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TEAMCENTER

Smarter decisions, better products through end-to-end PLM

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Teamcenter benefits

In today's highly competitive global marketplace, industry-leading companies need to develop and deliver world-class products.

Product lifecycle management (PLM) makes that happen. An enterprise PLM system drives product and process innovation by providing decision-makers with the right information to make smarter decisions that result in better products.

Teamcenter® software is the world's most widely used PLM system, helping companies across all industries manage increasingly complex products to maximize productivity and streamline global operations.

The benefits of Teamcenter solutions are clear. You can see immediate and long-term business results, including:

Smarter decisions. A single source of product and process knowledge empowers your global teams and suppliers to collaborate and make more informed decisions faster – with greater confidence.

Better products. With end-to-end PLM solutions, Teamcenter streamlines operations throughout the product lifecycle, from planning and development through manufacturing and support.

Proven success. You are in good hands with the world's most widely used PLM system. The ability to deliver proven business value is the reason more companies choose Teamcenter.

Teamcenter is backed by Siemens PLM Software's leadership in providing PLM solutions that enable companies to make intelligent, information-driven decisions at every stage of the product lifecycle.

End-to-end PLM, delivered in high definition

Take control of your lifecycle. Teamcenter's complete portfolio of lifecycle applications helps people make good decisions for their tasks-at-hand, while unifying the various work streams within a single source of product and process knowledge:

- Systems engineering and requirements management
- Portfolio, program and project management
- Engineering process management
- Bill of materials management
- Compliance management
- Content and document management
- Formula, package and brand management
- Supplier relationship management
- Mechatronics process management
- Manufacturing process management
- Simulation process management
- Maintenance, repair and overhaul
- Reporting and analytics
- Community collaboration
- Lifecycle visualization
- Platform extensibility services
- Enterprise knowledge foundation

Make smarter decisions in high definition. Decisions are easier to make when you can visualize their impact. From Active Workspace, you can locate, browse, and visualize your products in context-aware high definition, enabling you to investigate your 3D product data in greater detail. Seamlessly collaborating with others, you can easily compare and graphically report on product information, directly on the 3D product model.

Access PLM anytime, anywhere. Teamcenter Mobility enables PLM decision-making at the time and place a decision needs to be made. You can respond to workflows and review associated documents, browse product structures, 2D drawings and 3D models directly on mobile devices, making smarter product decisions in the context of the task at hand. With Teamcenter Mobility, you have access to your organization's PLM environment whenever and wherever you need it.

Systems engineering and requirements management

Advantages

Mitigate risk by understanding product requirements, program constraints, engineering concerns and manufacturing/supply chain issues

Combine systems level understanding with requirements to make better decisions

Ensure you deliver the right product content at the right time to the right market

Facilitate closed loop feedback by recognizing when intent is at risk and informing lifecycle stakeholders accordingly

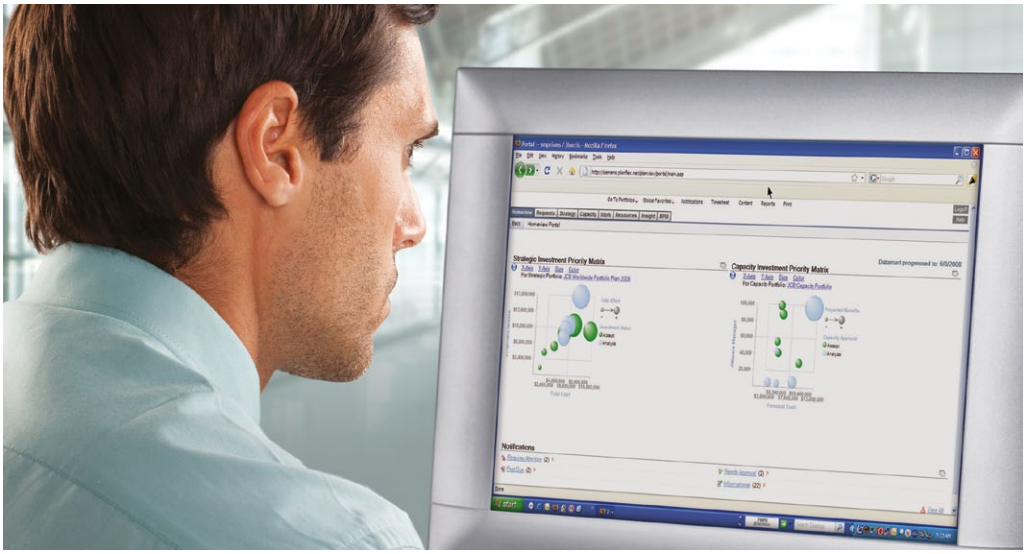
Requirements-driven product development. From Microsoft Office applications, you can define, capture, manage and control product requirements. You can link product requirements to downstream processes, providing visibility to source information. You can use workflow and change management capabilities to version, track, manage and route all changes.

