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Parametric Technology Corporation, 140 Kendrick Street, Needham, MA 02494 USA
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About This Guide

This publication provides an overview of the new features and functionality of Windchill 7.0.

Related Documentation

All Windchill products are supported by online help available from the user interface. In addition, a complete set of books is provided to assist installers, users, administrators, and developers in working with Windchill.

If books are not installed on your system, contact your system administrator.

Technical Support

Contact PTC Technical Support via the PTC Web site, phone, fax, or email if you encounter problems using Windchill 7.0.

For complete details, refer to Contacting Technical Support in the PTC Customer Service Guide enclosed with your shipment. This guide can also be found under the Support Bulletins section of the PTC Web site at:

http://www.ptc.com/support/index.htm

The PTC Web site also provides a search facility that allows you to locate Technical Support technical documentation of particular interest. To access this page, use the following link:

http://www.ptc.com/support/support.htm

You must have a Service Contract Number (SCN) before you can receive technical support. If you do not have an SCN, contact PTC License Management using the instructions found in your PTC Customer Service Guide under Contacting License Management.
PTC provides documentation in the following forms:

- Help topics
- PDF books

To view and print PDF books, you must have the Adobe Acrobat Reader installed.

All Windchill documentation is included on the CD for the application. In addition, books updated after release (for example, to support a hardware platform certification) are available from the Reference Documents section of the PTC Web site, at the following URL:

http://www.ptc.com/cs/doc/reference

Comments

PTC welcomes your suggestions and comments on its documentation—send comments to the following address:

documentation@ptc.com

Please include the name of the application and its release number with your comments. For online books, provide the book title.

Documentation Conventions

Windchill documentation uses the following conventions:

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<tr>
<td><strong>Bold</strong></td>
<td>Names of elements in the user interface such as buttons, menu paths, and dialog box titles. Required elements and keywords or characters in syntax formats.</td>
<td>Click OK. Select File &gt; Save. License File dialog box create_&lt;tablename&gt;.sql</td>
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<tr>
<td><strong>Italic</strong></td>
<td>Variable and user-defined elements in syntax formats. Angle brackets (&lt; and &gt;) enclose individual elements.</td>
<td>create_&lt;tablename&gt;.sql</td>
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<tr>
<td><strong>Monospace</strong></td>
<td>Examples Messages</td>
<td>JavaGen &quot;wt.doc.*&quot; F true Processing completed.</td>
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<tr>
<td><strong>&quot;Quotation marks&quot;</strong></td>
<td>Strings</td>
<td>The string &quot;UsrSCM&quot;...</td>
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<tr>
<td>Convention</td>
<td>Item</td>
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<td>!</td>
<td>The CAUTION symbol indicates potentially unsafe situations which may result in minor injury, machine damage or downtime, or corruption or loss of software or data.</td>
<td>When you add a value to an enumerated type (for example, by adding a role in the RolesRB.java resource file), removing that value can result in a serious runtime error. Do not remove a role unless you are certain there is no reference to it within the system.</td>
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What’s New in Windchill 7.0

Windchill 7.0 offers many enhancements that strengthen the industry’s leading suite of collaboration and control product lifecycle management (PLM) solutions. This release delivers exciting new capabilities to Windchill customers and further strengthens the PTC Product Development System. This chapter presents a high-level overview of the enhancements for Windchill 7.0, and subsequent chapters provide more detail by product.

For matrices identifying the third-party products and operating systems supported by Windchill 7.0, as well as tables identifying language support and interoperability of PTC products and specific platforms, visit the PTC Website at:


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Overview of Windchill 7.0 Capabilities

Windchill is production-proven set of integral PLM solutions that support the way companies develop products today — working closer than ever with customers, partners and suppliers. Windchill solutions, when combined with packaged implementation services, can be deployed in weeks and are designed to work together in a modular fashion.

Windchill 7.0 Product Suite

At the suite level, Windchill 7.0 provides enhancements along three key dimensions:

• Greater integral behavior between Windchill ProjectLink and Windchill PDMLink or Windchill Foundation & PDM
• Additional support for Internet standards such as J2EE 1.4, auditing, and Web services
• New interoperability capabilities for integration with other enterprise resource planning (ERP) systems and enhanced support for heterogeneous CAD environments

These enhancements provide a bridge that enables customers to take advantage of future PTC solutions offerings. The following products comprise the Windchill 7.0 release:

• Windchill PDMLink 7.0
• Windchill ProjectLink 7.0
• Windchill Enterprise Systems Integration (Windchill ESI) 7.0
• Windchill Foundation & PDM 7.0
• Windchill PartsLink 7.0
• Windchill ProductView 7.0
• Windchill Workgroup Managers (including Workgroup Manager for Pro/ENGINEER 2001, Pro/ENGINEER Wildfire, CADDs, and third-party MCAD integration tools: AutoCAD, Autodesk Inventor, CATIA V4, CATIA V5, I-DEAS, SolidWorks, and Unigraphics, and third-party ECAD/EDA tools: Cadence Concept, Allegro and OrCAD, and Mentor Graphics Board Station)

Note: Workgroup Manager for Pro/ENGINEER Wildfire is completely integrated with Pro/ENGINEER Wildfire. In other words, Pro/ENGINEER Wildfire connects to Windchill 7.0 without requiring the download and installation of additional software components.

Windchill PDMLink 7.0

Windchill PDMLink 7.0 enhancements include:

• Enhanced integral behavior with Windchill ProjectLink
• New integral Windchill ESI capabilities
• Enhanced administration capabilities, including distributed product and library administration, product teams and templates, and audit reports
• Document management enhancements, including extended support for structured documents and desktop integration improvements including drag-and-drop with Windows and streamlined Microsoft Office integration
• Folders for managing information
• Visualization enhancements, including 3D model preview, extended publication controls, PDF publishing, light-weight viewer
• Product structure editing enhancements, including line numbers and product structure annotation

Windchill ProjectLink 7.0

Windchill ProjectLink 7.0 enhancements include:
• Enhanced integral behavior with Windchill PDMLink and Windchill Foundation & PDM
• Additional CAD integrations, including CADDS, Autodesk Inventor, Mentor Graphics, and Cadence

Note: These products will be supported in a maintenance release of Windchill 7.0.
• Desktop integration improvements, including drag-and-drop with Windows, streamlined Microsoft Office integration
• Expanded searching capabilities, including full-text and discussion forum search and accessibility of project information to the entire organization
• Audit reports
• Visualization enhancements, including 3D model preview, extended publication controls, PDF publishing, light-weight viewer

Windchill Enterprise Systems Integration (Windchill ESI) 7.0

Windchill Enterprise Systems Integration (Windchill ESI) 7.0 enhancements include:
• New flexible and extensible architecture
• New prebuilt business logic
• Enhanced publication capabilities
• Enhanced customization capabilities
• New open API's
• New transaction control capabilities
• New out-of-the-box (OOTB) error management capabilities

Windchill 7.0 CAD Integrations
Windchill 7.0 CAD integration enhancements include:
• General CAD integration improvements that apply to all Workgroup Managers
• Enhanced support for third-party MCAD and ECAD design
• Pro/INTRALINK Gateway-specific enhancements
• Pro/ENGINEER-specific enhancements

Windchill Foundation & PDM 7.0
Windchill Foundation & PDM 7.0 enhancements include:
• Enhanced integral behavior with Windchill ProjectLink 7.0
• New integral Windchill ESI 7.0 capabilities for integration with enterprise systems
• Visualization enhancements, including 3D model preview, extended publication controls, PDF publishing and a light-weight viewer
• Enhanced CAD integration support, including new save-as capabilities, assembly and drawing package support and improved dependency reporting
• Improved search capabilities, including the ability to save, reuse and cancel searches
• Document management enhancements, including support for document templates and desktop integration improvements such as streamlined Microsoft Office integration
• Product structure editing enhancements, including part occurrence support, line number support and product structure annotation improvements
• Enhanced administration capabilities, including system audit reporting, organization management, configurable identification and revision sequencing support, and improved J2EE compliance and compatibility

Windchill PartsLink 7.0
Windchill PartsLink 7.0 enhancements include:
• Robust JSP architecture to support industry standard and allow easier customization
• New HTML results tables with links to part detail pages. Within the table, paging, sorting, scrolling, and support for thumbnail images are included
- Support for clustering to improve scalability for catalogs with millions of parts
- New Windchill PartsLink cache to improve updates

**Windchill ProductView 7.0**

Windchill ProductView 7.0 enhancements include:
- Visualization componentization
- Shrinkwrap envelope previewing
- Server-side watermarking
- Document collaboration option
What’s New Across Windchill 7.0 Solutions

This chapter covers enhancements to common functionality across Windchill 7.0 solutions and product suite offerings.

Note: Refer to the respective chapter for details on enhancements specific to individual Windchill 7.0 solutions.

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Overview Of Windchill 7.0 Solutions

Windchill 7.0 provides a complete portfolio of turnkey product lifecycle management (PLM) solutions, called Windchill solutions, which include products such as Windchill PDMLink and Windchill ProjectLink. Each Windchill solution addresses a specific business challenge, allowing companies to prioritize their investment in PLM. Windchill solutions are built upon a common architecture and technology platform and share the same common capabilities, services, and data model. A Windchill solution is defined by having prebuilt user interfaces, targeted best practices in the form of workflow-driven business process templates, embedded visualization, and other capabilities specific to the solution.

Windchill 7.0 introduces enhancements to common functionality that spans across multiple Windchill solutions, including:

- Integral behavior of Windchill ProjectLink and Windchill PDMLink or Windchill Foundation & PDM
- End-user enhancements
- Administration enhancements

Integral Behavior of Windchill Solutions

Windchill 7.0 offers integral capabilities for collaborative development and control of information and processes. Windchill ProjectLink 7.0 provides manufacturers with superior capabilities for design collaboration. Windchill PDMLink 7.0 and Windchill Foundation & PDM 7.0 provide superior management of product information and processes. By installing both solutions on the same database, customers can leverage the full range of capabilities simultaneously.

Windchill 7.0 supports enhanced integral behavior between Windchill ProjectLink 7.0 and Windchill PDMLink 7.0, and also between Windchill ProjectLink 7.0 and Windchill Foundation & PDM 7.0. By co-installing the solutions on a single database, overall complexity is reduced, making it very easy to share and exchange information between solutions and leverage capabilities from one solution to another. New operations that enable solutions to exchange business objects with one another have been developed to support common project and program management activities, such as:

- Sharing of objects from the product data management (PDM) system to a project so they can be project-managed with milestones, deliverables, and resource tracking
- Copy or check out of design information from the PDM system to a project to enable “what if” design investigations without requiring formal PDM control
- Facilitation of the collaborative investigation of problems, changes, enhancements, and new designs
• The ability to invite external (not defined in the PDM system) participants as project team members without requiring formal access to the PDM system

In addition, Windchill 7.0’s integral function architecture provides flexible deployment options, including:

• Deployment in the context of a “bundled” installation with a single common database.

