

Process Simulate on Teamcenter

A powerful 3D manufacturing simulation environment integrated to the most widely deployed standard in lifecycle data management, Teamcenter

fact sheet

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► Summary

Process Simulate on Teamcenter® software is a powerful digital manufacturing solution for manufacturing process verification and simulation integrated with Teamcenter's manufacturing data and process management solution. This integration provides a unified environment enabling manufacturing engineers to analyze process plans in detail, validate assembly sequences, automatically calculate motion paths and easily access a library of existing resources to improve asset performance.

Benefits

Works with native Teamcenter manufacturing data enabling direct updates to enterprise process plans

Maintains powerful capabilities found in Teamcenter's data management architecture such as revision rules and variants

Reduce and manage cost of change with early detection and communication of product design issues

Reduce number of physical prototypes with upfront virtual validation

Optimize process plans and assembly sequences in detail

Reduce cost by re-using standard tools and facilities

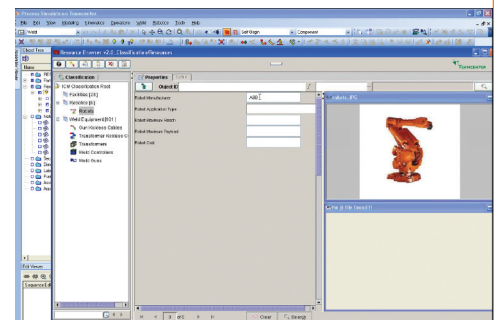
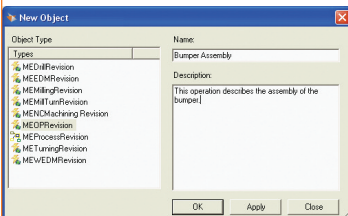
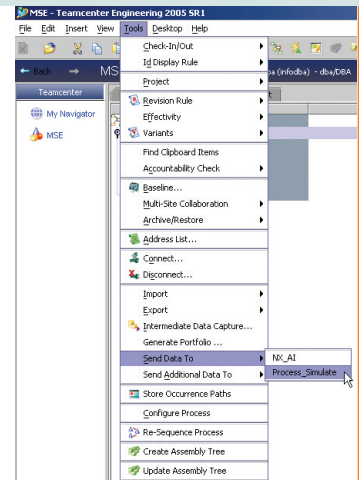
Minimize production risk by simulating several manufacturing scenarios

Increase process quality by emulating realistic processes throughout the process lifecycle

The business value of Process Simulate on Teamcenter

The increased complexity of products, manufacturing processes and distributed operational models presents world-class manufacturers with "time-to-market," capacity and asset optimization challenges. Manufacturing engineering teams are expected to enable flawless product launches and adhere to cost, quality and start-of-production targets. To meet these challenges, leading manufacturers know they must leverage their organizational knowledge, increase visibility and streamline workflows in order to succeed. Process Simulate on Teamcenter brings together the power of an enterprise lifecycle knowledge data management solution with a world-class digital validation environment providing manufacturers with a competitive advantage unmatched in the digital manufacturing arena. With this technology, thousands of validation experiments can be conducted efficiently and almost automatically to ensure production optimization and process reliability.

Process Simulate on Teamcenter is fully integrated with your enterprise manufacturing knowledge in Teamcenter, thus enabling manufacturing engineers to re-use, author and validate manufacturing processes in an advanced 3D environment. Capable of emulating the behavior of manufacturing processes, motion paths and assembly sequences it allows manufacturing planners to leverage the full production resources of your extended enterprise and quickly make improvements which are immediately updated to your corporate manufacturing knowledge base. This facilitates the optimization of work cell layouts and process plans in full context of the product, process and resources where multiple users across disciplines can interact and collaborate on the results. Process Simulate is highly scalable, providing various engineering disciplines with the data and toolset to examine detailed processes and verify them in different phases and perspectives.



Features

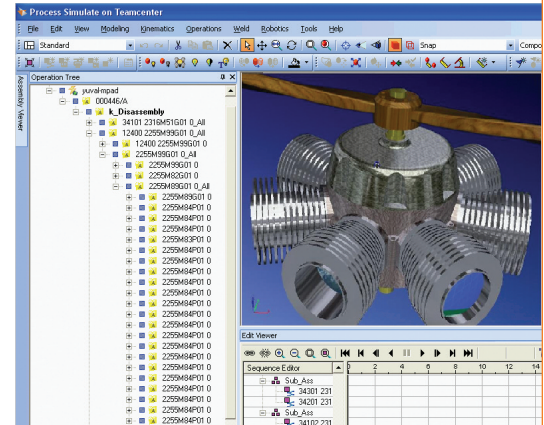
- 3D simulation
- Static and dynamic collision detection
- 2D and 3D sections
- 3D measurements
- Sequencing of operations
- Assembly and disassembly automated path planning
- Easily access production resources
- Integrate workflow processes and change management procedures
- Changes immediately reflected in Teamcenter data structures
- Line and workstations design
- Documentation tools and work instruction publication
- Natively supported JT visualization standard
- Visualize and balance welds on parts

Integrated environment for manufacturing process collaboration and validation

Process Simulate enables the verification of different segments of the manufacturing process or in-context of a particular focus area. This streamlines data requirements, eases communication and enhances collaboration because all extraneous data is removed from the collaborative effort yet full revision and variant history is maintained within the Teamcenter database. Assembly processes, weld point distribution for balancing and productivity and assembly paths can be simulated in the same environment, allowing for the simulation of virtual production zones.

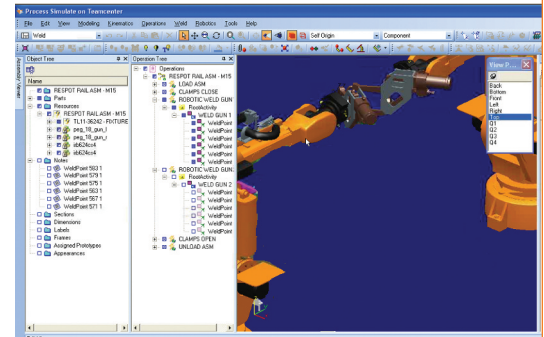
Assembly for Process Simulate on Teamcenter

Assembly allows users to verify the feasibility of an assembly process. It enables manufacturing engineers to determine the most efficient assembly sequence, catering for collision clearance and identifying the shortest cycle time. Process Simulate Assembly provides the capability to select the most suitable tool for the process by searching the enterprise resource library via Teamcenter's resource manager, performing virtual assembly tests and collision analysis and simulating the full assembly process of the product and the tool together.



Spot for Process Simulate on Teamcenter

The spot application enables users to design and validate spot welding processes in a 3D simulation environment from early planning through detailed engineering stages. This facilitates and streamlines manufacturing engineering tasks such as distribution of weld points for balancing geometric and cycle time constraints. With the new integration to Teamcenter, users can now access their manufacturing resource knowledge base for the selection of best fit weld guns, robots, tooling and fixtures.



Automatic path planner for Process Simulate on Teamcenter

The automatic path planner allows users to automatically calculate and create a collision-free path for the assembly and disassembly process. The module works with an existing path or with a number of locations and adds new locations to the path, and changes the existing orientations to create a new collision-free path. Once a collision-free path has been calculated, users can use the manual tools such as the location manipulator for fine tuning the final result, and/or for additional path modifications. This tool saves enormous time in finding the right path.

Leveraging 3D data, process plans, resources and layouts directly from Teamcenter, this powerful solution facilitates virtual validation and optimization to increase the efficiency, predictability and reliability of your manufacturing processes.

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