Integrated model-driven systems engineering. You can accelerate schedules and reduce risk by establishing a model of the product that defines all architectural, functional, logical, interface, connection and port objects which automatically populate the system definition and all variant conditions. You can link system requirements to diagram and object definitions, providing the traceability needed to assess the impact changes will have downstream.

System analysis and verification. You can model, simulate, analyze and optimize critical system performance and subsystem interaction before generating physical prototypes. Because Teamcenter supports tools for mathematical modeling, system computation and analysis, you can identify and correct system design or subsystem interaction issues earlier. As models evolve, Teamcenter manages the relationships to the design so you can assess the impact of changes downstream.

Standardized corporate data dictionary. You can capture, manage and share signals/messages and associate them with interfaces between sub-systems. You can eliminate integration errors and ensure that the entire supply-chain is working from a common set of content. You can produce the Interface Control Documentation (ICD) or ISO documentation required for contract or regulatory compliance.

Portfolio, program and project management



You can use Teamcenter to improve product development initiatives. Portfolio management capabilities enable you to align your product portfolio with your strategy and select the right mix for maximizing ROI.

Teamcenter program and project management capabilities enable you to drive the operational execution of programs and projects to deliver expected business results. By combining these capabilities, you can use Teamcenter to perform:

Portfolio management. You can define a portfolio strategy using weighted strategy objectives, scoring models and performance criteria. Portfolio analysis capabilities allow you to quickly evaluate and compare project alternatives and select a portfolio mix that matches your intent. Visibility of resources and schedules helps you see their impact on current projects during portfolio planning.

Program and project management. You can plan your programs in terms of team schedules, work tasks, dependencies, milestones, baselines and constraints and then execute projects in accordance with trackable expectations.

Resource, financial and business performance management. Teamcenter helps you understand team workload demands and the risks that projects face from shortfalls. You can associate bill rates with team resources to exercise both detailed and summary cost controls. You can also manage contract deliverables to customers and with suppliers.

Advantages

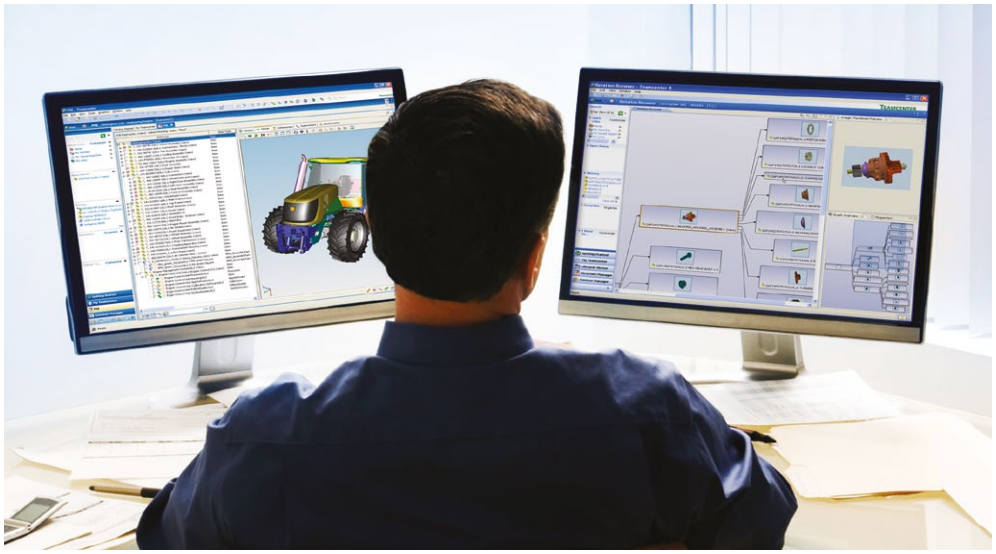
Select a portfolio mix that aligns with your strategy

Improve user productivity by incorporating Microsoft Office into your PLM environment

Coordinate resources across projects and drive execution of product teams' activities with unified goals, gates, timelines and targets

Provide stakeholders with up-to-date program information, including metrics for rolled-up performance, process, strategy-specific KPI and risk analysis

Engineering process management



Advantages

Provide a single source of engineering knowledge to support your global design teams

Capture workflow and best practices to develop common standards and processes

Speed up your design process and make it more collaborative by facilitating the continuous aggregation of design changes

Eliminate time and cost of data translations, design reviews and data validation when working with multiple CAD systems

Teamcenter capabilities for engineering process management[1] provide a secure environment for capturing and managing information from multiple CAD, CAM, CAE and ECAD systems.