• Implementation of a general multi-layer ‘context’ infrastructure to support multiple solutions working together. Examples of contexts include products, projects, organizations, and sites. Contexts provide a consistent notion of data partitioning and distributed administration of organizations, products, and libraries. Contexts also support the ability to create products and libraries within an organizational context, with the appropriate attributes and properties.

• A clipboard interface to support operations (copy, share, and check out) that enable exchange of business objects across solutions.

• Integration of CAD/CAM interfaces to allow communication with the Windchill solutions in a standard manner.

**Information Exchange Enhancements**

Windchill 7.0 supports a single and common clipboard mechanism across installed solutions, allowing for the exchange and sharing of information. You can search or browse for information from a product, library, or project context, add one or more items of information from that context to the clipboard, and then copy, check out, or share a link to that information by pasting it into another location or project. The availability of each operation depends on the source and target location, as well as the type of object being exchanged or shared.

**Copy Objects**

**Copy Objects Across Projects**

Users can copy documents, parts, folders, roles, users and groups among projects to selectively reuse information using the embedded clipboard mechanism.

**Copy Objects from PDM to Projects**

Users can copy objects from products and libraries (Windchill PDMLink) or cabinets and folders (Windchill Foundation & PDM) to projects, work on the objects in the projects (creating multiple design iterations), and then copy the new design objects back to Windchill PDMLink or Windchill Foundation & PDM.

**Share Objects**

Documents, CAD documents and parts can be shared from Windchill PDMLink products and libraries or Windchill Foundation & PDM cabinets.
and folders to projects. Implicit read-access permission is always granted for shared objects, for all project members.

Additional Windchill information such as problem reports, change requests, change notices, product configurations, product instances and baselines can also be shared from Windchill PDMLink products and libraries or Windchill Foundation & PDM cabinets and folders to projects. A link to these objects is created in the project, however, shared objects are only accessible to project team members who have access to the object in its source location.

Sharing is especially useful when you do not want to add members of other projects or products to the team in which a document or part was defined. For example, users may want to share a design specification document or part prototype design with a manufacturing line team, in a collaboration project, without adding the manufacturing members to the product team. The project provides a focused space in which the key manufacturing members and key product design members can collaborate around just the essential shared data. Users can also configure product and project spaces so that objects cannot be shared outside of that space. Users have full control over how broadly to share information by removing share privileges on all or selected objects, as appropriate.

Documents and parts can also be shared across projects. When sharing objects, users can choose to grant all or any subset of their rights to the objects they are sharing to any of the project team members.

Note: Windchill workgroup managers only allow downloading of items shared to a project.

Share Folders Across Projects

Users can share folders across projects. Folders can be shared as read-only, read and update, or read, create, update, and delete.

For example, a parent project may choose to share a common specification and standard parts with a number of supplier projects. Each supplier project can share a separate quote folder with the parent project representing a manufacturer collecting quotes. This gives each supplier access to the latest version of the design specification without the need to add the supplier to the parent development project. This approach allows suppliers a measure of autonomy in their independent project spaces.

Check Out Objects from PDM to Project

Windchill 7.0 allows the checkout of documents, CAD documents, and parts from products and libraries (Windchill PDMLink) or cabinets and folders (Windchill Foundation & PDM) to a project. Permissions will be granted to project team members for modification of these objects within the project. Once checked out to the project, the objects are locked in the PDM system to avoid concurrent modification and prevent synchronization problems.

Project members can check out information from Windchill Foundation & PDM or Windchill PDMLink to their project, collaborate on design variations in the project, and then check in the changes to the source PDM system. The project team can modify existing parts, documents, and CAD documents, create new parts, documents, and CAD documents, edit and change
structures during the project design collaboration, and then reconcile all or a subset of the changes with the source PDM system. Modifications to PDM checked-out objects are only visible within the project by the project team members.

CAD documents can be viewed and modified in a workspace created by the user in the context of a project. Windchill 7.0 supports a common set of CAD managers (client- and server-side) across all Windchill 7.0 systems, for all supported CAD authoring applications.

**Note:** CAD documents that have been published by the Pro/INTRALINK Gateway cannot be checked out to a project.

**Enhanced Common User Interface and Navigation**

Windchill 7.0 offers a unified user interface design to support Windchill 7.0 solutions and their integral contexts. This common navigation paradigm is based on a dynamic client architecture (DCA) Web user interface technology. It allows users to move easily between Windchill ProjectLink 7.0 projects and Windchill PDMLink 7.0 products and libraries.

The common user interface features include:

- Common desktop publishing and editing
- Common team components
- System wide search facility

**Note:** The Windchill Foundation & PDM 7.0 user interface model has been maintained in Windchill 7.0 to preserve the investment existing customers have made in deploying these solutions. The integral behavior between Windchill ProjectLink 7.0 and Windchill Foundation & PDM 7.0 allows users to easily navigate and share information between the two solutions, while preserving the current user interfaces of both solutions.

**Improved Content Navigation**

PDMLink and ProjectLink provide a common, tabbed navigation paradigm that supports the concept of a current product, current project, current library, current change item and a user home page.

**Enhanced Folder Browser Behaviors and Actions**

Windchill 7.0 provides enhanced folder browser behavior and actions.

- **Sticky Capability**
  
  Windchill PDMLink 7.0 and Windchill ProjectLink 7.0 provide a page “sticky” capability that starts at the tab level, extends to the first level navigation, and includes the existing Windchill PDMLink functionality to remember the session. For example, you can ‘recall’ a session that consists of an expanded view of a structure, displayed in the lower window when the user returns to the tab.

- **Paging**
Windchill 7.0 provides a paging mechanism to simplify the navigation of large quantities of items.

- **Supported Object Types**
  Windchill 7.0 supports object types for parts, documents, CAD documents, folders, baselines, and links.

- **Row Actions**
  Windchill 7.0 supports Row actions (for example, Details, Create Link, Create End Item, Rename) for folders.

- **Global Actions**
  Windchill 7.0 provides enhanced Expand All and Contract All global actions.

- **Multi-select Actions**
  The Multi-select functionality is part of the common search capabilities of Windchill 7.0, including:
  - Cut
  - Copy
  - Paste
  - Delete
  - Add to Hot-List

**End-User Enhancements**

Windchill 7.0 provides additional usability and performance enhancements.

**Document Management Enhancements**

Windchill 7.0 offers improved document management of product information through enhancements that include:

- A new document template administrator
- Ability to create documents using templates
- Template iteration control
- Microsoft Office and Desktop integration
- Common document components across Windchill 7.0 solutions

**Document Template Support**

Windchill 7.0 now allows users to define Microsoft Word and Microsoft Excel document templates that automatically create and update documents with information from your Windchill system. Document templates are also iteration-controlled, allowing updates to standard document formats to be managed and tracked within Windchill.
For example, you can define a specification template that includes the source name, number, document iteration, creator, last modifier, and a link to the document properties page. These fields are automatically updated with information from Windchill when a specification document based on this template is created. This capability enables an organization to define templates that ensure that the document source information is always linked with the document and printed or e-mailed versions can be explicitly traced to a location and an iteration of the document in Windchill. The document is populated with the latest attribute values from Windchill when the document is downloaded. If any of the document attribute fields are changed, the values do not overwrite the associated Windchill attribute values. An out-of-the-box sample specification document template is provided to illustrate the document template capabilities.

Document template support provides the following benefits:

- Define custom document types and associated custom attributes
- Each document type can have a unique set of attributes
- Custom attribute values can be preset in document templates, including automatic display of document attributes for:
  - Document creation
  - Document update
  - Document details

Desktop and MS Office Integration

**Integrated Editing Capabilities**

Windchill 7.0 provides integrated editing capabilities that support transparent create, edit, and update operations with Windows authoring tools such as Microsoft Word and Microsoft Excel. Using an optional plug-in tool, you can edit and directly replace document content in a project without explicitly saving the documents locally, invoking a check-in action from the browser, locating the saved modified file, and finally uploading the file. You can also create and edit documents using document templates.

**Create Multiple Files in a Single Step**

Windchill 7.0 now supports the functionality to browse and select multiple files from the client file system to upload to a specified folder. This allows you to upload one or more files to Windchill in a single step, for the purpose of creating multiple documents.

You can browse your file system, and either select multiple files (using SHIFT and CTRL) or drag and drop highlighted files from your desktop folders into a Windchill folder.

This optional capability requires downloading and installing a client plug-in module. The same plug-in module, shared between Windchill Foundation & PDM, Windchill PDMLink, and Windchill ProjectLink, allows the use of a single, common tool for uploading and editing of documents among Windchill solutions.
Product Structure Improvements

Product Structure Annotation Improvements

Windchill 7.0 provides an improved common product definition annotation component that provides enhanced support for the markup of proposed changes to a product structure.

The following capabilities have been added and enhanced for Windchill PDMLink 7.0 and Windchill Foundation & PDM 7.0:

- Easy to use drag-and-drop annotation operations
- Full usage occurrence support, including reference designators
- Deferred save and change execution
- Automatic operation to apply structure annotations using cut, copy, paste, and delete

Product Structure Line Numbers

Windchill 7.0 introduces support for product structure line numbers. This feature improves communication of product information with the manufacturing environment by providing:

- The ability to create and display line numbers in the Structure Browser
- The ability to create and display line numbers in the structure reports
- The automatic inclusion of line number information in the ESI workflows

Updated Integrated Search

Windchill 7.0 introduces new integrated search capabilities for Windchill ProjectLink and enhanced features for Windchill Foundation & PDM and Windchill PDMLink.

The integrated search capability supports the following actions:

- Multi-select actions on the toolbar of search table results
- Add-to-clipboard actions for the selected items
- Metadata and indexed content search that can be extended to include information stored outside of the Windchill database

The search component can be constrained to target specific repositories of data or predefined by the application launching the search. You can also execute actions on the search results and multi-select search results, both for adding to the clipboard and to return the selections to the application that launched the search. Additionally, you can maintain a search history of previously defined searches by specific user (query only, not results).

