

Windchill® MPMLink™

IMPROVE TIME-TO-MARKET AND REDUCE PRODUCT COSTS BY ENABLING CONCURRENT PRODUCT AND MANUFACTURING PROCESS DEFINITION

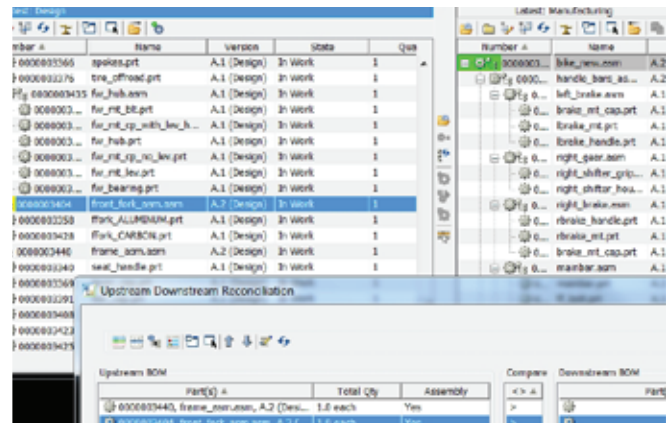
Windchill MPMLink helps resolve the daily challenges that design and manufacturing engineers face in ensuring that process plans, manufacturing bill-of-materials (mBOMs) and work instructions accurately reflect the current engineering model, and that design decisions consider manufacturing best practices.

Transforming engineering designs into mBOMs and manufacturing processes has typically been a cumbersome process that had to wait until the design was completed. With the digital Manufacturing Process Management (MPM) capabilities of Windchill MPMLink, manufacturers can develop both the product and the manufacturing process definition concurrently, thus enabling you to reduce product cost, improve accuracy of manufacturing deliverables, and shorten development cycle time.

Key Benefits

Reduce time-to-market

- Enable concurrent product and manufacturing process definition by managing digital manufacturing process plan definitions in the same system used by the design team
- Reduce late-stage changes requested by Manufacturing by providing manufacturing engineers with early access to design information
- Reduce the time required to create manufacturing engineering deliverables through digital modeling and content management of manufacturing process definitions



Windchill MPMLink BOM reconciliation tool allows the manufacturing engineer to graphically identify and resolve, discrepancies between equivalent eBOM and mBOM.

Enhance efficiency of manufacturing engineers

- Associatively link mBOMs to the source engineering design information, so that mBOMs always reflect Engineering's current design
- Digitally author and manage manufacturing process plans and the associated resources, instead of relying on inefficient, paper-based tools
- Improve manufacturing process consistency by capturing and sharing manufacturing knowledge, regardless of location or time zone, using enterprise-wide collaboration
- Enable reuse of standardized and normalized processes and resources, thus avoiding data duplication

- Lower the cost of changes
- Increase efficiency by providing an integral change management system that supports both Engineering and Manufacturing needs
- Facilitate cost-effective design decisions by increasing engineering visibility into the potential manufacturing impact of a change

Improve production ramp-up and productivity

- Dynamically generate accurate work instructions with embedded 2D and 3D product illustrations
- Accelerate implementation of change in manufacturing deliverables
- Efficiently optimize manufacturing processes with visual configuration tools
- Identify required design changes earlier in the development lifecycle and include timely feedback from Manufacturing

Reduce scrap and rework

- Eliminate discrepancies between the latest process definition and the work instructions used on the shop floor

Features

Associative eBOM-mBOM

- Easily transform an eBOM (engineering bill-of-material) into multiple mBOMs – while maintaining associativity – using traceability links
- Create and manage alternate BOMs describing the different manufacturing variations that can produce the same part
- View engineering designs, eBOMs and mBOMs using embedded 3D visualization provided by PTC's Creo™ Elements/View™ (formerly ProductView®) technology
- Create and revise manufacturing parts, with or without the equivalent engineering part
- Dynamically generate 3D representations and digital mockups of the mBOM

The screenshot displays a software interface with a BOM table on the left and a details pane on the right. The BOM table lists various parts and their attributes.