Design management. Teamcenter enables you to bring together disparate product design and engineering data into a single source of knowledge. As a result, your teams can easily find information, and then modify, share and collaborate on the product design while maximizing part, process and information re-use.

Engineering change and process management. You can establish revisions and intermediate version controls over your engineering data. Teamcenter provides preconfigured standards-based processes to initiate, review/approve and execute engineering changes.

Design validation. You can establish hierarchical product structures that can be decomposed into manageable design and engineering tasks. Teamcenter accelerates your design validation process by enabling you to aggregate design changes continuously. Extended teams can develop and visualize digital mockups based on configured product structures, and collaboratively review alternatives. The unique context management capability of Teamcenter enables you to create, save and re-use the same content.

[1] Siemens PLM Software also provides Teamcenter Express, which is a preconfigured, easy-to-use and easy-to-deploy collaborative product data management solution (cPDM) designed to meet the requirements of small to mid-sized manufacturing companies.

Bill of materials management

Manage your complete bill of materials (BOM) in a single environment – from simple structures to complex product definitions.

Product BOM authoring and analysis. Establish a single, complete product definition that reflects all product parts and intuitively presents this information to you, including a visual representation of the product as configured. Audit and analysis capabilities provide clarity with visual feedback.

Product configuration. Leverage commonality across products to consolidate a range of products into a single structure. This single source of information enables you to manage products as families instead of discrete variants, enabling more options without additional effort and viewing all valid product configurations.

Context management. Manage your complete BOM without sacrificing productivity. Provide tailored visibility to clear, current and accurate BOM definition, specific to the tasks of teams and users, boosting productivity and collaboration.

Extended lifecycle support. Manage your complete BOM definition beyond design and engineering. With extended support through procurement and delivery, as well as automated exchange of information with business systems, you can reduce costs and eliminate the time consuming and error prone process of manually copying information.

Advantages

Reduce complexity by eliminating the need for multiple BOM systems

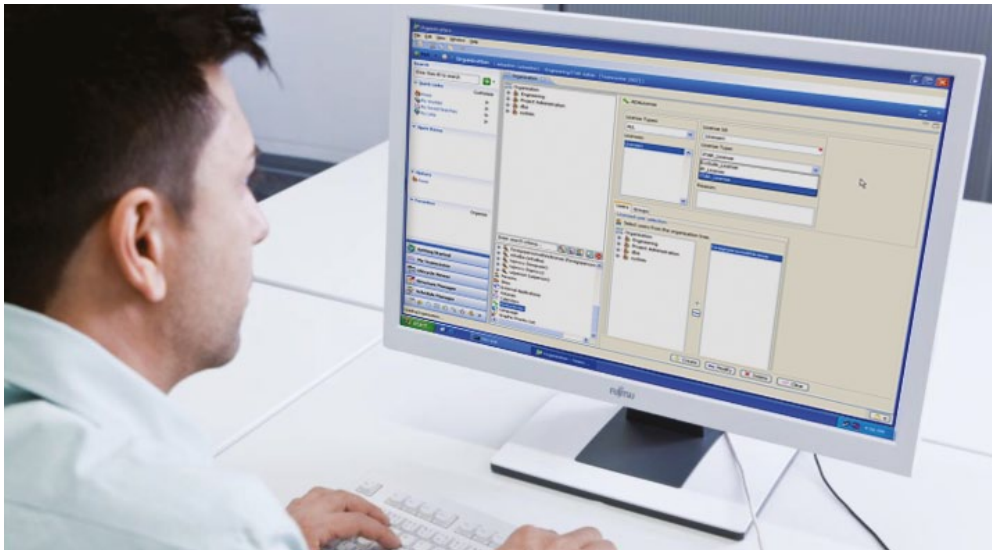
Provide clarity with analysis capabilities

Improve product success by handling more options without additional effort, offering more product variety and more flexibility to customer requirements