Search Within and Across Repositories

Windchill 7.0 provides a single common search interface that allows you to search within and across repositories for information in projects, products,
and libraries. This enables searches to be constrained or expanded to find information that may be stored in Windchill Foundation & PDM, Windchill ProjectLink, or Windchill PDMLink when the solutions are co-installed.

Users can constrain a search to specified object types and subtypes, type-specific attributes, date ranges, information authored in the organization to which you belong, or to all repositories of which you are a member — even if the repository is hosted by another organization. You can save, name, and recall a particular search query if you expect to reuse the query.

Search Across Document Content and Discussion Forums

Windchill 7.0 provides the capability to search across document content, discussion forums, and text postings. You can search for text strings and include in your search scope both the text about an object (such as its name, number, or description), as well as any associated content text (such as the words and text strings inside an uploaded file associated with a document).

This indexed search functionality is supported for documents, part metadata, activities, milestones, deliverables, action items, meetings discussion attachments, reference attachments and discussion subjects and postings.

Enhanced Change Management Control

Windchill Foundation & PDM 7.0 and Windchill PDMLink 7.0 include a number of enhancements to the change management process and user interface. Change management controls and monitors product changes and their impact on deliverables throughout the entire product and process lifecycle.

Administration Enhancements

New Windchill Installation Utilities

Windchill 7.0 introduces new powerful multi-platform software deployment utilities for the installation and configuration of individual and combined Windchill solutions. The Windchill installers provide an automated, intuitive installation for the most common Windchill configurations. Advanced and less common configurations are fully documented.

Windchill 7.0 also introduces a new maintenance installation process that minimizes the impact of applying maintenance corrections and updates to a Windchill system. Two aspects of this include a new utility, xconfManager, that separates PTC and customer changes to property files, and restructuring of the client JAR files to reduce the downloads associated with maintenance updates.

Normal maintenance corrections and updates to Windchill 7.0 are delivered via a new Windchill Service Pack or for some components, as a replacement of the original CD image. These updates can be ordered on CD or downloaded from PTC’s Software Update web site:

http://www.ptc.com/cs/doc/swupdate.htm
The Windchill Service Pack installer and a recommended best practice for maintenance installation are used together, to efficiently update Windchill 7.0 systems. For more information on Windchill 7.0 Maintenance, see the Windchill System Administrator’s Guide.

Enhanced Security Auditing

Windchill 7.0 provides auditing of user and system events to identify potential security breaches and business process bottlenecks. Sites can be configured to generate audit trails for specific events and specific objects of interest. Audit reports can be generated for specific repositories, users, and objects, and for specified date and time ranges. These reports can be exported to files and archived in a tamper-resistant environment to verify that database records have not been altered in the event of a security audit. Windchill 7.0 contains the following out-of-the-box audit reports:

- Access to specific repositories such as projects, products and libraries (Windchill PDMLink and Windchill ProjectLink only)
- Changes to specific repositories, such as projects, products and libraries
- Access control changes to specific repositories, such as projects, products, and libraries (Windchill PDMLink and Windchill ProjectLink only)
- Access to specific objects
- Changes to specific objects
- Access control changes to specific objects
- Access to specific organizations (Windchill PDMLink and Windchill ProjectLink only)
- Changes to specific teams
- Access by specific users
- Access by a specific user to a specific repositories such as projects, products and libraries (Windchill PDMLink and Windchill ProjectLink only)

**Note:** Windchill Foundation & PDM has a single repository architecture and does not require the audit reports that analyze specific repositories. These reports are available when Windchill Foundation & PDM are co-installed with Windchill ProjectLink.

Organizational Ownership of Product Information (Cage Code Support)

Windchill Foundation & PDM 7.0 and Windchill PDMLink 7.0 support the definition of organizational global item identification attributes, extending the traditional identification of parts and documents to include organizational ownership. This new capability enables unique identification of parts and documents across the digital value chain, supporting common business concepts such as cage codes.
Configurable Identification Scheme

Windchill Foundation & PDM and Windchill PDMLink 7.0 provide an extensible framework for the identification of product information that can be configured by class name, including documents, parts, and change items. This framework provides the following standard item identification schemes:

- User-supplied item identifier
- Simple sequential item identifier
- Configurable three-field identifier

The item identification scheme framework is extensible to allow the introduction of custom item identification schemes, including ones from external systems.

Configurable Revision Scheme

Windchill Foundation & PDM 7.0 and Windchill PDMLink 7.0 provide an extensible framework for the definition of revision schemes that can be configured by class name. Windchill 7.0 provides the following standard revision schemes out-of-the-box:

- An alphabetical revision scheme (Windchill default)
- A numeric revision scheme
- A MIL-STD revision scheme (starts -, skips I, O, Q, S, X, Z)

The revision scheme framework has been implemented in the following actions: Create, Save As, and New View Version actions (to set the initial revision level) and Revise action (to set the next revision level in the defined revision scheme). The revision scheme framework can be extended to support custom revision schemes.

Administration and Runtime Improvements

Windchill 7.0 introduces a number of enhancements to simplify the administration of global implementations. These enhancements include:

- Improved Web application deployment
- Removal of uniqueness constraint on principal names
- Allowance for long domain names
- Increased ad hoc access storage capacity

Enhanced Windchill J2EE Compliance and Compatibility

Windchill 7.0 provides enhanced Windchill J2EE compliance and compatibility with enhanced simple object access protocol (SOAP) interface and integration with J2EE application servers using Java Connector Spec, including automatic generation of J2EE Connector Architecture (JCA) stubs and Enterprise Java Beans (EJ Bs) from existing Windchill Info®Engine tasks.
Customization Enhancements

Windchill 7.0 introduces a number of enhancements to simplifying the implementation and management of system customizations.

GUI Interface for Info*Engine Task Modeler

The Info*Engine Task Modeler in Windchill 7.0 provides a swing application interface for assisting in the creation and editing of Info*Engine task XML or JSP files. The editor provides assistance in the form of dialogs that help the user through the webject configuration process. Each webject in each type of adapter provides a dialog box to prompt the user through the required and optional parameters for each webject. The editor automatically locates the available adapters based on the Windchill LDAP services configuration.

Improved Type Manager

In Windchill 7.0, the TypeManager and AttributeManager automatically make changes to the configuration available to Info*Engine and DCA without the need for a server restart. The TypeManager user interface has been improved to have command buttons that reflect the available commands that can be used instead of relying solely on mouse context menus, which obscured some functionality. The TypeManager automatically provides zeros and empty strings into the default value fields for each defined attribute. The user no longer has to enter default values unless they want to deviate from these settings.

DCA Enhancements

Windchill 7.0 introduces several DCA based user interfaces. All search user interfaces, the user/group/organization editor, the queue manager and the Windchill ESI pages are defined with DCA.

The DCA itself has been enhanced to fully support the functionality necessary for these pages. DCA also provides the ability to create templates or patterns of user model constructs into which specific configuration fragments for each defined object supply components such as the columns to be displayed in a table, and the layout of the search criteria area. This drastically reduces the amount of work necessary to create new user interfaces for new objects since the user model components are centralized in the patterns and the object definitions only contain the configuration fragments directly related to that specific object. It also enables general user model changes, such as adding paging to tables, to be performed in a single location and result in the updating of all tables used in DCA applications.
This chapter describes the new features and enhancements specific to Windchill PDMLink 7.0.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview of Windchill PDMLink 7.0</td>
<td>3-2</td>
</tr>
</tbody>
</table>
Overview of Windchill PDMLink 7.0

Windchill PDMLink 7.0 introduces a number of new capabilities that bring additional value to customers. The improved Windchill architecture enables distributed administration of organizations, products, and libraries and the ability to create products and libraries within an organizational context. Windchill PDMLink 7.0 is also easier to use with a common look and feel across Windchill solutions to enhance the user's experience. Windchill PDMLink 7.0 can be installed as a standalone solution or with Windchill ProjectLink 7.0 as a single integral solution.

A totally reworked product structure editing tool provides better functionality and productivity enhancements to support the process of reediting product structures. With Windchill PDMLink 7.0, you can create document structures that increase document usability and flexibility, and allow you to partition large documents into small sections that be authored, reviewed, approved, and re-used separately.

Windchill PDMLink seamlessly links with Windchill Enterprise Systems Integration (Windchill ESI) 7.0 for passing of product information between design engineering and manufacturing.

Many of the enhancements in Windchill PDMLink 7.0 are common among the Windchill 7.0 solutions, including Windchill ProjectLink and Windchill Foundation & PDM, and are covered in Chapter 2 of this document. They include:

- Integral behavior between Windchill ProjectLink and Windchill PDMLink or Windchill Foundation & PDM
- Architecture update, supporting integral behavior and associated administrative policies
- Integrated search
- Enhanced Microsoft Office integration
- New Windchill installation utility
- System audit reports
- Enhanced J2EE compliance and compatibility
- Administration and runtime improvements
- Customization improvements
- Enhanced CAD management support (Chapter 6)
- Enhanced visualization solutions (Chapter 9)

Windchill PDMLink 7.0 provides enhanced capabilities including:

- Enhanced administration and usability capabilities
- Enhanced configuration management
- Enhanced document management
• New Windchill PDMLink tutorials

**Enhanced Administration and Usability Capabilities**

Windchill PDMLink 7.0 introduces an improved architecture that allows administrative rules to be set up at the global system level, organization level, or product and library level.

Product managers can now manage their product context with new tools that facilitate system administration at this level. Product templates can be created to promote consistency and quickly jump-start a new product including:

• Product teams with access controls
• Document templates
• A folder structure
• Object life cycles and workflows
• Object initialization rules
• Part and document numbering schemes
• Part and document versioning schemes

**Site Administration**

The following table illustrates where certain attributes and properties can be administered.

<table>
<thead>
<tr>
<th>System Level</th>
<th>Administration Enabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>System/Site</td>
<td>Access controls</td>
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<td></td>
<td>Product teams</td>
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<tr>
<td></td>
<td>Document templates</td>
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<td></td>
<td>Life cycles and workflows</td>
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<tr>
<td></td>
<td>Object initialization rules</td>
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<tr>
<td></td>
<td>Roles and groups</td>
</tr>
<tr>
<td></td>
<td>Attribute type definitions</td>
</tr>
<tr>
<td>Organization</td>
<td>Access controls</td>
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<tr>
<td></td>
<td>Product teams</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Attribute type definitions</td>
</tr>
</tbody>
</table>
Enhanced Configuration Management

End Item Effectivity Context

It is possible in Windchill PDMLink 7.0 to use end items as effectivity contexts. For example, it is possible to designate the label with a part number (L124589) for use only with the product variant P23135.

