis, exhaust systems) common to all of its vehicles. The automaker could create a re-usable generic product structure that classifies all of the variations applicable to each of these assemblies (e.g., they could classify engines as 4-cylinder overhead cam, V6, V8, or high-performance 12 cylinder). In addition, the company could create a physical product structure that defines the preferred parts that apply to each design element in each assembly.

Template-based design enables an automaker's engineer teams to quickly fill their product configurations with preferred or optimized design elements that team members can access, view, validate and change using their everyday CAD/CAM/CAE tools.