Cut development costs with increased re-use, improved accuracy and reduced cycle time

Improve productivity with visibility to clear, current and accurate BOM information

Compliance management



Advantages

Integrate compliance as a comprehensive strategic initiative rather than as a reporting activity

Reduce the risks of non-compliance by establishing regulatory processes across your entire product lifecycle

Enforce regulatory control by fully documenting your compliance requirements, establishing ownership, tracking accountability and auditing compliance

Ensure executive awareness by integrating compliance-related status into dashboard summaries, system audits, worst-case analyses and/or risk assessment reports

Teamcenter enforces compliance management as an integrated part of a comprehensive PLM strategy. You can use Teamcenter to capture compliance requirements early and incorporate these requirements into your development processes and track accountability for regulatory compliance.

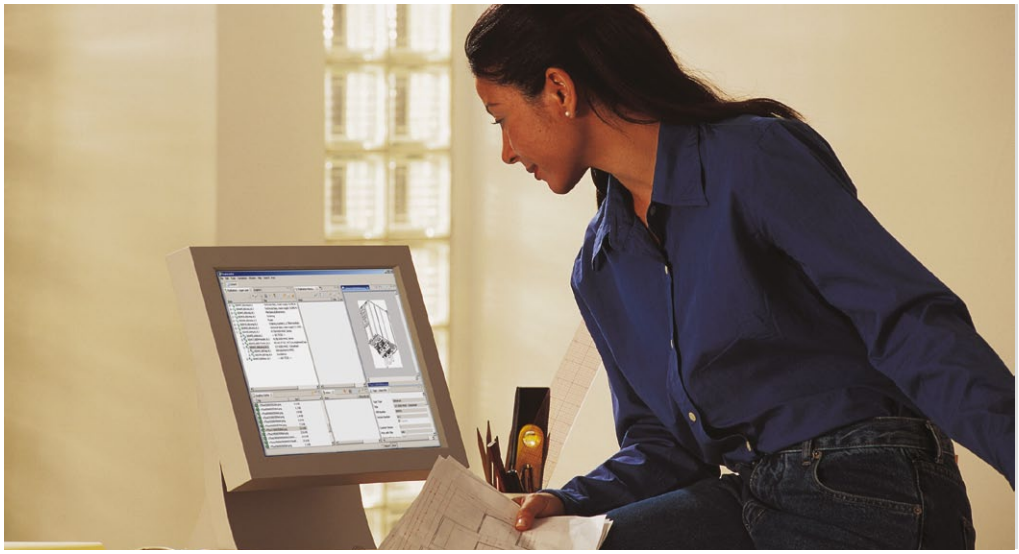
Environmental compliance. Teamcenter facilitates compliance with Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), End-of-Life Vehicle (ELV), Restriction on the Use of Hazardous Substances (RoHS) and Waste Electrical and Electronic Equipment (WEEE) directives.

Medical device compliance. Teamcenter ensures traceability in accordance with the regulatory requirements for the medical devices industry based on U.S. Food and Drug Administration regulations 21 CFR Part 11 (Electronic Records and Electronic Signature) and 21 CFR Part 820 (Quality System) regulations.

Export control. The Teamcenter authorized data access (ADA) capabilities control the export of regulated information and intellectual property (IP) protection based on specifications from the U.S. International Traffic in Arms Regulations (ITAR) set forth by the U.S. Department of State (Office of Defense Trade Controls).

Extended framework. Teamcenter can be extended to adapt to new, evolving and localized regulatory requirements.

Content and document management



Teamcenter enables you to manage documentation development/support in the same environment you use to manage product development. Documentation deliverables can be scheduled into product launches, published in diverse formats (i.e., multimedia, multilanguage, multitarget), and re-used.

Structured content management. You can split documents into re-usable components. Teamcenter manages structured SGML/XML content within your PLM environment and supports industry standards such as S1000D and DITA.

Tightly integrated graphics content. You can link parts or assemblies in product definition to 2D and 3D illustrations in product documents. If a change occurs, the linked illustration is automatically updated in the document, showing where the illustration appears and allowing you to evaluate, reject or accept it.

Automated documentation processes. Documentation teams can leverage workflow capabilities to optimize change processes and trigger audience-specific publication processes.

Advanced Microsoft Office support. Using the Microsoft Office integration, you can interact directly with PLM from your Office application to contribute and use product data as well as exchange attributes between Office and Teamcenter. Easily configurable templates can be used to create documents that meet requirements. Auto-rendering and review/markup tools facilitate faster, more efficient cycle times.