User Interface Enhancements

View Files in Filtered Tables and Lists

Users can view project files in a filtered table view and as a folder hierarchy. This is especially useful for projects that contain a large number of files where a folder hierarchy can be awkward. For example, you can choose to view the project files in a table, with the most recently created or updated items displayed first. Alternatively, you can view the files sorted alphabetically by author, with the most recently updated files by each author displayed first.

The following views are supported:

• Folder hierarchy and contents (default view)
• Folder hierarchy only (no contents)
• Created or updated by me (created or updated by current user)
• Recently updated
• By author
• Parts (only parts)
• Documents (only non-CAD documents)
• CAD documents (only CAD documents)
• Linked or shared (only links or shares)
• Deliverables (files that are associated with deliverables)
• Discussed
• Routed
• Created in project
• Checked out to project
• Checked out to project and modified

The table views are displayed with a fixed number of table rows per page. The number of rows per page is configurable as a preference for each user. The paging interval applies to all tables. Each column can be sorted in a view and the sorting is saved as a preference for each project folder view for each user.
Recursively Collapse Folders and Expand a Single Node

Windchill 7.0 provides enhancements to the Collapse All and Expand All actions. When you use the Collapse All action for all or selected folders, the action recursively collapses all folders at and below the selected nodes. The Expand All action when used for all or selected folders, recursively expands all folders from the selected node and below.

If you select an individual icon to collapse a folder node, the respective node collapses without affecting the state of the child nodes. A subsequent expansion of the node returns the folders to their prior state. If you use the Collapse All capability and then select individual expand icons, the folders expand one level at a time.

Access List of Recently Visited Objects From A Home Page

Provides the ability to display a list of recently visited objects such as parts, documents, activities, deliverables, or change objects from the user’s home page. This list is sorted so that the items most recently visited by the logged-in user are displayed first. This list is maintained independently and uniquely for each user.

This capability enables users to quickly return to an item of interest without navigating to or searching for the item.

Access List of Recently Created or Updated Objects From A Home Page

Provides users with the ability to access a list of objects that they recently created or updated from their user home page.

This list provides users with quick access to documents and parts that are current and likely candidates for additional updates or views and makes them readily available. The list is sorted by creation or modification date, with the earliest created or modified items first.

The list contains 7-15 items by default based on user preference, including the following attributes:

- Object name
- Object type
- Creation or modification date
- Life cycle state (life cycle state)
- Object action list
- Context (product, project, library)

The list supports several default views including:

- Most recent (all types)
- Documents (non-CAD)
- CAD documents
- Parts
• Change items (only if Windchill PDMLink component is installed)

• Project items (only if Windchill ProjectLink component is installed)

When a view is selected, it becomes the default view for the user’s home page, and is displayed on a subsequent visit. A full list of the updated items is available on the user home page sub-navigation row. You can set the paging preference or use the default paging of 50 rows. You can also add one or multiple items from the recently created or updated list to the user hotlist.

Product Structure Editing Enhancements

Ability to Create Multiple End Items in a Product or Library

Windchill PDMLink 7.0 removes restrictions in previous releases, by allowing multiple end items (WTProducts) to be created within a context (product or repository).

You can create product configurations and product instances for end items. This allows tracking and maintenance of product structures for individual items that serialized and shipped to customers.

The ability to create multiple end items in a product or library provides a level of support for product family management within a product container.

End Items as Children of Parts

Windchill PDMLink 7.0 removes restrictions in previous releases, by allowing end items (WTProducts) to be included, as children, in the product structure of regular parts. This allows you to maintain serializability at any level of the product structure.

Enhanced Document Management

New Folder Capability

Folders have been added to Windchill PDMLink 7.0 to provide product information organization capabilities. Folders can be established to organize design, manufacturing, or any other logical grouping of product information to improve navigation and location of data.

Windchill PDMLink 7.0 allows managers to create folder hierarchies that conform to company standards and are context-specific (product or library). Product data such as documents, CAD documents, parts, or models can be stored in folders. The enhanced folder capabilities allow users to navigate and search through large volumes of data in a familiar Windows-like paradigm.

Structured Documents

Document hierarchies can be established to create manuals or build logical relationships between documents in Windchill PDMLink 7.0. This capability enables users to structure information in a meaningful way for use by various stakeholders throughout the product design process. Structured documents help increase the level of rich content with relationships and organization.
Selectable Structured Document Download

Windchill PDMLink provides improved management of product information through product folders, templates, and structured documents. You can select a structured document for download from the Check Out dialog box or Structure Browser to enable control of the files to be downloaded. The system provides a site-defined flag to enable or disable this feature.

From the Document Structure Browser, you can:

- Add a document structure to a baseline
- Extend a configuration specification by baseline or latest configuration.
- Perform a multiple content download
- Designate a document order for downloading document structures
- Generate a multi-level Where Used report that shows the parent document in any document structure that uses any given document.

Structured Document Relationships

Windchill 7.0 provides an HTML client for the management of structured documents (document-to-document relationships) in Windchill PDMLink.

The following capabilities are available:

- Ability to build and display structured document relationships in HTML
- Create and manage the document-to-document relationships by manually querying and selecting documents to be related:
  - One value populates a set of documents to a baseline in order to preserve versions and documents that are in the structure at a particular point in time.
  - The other value downloads the primary content based on the configuration specification, for example, for a baseline.

Using Product Templates

Windchill 7.0 allows you to use product templates to facilitate and standardize product deliverables.

The following templates are supported for Windchill 7.0:

- Team
- Folder and document
- Workflow
- Lifecycle
- Document Type
Windchill PDMLink Tutorials

Windchill PDMLink 7.0 provides a set of tutorials. The tutorial set includes key topics that illustrate how to set up and conduct product development-related activities within Windchill PDMLink. The embedded tutorials provide topical education that describes why and how a feature is used in the system; this greatly reduces the need for end user training and supports users as they complete tasks.
This chapter describes the new features and enhancements specific to Windchill ProjectLink for Windchill 7.0.

Overview of Windchill ProjectLink 7.0 ............................................................. 4-2
Overview of Windchill ProjectLink 7.0

Windchill ProjectLink 7.0 introduces a number of new capabilities that bring additional value to our customers. It includes a new desktop integration that enables drag and drop between Windchill ProjectLink and the Windows desktop, multiple-file select and upload, and improved viewing and editing of Microsoft Office documents with the ability to edit and check in documents directly from Microsoft Office applications. The expanded advanced search capabilities allow for searching of document content and discussion forum content.

Many of the enhancements in Windchill ProjectLink 7.0 are common among the Windchill 7.0 solutions, including Windchill PDMLink and Windchill Foundation & PDM, and are covered in Chapter 2 of this document. They include:

• Integral behavior between Windchill ProjectLink and Windchill PDMLink or Windchill Foundation & PDM
• Architecture update, supporting integral behavior and associated administrative policies
• Integrated search
• Enhanced Microsoft Office integration
• New Windchill installation utility
• System audit reports
• Enhanced J2EE compliance and compatibility
• Administration and runtime improvements
• Customization improvements
• Enhanced CAD management support (Chapter 6)
• Enhanced visualization solutions (Chapter 9)

In addition to the common capabilities available in Windchill 7.0, Windchill ProjectLink introduces specific capabilities to address common customer requests, including:

• Desktop integration
• Administration enhancements
• Team and project management enhancements
• General enhancements
• Customization support

Desktop Integration

Release 7.0 of Windchill PDMLink and Windchill ProjectLink provides a common desktop publishing and editing authoring component (DTI2.0) that
has been enhanced to support common document templates, collaboration space awareness, and global item identification.

Integrated Search
Windchill 7.0 introduces new integrated search capabilities for Windchill ProjectLink. The integrated search capability supports multi-select actions on the toolbar for search table results and object actions on the result sets. The search tool also supports add-to-clipboard actions on the selected items.

The new search capabilities include:

• Search across project and PDM contexts
• Conduct attribute-based searches within and across projects
• Conduct full-text indexed searches within and across projects

Administration Enhancements

Access Policy Definition
Using Windchill ProjectLink 7.0, you can define access policies that grant broad access to information owned by a specific organization. This provides members of a specific organization access to product, project, library, and change management information without explicitly being invited to a product or project team.

For example, you may define an organizational policy that grants read access to all projects of the type “sales” by any member of the sales group in the organization.

A project creator or manager can also make a project private so that the project and its contents can only be accessed by the project team members, independent of any organizational access policies that would otherwise grant access to members outside the project team.

Organization Access to Full Corporate Directory Searches
Windchill ProjectLink 7.0 provides organization access to full corporate directory searches. When you define an organization, you can choose to grant access to the entire corporate directory rather than just to the registered users for an organization. This allows a company hosting a private exchange to provide full access to its corporate directory, when users from this organization invite members to project teams. This behavior is consistent for project, product, and library teams in Windchill PDMLink and Windchill ProjectLink.

Enhanced Security Auditing
Windchill ProjectLink 7.0 provides audit access and update capabilities to project and product spaces and their contained information. This allows individual organizational units to access, audit, and update events for projects and products in their organizations.
• Audit reports can be generated for specific projects, users, and objects for specified date and time ranges. These reports can be exported to files and archived in a tamper-resistant environment to verify that database records have not been altered in the event of a security audit.

• Access control tools are available for individual items in a project.

• A site can be configured to generate audit trails for the specific audit events and for the specific objects of interest.

• The audit capability can be used to discover external security breaches, verify access history or update history by specific users, and monitor activity by project or user.

Create, View, and Update Organization Level Groups

Organization administrators define, view, and update organization level groups across project, product, and library teams in Windchill PDMLink and Windchill ProjectLink. These groups can be used when inviting members to teams and when defining access policies. The group members can be drawn from users and groups defined in the organization, as well as groups defined at the site and defined in a connected corporate directory (provided organization administrators are provided access to this corporate directory).

Identify Life Cycles Available for Routing

You can now mark a life cycle as available for routing so that an administrator can control the selectable list of routing life cycle/process combinations that are displayed to an end user.

Manage Life Cycle and Workflow Templates

You can now upload and download life cycle and workflow template definitions directly from your client without accessing the server file system. This allows users to easily exchange life cycle and workflow templates. Each organization administrator can only see the life cycles and workflow templates for their organization, and can only upload and download templates from their organization. This behavior is consistent for project, product, and library teams in Windchill PDMLink and Windchill ProjectLink.