Name	Number	Version
assembly	0000000203	A.2 (Manufactur...
install frame on future	0000000204	A.2 (Manufactur...
na_aluminum prt	0000000423	A.1 (Design)
na_carbon prt	0000000408	A.1 (Design)
install front fork	0000000205	A.2 (Manufactur...
l_aluminum prt	0000000328	A.1 (Design)
l_carbon prt	0000000428	A.1 (Design)
install rim brackets	0000000206	A.2 (Manufactur...
ie_caliper_asm.asm	0000000367	A.1 (Design)
install seat quick release	0000000207	A.2 (Manufactur...
_cap prt	0000000391	A.1 (Design)
if_cap prt	0000000369	A.1 (Design)
l_handle prt	0000000390	A.1 (Design)
l_lever prt	0000000425	A.1 (Design)

The details pane on the right shows the following information for the selected assembly:

- Number: 0000000203
- Name: Frame Assembly
- Version: A.2 (Manufacturing)
- Status: Checked in
- State: In Work
- Content Name: Bike_MFM
- Base Unit of Measure: each
- Life Cycle: Basic
- Team:
- Category: Production
- Standard: No

Configure process plan and part allocations based on Options in Windchill MPMLink.

- Quickly identify and analyze discrepancies between the eBOM and mBOM
- Define and manage customer-specific product and process variations according to different manufacturing sites or product variants

Digital process plans

- Define plant-specific process plans in terms of sequences and operations to describe how a part is manufactured, assembled, reworked, repaired and/or inspected
- Define process plan operations by allocating parts, resources, standard procedures, documents, and time and cost breakdowns
- Review and analyze process plan definitions in an easy-to-use, interactive Gantt chart, including resource usage and loading
- Define alternate and parallel sequences of operations, as well as alternate process plans
- Dynamically generate and view the in-process state of assembly at any operation, using embedded 3D visualization
- Directly reuse engineering data, including parts, classification, 3D mockups and manufacturing requirements such as GD &T (Geometric Dimension & Tolerance)
- Automatically create a high-level part machining process plan from a Creo manufacturing object

- Support for controlling key manufacturing characteristics that define and document quality control process plans

Integral change and configuration management

- Fully manage manufacturing configurations with revision control, lifecycle management, effectivity and access control
- Share common workflow and notification tools between Design and Manufacturing
- Facilitate change impact with visual indicators

Dynamically generate rich, visual shop floor work instructions

- Generate work instructions, on demand, according to the current process plan configuration
- Access instructions via a simple Web browser
- Directly interact with 3D graphics embedded within the instructions

Manage libraries of resources and manufacturing standards

- Define and manage libraries of both physical and human resources, along with their compatibilities, which are required to perform a production activity, including plants, work centers, tooling, process materials and human skills
- Manage the relationship between a resource and its CAD design, which facilitates the creation of visual aids that include both parts and resources
- Define and manage standard procedures that can be used and/or referenced within multiple process plans

- Manage manufacturing capabilities indicating how the process can be executed in terms of resources, documentation and standard procedures Integration to Production Systems
- Electronically share manufacturing deliverables with ERP or MES systems using secure Windchill enterprise system integration technology
- Reduce total cost of ownership with out-of-the-box integration to SAP® and Oracle® Manufacturing
- **Platform specifications**
- Prerequisite: Windchill PDMLink®
- Server Operating Systems: Microsoft Windows®, UNIX, Linux
- Browser: Internet Explorer® and Mozilla® Firefox
- Database: Oracle 11g and SQL Server 2008
- Languages: English, Chinese (Traditional), Chinese (Simplified), French, German, Italian, Japanese, Korean, Spanish

For the most up-to-date platform support information, please visit: PTC.com/partners/hardware/current/support.htm

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