Print Management. You can ensure documents are properly labeled when printed with print stamps and watermarks.

Advantages

Improve product launch success by synchronizing all deliverables in a single environment

Reduce costs by maximizing the re-use of document content and supporting multiple delivery formats

Improve productivity by leveraging SGML/XML to publish multiple product variant documents

Improve productivity by incorporating Microsoft Office into your PLM environment

Generate documents directly from product information

Formula, package and brand management

Advantages

Improve productivity by integrating formula, packaging, artwork, and brand data and processes with the rest of your enterprise

Drive on-time delivery by synchronizing the development and execution of your formulated and discrete products – and leveraging their associated packaging and brand information

Eliminate costly recalls by embedding requirements and regulatory information across your lifecycle processes

Reduce development and sourcing costs by standardizing and re-using packaging and artwork components

The Teamcenter formula, package and brand management solution manages formulated products, packaging, artwork and brand information as part of a unified PLM platform.

You can realize gains in speed, productivity, cost efficiency, and compliance by unifying discrete and formulated product information with packaging and brand information.

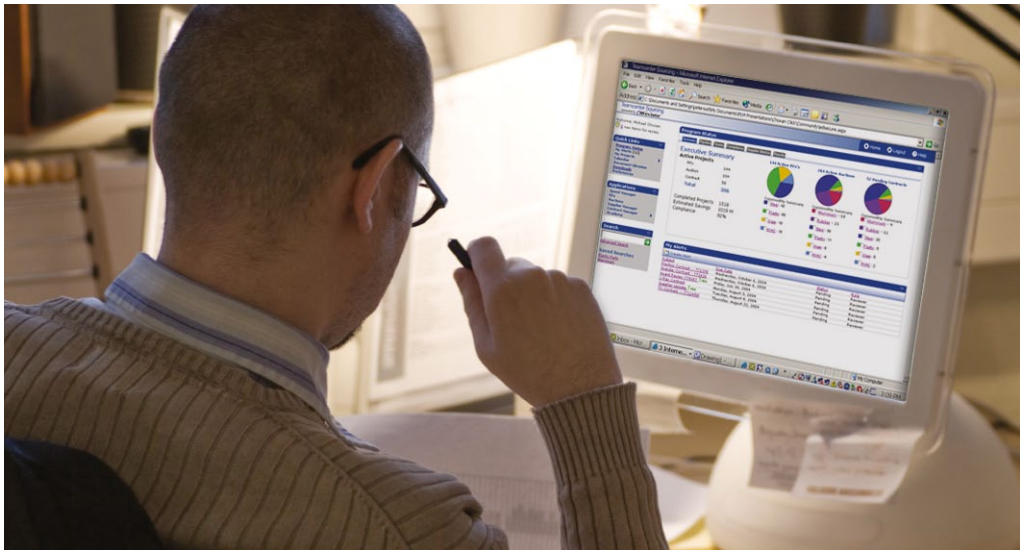
Brand knowledge management. You can manage information about a brand, its characteristics, communications, related analyses and assets.

Formula management. Manage complete formula information. Teamcenter facilitates multi-level recipe management, allowing you to manage country, plant and regional variations.

Packaging and artwork management. You can manage all packaging and artwork knowledge. Packaging requirements and regulatory information can be captured and incorporated into your product development process.

Global specification management. Teamcenter enables you to represent specifications as intelligent, configurable relationships between objects. This allows you to leverage every element in a specification across the entire product and production lifecycle.

Supplier relationship management



The Teamcenter supplier relationship management (SRM) solution integrates your extended enterprise, suppliers and their associated information across all stages of product development. Teamcenter connects procurement and suppliers closely with design teams, earlier in the process to help maintain and improve quality, service and innovation.

RFx with data exchange. The Teamcenter request-for-BOM collaboration capabilities facilitate event-driven exchange of item-related information. Request-for-business information capabilities streamline and standardize the data collection processes associated with issuing RFIs, RFPs and RFQs, enabling you to collect detailed product information.

Internet negotiation management (reverse auction). Procurement teams can leverage Teamcenter to bring the negotiation process online for virtually all goods and services. Online auctions facilitate price transparency and analysis.