Project Deletion and Project Name Reuse

When you delete a project, the project and all its content objects are internally marked for deletion. Once a project has been marked for deletion, you can reuse the project name in a new project. The deleted project and its contents do not show up in any searches or queries that users execute.

Projects that are marked for deletion may be thought of as being placed in an organization trashbin for the organization hosting the project. An organization administrator can view the trashbin for the list of projects that are marked for deletion. They can choose to recover the projects or empty the trashbin. Projects that are emptied from the trashbin are not entirely removed from the database, however, content associated with all iterations of content holder objects is removed from the database. The removal of the content holder objects frees up the primary disk space for a project. The
A project is then identified as deleted, however, all contained objects remain marked for deletion and are ignored in all subsequent searches and queries. Once a project is emptied, it no longer is displayed in an organization’s list of projects marked for deletion. This capability provides a means to recover projects that are inadvertently deleted.

**Unified Administration and Runtime Capabilities**

Windchill ProjectLink 7.0 allows you to dynamically define types and type-specific attributes for projects and documents in a user interface without programming. You can do this for each organizational unit with a parent organization. Each object type can be associated with a unique set of custom attributes.

Organization and site administrators can define custom types and attributes. These custom types and attributes for documents are automatically exposed in the project user interface for creating, updating, and viewing document properties or details. Custom types and attributes are inherited from a site definition and sub types and associated attributes can be added by each organization in the site that is specific to the organization. It is not possible to define custom part types, but you can define custom part attributes at the site level that are inherited by all parts (for all projects hosted by all organizations participating in a site).

The document and project templates may preset attribute values in the document or project instance. You can create custom document attributes that are then automatically mapped to fields defined in a document template. For example, customer number and customer name attributes of the project in which a document is created may be mapped to customer number and name fields in each Microsoft Word document template.

Custom project attributes can be defined but are not automatically exposed in project view, create, and update user interfaces. You can manually customize these interfaces through documented and supported techniques to expose the custom attributes in the project view, create, and update interfaces. You can also create custom reports that include or filter against these attributes.

The table views display the most recently updated items by default, but are sticky per folder per user.

**Enhanced File Vault and Replication Support**

Windchill ProjectLink 7.0 supports the common Windchill file vault configuration and rules. The same rules apply for bundled and solution standalone installations. This enables multiple external file vaults and the ability to replicate data.

**Content File Vault Replication**

You can create and use replicated file vaults for improved local upload and download performance. As site administrator, you can set up file vault replication so that one or more remote replica vaults can be configured to improve content upload and download performance for remote users.
A project manager or organization administrator can also configure a project to enable replication and establish the replication rules for the project data. Users belonging to a project with replication enabled can set a preference to use the closest replica vault to access. The default parameter is set to use the master replication vault.

**Team and Project Management Enhancements**

**View and Update Project Invitation Message**

You can now view and update the project invitation message. You can also view the message from the project details page and update it from the project update wizard and the team update interface.

This capability is important when you define a project but do not start it until some time later, and need to alter the message just prior to starting the project. You can tailor the invitation to a newly invited group and update them on the status of the project.

**List the Projects of Which You Are a Member from any Project Page**

You can list the projects of which you are a member from any project page. The list includes the project owner column. You can sort on any of the columns in the list.

**Quickly Switch to a Recently Accessed Project from any Project Page**

The project page now displays a drop-down list of available projects that were recently accessed (versus recently updated) by the logged-in user. Since the recent project list is specific to the user interacting with the project, it is not affected by changes made in projects by other users.

**Create New Project from any Project Page**

Windchill ProjectLink 7.0 allows creation of a new project or change instance from the project or change tabs, respectively. You can create a new project from a workspace whose context is a project. The Project Create functionality is now available from any project page.

**Invite Users and Groups to Guest Role in Project**

Users and groups can be invited as full or guest members to a project, product, library, or change team. Guest members do not display as team members, and the project or product instances do not display on a guest member’s project, product, or library list. Guest members can search across projects, libraries, and products for information. They can also access projects and products to view the information in those contexts. Guest members cannot update or add information to a project, product, or library.

The guest members or roles are visible only by the members of the organization to which they belong. For example, an original equipment manufacturer (OEM) may invite a large corporate group to a project as a guest. The OEM may also invite a number of suppliers to the project that
belong to external organizations. The guest group would not be visible to or expandable by any supplier that is not a member of the OEM's organization.

You can think of guests as observers, rather than active participants or authors of information in the project. Guest roles allow a project manager to provide broad organization access to project information without individually inviting members to a team, and without defining a complex organization level policy that might only be used once. This behavior is consistent for project, product, and library teams in Windchill ProjectLink 7.0.

**Invite Members to a Team Using a List of Full or Partial Names**

You can enter a comma or semi-colon separated list of user names or partial names for users and groups defined in your organization, to invite them to a team role. All unique results are immediately added to the list of selected team members for a role. Full names or partial names are returned in a list from which you can individually select and add to the team role.

For example, if your organization consists only the US presidents, you could enter the full and partial names in the user invitation field, as follows: G Washington; John Ad; G Bush; T Jeff; Abraham; George Washington, John Adams, Thomas Jefferson, Abraham Lincoln. These full and partial names would all be automatically added to the list of selected users. George Herbert Bush and George Walker Bush would be added to the list of matches from which the user could select one or both.

This behavior is consistent for project, product and library teams in Windchill ProjectLink 7.0.

**General Enhancements**

**Link Deliverable with Activity**

When you associate a deliverable with an activity in a project, the deliverable status (percentage) of completion, health status, planned and actual dates, effort, and cost) is now bidirectionally linked with the activity status by default.

This feature is useful when there is a one-to-one relationship between deliverables and activities. When a deliverable is linked with an activity, it means the status can be viewed or updated from either the deliverable or the activity. Changes made to an activity are directly reflected in both the activity and its associated (linked) deliverable. The default behavior links deliverables with activities. A project creator can optionally disable this linking when creating a project. The linking behavior applies to the entire project. When the option to link deliverables with activities is set, it is possible to associate only a single deliverable with an activity.

**Folder Capabilities**

**Search Within a Folder**

You can quickly search within a folder using a simple keyword or more advanced search query. The search within a folder option is accessible from a folder detail page.
Access Folder Path for any Document

From a document details page, you can view and access any folder in the folder path to the document.

View Contents and Link to a Specific Folder

Each folder has its own property or detail page where you can view the properties and contents of the folder. The contents can be viewed using any of the folder views supported. The last view accessed is saved for each folder in each project so that the next time you visit the folder, it is filtered and sorted as last viewed. You can view the folder path and navigate to any parent folder in the parent path from the folder details page. You can also capture and hyperlink to any folder so that you can refer to a folder in a document reference, your notebook, a discussion-posting link or paste it into a document or Web page. This behavior is consistent for project, product and library teams in Windchill ProjectLink.

Customization Support

The APIs for creating, updating, and querying the primary project objects (project, plan, milestones, deliverables, activities, teams, resources, action items) have been made available for customization. Documentation is available for the customization of the user interface components to view and update custom attributes and extend the standard reports.
This chapter covers capabilities for Windchill Enterprise Systems Integration (Windchill ESI) for Windchill 7.0.

Overview of Windchill ESI 7.0 ........................................................................................................5-2
Overview of Windchill ESI 7.0

Windchill 7.0 provides support for seamless interoperability with enterprise systems using Windchill ESI. Windchill ESI provides a prebuilt, pretested, integration that supports the publishing of various types of product information to SAP 4.6c. Future releases of Windchill ESI will encompass other target systems.

Windchill ESI 7.0 is an add-on option to Windchill PDMLink 7.0 that includes a set of core services, based on industry standards, to enable robust communication with external systems.

Additionally, Windchill ESI is built on industry-leading EAI software provided by TIBCO. This integration solution provides a powerful layer of business logic, data translation, and robust communication control between Windchill and the target system. The EAI technology complements the core services of Windchill, which are designed to be EAI neutral, with a set of critical features and functions that are required by ERP and other systems to support robust integrations.

Windchill ESI leverages adapters from TIBCO to handle the lower level communications, such as the execution of specific APIs within the target system. Also, the modular architecture of Windchill ESI supports custom integrations to many different enterprise systems and the ability to work with other EAI technology. The Windchill ESI EAI-based architecture ensures that Windchill and the target systems always have the most current and accurate information concerning the release of product data.

The following capabilities are new in Windchill ESI 7.0:

- New flexible and extensible architecture
- New prebuilt business logic
- Enhanced publication capabilities
- Enhanced customization capability
- New open APIs
- New transaction control capabilities
- New out-of-the-box (OOTB) error management capabilities
- Enhanced user experience

New Flexible and Extensible Architecture

Windchill ESI’s new enterprise application integration (EAI) based architecture enables PTC to deliver a world-class integration solution that provides the following benefits:

- Commercially available, standards-based EAI technology.
- The ESI software that is part of Windchill ESI can also act as an integration hub for all of a customer’s integration needs.
• Ability to exercise any SAP BAPI, RFC, or IDOC functionality beyond the pre-defined publication capabilities.
• Ability to access SAP modules including Material Management for parts, Cross-Application Components for documents, Logistics for ECNs, and Production Planning for BOMs
• TIBCO middleware is certified by SAP
• Transactions protected by authentication security measures.

**New Prebuilt Business Logic**

Windchill ESI’s prebuilt business logic enables ESI to be an out-of-the-box integration solution. PTC leveraged years of integration experience to design and build the critical business processes that control data transfer between Windchill and other enterprise systems and provide support for the critical business objects required to execute a flawless publication to a target system, out-of-the-box.

**Enhanced Publication Capabilities**

Windchill 7.0 allows publication of key business objects to SAP, including:

• Engineering change notices (ECNs)
• Bill Of Materials (BOMs)
• Parts and their associated documents, alternates, substitutes, reference designators, and line numbers.
• ECN-based product structure release
• Top-down multi-level BOM release

The following publication capabilities are also available:

• Publish to multiple SAP instances
• Windchill workflows to manage user interaction with the release process
• Control over where product information gets published

For example, users can assign individual parts to one or more SAP plants or choose to publish product structures as group BOMs and non-plant-specific materials.

**Enhanced Customization Capability**

Windchill ESI facilitates any necessary extensions of out-of-the-box capability with easy to use graphical user interface (GUI) tools.

• Technology infrastructure for queries of SAP information
• PTC offers any TIBCO commercially available adapter for customization to a target system
New Open APIs

Windchill ESI provides open APIs for ERP integration that are well-documented and EAI vendor neutral.

New Transaction Control Capabilities

Windchill ESI 7.0 provides the following transaction control capabilities:

- Robust transaction management, to ensure publication integrity
- Full, closed-loop transaction management, to ensure the success of every publishing transaction

New Out-of-the-Box Error Management Capabilities

Windchill ESI has the capability to facilitate rapid resolution of publication errors via robust error management workflow capabilities.

Enhanced User Experience

Windchill ESI's prebuilt publication capabilities enable the user to publish critical product information in a user-friendly GUI-based environment. The enhancements include:

- Administrative tasks are made significantly easier using TIBCO's GUI development and administrative tools
- User interfaces for setting and viewing plant assignments and for viewing transaction results
- Localized user interfaces in all the languages supported by Windchill 7.0
- Ability to publish product information in languages supported by Windchill 7.0
This section describes enhancements for Windchill interoperability with CAD systems.

Overview of Windchill 7.0 CAD Integrations .................................................. 6-2
Overview of Windchill 7.0 CAD Integrations

Windchill 7.0 integrates with CAD tools to provide tight links to work-in-process design data. Windchill CAD integrations create and maintain parts and their relationships. Windchill CAD integrations also map attributes from CAD files to Windchill attributes.

Windchill CAD integrations are also referred to as workgroup managers. For example, the integration between Pro/ENGINEER 2001 and Windchill is referred to as the Workgroup Manager for Pro/ENGINEER 2001. Similarly, the integration between Pro/ENGINEER Wildfire and Windchill 7.0 is referred to as the Workgroup Manager for Pro/ENGINEER Wildfire.

**Note:** The Workgroup Manager for Pro/ENGINEER Wildfire is completely integrated with Pro/ENGINEER Wildfire. In other words, Pro/ENGINEER Wildfire connects to Windchill 7.0 without requiring the download and installation of additional software components.

With Windchill 7.0, the CAD integrations have been significantly enhanced to provide:

- Simplified new Windchill installation utilities
- A common user interface and capabilities for working with Windchill PDMLink, Windchill ProjectLink, and Windchill Foundation & PDM
- Support for PDM checked-out and shared data
- Improved management of as-stored configurations
- Ability to duplicate CAD structures using the Save As command for Pro/ENGINEER data only.

**Note:** Support for other CAD data will be provided in maintenance releases of Windchill 7.0.

- Improved configuration specification rules
- Workspace improvements to facilitate management of work-in-process data
- Improved revise capabilities
- Ability to auto-associate a CAD document to an existing WTPart
- Pro/ENGINEER-specific enhancements
- Pro/INTRALINK Gateway improvements
- Specific third-party CAD integration enhancements

New Windchill Installation Utilities

Windchill 7.0 introduces powerful new multi-platform software deployment utilities for the installation and configuration of individual and combined Windchill solutions. See Chapter 2 for further details.
Enhanced Common User Interface

Windchill 7.0 offers a unified user interface design to support Windchill solutions and their associated contexts. More specifically, with Windchill 7.0, the process of interacting with CAD data is consistent between Windchill PDMLink, Windchill Foundation & PDM, and Windchill ProjectLink. In other words, the user interface for checking a Pro/ENGINEER CAD file into Windchill PDMLink is the same as the one used for checking a Pro/ENGINEER CAD file into Windchill ProjectLink. This improved consistency applies to all of the Windchill 7.0 CAD integrations.

Furthermore, Windchill 7.0 introduces a common navigation paradigm that is based on a dynamic client architecture (DCA) Web user interface technology. This allows users to move easily between Windchill ProjectLink projects and Windchill PDMLink products and libraries.

The common user interface features include:

- Common desktop publishing and editing
- Common team components
- System wide search facility
- Client side viewable creation

**Note:** This Windchill ProjectLink 6.2.6 CAD manager capability is new for Windchill PDMLink and Windchill Foundation & PDM.

- Package checkin

**Note:** This Windchill ProjectLink 6.2.6 CAD manager capability is new for Windchill PDMLink and Windchill Foundation & PDM.

Support for PDM Checked-Out and Shared Data

Windchill 7.0 provides ability to check out and share data between products and libraries (Windchill PDMLink), or cabinets and folders (Windchill Foundation & PDM) and projects (Windchill ProjectLink). Windchill Foundation & PDM, Windchill PDMLink, and Windchill ProjectLink now use consistent CAD integrations (workgroup managers). These workgroup managers have consistent behavior across Windchill 7.0 solutions.

The Windchill 7.0 integrations provide the ability for project team members to work on CAD data in a project, in isolation from the rest of the product data, by referencing shared objects and modifying PDM objects that have been checked out to a project.

Improved Management of As-Stored Configurations

Windchill 7.0 provides the capability to automatically create and retrieve a snapshot of the configuration of the objects that have just been checked in.

As-stored configurations are iterations of a CAD assembly, model, or model drawing (with or without its dependents) as they were stored during checkin. The term “as-stored” refers to the CAD document configuration, as checked-in...
not as-saved (as during an upload). A single as-stored configuration can be
associated with a CAD document iteration.

Windchill 7.0 allows users to retrieve an as-stored configuration of a CAD
document (if available) using the Check Out, Download, Add to Workspace,
Windchill/Open from CAD tool, and Save-As commands.

Ability to Duplicate CAD Structures using Save-As Command

The Save-As functionality for Windchill 7.0 is available from the HTML
Workspace Browser and HTML CAD Document detail page.

It allows WTParts and associated CAD documents to be copied and saved
with a different name, while maintaining dependencies between objects. The
Save-As command saves objects across contexts.

Improved Configuration Specification Rules

For Windchill 7.0, the configuration specification now allows the user to
choose the type of dependency processing.

Object dependency processing uses either part or document configuration
specifications for selecting parts or documents in operations such as upload,
download, check in, and check out.

When a part-centric approach is used, objects may also be filtered based on
the effectivity defined on the Part Configuration Specification tab.

Additionally, complete part structures may be checked out and downloaded
by selecting only the top-level node.

The default behavior can be set in a preference file.

Workspace Improvements

In Windchill 7.0, workspaces are available for most third-party CAD
workgroup managers. Objects may be checked-in and checked out in the
context of a workspace in either the Java or HTML user interface.

Workspace Support for a Single Windchill Solution at a Time

When creating a workspace in a workgroup manager, the context is set,
depending on the solution installed.

• Product context (Windchill Foundation & PDM and Windchill PDMLink)
• Project context (Windchill ProjectLink)
• Library context (Windchill PDMLink)

However, the context of a workspace can be changed if the workspace is
empty. Any new object created in the workspace inherits the default context
defined for the workspace at the time.
Support for HTML Workspace Functionality for Most CAD Integrations

Windchill 7.0 allows users to manipulate CAD metadata without requiring the workgroup manager Java client.

Supported capabilities are:

- Workspace listing page (list of all workspaces)
- Workspace page (shows contents of workspace)
- Checking out and checking in of meta data only
- Associate/Disassociate commands
- CAD document and WTPart revision
- Attribute modification from the HTML CAD document property page
- Enhanced deletion capabilities for CAD documents and WTParts (multi-select and circular dependents)
- Set State
- Set Folder (move)

Improved Revise Capabilities

The revise command provides more consistent behavior across CAD applications when revising an object from the following Windchill interfaces:

- Windchill Explorer
- CAD Document HTML Property page
- Workspace browsers (HTML and Java)

When revising a CAD document, users now have the option to revise associated WTParts, as follows:

- Revise CAD document only
- Revise the WTPart only
- Revise both CAD document and WTPart

Furthermore, Windchill 7.0 now provides the capability to select multiple objects for revision, if they are not already checked out by you. This functionality is available only in the workspace.

The revise functionality in the workgroup managers for Pro/ENGINEER 2001 and Pro/ENGINEER Wildfire has been enhanced in the following ways:

- Support for revision of family instances
- Enhanced ability to allow revise of a WTPart/CAD document without revising associated CAD document/WTPart
- Enabled to include or exclude associated WTParts/CAD documents for multiple objects in single action
Enabled to include or exclude family members for multiple CAD documents in single action

Enabled to set folder to multiple objects in single action

Presenting detailed information of all selected objects in the dialog before proceeding to revise

Customization for setting revise options using delegate

**Ability to Auto-Associate CAD Document to Existing WPart**

Windchill 7.0 allows existing CAD documents in the workspace to be automatically associated with WPart using the Associate with Parts command.

The auto-associate functionality is available in the following interfaces:

- HTML Workspace Browser (all CAD integrations)
- Java Workspace Browser (Pro/ENGINEER 2001, CADDS, and CATIA V4 only)

The behavior of the Associate with Parts command is customizable, and the outcome of the command depends on settings in a preference file.

The settings provide the ability to search for existing WPart, as follows:

- Search based on a predefined attribute
- Ability to search a specific custom class
- User can optionally be asked to create the part if it is not found
- Ability to change the type of association (from active to passive)

Users can do this either by selecting the object in the Workspace Browser and then selecting the Create Parts for Document command, or upon check-in.

You can set preferences and settings for user, group, product, team, and site. If a WPart already exists and matches the settings, it is associated to the CAD document. If no WPart exists, you can choose to create it. The option for creation can be set in the preference autoassociate.ini file.

When you auto-associate a new drawing CAD document (for example, a new Pro/ENGINEER drawing) that references an existing CAD document (for example, an existing Pro/ENGINEER part or assembly) that has a build relationship to an existing WPart, the auto-associate command automatically creates a described-by link from the WPart to the new CAD document drawing.

When the new drawing CAD document references a CAD document for a Pro/ENGINEER model that is the generic of a family table, you have the option to automatically create a describes-by link from the WPart associated with each family table instance to the new CAD document drawing.
Enhancements Specific to Pro/ENGINEER

Data Upload Improvements (Windchill 7.0 + 6.2.6 DSU 4)

The following data upload enhancements have been added to Windchill 7.0 for the Java and HTML client:

- Ability to analyze Pro/ENGINEER data that needs to be uploaded.
- Warn the user which files and dependent objects already have been uploaded to Windchill.
- Ability to automatically add CAD documents to the workspace.
- Warn the user about missing dependencies in the data set.
- Warn the user about instances that have the same name as standard parts.

CAD Document Names/Numbers Without File Extensions

Windchill 7.0 supports naming of objects from Pro/ENGINEER with or without file extensions. A runtime option allows you to change the naming convention, for example, by adding an underscore or changing the file name completely.

Verified Flag on Instances

This functionality is only supported with Pro/ENGINEER Wildfire.