Advantages

Automate supplier integration and manage supply chain data at a granular level

Align sourcing data with the BOM to provide insight into supplier cost impact

Mechatronics process management

Advantages

Manage mechatronics development processes in one cohesive and integrated environment, improving productivity and enabling disparate disciplines to work together

Facilitate decision making by enabling teams to understand the entire electro-mechanical product and how customer and product requirements relate to their designs

Enable individual disciplines to more clearly understand how their efforts impact the product's roadmap and its related cost, scheduling and quality constraints

Teamcenter mechatronics process management capabilities establish a rich environment in which multiple disciplines – electronic, electrical, software and mechanical – can work together to develop electro-mechanical products.

Each engineering discipline works in its own development environment using tools-of-choice to design their components. By combining your current tools with other applications, you can transform disconnected tools and processes into an integrated design solution that lowers costs and improves quality while increasing design productivity.

Integrated data and product structure management. The Teamcenter data, document, record and content management capabilities enable you to integrate critical mechatronics information.

Integrated change and process management. You can use Teamcenter to implement best practice workflows that help teams understand change impact, manage review/approval processes and execute product changes.

Visualization and collaboration. The Teamcenter digital mockup, analysis and markup capabilities let teams collaboratively investigate and validate a wide range of performance and quality issues.

Systems-driven mechatronics associativity. You can use Teamcenter to define, search, visualize and navigate relationships, interactions and dependencies between data elements across domains, resulting in lower costs, improved scheduling and higher quality.

Manufacturing process management

You can manage your product, process, resource and plant layout knowledge in a common PLM environment. This helps streamline new product design and manufacturing process workflows. A single source of product and process knowledge allows you to efficiently manage global product design and production activities to significantly speed up time-to-market.

Design, manage, analyze and optimize your manufacturing process from part machining process to plant simulation.

Get clear visibility to manufacturing decisions, analysis and results.
Using a set of powerful data management, 3D visualization and analysis tools, you can optimize manufacturing planning by evaluating alternatives. The system helps you analyze data from different sources quickly and easily.

You can improve your productivity using fast, intelligent search that only displays relevant information. You can generate animated work instructions using 3D PDF technology, to clearly communicate assembly instructions.

Gain the freedom to react to change efficiently.
With fully integrated product design and manufacturing, you control your product development processes and know the exact impact of change at every step. If change is introduced at any point, you can quickly communicate and reconcile the entire scenario using powerful analysis and validation tools. Through Teamcenter change management, responsible parties are informed and notified so that your organization can make better planning decisions.

Advantages

Increase productivity and support continuous improvement in design-for-manufacturing initiatives

Enable product and manufacturing teams to collaborate and make smarter planning decisions

Synchronize as-designed and as-planned BOM, helping cross discipline teams enjoy better change visibility

Simulation process management

Advantages

Speed up simulation by enabling simulation teams to find and re-use data, create models/assemblies and react to design changes

Improve your products by integrating CAE into a wider development context, enabling product teams to interactively visualize simulation results without the need for expert tools

Minimize implementation cost/risk with a common/secure data management infrastructure for engineering teams with an open standards-based platform

Teamcenter simulation process management capabilities are specifically designed for engineers and analysts. This enables engineering teams to more effectively use simulation-specific data, workflow and process management capabilities in a complete digital product development environment

Simulation data, assembly and change management. You can use Teamcenter solely for managing simulation data, or for managing simulation data in context with product data. You can find and re-use data for simulation, including requirements, designs, existing models and results from earlier simulations. When designs change, you can compare and update models and assemblies, regenerate results and validate the changes.

Integrated simulation workflows and 3D visualizations. You can use standard workflows to initiate, monitor, review and approve simulation work and be confident that results will arrive on time. You can quickly find all simulation work related to specific product variants or configurations. You can interactively visualize simulation without needing expert tools.

Open, secure and scalable platform for simulation management. You can easily configure and launch CAE applications and store results in the right context. Distributed engineering teams are provided with secure global access to all simulation data, enabling them to collaborate more effectively.

Maintenance, repair and overhaul

Teamcenter maintenance, repair and overhaul (MRO) solutions establish after-sales capabilities to meet the demands of service lifecycle management and enterprise asset management. Teamcenter provides total visibility into complex products that are capital assets.

You can maximize the efficiency of your service departments by using configuration-driven MRO applications to plan operations, optimize service execution and better utilize assets and part, tool and equipment inventories.

Service data management. You can gain visibility into long-life assets, including configuration knowledge and status, as well as capture service event activities that can be delivered in dashboards to support PBL/SLA contracts.