Partial Family Table Save As

This capability requires Pro/ENGINEER Product Life Management (PLM) Data 2.0 (J03 neutral data) support.

You can now copy family tables and all instances, if you copy a CAD document that represents a generic. You are required to enter a new name, number and model name for each instance.

Enhanced Missing Dependents Support

Windchill 7.0 of Workgroup Manager for Pro/ENGINEER Wildfire provides a menu to resolve missing dependents (ghost objects) when Pro/ENGINEER assemblies or CAD documents are downloaded or checked out to the active workspace.

You can select the Resolve Missing Dependents menu option from the Workspace Browser to launch the Missing Dependents Resolution dialog box.

Pro/INTRALINK Gateway Improvements

Support for Publication of As-Stored Transaction IDs to Windchill and PDMLink

With the introduction of as-stored configurations in Windchill PDMLink 7.0, it is now possible to publish complete as-stored information from
Pro/INTRALINK. After publishing the CAD objects from Pro/INTRALINK, the gateway propagates the applicable as-stored information to the CAD documents in Windchill. This allows the retrieval and visualization of Pro/INTRALINK configurations directly from Windchill PDMLink.

Enhanced Data Mapping Flexibility

The mapping operations of the gateway are even more flexible than in past releases. Both part settings and CAD document settings for the gateway can be defined at the selector level. This means that naming and number conventions can be defined at the folder level.

New Publishing Option

In Windchill 7.0, there is a new option in the Pro/INTRALINK Application Server (IAS) that can be configured to change the gateway publishing behavior. This new option is referred to as enhanced baseline publishing. With enhanced baseline publishing enabled, the gateway publishes all prior versions and iterations of the selected Pro/INTRALINK objects identified by the publishing selector. Using this option further ensures that there are no holes in the Windchill data, thus avoiding the potential for failure of future data selections.

E-mail Notification for Gateway Administrators

The gateway can be configured to automatically send an e-mail notification to the gateway administrator at the conclusion of a scheduled publishing event. The e-mail notification indicates that the publishing has completed, and provides a direct link to the associated log files for analysis.

Supported Pro/INTRALINK Versions and Date Codes

The following Pro/INTRALINK versions are supported:

- Pro/INTRALINK 3.2 2003120 and 2003200
- Pro/INTRALINK 3.3 2002470 and 2003290

Optegra Gateway

The following versions of Optegra will be supported, using the Optegra Gateway, in a maintenance release of Windchill 7.0:

- Optegra 6.0
- Optegra 7.0

CADDS 5 Versions

The following versions of CADDS 5 will be supported in a maintenance release of Windchill 7.0:

- CADDS 5 Release 12
- CADDS 5 Release 13
Third-Party CAD Integrations

Windchill 7.0 supports the following third-party CAD integrations, with the initial launch of Windchill 7.0:

- AutoCAD
- CATIA V5
- I-DEAS

The following products will be available in a maintenance release of Windchill 7.0:

- Autodesk Inventor
- Cadence Concept/Allegro/OrCAD
- CATIA V4
- Mentor Graphics Board Station
- SolidWorks
- Unigraphics

Enhanced Installation of the Workgroup Manager Client

Windchill 7.0 provides the following enhancements for installation of the workgroup manager clients:

- A simplified user interface using new Windchill installation utilities
- A one-step process for installing workgroup manager JAR files and configuring the CAD application
- Capability to perform multiple installations of the same workgroup manager (for example, Workgroup Manager for AutoCAD) on the same client machine from multiple Windchill servers. This eliminates the need to re-install the workgroup manager each time a different Windchill server needs to be accessed. The capability to switch servers is provided in the workgroup manager user interface.
- A new server Update command to update, in one operation, all JAR files of all installed third-party workgroup manager clients.

Enhanced User Interface for Third-Party Workgroup Managers

Windchill 7.0 provides the following enhancements for most third-party MCAD workgroup managers:

- A common user interface for Windchill Foundation & PDM, Windchill PDMLink, or Windchill ProjectLink solutions merges all capabilities of Windchill Foundation & PDM, Windchill PDMLink and Windchill ProjectLink
- Configurable dialog boxes to define what tab is visible by default, minimizing the number of mouse clicks to access most commonly used tabs
• Configurable dialog boxes to define the default options of a given operation, minimizing the number of mouse clicks to select most commonly used options

• Configurable dialog boxes to define:
  – Visible attribute columns
  – Order of the columns that optimize access to the most pertinent attributes

• Capability to select a Windchill context (product, project, library) for a given workgroup manager operation (for example, check in or check out) or user session

• Provides the capability to select an active Windchill workspace. The active workspace provides additional capabilities for workgroup managers to manage downloaded files. A Windchill workspace can be used for a given user task that requires working with a given set of files. Different workspaces allow users to easily distinguish different groups of files for different user tasks

• Configurable bookmarks to access commonly used Windchill HTML pages from the user CAD session

• A new check in selection dialog box provides the capability to easily select multiple files, such as the file active in the CAD session, files open in the CAD session, files existing in the local download directory, or files belonging to the active workspace, to be checked in

• The status window provides improved feedback to the user displaying progress bars and providing access to detailed error messages

**Note:** Windchill 7.0 does not support the enhanced user interface options described above for Workgroup Manager for Cadence and Workgroup Manager for Mentor Graphics.

### Enhanced Check Out Command

Windchill 7.0 provides the following enhancements for the check out command:

• Capability to download iterations of dependent Windchill objects complying with Windchill configurations (latest, as-stored, baselines, or workspace configurations). The workspace configuration is the Windchill configuration associated with the active workspace

• Capability to check out multiple selected objects

• Preview capability for check out and revise operations to allow the displaying of generated thumbnails of the selected object from the Check Out and Revise dialog boxes

• Additional options for accessing various types of dependent objects to be checked out or downloaded with the selected objects. The dependents objects are derivative files, referencing files, associated drawing files, or Windchill parts
• Capability to select object from the active Windchill workspace avoiding to search again in Windchill database objects that were already downloaded

New Cleanup Command
Windchill 7.0 provides a new cleanup command with the following capabilities:

• Available for all third-party workgroup managers
• Deletion (from the local download directory) of files that are checked in and referenced in the active Windchill workspace. The objects referenced in the active workspace are also removed from the workspace, but not from the Windchill database
• Availability of the cleanup functionality from the Check In command to remove files at the end of a successful checkin

New Update Command
Windchill 7.0 provides a new Update command with the following capabilities:

• Available for all third-party workgroup managers
• Provides the capability to update downloaded files that would otherwise be checked in and out-of-date in the active Windchill workspace. The objects referenced into the active workspace are also be updated

New Preferences Command
Windchill 7.0 provides a new preferences command with the following capabilities:

• Available for all third-party workgroup managers
• Ability to configure workgroup manager dialog boxes
• Ability to define default options for workgroup manager dialog boxes
• Ability to switch Windchill servers if a workgroup manager has been installed from multiple servers
• Provides capability to switch Windchill context and workspace defining active context and workspace for the subsequent workgroup manager operations.

Workgroup Manager for AutoCAD

Supported AutoCAD Releases
Windchill 7.0 supports the following versions:

• AutoCAD 2000i
• AutoCAD 2002
Note: AutoCAD 2004 will be supported in a maintenance release of Windchill 7.0.

Workgroup Manager for CATIA V5

Supported CATIA V5 Releases
Windchill 7.0 supports the following versions:
- CATIA V5 Release 10
- CATIA V5 Release 11

Workgroup Manager for I-DEAS

Optional Multi-Site I-DEAS TDM Support
Windchill 7.0 supports the following capabilities:
- Support for multiple TDM installations with a single Windchill install
- Allows content to remain on local TDM server
- Allows publication of viewables and metadata to a Windchill server

Supported I-DEAS Versions
Windchill 7.0 supports the following versions:
- I-DEAS version 9.0
- I-DEAS version 10 (NX)

Workgroup Manager for Autodesk Inventor

The Workgroup Manager for Autodesk Inventor will be available in a maintenance release of Windchill 7.0. Autodesk Inventor introduces a full-featured workgroup manager that includes:
- Visualization support for Autodesk Inventor files
- Increase support for Autodesk Inventor
- Support for iPart factories (Autodesk Inventor family tables)
- Support for Autodesk Inventor Release 6.0 and Release 7.0

Enhanced ECAD Integrations

Workgroup Manager for Cadence

Support for UNIX version of Cadence Concept/Allegro PCB Design Tools
A UNIX version of the Cadence Concept schematic design and Cadence Allegro PCB layout tools will be supported in a maintenance release of Windchill 7.0.
Key improvements will include:
• Automated process of extracting design BOM to enterprise BOM and managing BOM through the life cycle of the product
• Archive/vault design data
• Bidirectional exchange of attributes
• Support for Cadence design data and drawing formats
• Sharing of IDF format data between Cadence and Pro/ENGINEER 2001

**OrCAD Support**
Windchill 7.0 now supports OrCAD in the following ways:
• A single Cadence workgroup manager supports multiple Cadence PCB flows
  • Variant design

**Workgroup Manager for Mentor Graphics**
Workgroup Manager for Mentor Graphics will be supported in a maintenance release of Windchill 7.0.

**Design Architect/Board Station Support**
Windchill 7.0 offers a new CAD system (Board Station) for Mentor Graphics, which is available on the following platforms:
• Windows 2000
• XP Pro
• Solaris 2.8
• HP-UX 11i
This chapter describes the new features and enhancements specific to Windchill Foundation & PDM 7.0.

Overview of Windchill Foundation & PDM 7.0 ......................................................... 7-2
Overview of Windchill Foundation & PDM 7.0

Windchill Foundation & PDM 7.0 provides key enhancements that enable customers to expand their current use of these solutions and leverage the benefits of other Windchill solutions. Windchill 7.0 provides customers with unique capabilities that streamline the sharing and communication of information and processes between the creation, collaboration, control, and manufacturing environments.

The majority of enhancements in Windchill 7.0 support this expanded and unified product development environment and are common among the Windchill 7.0 solutions, including Windchill Foundation & PDM and are covered in Chapter 2, titled “What’s New Across Windchill 7.0 Solutions.”