Service request management. You can efficiently manage service requests in ways that improve responsiveness and increase customer satisfaction, while controlling costs and maintaining standards.

Service planning. You can create, manage and leverage planning information to support preventative-, condition- or reliability-based maintenance models.

Service scheduling and execution. You can effectively schedule service jobs and tasks and track execution of work to closure and signoff, capturing important asset information to improve service planning and future products.

Reporting and analytics. You can examine operational information from services to discern trends in asset performance/reliability and track/analyze asset and organizational KPIs.

Advantages

Enable service organizations to plan and deliver MRO services more efficiently

Maximize the operational availability and reliability of managed assets

Provide asset knowledge to service teams at point of need so they can understand service requirements

Establish feedback loops to bring service concerns to the attention of product developers

Support preventative-, condition-, and reliability-based maintenance operations

Reporting and analytics

Advantages

Create a basis for establishing, measuring and analyzing performance metrics to drive better process performance

Aggregate data from multiple application sources into an enterprise information integration solution

Extend to systems outside the product lifecycle with the Teamcenter open framework, flexible data input formats, application-specific APIs and JDBC support for any relational database

Reduce the total cost of implementing reporting and analytics capabilities

Teamcenter reporting and analytics capabilities rapidly transform data from enterprise systems into insightful and actionable analyses for timely decisions.

Powerful data aggregation capabilities. You can aggregate Teamcenter-managed data while leveraging Teamcenter business rules and security models to maintain data integrity/security. You can bring in data from virtually any application while honoring all security and business conventions.

Rich dashboard and after-lifecycle reporting capabilities. You can generate executive, program, process and KPIs/dashboards and reports based on this aggregated data in customizable HTML formats for viewing and printing. You can save reports, email them, render them into PDFs or export them into Excel.

You can view, report and analyze data from multiple perspectives (e.g. drill up/down and drill through data centric and graphical views). You can optimize this data through caching and the use of data cubes that present data views for multiple types of analysis, including historical performance and before-trend analysis.

Open data framework and advanced capabilities. You can leverage advanced features and the Teamcenter open data framework to rapidly deploy and maintain the system's reporting and analytics capabilities, minimizing your total cost of ownership.

Community collaboration

Teamcenter community collaboration capabilities establish a secure and adaptive environment in which distributed multidisciplinary teams can work together with rich product data across the entire product lifecycle – without knowing how to use a PLM or CAD system.

You can engage suppliers, partners and customers in a collaborative community that facilitates concept studies, program reviews, design reviews and engineering change reviews.

Secure PLM collaboration. Your team can collaborate in a dynamic virtual environment and contribute to the product development process.

Virtual design reviews. You can conduct virtual design reviews to resolve quality concerns, mitigate costs and preserve knowledge for future re-use.

Visual product collaboration. You can view, analyze and mark up data from any CAD systems using the CAD-neutral JT™ format, as well as route these "visual issues" for resolution.

Synchronous and asynchronous collaboration capabilities. You can leverage 3D product visualizations, application sharing, digital calendars/ schedules, instant messaging, document routing/notification services, discussion boards and shared documents, folders and libraries.

Advantages

Securely engage globally distributed team members in a rich virtual collaborative environment combining the advantages of PLM with the familiarity of Microsoft's desktop applications

Quickly resolve quality issues and re-use acquired knowledge to bring innovative new products to market

Leverage knowledge from ERP, SCM and CRM systems alongside Teamcenter-managed product knowledge

Enable team members to view, mark up and review/ approve CAD data in virtual design reviews without CAD licenses or CAD authoring experience

Lifecycle visualization

Advantages

Enable stakeholders to clearly view and understand product and process issues through unambiguous 3D visualization

Bring all stakeholders into your processes by enabling people without a CAD authoring system to engage early and often

Significantly reduce product development time and cost by using digital prototypes

Extend your visualization backbone with process-specific add-ons, including immersive virtual reality, automated clearance analysis, virtual-human ergonomics, tolerance simulation, animation creation, quality validation and assembly path planning

Teamcenter provides you with scalable visualization capabilities so you can view your products as they evolve. Team members can visualize 2D and 3D product data in a single environment.