They include:

• Integral behavior between the Windchill ProjectLink and Windchill PDMLink or Windchill Foundation & PDM
• Architecture update and associated administrative policies
• Integrated search
• Enhanced product structure annotating
• Product structure line number support
• Enhanced Microsoft Office integration
• Enhanced desktop integration
• Support for document templates
• New Windchill installation utility
• Configurable identification and revision schemes
• Organizational owners of product information
• System audit reports
• Enhanced J2EE compliance and compatibility
• Administration and runtime improvements
• Customization improvements
• Enhanced integration with manufacturing system (Chapter 5)
• Enhanced CAD management support (Chapter 6)
• Enhanced visualization solutions (Chapter 9)

In addition to the common capabilities available in Windchill 7.0, Windchill Foundation & PDM introduces specific capabilities to address common customer requests, including:

• Part Occurrence Name Support
• CMII Closed-Loop Change Management Process
Part Occurrence Name Support

Windchill PDM 7.0 enhances the Product Information Explorer (PIE) with the ability to define and edit the product structure occurrences, commonly known as reference designators. Product structures can be created with specific occurrences of parts, versus overall quantities, and assigned unique names that reference their specific usage within a product. Examples of the use of product occurrences include:

- Tires of a vehicle — left front, right front, left rear, right rear
- Seat locations within an aircraft
- Component placements on circuit boards

CMII Closed-Loop Change Management Process

Windchill PDM 7.0 supports the CMII closed-loop change management process template that has previously been available in Windchill PDMLink. The system can be configured to use the CMII closed-loop change management process template with an installable option that replaces the Windchill PDM Change Manager. The CMII closed-loop change management process template introduces problem reports, enterprise change requests, and enterprise change notices that are compliant with the forms and process methodologies defined by the Institute of Configuration Management (ICM).

Part Effectivity Traceability and History

Windchill PDM 7.0 provides the ability to trace the setting of a part effectivity to a change activity and change order. In addition, changes to the part effectivity can be captured as history as the part effectivity changes during the change process. The part effectivity history includes a modification time stamp and a modification user.
This chapter describes enhancements to Windchill PartsLink 7.0.

Overview of Windchill PartsLink 7.0 ............................................................... 8-2
Overview of Windchill PartsLink 7.0

Windchill PartsLink 7.0 enables designers to achieve maximum part reuse through Web-based access to standard parts and preferred parts, and allows suppliers of standard parts to provide their customers with rich technical product data.

The Windchill PartsLink Catalog can be used as a standalone application or in combination with Windchill 7.0. If used in combination with Windchill Foundation & PDM or Windchill PDMLink, consulting services are required to enable the integration.

Windchill PartsLink 7.0 provides the following capabilities:

- Develop classifications and structured content for product information systems
- Create interactive web-based product catalogs
- Create component management systems and product libraries
- Perform parametric searches on part and design information
- Deliver rich CAD information and visualizations from multiple engineering applications to the user

Windchill PartsLink 7.0 Capabilities

Windchill PartsLink 7.0 provides enhanced capabilities including:

- Integration with Windchill PDMLink and Windchill Foundation & PDM
- JSP architecture, which allows easier customization
- HTML results table with paging, sorting, support for thumbnail image and scrolling with locked column and row headings
- Clustering support, which provides scalability to support millions of parts with configurable replication and partitioning
- SQL cache
  - Supports data import through SQL query, tab delimited files, CSV files and XML
  - Eliminates update latency
This chapter describes the latest enhancements and any new products being introduced with ProductView 7.0.

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Overview of Windchill ProductView 7.0

Windchill ProductView Lite Edition

Windchill 7.0 solutions incorporate a set of embedded lightweight visualization components. Building on the version of Windchill ProductView Lite Edition that shipped with Windchill Foundation 6.2, the visualization components now include modular viewers for each of these file types, all hosted within a Windchill Web page:

- 3D models
- 2D drawings
- ECAD printed circuit boards and schematics
- Images
- Documents

These components are designed to lower the cost of visualization administration within your extended organization by making them self-installing and self-administering. These easy-to-use viewing tools are delivered on demand to end-users and cached on their machines. When later versions of these visualization components are placed on the server, they will be delivered automatically to end-users the next time they view content in Windchill.

The Windchill ProductView Lite Edition components include markup capabilities, providing users with simple, lightweight tools for collaboration. In addition, the 3D model viewer incorporates new graphics rendering technology for improved rendering of large models, smoother user interaction, and faster data loading.

Windchill ProductView Standard Edition

Windchill ProductView Standard Edition, often referred to as the thick client, is now a purchasable option.

Document Collaboration Option

Windchill 7.0 includes the new Document Collaboration option, which is available for both ProductView Standard Edition and ProductView Lite Edition. This purchasable option provides high-quality document viewing and collaboration functionality, including these key features:

- Automated Office document publishing for Microsoft Word (DOC) and Microsoft Excel (XLS) documents
- High-fidelity document viewing and printing
- Rich document annotation and markup tools, including comment notes, highlighting, strikethrough, and underlining of text
- Intuitive navigation of markups on multi-page documents
• At-a-glance views of document pages using the thumbnails view
• Easy scanning of markups using the Comments tab interface
• Watermarking capabilities for both viewed and printed documents

In addition, you can now use a preview picture to create a 2D thumbnail when publishing in Windchill. To do this, you enable the Save Preview Picture option when saving the document.

**MCAD Visualization Adapters**

**Pro/ENGINEER**
Versions up to Pro/ENGINEER Wildfire are supported. Enhancements include:

• Publication of Weld parameters to the ED file
• Ability to publish the visible parts list for simplified rep definitions as “Groups” within ProductView
• Improved conversion of GD&T (Geometric Dimension and Tolerance) data from Pro/ENGINEER models
• Ability to publish Pro/ENGINEER models with texture maps to ProductView

**I-DEAS**
Version 10 of I-DEAS is now supported. Enhancements include:

• Ability to publish data to Windchill ProductView formats from within the I-DEAS user interface
• Conversion of package file items

**CADDS 5**
Version 13 of CADDS 5 is now supported. Enhancements include:

• Generation of bounding boxes in the ED file
• A configuration tool for setting up the CADDS 5 adapter
• Improved quality of B-REP and tessellated data in the Windchill ProductView files
• Improved memory efficiency

**Unigraphics (UG)**
Versions up to Unigraphics NX are supported. Publishing of PMI data (including text, dimensions, and tolerances) has been improved.
SolidWorks

Versions up to 2003 are now supported.

CATIA Version 5

A CATIA V5 adapter is available from Theorem Solutions Ltd. (www.theorem.co.uk) - contact sales@theorem.co.uk. This adapter publishes assemblies, parts, and drawings created within CATIA V5 to the standard Windchill ProductView viewable formats. PTC provides support within Windchill Visualization Services to control the adapter.

Windchill Visualization Services

Automated Document Publishing to PDF

To complement the view and collaboration client tools, Windchill 7.0 offers a purchasable automated document publishing service called Windchill Document Collaboration Services. This service automatically publishes Microsoft Word and Microsoft Excel documents to PDF upon check-in or upload, and stores the resulting PDF in the context of a visualization representation within Windchill for subsequent view and markup within ProductView.

3D Thumbnail Generation

Windchill 7.0 now provides the ability to generate 3D thumbnails in addition to 2D thumbnails. These 3D thumbnails appear in a small viewing pane, allowing the user to spin, pan, or zoom the thumbnail to preview the data prior to download.

The 3D thumbnails are generated automatically from published Windchill ProductView 3D viewables. First, all OL files referenced by the ED file are input to the thumbnail generator. Then, the thumbnail generator removes internal detail, leaving only surfaces that are viewable from outside the model. For example, for an automotive engine, geometrical descriptions of the pistons, crankshaft, and so on, are removed, leaving the outer surfaces of the cylinder block and head.

Typically, the 3D thumbnails range from 20 to 50 KB and, due to their small size, provide a rapid way of previewing a model.

Other features of the 3D thumbnail generator include:

• Ability to generate 2D thumbnails automatically.
• “Plug-compatibility” with the Windchill Release 6.X 2D thumbnail generator.
• Unlike the 2D thumbnail generator in Windchill Release 6.X, the new 3D thumbnail generator does NOT require an installation of Java3D, OpenGL, or graphics hardware, thereby making it ideally suited to run on server-class machines.
Server-side Watermarking

Windchill 7.0 allows the system administrator to enforce watermarking on viewable content that is viewed or printed by Windchill ProductView Standard Edition users. Watermarking is the process by which information is overlaid onto viewed or printed content, providing a method to communicate information or prevent uncontrolled screen shots or prints. Watermarks can consist of simple text strings, images, or strings dynamically computed from attributes retrieved from Windchill (for example, life cycle state).

Configured by a new user interface, the watermarking content can be specified for the site per organization, project, product, or library.

Note: ProductView Lite Edition will honor the server-side watermarking enforcement in a maintenance release of Windchill R7.0.

Visualization Collection

The user interface formerly known as the Visualization Clipboard is now known as the Visualization Collection. Users can add product configurations, product instances, and part structures without existing representations to the Visualization Collection, and can subsequently view these items in ProductView.

Support for Markup of Product Configurations and Instances

Product configurations and instances are now viewable and can be marked up.

Viewables in External File Vaults

Viewable files can be configured to be stored in Windchill external file vaults rather than in Oracle, allowing for rapid retrieval of large amounts of viewable data.
Representable WTDocuments

WTDocuments are representable in Windchill 7.0, allowing publishing of content stored against WTDocuments (such as a Microsoft Office document or IGES file). Representations on WTDocuments can be added to the Visualization Collection. In addition, viewable data can be uploaded from the user’s machine and published as a representation onto the WTDocument.

Ability to Disable Viewable and Thumbnail Publishing of Specific EPM Documents

Windchill 7.0 provides an interface for the administrator to specify that certain EPM documents should not be published or should have a thumbnail generated. Filters can be applied to prescribe conditions for this publishing, for example, to publish an EPMDocument or WTDocument when it is released.

In addition, administrators can now disable the ability of specific end users to initiate publishing of representations.

Out-of-date Representations

If a representation is out-of-date, such as when a child object of an assembly has been iterated and republished, the Windchill interface notifies the end user, who is given the option to view or republish that data.

Support for Windchill ProductView Lite Components

Windchill Visualization Services supports the full range of Windchill ProductView Lite components available with Windchill 7.0.

Support for Publishing CATIA V5 data

Complementing the CATIA V5 Workgroup Manager, Windchill Visualization Services in release 7.0 provides the necessary infrastructure to control the publishing of CATProducts, CATParts, and CATDrawings using the CATIA V5 adapter available from Theorem Solutions (www.theorem.co.uk).

Support for Pro/INTRALINK Gateway

Version 3.3 of the Pro/INTRALINK Gateway is now supported.

Context Compliance

Windchill Visualization Services is compliant with the context architecture of Windchill 7.0, including products, projects, and libraries.