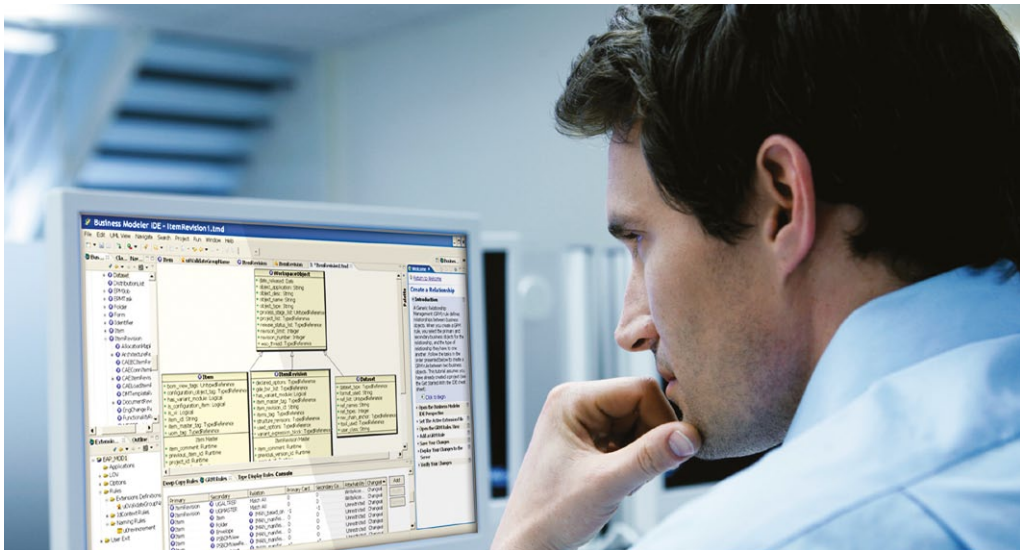
You can eliminate ambiguity that can result in errors while streamlining your PLM processes by replacing paper-based workflows. You can eliminate wasted time and travel while improving productivity with digital tools for virtual design reviews. You can minimize the need for costly physical prototypes with sophisticated digital prototypes.

Teamcenter capabilities for lifecycle visualization are powered by open JT technology, the world's common 3D language for PLM collaboration, visualization and interoperability.

You can extend your PLM environment by providing:

- Full function 2D capabilities and basic 3D visualization for viewing into the product lifecycle
- Enterprise 2D/3D view and markup capabilities for interacting with advanced product data
- Full function 2D/3D analysis for performing collaborative virtual design reviews of multi-CAD assemblies
- Sophisticated digital mockup capabilities for assembling a complete digital prototype and performing advanced analysis to validate form, fit and function issues.
- Powerful process-specific applications for immersive virtual reality, automated clearance analysis, virtual-human ergonomics , tolerance simulation, animation creation, quality validation and assembly path planning

Enterprise knowledge foundation and platform extensibility services



Enterprise knowledge foundation Teamcenter lets you bring product, process, manufacturing and service information from diverse applications into a single, secure source of knowledge.

Comprehensive PLM You can manage all of the data types that define your products throughout an entire lifecycle, while facilitating advanced search, navigation, security and scalability.

Process enablement You can capture and automate processes and best practices across your PLM environment with an advanced workflow engine and out-of-the-box change management capabilities.

Foundation for deployment You can rapidly deploy the Teamcenter solutions from a single foundation to speed your PLM investment's time-to-value.

Platform extensibility services You can realize value from your Teamcenter investment quickly and cost effectively by leveraging the open, extensible and unified architecture of Teamcenter.

Configuration services You can easily tailor Teamcenter to fit your business without developing costly custom software.

Connection services You can seamlessly integrate Teamcenter with other enterprise applications (including ERP and other Teamcenter installations) to enable enterprise-wide business processes.

Customization services You can extend Teamcenter with maintainable and upgradeable custom software to meet your specialized business needs.

Advantages

Rapidly and securely deploy domain and industry-specific solutions to speed time-to-value

Reduce costs and shorten implementation schedules by quickly configuring Teamcenter without customization

Leverage your investments in other enterprise applications and create enterprise-wide business processes across multiple applications

Extend Teamcenter with specialized custom applications that meet your unique PLM requirements while ensuring ease of maintenance and future upgradeability

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About Siemens PLM Software

Siemens PLM Software, a business unit of the Siemens Industry Automation Division, is a leading global provider of product lifecycle management (PLM) software and services with 7 million licensed seats and more than 71,000 customers worldwide. Headquartered in Plano, Texas, Siemens PLM Software works collaboratively with companies to deliver open solutions that help them turn more ideas into successful products. For more information on Siemens PLM Software products and services, visit www.siemens.com/plm.

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